SCHEDULE OF RATES

FOR

TERM CONTRACTS

FOR

BUILDING WORKS

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Volume 2

(Building Services Works)

ARCHITECTURAL SERVICES DEPARTMENT
HONG KONG

ARCHITECTURAL SERVICES DEPARTMENT

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Section 00

GENERAL REGULATIONS

SECTION 00

GENERAL REGULATIONS

Associated documents

GR.01 This Schedule of Rates (hereinafter referred to as “this Schedule” or "the Schedule") shall be read and used in conjunction with : -

(a) The General Conditions of Contract and Special Conditions of Contract adopted for the Term Contract.

(b) The Conditions of Tender, Form of Tender and Articles of Agreement of the Term Contract.

(c) Drawings, Specification and Employer’s Requirements of the Term Contract.

(d) The term “Specification” shall mean the General Specification, Codes of Practice and other documents referred herein below, Particular Specifications and all other specification requirements issued therein and referred to in the Term Contract.

(e) The General Specifications and other documents for building works including but not limited to the document as listed below including all current amendments issued thereto, and any further document all as referred to in the Term Contract : -

(i) General Specification for Building issued by Architectural Services Department.

(ii) Appropriate Sections of General Specification for Civil Engineering Works issued by Civil Engineering and Development Department.

(iii) Design Manual - Barrier Free Access issued by Buildings Department.

(iv) Code of Practice for Fire Safety in Buildings issued by Buildings Department.

(v) The Fresh Water Plumbing Maintenance Guide, Handbook on Plumbing Installation for Buildings, Hong Kong Waterworks Standard Requirements for Plumbing Installations in Buildings, Maintenance of Internal Plumbing and Circular Letters issued to Licensed Plumbers and Authorized Persons by Water Supplies Department.

(vi) Geotechnical Manual for Slopes, Geoguide 5 - Guide To Slope Maintenance and other relevant Geoguides issued by Geotechnical Engineering Office, Civil Engineering Department.

(f) The General Specifications, Codes of Practice and other documents for building services installations including but not limited to the document as listed below, which are issued by Architectural Services Department or Electrical and Mechanical Services Department including all current amendments issued thereto, and any further document all as referred to in the Term Contract : -

(i) General Specification for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(ii) General Specification for Air Conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

Associated documents (Cont'd)	**GR.01 (Cont'd)**	(f)	(iii)	General Specification for Mechanical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(iv)	General Specification for Fire Service Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(v)	General Specification for Lift, Escalator and Passenger Conveyor Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(vi)	General Specification for Liquefied Petroleum Gas Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(vii)	General Specification for Catering Equipment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(viii)	General Specification for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(ix)	General Requirements for Electronic Contract (ESG01) issued by Electrical and Mechanical Services Department.
			(x)	General Specification for Broadcast Reception Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(xi)	General Specification for Public Address Systems (ESG11) issued by Electrical and Mechanical Services Department.
			(xii)	General Technical Specification for Monochrome and Colour Closed Circuit Television Systems (ESG14) issued by Electrical and Mechanical Services Department.
			(xiii)	General Technical Specification for Uninterruptible Power Supply (UPS) (ESG15) issued by Electrical and Mechanical Services Department.
			(xiv)	General Specification for Plumbing Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(xv)	General Specification for Drainage Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.
			(xvi)	Code of Practice for the Electricity (Wiring) Regulations issued by Electrical and Mechanical Services Department.

Associated documents (Cont'd)

GR.01 (Cont'd)

(f)

(xvii) Code of Practice for Energy Efficiency of Building Services Installation issued by Electrical and Mechanical Services Department.

(xviii) Code of Practice on Working near Electricity Supply Lines issued by Electrical and Mechanical Services Department.

(xix) Code of Practice on Avoiding Danger from Gas Pipes issued by Electrical and Mechanical Services Department.

(xx) Code of Practice for Hong Kong LPG Industry issued by Electrical and Mechanical Services Department.

(xxi) Code of Practice GU01, GU03 - 06, GU09, GU12, GU13, GU15 and GU21 issued by Electrical and Mechanical Services Department.

(xxii) Code of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment issued by Fire Services Department.

(xxiii) Code of Practice for Lift Works and Escalator Works issued by Electrical and Mechanical Services Department.

(xxiv) Testing and Commissioning Procedure for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxv) Testing and Commissioning Procedure for Air-conditioning, Refrigeration, Ventilation and Central Monitoring and Control System Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxvi) Testing and Commissioning Procedure for Fire Services Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxvii) Testing and Commissioning Procedure for Lift, Escalator and Passenger Conveyor Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxviii) Testing and Commissioning Procedure for Liquefied Petroleum Gas Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxix) Testing and Commissioning Procedure for Catering Equipment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxx) Testing and Commissioning Procedure for Swimming Pool Water Treatment Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

Associated documents (Cont'd)

GR.01 (Cont'd)

(f) (xxxi) Testing and Commissioning Procedure for Broadcast Reception Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxxii) Testing and Commissioning Procedure for Burglar Alarm and Security Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxxiii) Testing and Commissioning Procedure for Emergency Generator Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxxiv) Testing and Commissioning Procedure for Steam Boiler and Calorifier Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxxv) Testing and Commissioning Procedure for Plumbing Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(xxxvi) Testing and Commissioning Procedure for Drainage Installation in Government Buildings of the Hong Kong Special Administrative Region issued by Architectural Services Department.

(g) Particular Specification(s) and all other specification requirements issued and referred to in the Term Contract.

(h) Any Amendments and Corrigenda to the Schedule of Rates issued and referred to in the Term Contract.

All items of works contained in this Schedule and in the Amendments and Corrigenda to the Schedule of Rates issued and referred to in the Term Contract, shall be executed in accordance with the conditions and stipulations as provided in the above mentioned documents, and in compliance with all requirements on workmanship, materials, plant, measurements and any other requirements as stipulated in the above documents.

Due allowance is deemed to have been made in the Contract Percentages for complying with the requirements in the Specification and/or Employer's Requirements as adopted in the Term Contract.

Definitions generally **GR.02**

Where any of the definitions given in these General Regulations are at variance with those given in the Special Conditions preceding the Sections throughout this Schedule, the definitions given in the Sections in this Schedule shall take priority.

“approved”	shall mean approved in writing by the Maintenance Surveyor but this approval shall not relieve the Contractor from responsibilities imposed by the Term Contract.
“described”	shall mean described in the Specification and all current amendments (if any) issued thereto.
“ditto”	shall mean the whole of the work described in detail in the preceding item, except as qualified in the description in which it occurs.
“origin”	shall mean the place or country where the material (which shall be natural material only) is originally produced.
“proprietary”	shall mean a proprietary material or product, protected by a patent or registered trade mark ® or a trade mark symbol ™ or similar recognizable trade mark or copyright, that is manufactured and marketed by the owner who has exclusive rights of use, or other material or product that the Contractor could provide authentication documents on its make and origin as required by the Maintenance Surveyor and to his satisfaction.
“Schedule”	shall mean this Schedule of Rates.
“specified”	shall mean specified in the Specification and all current amendments (if any) issued thereto.
“submission”	shall mean the submission of all documents like design, calculation, working drawings, shop drawings, records, etc. as required in the Special Conditions to each Section of the Schedule including obtaining the approval of the Maintenance Surveyor on the submission.
"Term Contract"	shall mean the Contract referring this Schedule as forming part of the Contract.

Abbreviations

“exc.”	shall mean exceeding.
“n.e.”	shall mean not exceeding.
“c/w”	shall mean complete with.
“xx - yy”	shall mean a range of dimensions exceeding the first dimension as stated but not exceeding the second, for example: "1.50 - 3.00" shall mean exceeding 1.50 and not exceeding 3.00.
“bore”	shall mean nominal internal diameter.
“dia”	shall mean nominal diameter.
“mm”	shall mean millimetre.

Abbreviations (Cont'd) **GR.02 (Cont'd)**

“m”	shall mean linear metre.
“m²”	shall mean square metre.
“m³”	shall mean cubic metre.
“kg”	shall mean kilogram.
“AL”	shall mean Accredited Laboratory which is an independent body accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS).
"B.S."	shall mean British Standard.
"DIN"	shall mean German Institute for Standardization.
"DBH"	shall mean diameter of trunk of tree or plant measured at a height of 1.3 m above ground level.
"EN"	shall mean European Standard.
"FRR"	shall mean fire resistance rating.
“G.S.”	shall mean the General Specification and other documents referred to in General Regulations Clause GR.01(e) and (f) where appropriate.
"MDF"	shall mean medium density fibreboard.
"PWL"	shall mean Public Works Laboratories.
“RSE”	shall mean Registered Structural Engineer.
“TCP”	shall mean Technically Competent Person.

Methods of measurement **GR.03**

All works including “Supply only of materials” measured and paid for under this Schedule shall be measured in accordance with the conditions and rules detailed herein irrespective of any local or trade customs.

All works shall be measured net as completed or fixed in its place. Due consideration has been made in the Schedule rates for works executed in small quantities, narrow widths, short lengths, isolated patches, repairs, any height or locations above or below ground, difficult positions or confined spaces or any other exceptional circumstances; and no additional payment for such circumstances shall be made except where specifically provided for in this Schedule.

All works of “Supply only of materials” shall be the net quantities specified in a Works Order. No allowance or payment shall be made to the Contractor for small quantities, short lengths, breakage or damage, delivery to store or any designated location as directed by the Maintenance Surveyor or any other circumstance except where specifically provided for in this Schedule.

Any disadvantage which may be entailed by items being performed under exceptional circumstances must be regarded as being offset by other items which may be proven exceptionally advantageous, and due allowance is deemed to have been made in the Contract Percentages.

Overtime **GR.04**

All works shall be deemed to be executed during any working hour in a 24 hour-day (from 00:00 hour to 24:00 hour) including Sundays and General Holidays. No additional payment shall be made for any overtime including : -

(a) Overtime which is ordered by the Maintenance Surveyor in accordance with the Conditions of Contract to expedite slow progress of the work caused by default, negligence or omission by the Contractor.

(b) Watchmen or security guard at any time.

Deductions for voids **GR.05**

Where a minimum area is defined for the deduction of voids, such minimum shall refer only to openings or wants detached from the boundaries of the space measured. Openings and wants caused by projections from the boundary of the space measured shall always be the subject of deduction, irrespective of size.

Curved or circular works **GR.06**

Except where specified items are included in this Schedule for curved or circular work, all work shall be measured and priced as if straight and flat. Where specific items for curved work or circular work are included, the maximum radius stated in such description shall be the limit for which curved or circular work shall be paid for and any work curved to a radius greater than this limit shall be measured and priced as if straight and flat.

Works executed by Specialist Sub-contractors, sub-contractors, etc. **GR.07**

Where appropriate throughout this Schedule and where specified in the Term Contract, the following categories of works shall be executed by : -

(a) Specialist Sub-contractors included in the list of Approved Suppliers of Materials and Specialist Contractors for Public Works maintained by Development Bureau namely : -

(i) Air-conditioning Installation

(ii) Audio Electronics Installation

(iii) Broadcast Reception Installation

(iv) Burglar Alarm and Security Installation

(v) Catering Equipment Installation

(vi) Design, Manufacture and Installation of Glass (or Fibre) Reinforced Plastic Units

(vii) Diesel Generator Installation

(viii) Electrical Installation

(ix) Electrical and Mechanical Installation for Sewage Treatment and Screening Plant

(x) Electronic Timing and Display Installation

(xi) Fabrication of Steel Pipe Specials

Works executed by Specialist Sub-contractors, sub-contractors, etc. (Cont'd)	**GR.07 (Cont'd)**	(a)	(xii)	Fabrication of Unfired Pressure Vessels
			(xiii)	Fire Service Installation
			(xiv)	Fountain Installation
			(xv)	Landscaping
			(xvi)	Landslip Preventive/Remedial Works to Slopes/Retaining Walls
			(xvii)	Lift, Escalator and Passenger Conveyor Installation
			(xviii)	Liquefied Petroleum Gas Installation
			(xix)	Low Voltage Cubicle Switchboard Installation
			(xx)	Mechanical Handling and Lifting Installation
			(xxi)	Mechanical Plant and Equipment Installation
			(xxii)	Plumbing Installation
			(xxiii)	Radio Electronics Installation
			(xxiv)	Repair and Restoration of Historic Buildings
			(xxv)	Repair of Motors, Transformers and Switchgear
			(xxvi)	Road Marking
			(xxvii)	Soil and Rock Testing
			(xxviii)	Space Frame Systems
			(xxix)	Steam and Compressed Air Installation
			(xxx)	Structural Steelwork
			(xxxi)	Supply and Installation of Pumpsets and Associated Pipework
			(xxxii)	Supply and Installation of Water Treatment Plant
			(xxxiii)	Supply of Bituminous Pavement Materials and Construction of Special Bituminous Surfacing
			(xxxiv)	Swimming Pool Water Treatment Installation
			(xxxv)	Turn-key Interior Design and Fitting-out Works
			(xxxvi)	Uninterruptible Power Supply Installation
			(xxxvii)	Video Electronics Installation

Works executed by Specialist Sub-contractors, sub-contractors, etc. (Cont'd)

GR.07 (Cont'd)

(b) Maintenance Surveyor's approved sub-contractors or applicators namely : -

(i) Medical Gas

(ii) Town Gas

(iii) Curtain Walling

(iv) Fuel Supply

(v) Chimney

The above categories of specialist works are not exhaustive. Other categories of works, if specified in the Term Contract, shall also be executed by Specialist Sub-contractors or other approved sub-contractors or applicators.

Due allowance is deemed to have been made in the Contract Percentages for complying with these requirements.

Latest standards, specification and drawings referred to in this Schedule

GR.08

Where materials, workmanship and works are specified in this Schedule to be in conformity with certain British Standards or other International Standards, or to be in accordance with certain G.S. Items, Code of Practice, drawings and the like, they shall deem to be referred to the latest relevant and equivalent standards and amendments as specified in the Specification; or where no specific dates are stated, they shall deem to be referred to the latest relevant and equivalent standards, specification and drawings current and published before the date of first notice of tender invitation for the Term Contract unless otherwise specified. If conflict occurs between various standards, then the more onerous is to apply.

Due allowance is deemed to have been made in the Contract Percentages for complying with these requirements.

Imperial equivalents where required or necessary

GR.09

Whenever practicable, the Contractor shall supply materials in metric sizes and execute the works strictly in accordance with the metric dimensions specified. Imperial equivalents may be accepted only when circumstances prohibit compliance with this sub-clause (for example, statutory obligations) or where the Maintenance Surveyor considers it impracticable, undesirable or impossible to use metric sizes or dimensions or when suitable materials are not available in metric sizes.

The provision of this sub-clause shall not apply to materials which are specified in this Schedule by their actual manufactured sizes or their metric equivalents (for example, roof tiles, plywood, building boards, p.v.c. pipes, mosaic tiles) or classified in accordance with the relevant British Standards (for example, copper pipes) or other International Standards.

Schedule rates **GR.10** The rates throughout this Schedule shall include for : -

(a) All materials supplied, and all works and services executed complying strictly with the Specification as detailed in General Regulations Clause GR.01 and the provision or execution of all samples of materials or finished works in patterns where required.

(b) Provision of all materials and cutting and wastage on the same, except where otherwise stated, including collection, loading, conveyance, delivery, unloading, stacking, storage of the same, multi-handling between positions as directed on Site and provision of storage accommodation, handling, hoisting, lowering, distributing, etc. to specified location.

(c) Provision of all labour including contributions to Mandatory Provident Fund, paid leave, travelling expenses, lodging allowance or living accommodation and any other allowances as required.

(d) Provision of all tools, plant, temporary water, power and lighting, watching and work sheds.

(e) All expenses for delivery, distribution or transportation of articles, materials, labour, personnel, tools, plant, work sheds etc. by all means including land, sea or air except otherwise specifically provided for in the Special Conditions of each Section in this Schedule or when specifically required and ordered by the Maintenance Surveyor.

(f) Executing work in any position, location and height unless otherwise stated.

(g) Providing record of photograph, location plan and schedule of existing trees, if any, within and in close vicinity (within 2.00 m) of the site boundary and works areas including protective and preservative works/measures such as tree surgery works, temporary fencing, etc. and the like, allowance for method of operation and vehicular access for tree preservation throughout the period of the Works and removing all temporary protective and preservative works/measures on completion and making good all works disturbed.

(h) Setting up monitor points for controlling noise, vibration, settlement and lateral movement imposed on adjoining properties including provision of equipment, technical and supervisory personnel carrying out daily monitoring and submission of records as directed by the Maintenance Surveyor.

(i) Providing and maintaining temporary access and road as G.S. Item 1.25 and making good to match existing.

(j) Providing and maintaining temporary drainage system as G.S. Item 1.26 and making good to match existing.

(k) Provision of drawings including shop drawings and/or as built drawings, and operation and maintenance manuals, and carrying out tests on samples or finished works including the submission of test reports and test certificates to the satisfaction of the Maintenance Surveyor; unless specifically provided otherwise in the Schedule.

(l) Allowance for the works to be executed by Specialist Sub-contractors, Maintenance Surveyor's approved sub-contractors and applicators where required in the Specification, or as stated in the Special Conditions of each Section of the Schedule.

Schedule rates (Cont'd)

GR.10 (Cont'd)

(m) Carrying out tests by the Public Works Laboratories (PWL) or by an independent body accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) (hereinafter referred to as the "Accredited Laboratory") (AL) including provision and submission of sampling and analysis methodology to the Maintenance Surveyor for approval prior to conducting any tests. The testing laboratories to be engaged by the Contractor shall be approved by the Maintenance Surveyor. The testing laboratories shall submit test results directly from the laboratory to the Maintenance Surveyor in sealed envelopes.

(n) Conducting compliance tests on structural works by the PWL/AL. The testing laboratories to be engaged by the Contractor shall be approved by the Maintenance Surveyor. The testing laboratories shall submit test results directly from the laboratory to the Maintenance Surveyor in sealed envelopes.

(o) Certification including the employment of independent certification bodies wherever required or necessary.

(p) Provision, erection, maintenance, alteration, dismantling and clearing away of the following temporary works and protective measures that are required for the execution and completion of the Works unless specifically provided otherwise in the Schedule : -

(i) All bamboo, metal or proprietary scaffolding, staging, ladders, trestles, cradles, gondolas, platforms and similar items complete with all netting, coverings, screens, dust sheets, barricades, catch-fans, protective canopies, etc.;

(ii) All types of hoardings and walkways complete with gateways, adequate lighting, associated power supply and electrical work as required by the Maintenance Surveyor including the types of hoardings and walkways (including internal metal/aluminium hoardings) referred to in Section 10 - Steel and Metal Work of this Schedule and other proprietary hoardings and walkways systems, and the submission of detailed drawings together with supporting calculations certified by TCP or RSE for approval and provision of operation manuals of other proprietary hoardings and walkways systems not referred to in Section 10 - Steel and Metal Work; and

(iii) Similar temporary measures including but not limited to protective shield coverings, fences, barriers and the like and/or other protective measures specifically covered by the Special Conditions of each Section in this Schedule, and the erection, alteration and dismantling of such temporary measures on a daily basis where required by the Maintenance Surveyor for all necessary protection to new works and the public from harm, dust or nuisance.

The drawings referred to in Section 10 - Steel and Metal Work of this Schedule and in sub-clause (ii) above are not exhaustive and would be subject to change. The Contractor is deemed to allow for complying with the requirements as stipulated in General Regulations Clause GR.08.

(q) Clearing away debris, surplus materials or other materials arising from the works and leaving the works and areas affected by the works clean and tidy on completion to the satisfaction of the Maintenance Surveyor.

(r) Provision of mechanical dump truck covers in accordance with Particular Specification for Mechanical Dump Truck Covers.

Schedule rates (Cont'd)

GR.10 (Cont'd)

(s) All superintendence, establishment charges, overhead, expenses and profit.

(t) Any cost and/or expenses incurred for carrying out the works at all times including working outside normal working hours as provided in General Regulations Clause GR.04.

(u) Any costs and/or expenses in supplying materials or products to match existing works, finishes or systems when instructed by the Maintenance Surveyor, except when such materials or products are not specifically mentioned in this Schedule.

(v) Any other expenses incurred in conforming with the Term Contract.

(w) Reinstatement and making good surfaces disturbed.

(x) Imperial equivalents wherever required or necessary.

(y) All work, services and obligations for or related to ensuring that all workers involved in site works wear site uniform when they are on the site as prescribed in the Term Contract. There shall be no measurement or separate payment for any of such work, services and obligations.

(z) The provision of implementation of and compliance with the Sub-contractor Management Plan (SMP) including submission and quarterly updating of SMP in the form and contents as prescribed in the Term Contract. There shall be no separate items in this Schedule for measurement of "complete Sub-contractor Management Plan" and "quarterly updating of Sub-contractor Management Plan".

(aa) The provision of implementation of and compliance with the Mandatory Construction Tradesman Collaborative Training Scheme (CTS) including submission and quarterly updating of training plan in the form and contents as prescribed in the Term Contract. There shall be no measurement or separate payment for any of such work, services and obligations.

Where the Contractor considers any of the rate contained in the Schedule is insufficient or inadequate, the Contractor is deemed to have made all necessary allowances in the Contract Percentages adjustment and/or in any other priced items in the Term Contract for executing the works as contained in the Schedule and in compliance with all requirements as stipulated in the Term Contract.

Schedule rates and application of Contract Percentages

GR.11

The Schedule rates in this Schedule are derived from the basic rates of provisions of labour, materials, plant and all other provisions as stated in this Schedule including adjustments made to the basic rates giving due consideration of factors including market trends, trade practices and the management efficiency and bidding strategies of contractors as reflected in the past term contracts procurement.

The Schedule rates also take into account conditions under which term contracts works are executed, which may include but not be limited to works executed in small quantities or large quantities, narrow widths, short lengths, isolated patches, repairs, any height or locations above or below ground, difficult positions or confined spaces or any other exceptional circumstances of the works.

Schedule rates and application of Contract Percentages (Cont'd)

GR.11 (Cont'd)

The Schedule rates shall apply to the valuation of works instructed by the Maintenance Surveyor, and in all cases, the Schedule rates to be paid for the works shall be determined and applied before applying any relevant Contract Percentages.

The Contract Percentages including any percentage addition/adjustment as priced and included in the Contract shall include the Contractor's profits and overheads, attendance, all costs and expenses incurred in connection with the Works and are necessary in fulfilling the requirements of the Term Contract where they are not separately itemized or stated in this Schedule, including the works or services assessed under proportional rate items, star rate items and re-applicable rate items.

Rates for items not specifically mentioned in this Schedule

GR.12

Rates for items not specifically mentioned in this Schedule shall be valued as follows : -

(a) Proportional rate

When an article, a material, workmanship or service is of similar form, character or quality to that detailed in the Schedule or executed under similar conditions and circumstances as described therein, then at a rate equal to a Schedule rate but with a fair adjustment for the difference in form, character and quality or in conditions and circumstances, and such rate to be agreed upon between the Maintenance Surveyor and the Contractor.

Such proportional rate shall be subject to relevant Contract Percentages adjustment.

(b) Star rate

When an article, a material, workmanship or service is not of similar form, character or quality to that detailed in the Schedule or not executed under similar conditions and circumstances as described therein, or when work or material of any kind which is not detailed in the Schedule, then at a reasonable rate to be agreed upon between the Maintenance Surveyor and the Contractor.

Such star rate shall not be subject to relevant Contract Percentages adjustment unless otherwise specifically stated.

(c) Re-applicable rate

A rate fixed in accordance with the Term Contract requirements and to be re-applicable in any other Works Orders as approved by the Maintenance Surveyor for the whole duration of the Term Contract and not subject to adjustment of fluctuation and Contract Percentages adjustment.

Materials supplied by Government or other designated suppliers

GR.13

When materials are supplied to the Contractor by Government or other designated suppliers, no allowance shall be made to the Contractor other than the payment for “Fix only” (“Lay only” or “Set only”, etc.) as detailed under the appropriate items of this Schedule.

"Supply only" **GR.14**

The term "Supply only" used throughout this Schedule shall mean the provision complete by the Contractor of an article, a fitting or a material. The rates for such items shall include for, where applicable, obtaining and taking delivery of the articles, fittings or materials, transporting by land, sea, or air to sites or Government stores or other designated locations as directed by the Maintenance Surveyor, and all necessary off-loading and moving into sites, Government stores or other designated locations.

The rates listed in the "SUPPLY ONLY OF MATERIALS" in each Section of this Schedule shall include all the foregoing charges and allowance for replacement of materials damaged during delivery to sites, off-loading and moving into sites, Government stores or other designated locations as directed by the Maintenance Surveyor.

"Take down ("Take up" or "Take out", etc.) and clear away" **GR.15**

The term "Take down ("Take up" or "Take out", etc.) and clear away" used throughout this Schedule shall mean execution complete by the Contractor of the work of taking down, taking up or taking out of an existing article, fitting or material either in whole or in part and removing from Site and disposing of the same. The rates for such items shall include for all or any of the following : -

(a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.

(b) Payment of all fees and charges.

(c) Taking down, taking up or taking out of the articles, fittings or materials either in whole or in part together with any associated plugs, holdfasts, lugs, brackets and other fixings and all necessary cutting out and disposal.

(d) Making good any works disturbed and any damage to surrounding surfaces and filling up all mortices, holes, etc. or alternatively leaving the same open and clean to receive readily new articles, fittings or materials.

(e) Reinstatement and making good surfaces disturbed.

(f) Preparing edges, ends or surfaces of remaining materials to receive junctions with new.

(g) Taking up or removing covers, access doors, etc. and the like for the execution of the works and re-fixing the same on completion.

The articles, fittings, or materials taken down shall become property of the Contractor. Unless otherwise specified, due allowance for credits has been considered in the Schedule rates where applicable.

“Take down (“Take up” or “Take out”, etc.) and set aside for re-use”

GR.16

The term “Take down (“Take up” or “Take out”, etc.) and set aside for re-use” used throughout this Schedule shall mean execution complete by the Contractor of the work of taking down, taking up or taking out of an existing article, fitting or material either in whole or in part and setting the same aside on site or transporting to Government stores or other Government sites for subsequent re-use. The rates for such items shall include for all or any of the following : -

(a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.

(b) Payment of all fees and charges.

(c) Carefully taking down, taking up or taking out of the articles, fittings or materials together with associated plugs, holdfasts, lugs, brackets and other fixings and all necessary cutting out and disposal.

(d) Thoroughly cleaning, oiling and adjusting the articles, fittings or materials ready for re-use, dismantling, re-assembling again as necessary, moving and stacking or putting into stores on sites or alternatively loading, transporting, unloading and moving to Government stores or other Government sites.

(e) Making good any works disturbed and any damage to surrounding surfaces and filling up all mortices, holes, etc. or alternatively leaving the same open and clean to receive readily re-used or new articles, fittings or materials.

(f) Reinstatement and making good surfaces disturbed.

(g) Preparing edges, ends or surfaces of remaining materials to receive junctions with re-used or new.

(h) Repairing or replacing at Contractor's own cost any damage caused to the articles, fittings or materials during taking down, taking up, taking out, etc. and transit.

(i) Taking up or removing covers, access doors, etc. and the like for the execution of the works and re-fixing the same on completion.

"Fix only" ("Lay only" or "Set only", etc.)

GR.17

The term "Fix only" ("Lay only" or "Set only", etc.) used throughout this Schedule shall mean execution complete by the Contractor of the work of fixing, laying, setting, jointing, re-fixing, re-laying, re-setting and re-jointing an article, a fitting or a material made available free of charge to the Contractor by Government or it has been previously taken down. The prior taking down of the existing articles, fittings or materials shall be measured separately and paid for at the appropriate rates under applicable Sections of this Schedule. The rates for such items shall include for any or all of the following : -

(a) Works executed by skilled labourers of the required trades, unless specifically provided otherwise in the Schedule.

(b) Payment of all fees and charges.

(c) Taking delivery of the articles, fittings or materials at Government stores or other designated suppliers, loading, transporting to sites, unloading, checking and examining the same and storing on sites and returning any crates and other packings to Government stores, if required.

(d) Taking the articles, fittings or materials from stores on sites, sorting, cutting and fitting, fabricating, assembling, moving, hoisting, distributing at locations, fixing, laying, setting, jointing, re-fixing, re-laying, re-setting and re-jointing in new or existing work, opening or position.

(e) Providing all fixing and jointing materials such as nails, bolts, nuts, washers, screws, gaskets, mastic, adhesive, mortar and the like or other fixing and jointing materials made available from taking down.

(f) Executing all plugging and screwing, jointing, cutting all mortices and grouting the same, and executing all cutting, fitting, easing or adapting necessary to the articles, fittings or materials to the positions in which the same are to be fixed, and oiling and leaving in good working order.

(g) Making good any damage caused to the articles, fittings or materials and surrounding surfaces and making good new or existing finishes up to the same.

(h) Reinstatement and making good surfaces disturbed.

When the articles, fittings or materials despite having been taken down from another positions and set aside for re-use or having been delivered by Government or other designated suppliers or their agents are made available on site, no deduction shall be made from the rates of "Fix only"("Lay only" or "Set only", etc.) for transporting the said articles, fittings or materials to Site.

Built up fittings or composite units

GR.18

The rates for "Take down and clear away", "Take down and set aside for re-use" and "Fix only" are not intended to cover built up fittings or composite units, i.e. fittings or units that are fabricated and can be moved in their entirety or broken down into fabricated components. These items are to be measured as the appropriate items in the respective Sections unless otherwise provided in this Schedule.

Nominated Sub-contractors' accounts **GR.19**

When works are carried out by Nominated Sub-contractors and facilities for the execution of such works are afforded to the Nominated Sub-contractors by the Contractor and accounts for such works are paid by the Contractor in accordance with the Conditions of Contract, the percentage addition allowed to the Contractor on the net cost of such works shall be as that contained in the Form of Tender for "Profit and Attendance on Nominated Sub-contractors' Works".

"Making good" **GR.20**

The term "Making good" shall be understood as including all labour and materials necessary to bring the disturbed area to the same appearance, colour, texture, etc., in the same materials as the surrounding work and shall include for painting, colouring and/or varnishing any new work to match the surrounding existing work to the entire satisfaction of the Maintenance Surveyor.

Daywork **GR.21**

When daywork is ordered by the Maintenance Surveyor, measurement of daywork shall be made according to the Special Conditions set out in Section 17 - Labour and Section 18 - Temporary Plant and Facilities of this Schedule.

"Utility Connection And Pavement Works" **GR.22**

The term "Utility Connection And Pavement Works" shall mean the works of drainage connection, water supply connection, construction of run-in and reinstatement of footways which shall be executed complete by contractors selected and employed by the Contractor from the "List of Approved Contractor for Public Works in Group A, B or C for Road & Drainage Works" for the drainage connection and construction of run-in and reinstatement of footways and from the "List of Approved Contractors for Public Works in Group A, B or C for Waterworks" for the water supply connection work.

When Utility Connection and Pavement Works are required to be executed under the Term Contract and are ordered specifically by the Maintenance Surveyor for such purpose, the Contractor shall be reimbursed a lump sum fee payment as included in Item 03062 in Section 03 – Excavation of this Schedule for compliance with the requirements stated herein and as provided in the Term Contract for the Utility Connection and Pavement Works. This lump sum fee payment is an allowance made for all costs and expenses other than the valued works executed in connection with the Utility Connection and Pavement Works under the relevant Sections in this Schedule, and shall include for the following : -

(a) Complying with the requirements and procedures in connection with the Utility Connection And Pavement Works specified in the Particular Specification referred to in the Term Contract and submitting assessments and reports as required.

(b) Liaising with the relevant authorities and utility companies, preparing and submitting relevant drawings, programmes and documents and completing all the forms in connection with the Utility Connection And Pavement Works.

(c) Submitting all the detailed particulars in connection with the granting of an Excavation Permit [Note : Excavation Permit means any excavation permit issued by the Government in respect of the Utility Connection And Pavement Works under Section 8 of the Land (Miscellaneous Provision) Ordinance] as required by the Maintenance Surveyor.

(d) Obtaining approvals and permits from relevant utility companies or Government departments.

"Utility Connection And Pavement Works" (Cont'd)

GR.22 (Cont'd)

(e) Complying with the conditions of any Excavation Permit applicable to the Utility Connection And Pavement Works.

(f) Providing and maintaining temporary road or access where required for pedestrian and vehicular traffic diversions and subsequent clearing away after completion of the Works.

(g) Providing and maintaining traffic control as G.S. Item 1.18.

(h) Locating and protecting existing services as G.S. Item 1.22.

(i) Carrying out all necessary site inspections (including handing over inspections) jointly with the relevant authorities and utility companies.

(j) Provision of identification tapes along the water connection mains.

(k) Cleaning and sterilization of fresh water mains for making connections.

(l) Provision of as built drawings and test reports as specified.

(m) Protection of curbs, masking and unmasking of drainage channels, manhole covers, gully gratings, expansion joints, road studs and road marking.

(n) Provision, maintenance and removal of all measures to maintain traffic flow including labour and temporary traffic diversion lighting and signs and paying all charges incurred.

(o) Provision, maintenance and removal of temporary road, walkway, covers to trenches and the like.

(p) Making good all surfaces, features, etc. and the like disturbed by all temporary road, access, traffic control, pedestrian footway, etc. and the like to match existing and including all requirements as stipulated in the Term Contract for carrying out the Utility Connection and Pavement Works.

This lump sum fee payment shall only be paid once for each location specified in the Works Order. Works executed in connection with the Utility Connection and Pavement Works shall be measured separately in accordance with the General Regulations and the Special Conditions of the relevant Sections in this Schedule.

Submission of measurement and accounts

GR.23

All quantities shall be measured and rounded to the nearest two decimals of a unit.

Materials/ Products **GR.24**

All materials/products shall generally be based on the corresponding properties and/or performance standards as stipulated in the Specification (as defined in General Regulations Clause GR.01(d) herein) and/or as set out in this Schedule.

Where materials, products or works in this Schedule are stipulated as "proprietary", "approved", of "specific quality" or by their origins of which properties and/or performance standards are specified without their brand names, authentication documents on such materials, products or works including certificates of origins, technical literature and catalogues, test certificates and/or compliance test reports, manufacturers' guarantees or warranties, samples and mock-ups of these materials, products or works together with other documents required by the Maintenance Surveyor should be submitted or provided for the Maintenance Surveyor's written approval before purchase, delivery and execution. If any of these materials, products or works delivered or executed without the Maintenance Surveyor's prior written approval, or are not carried out to the Maintenance Surveyor's satisfaction, they should be removed or reinstated by the Contractor at his own expenses. The Maintenance Surveyor may also adjust this payment to the Contractor in accordance with General Regulations Clause GR.26.

For all materials, products and works within the definition of "proprietary" in General Regulations Clause GR.02, the Contractor, if required by the Maintenance Surveyor, shall provide a certificate of patent or registered trade mark or copy right; or provide authentication documents like the make or origin of the materials or products, test reports, test certificates, operation and maintenance manuals, warranties and manufacturer's guarantees and any other document that could provide the authentication to the same effect; and provide local project reference to demonstrate that the materials, products and works have proven track record of similar application, all to the satisfaction of the Maintenance Surveyor. The Contractor shall further be required to have specific proprietary materials/products/works executed by approved sub-contractors/applicators and submit technical literature, method statements, etc. where required by the Maintenance Surveyor or as stated in the Term Contract.

Due allowance is deemed to have been made in the Contract Percentages for complying with all of the above requirements.

Materials/Products specified as "specific quality" **GR.25**

Certain materials/products in this Schedule are stipulated as of "specific quality". These shall generally be materials/products of significance, such as those that are safety critical, prestigious in nature, or such are required to create a specific visual impact to the completed works, or are critical to the completed works from their functionality, operation and maintenance perspectives that the quality of such materials/products exceeds the requirement generally stated in the General Specification and in the Term Contract.

The Contractor shall provide authentication of documentary evidence and proof including those specified in this Clause and General Regulations Clause GR.24 herein to identify and justify the properties and/or performance standards of "specific quality" of the subject materials/products are generally of higher quality than that specified in the General Specification and the requirements as stated in the Specification of the Term Contract, for the Maintenance Surveyor's approval. Such proof may include carrying out appropriate quality tests to verify the quality of the subject materials/products is of quality higher than that specified in the General Specification, or obtaining certification from an independent testing authority/expert (to be approved by the Maintenance Surveyor) confirming of such specific quality.

Due allowance is deemed to have been made in the Contract Percentages for complying with all of the above requirements.

Payment for materials/products **GR.26**

Throughout this Schedule and including items valued under General Regulations Clause GR.12, the payment of materials/products shall generally be assessed according to the corresponding properties or performance standards as set out in this Schedule (with reference to the Specification) regardless of whether the materials/products are specified with brand names or referred as "proprietary", "approved", of "specific quality" or by their origins, or not.

The onus of proof is vested with the Contractor to identify the origins, properties and/or performance standards of materials/products used in the works corresponding to those set out in this Schedule (with reference to the Specification) and/or approved or accepted by the Maintenance Surveyor, and to provide the necessary documentary evidence and authentications including but not limited to certificates of origins, certificates of patent, registered trade marks or copy rights, local job references to demonstrate that the materials, products and works have proven track records of similar applications, technical literature and catalogues, test certificates and/or compliance test reports, manufacturers' guarantees or warranties, sub-contractors' or applicators' warranties and the like of the materials/products specified or approved all to the satisfaction of the Maintenance Surveyor, and for use by the Maintenance Surveyor for payment of the corresponding materials/products as set out in this Schedule.

In the absence of any documentary evidence and authentications that are required to demonstrate the conformity or compliance of the materials/products/works with the respective "proprietary", "approved", of "specific quality", origins or brand names, the assessment of such materials/products/works may be based on the basic costs of the materials/products/works that are available in the Schedule as ascertained by the Maintenance Surveyor, or otherwise the Maintenance Surveyor shall withhold or deduct the value of such materials/products/works that are not being carried out to his satisfaction from the final value of the works.

Adjustment to unit rates exceeding $99,999.99 **GR.27**

Whenever the unit rate for an item exceeds $99,999.99, it has been divided by a factor (“adjustment factor”) to reduce the figure to fall within $99,999.99 (“adjusted rate”) for inclusion in this Schedule. Such unit rate before adjustment is described in the item description as the actual rate. When the adjusted rate is to be used for all purposes under the Term Contract, such adjusted rate shall be multiplied by the adjustment factor to revert it back to the actual rate before making any adjustment of the relevant Contract Percentages.

Application of Schedule rates **GR.28**

This Schedule comprises Volume 1 for Builder's Works and Volume 2 for Building Services Works (B.S. Works). The compilation of unit rates in these two volumes of Schedule of Rates are made with due consideration on the specific natures, purposes and requirements which would vary for the execution of the builder's works and the building services works.

Where similar Schedule rates are found in different Sections, whether within the same volume or different volume of the Schedule, such valuation shall in so far as reasonable be based on Schedule rates of the same Section under which the works are executed.

Section 01

CONTRACT FACILITIES AND SPECIAL ATTENDANCES

SECTION 01

CONTRACT FACILITIES AND SPECIAL ATTENDANCES

SPECIAL CONDITIONS

Contract Requirements

SC01.01

This Section shall be read and used in conjunction with the Specification and the Employer's Requirements adopted in the Contract.

Contract Facilities stated in this Section shall refer to land transport facilities, contract equipment and contract staff services provided by the Contractor for the exclusive use by the Maintenance Surveyor, his representatives, the Employer or his staff all in accordance with the requirements of the Contract for the Contract Period or such other period as instructed by the Maintenance Surveyor.

Special Attendances stated in this Section shall mean the Contractor's provision of means of access for the works in Works Orders of incidental minor maintenance and repair nature at a height of over 10 metre where no other proper means of access is available. Payments of Special Attendances shall satisfy the conditions as stated in Special Conditions Clause SC01.11 below.

The Contractor shall arrange for the provisions of Contract Facilities and Special Attendances to be readily available for use at the time or any time, for the duration and in the manner as specified in the Contract, or otherwise as may be instructed by the Maintenance Surveyor.

Particular Preamble

SC01.02

The rates appearing in this Section are allowances for providing the Contract Facilities as required in the Contract and Special Attendances. The Contractor is deemed to have allowed in his Contract Percentage(s) for this and other Sections in the Schedule of Rates of any insufficiency of rates and all other expenses incurred under the Contract for : -

(a) Meeting all contractual and statutory obligations in connection with the provision of Contract Facilities and Special Attendances, and any other related obligations, liabilities, risks and profit borne by the Contractor;

(b) Any of the Contract Facilities requirement which is impracticable or not available (e.g. when the model satisfying the contract requirement is no longer available or out of stock), the Contractor shall provide similar facilities and services satisfying the requirement of the Contract and accepted by the Maintenance Surveyor;

(c) Any item or part thereof of any Contract Facilities that is required and specified in the Contract but the methods of measurement provided hereunder do not measure or have excluded such item or part thereof in this Section;

(d) The payment for Special Attendances shall in no way vitiate the provisions as stipulated in General Regulations for all works and services carried out under the Contract;

(e) Any further period of Contract Facilities provided beyond the period of measurement as provided in the Special Conditions contained in this Section and without any confirmation from the Maintenance Surveyor; and

(f) All other allowance as stipulated in the Contract in connection with the provision of the Contract Facilities and Special Attendances.

SPECIAL CONDITIONS

Rates generally **SC01.03** The rates in this Section shall generally include for : -

(a) Maintenance, repairs, service charges, tax, licence and any other government fees and charges in connection with the use of the Contract Facilities and provisions of Special Attendances.

(b) Provisions of all insurances on the Contract Facilities against accident, damage, loss by theft or fire, etc.

(c) Replacement of contract staff.

(d) Replacement of damaged or lost facilities.

(e) Removal of the Contract Facilities within the time as stipulated in the Contract, or at any time as may be informed by the Maintenance Surveyor.

Measurement of Contract Facilities generally **SC01.04** The items for Contract Facilities shall generally be measured and paid for in accordance with the Special Conditions provided below and the Employer's Requirements where such facilities are specifically stated in the Contract.

LAND TRANSPORT

Measurement of land transport facilities **SC01.05** The land transport facilities shall include the provision of petrol private car, electric vehicle or multi-purpose vehicle (MPV) and the driver services as specified in the Contract.

The rates for land transport facilities shall be measured each and on a monthly basis for the period from the date when such land transport facilities are provided for use under the Contract until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the land transport facilities that the Maintenance Surveyor expressly confirms in writing.

In case where the period of the provision of land transport facilities provided for use is not in a whole month, or where no land transport or alternative replacement facilities are provided on any day(s) within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for the provision of land transport facilities in a particular month for each number vehicle $= \frac{D_1}{D} \times R$

D_1 = The number of days on which the land transport or alternative replacement facility is not provided in the particular month.

D = Total number of days in the particular month where provision of the land transport facility is required.

R = Schedule rate for the provision of land transport facilities in a particular month for each number vehicle subject to Contract Percentage adjustment.

The periods (D1) and (D) are measured in half calendar day unit occurring during the said month.

No measurement and payment shall be made for any period of time during which no land transport nor other alternative replacement facilities are provided for use under the Contract.

SPECIAL CONDITIONS

LAND TRANSPORT

Rates for land transport facilities **SC01.06** The rates for land transport facilities shall further include for : -

(a) Provision of Environment-friendly Petrol Private Cars, Electric Vehicles or Hybrid Vehicles of not more than one year old, and in good working order. A valid Environment-friendly Vehicle Certificate shall be provided for Environment-friendly Petrol Private Cars.

(b) Provision of a competent and licensed driver for each vehicle who must have not less than 3 years' driving experience, no dangerous driving records and who shall be approved by the Maintenance Surveyor. The driver shall be equipped with a mobile telephone for contact purpose when on duty.

(c) Provision of the vehicles at all times and for the uses as specified in the Contract.

(d) Arranging the vehicles to be standby during the period when the vehicles are not in use including having the vehicles parked at a location designated by the Maintenance Surveyor.

(e) All tunnels, bridges and cross harbour tunnel toll fees, and parking fees including the parking fees incurred when the vehicles are standby.

(f) Maintaining a record of the use of the vehicles including details, times and purposes of journeys together with appropriate pedometer readings and distances travelled.

(g) Maintaining effective comprehensive insurances covering passenger liabilities of the vehicles to be driven by any driver. In the case of a private car under the ownership of the Contractor, inclusion of an endorsement in the insurance policy expanding the definition to cover the Maintenance Surveyor and his Representatives and all personnel of the Employer.

(h) Fuels, oils, lubricant and the like for the proper running and functioning of the vehicles.

(i) Provision for similar alternative transport when the vehicles provided are unavailable.

(j) Providing or painting the contract number, contract title, the Contractor's name or other suitable identification as approved by the Maintenance Surveyor to the vehicles.

SPECIAL CONDITIONS

CONTRACT EQUIPMENT

Measurement of contract equipment **SC01.07**

The rates for provision of contract equipment shall be measured each and on a monthly basis from the date when such equipment is provided for use until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the contract equipment that the Maintenance Surveyor expressly confirms in writing.

In case where the period of the provision of contract equipment provided for use is not in a whole month, or where no contract equipment or alternative replacement is provided for each period exceeding seven calendar days within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for the provision of contract equipment in a particular month for each number contract equipment $= \frac{D_1}{D} \times R$

D_1 = The number of days on which the contract equipment or alternative replacement is not provided in the particular month.

D = Total number of days in the particular month where provision of the contract equipment is required.

R = Schedule rate for the provision of contract equipment in a particular month for each number contract equipment subject to Contract Percentage adjustment.

The periods (D1) and (D) are measured in half calendar day unit occurring during the said month.

Deduction shall be made for each period of continuous non-provision more than seven calendar days and of which shall include the initial seven calendar days of that period of non-provision. For clarity, no deduction shall be made if the period of non-provision does not exceed seven calendar days within a particular month.

Save as the aforesaid provisions, no measurement and payment shall be made for any period of time during which no contract equipment nor other alternative replacement is provided for use under the Contract.

Rates for contract equipment **SC01.08**

The rates for contract equipment shall further include for : -

(a) Provision of all equipment with functions, configurations and specifications as stated in the Contract and in good working order.

(b) Provision of all necessary consumables like paper, toner, etc.

(c) Licence fees, connection charges, rental charges, broadband internet connection, service charges, insurance and the like.

(d) Maintaining monthly report on usage.

(e) Regular maintenance, repair and temporary replacement of the devices of similar functions and configurations during period of repair.

SPECIAL CONDITIONS

CONTRACT STAFF SERVICES

Measurement of contract staff services **SC01.09**

The contract staff services shall include the provision of the following staff services when specified in the Contract : -

(a) Clerical support staff

(b) Maintenance support officer

(c) Technical officer

(d) Works supervisor (builder's work) and works supervisor (building services)

(e) Quality control assistant (builder's work) and quality control assistant (building services)

(f) Customer services officer

(g) Senior customer services officer

The rates for provisions of contract staff services shall be measured each and on a monthly basis from the date when the contract staff reports duty at the Employer's office until the expiry of the Contract Period as specified in the Contract, and any further period of provision of the contract staff services that the Maintenance Surveyor expressly confirms in writing.

Payment shall only be made when the Contractor has demonstrated to the Maintenance Surveyor's satisfaction that salary payments have been received by the contract staff.

In case where the period of the provision of contract staff services is not in a whole month, or where replacement is not provided for the respective contract staff service on any day(s) within a particular month, the rate to be paid to the Contractor shall be adjusted as follows : -

Amount to be deducted from the Schedule rate for the provision of contract staff services in a particular month for each number contract staff $= \frac{D_1}{D} \times R$

D_1 = The number of days on which the contract staff or alternative replacement is not provided in the particular month.

D = Total number of days in the particular month where provision of the contract staff services is required.

R = Schedule rate for the provision of contract staff services in a particular month for each number contract staff subject to Contract Percentage adjustment.

The periods (D1) and (D) are measured in half calendar day unit occurring during the said month.

No measurement and payment shall be made for the period of time during which no contract staff services nor other alternative replacement are provided for use under the Contract.

SPECIAL CONDITIONS

CONTRACT STAFF SERVICES

Rates for contract staff services

SC01.10 The rates for "contract staff services" shall further include for : -

(a) Provision of full time contract staff with qualification and experience that meet the requirements as specified in the Contract.

(b) Performance of all duties.

(c) Maintenance of an attendance diary.

(d) All expenses and reimbursement in connection with employment of the contract staff including but not limited to basic salary, contribution to the Mandatory Provident Fund, gratuity and all necessary levies, e.g. levy for Construction Industry Council, insurances, etc.

(e) Transportation arrangement required for executing their respective duties.

(f) Provision of facilities for executing their respective duties like computer equipment and mobile phone (including internet connection and its services charges, hardware and software), digital cameras, stationery and consumables, etc.

(g) Working outside normal working hours.

(h) Working on General Holidays, emergency and urgent works and working at specific locations.

(i) Replacement by temporary staff when the contract staff is on leave, absent or resigned.

(j) Any other related costs and expenses that the Contractor may incur from the recruitment, management and deployment of the contract staff services.

PAYMENT FOR SPECIAL ATTENDANCES

Measurement of Payment for Special Attendances

SC01.11 The item for “Payment for Special Attendances" shall only be measured and paid for when the Maintenance Surveyor is satisfied that the following conditions have been fulfilled : -

(a) Where the work instructed under the Works Order is incidental minor maintenance and repair work in nature and the claimed value of the works under the Works Order alone does not exceed $1,000;

(b) Works is carried out to walls or ceiling soffits, where the work is at a clear height over 10 m high (measured from the level on which the staging or the means of access is erected, or where the level is sloping, measured from the level immediately at the provision of the staging or the means of access) with no other means of access available;

(c) Submission of reports and photographic records to justify such payment; and

(d) The provision of the staging or means of access is made by the Contractor ownself.

SPECIAL CONDITIONS

PAYMENT FOR SPECIAL ATTENDANCES

Measurement of Payment for Special Attendances (Cont'd)

SC01.11 (Cont'd)

Where works under more than one Works Orders of incidental minor maintenance and repair nature are carried out at the same location at or around the same period of time by the Contractor or his Specialist Sub-contractors, the Contractor shall arrange for the full utilization of the means of access to be provided for these Works Orders. Subject to fulfilment of the conditions stated in sub-clauses (a) to (d) herein, payment for Special Attendances shall only be made once irrespective of the number of Works Orders issued under such circumstance.

No measurement and payment shall be made for "Payment for Special Attendances" under either one of the following conditions : -

(i) The claimed value of the works carried out under the above circumstances exceeds $1,000 per Works Order.

(ii) Where means of access is available or provided at the location by the owners, the Employer or other parties.

(iii) The Contractor fails to submit the report and photographic records to justify the payment of the Special Attendances claimed, or the Maintenance Surveyor considers that the report submitted fails to provide adequate information to demonstrate satisfaction of the conditions as stated in sub-clauses (a) to (d) herein.

(iv) Where works are carried out under separate Works Order with staging or means of access provided at the same location at or around the same period of time, and the estimated value of the works exceeds $1,000 for that Works Order.

Rates for Payment for Special Attendances

SC01.12

The rates for “Payment for Special Attendances” shall further include for : -

(a) Providing any means of access including but not be limited to scaffolding, screens, working platforms, staging, gondolas and the like; and erection, subsequent dismantling and removal of the same upon completion of the works;

(b) Compliance with all safety requirements and certification from independent checking engineer, where required, and payment of all fees; and

(c) Submission of all necessary records and reports in the format as approved by the Maintenance Surveyor.

Item			Item
	CONTRACT FACILITIES		
	Note : - The following Items 01001 to 01018 inclusive shall only be paid for if the requirements as set out in the Contract and the conditions as set out in the Special Conditions are complied with.		
	LAND TRANSPORT		
	Per number-month	A $	
01001	Private car - fully air conditioned saloon car with seating capacity of not less than five seats (including driver).....	24,000.00	01001
01002	MPV - fully air conditioned saloon car with seating capacity of not less than seven seats (including driver).....	26,000.00	01002
	CONTRACT EQUIPMENT		
	Per number-month	A $	
01003	Provision of facsimile machine (for A4 size).....	120.00	01003
01004	Provision of mobile phone.....	240.00	01004
01005	Provision of computer facilities.....	280.00	01005
01006	Provision of monochrome laser-jet printer (for A4 size).....	180.00	01006
01007	Provision of colour inkjet printer (for A3 size).....	250.00	01007
01008	Provision of colour laser printer (for A3 size).....	380.00	01008
01009	Provision of digital camera.....	40.00	01009
	CONTRACT STAFF SERVICES		
	Per number-month	A $	
01010	Clerical support staff.....	11,900.00	01010
01011	Maintenance support officer.....	15,900.00	01011
01012	Technical officer.....	17,200.00	01012
01013	Works supervisor (builder's work).....	22,800.00	01013
01014	Works supervisor (building services).....	22,800.00	01014
01015	Quality control assistant (builder's work).....	17,200.00	01015
01016	Quality control assistant (building services).....	17,200.00	01016
01017	Customer services officer.....	13,200.00	01017
01018	Senior customer services officer.....	14,600.00	01018

Item			Item
	PAYMENT FOR SPECIAL ATTENDANCES		
	Note : - Item 01019 shall only be paid for if the requirements as set out in the Contract and the conditions as set out in the Special Conditions are complied with.		
	Per item	A $	
01019	Payment for Special Attendances.....	3,000.00	01019

Section 27

ELECTRICAL INSTALLATION -

LIGHTING SYSTEM AND FIXTURES

SECTION 27

ELECTRICAL INSTALLATION

SPECIAL CONDITIONS

(Note: The following special conditions shall apply equally where appropriate to rates under Sections 27 to 30)

Measurement of conduits and flexible conduits	**SC27.01**	Conduits and flexible conduits shall be measured the net length as fixed in linear metres over all conduit fittings, boxes and short running lengths.
Measurement of trunkings, trays and ladders	**SC27.02**	Trunkings, trays and ladders shall be measured the net length as fixed in linear metres over all fittings, short running lengths and branches.
Measurement of cables	**SC27.03**	Cables shall be measured the net length as fixed in linear metres between equipment, control gear, fittings, accessories and the like.
Measurement of excavations, cable ducts, chases, holes and other subsidiary work	**SC27.04**	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All cable ducts shall be measured separately and paid for at the appropriate rates under Section 12 - Roadwork and Cable Duct of this Schedule. All chases in, and holes through existing walls, ceilings and similar for cables, conduits etc. shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule. Special concrete marker blocks specifically ordered in writing by the Maintenance Surveyor shall be measured separately and paid for at the appropriate rates under the applicable Works Sections of this Schedule.
Measurement of power supply for bedhead trunking system and staff/ emergency/ nurse call system	**SC27.05**	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the bedhead trunking system and staff/ emergency/ nurse call systems shall be measured separately and paid for at the appropriate rates under these Sections 27 to 30 or other applicable Work Sections of this Schedule.
Measurement of control panel for bedhead trunking system and staff/ emergency/ nurse call system	**SC27.06**	The interconnecting cables and the cable containment for the control panel connecting to external equipment or existing panel shall be measured separately.

SPECIAL CONDITIONS

Measurement of simplified items **SC27.07**

(1) Simplified items included in Section 27 shall apply to : -

(a) Lighting points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting switch/ lighting fitting.

(b) Lighting switch points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting fitting and lighting switch.

(c) Occupancy sensor points/ motion detector points commencing from the loadside of the over-current protection device (e.g. MCB) or existing lighting switch/ fitting.

(2) Simplified items included in Section 28 shall apply to : -

(a) Power points commencing from the loadside of over-current protection device (e.g. RCBO) or adjacent power outlet.

(b) Telephone points commencing from the telephone distribution room on the same floor.

(c) LAN nodes commencing from the server, hub, cabinet, switches, equipment rack or router on the same floor.

(d) Service outlet points (e.g. broadcast and satellite reception, audio-visual, public address) commencing from the cabinet, equipment rack or distribution splitter on the same floor.

(e) Door bell points commencing from the loadside of over-current protection device (e.g. RCBO) or existing door bell/ push button.

(3) Any point containing a socket outlet (single or twin), a power connection unit, a power switch controlling socket outlet/ power connection unit and the like shall be measured as a power point. Any power point for power switch controlling socket outlet/ power connection unit shall be measured in accordance with the rating of its controlled socket outlet and rating of protection fuse of power connection unit no matter its rating is larger than the socket outlet/ power connection unit except the connection unit with cables of conductor size 2.5 mm^2 with ring final circuit arrangement shall be measured as a 13A power point.

(4) Cabling and wiring facilities for fan regulators shall not be measured as a power point.

(5) Any power points, telephone points, LAN points and service outlet points being fixed to floor outlet box/ trunking service box shall be measured as simplified items. Floor outlet box or trunking service box shall be measured separately.

(6) Simplified items shall be adopted unless otherwise specifically ordered in writing by the Maintenance Surveyor.

(7) Additional payment for Items 27908 to 27915 and Items 28545 to 28572 inclusive for provision of circuit protective conductors to grid switch shall be measured according to the number of final circuits.

SPECIAL CONDITIONS

Measurement of periodic inspection, testing and certification of electrical installation

SC27.08

Testing and inspection of electrical installation for the whole premises to comply with the statutory requirements shall be paid for at the appropriate single rate in accordance with the installed rating of outgoing switch of the switchboard or cut-out switch comprising rising mains and feeder circuits in single-phase or three-phase, except for small premises without switchboard or cut-out switch in which case the appropriate single rate for the installed rating shall apply. The testing of the sub-main circuit, final circuit, external mounted IDMT relay and testing of the main L.V. switchboard shall be measured separately and paid for at the appropriate rates under Section 30.

Measurement of temporary supply

SC27.09

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally

SC27.10

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective coating or finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of fixings, hangers, brackets, supports, saddles, nails, screws, nuts, bolts, shims, washers, plugs, shotfired pins, spring compensated and seismic restraints and isolated components and the like.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC27.10 (Cont'd)**

(g) Provision of fire stopping as required.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(m) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(n) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(o) Provision of manufacturer's guarantee.

(p) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

Where an equipment or item requires identification by lettering , engraving, sign, label, etc., 25 per cent of the value of the appropriate item will be deducted for non-provision of the required lettering, engraving, sign, label, etc.

Rates for "Take down and clear away" or "Take down and set aside for re-use" **SC27.11**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with electrical installation shall further include for : -

(a) All in-line fittings including brackets, supports, hangers and the like.

(b) Cutting into existing conduits, trunkings, trays, ladders, cables and the like in position.

(c) Plugging off remaining ends with plugs or caps as required.

(d) Preparing remaining ends of building services works to receive connections with new work if required.

(e) In the case of equipment, lighting fittings, appliances and the like, taking down all associated connecting cables and the like.

(f) In the case of bedhead trunking and staff/ emergency/ nurse call system, taking down all associated building services works.

SPECIAL CONDITIONS

Rates for "Take down and clear away" or "Take down and set aside for re-use" (Cont'd)

SC27.11 (Cont'd)

In the case of fluorescent lighting fittings, the rates for "Fix only" or "Take down and clear away" or "Take down and set aside for re-use" for fittings/ components of the fittings complete with T5 electronic ballasts shall also apply to the similar items complete with LED tube/ T8/ T12 electronic/ magnetic ballasts and starter units.

PART I - ELECTRICAL INSTALLATION

Rates for electrical installation generally

SC27.12

The rates for electrical installation shall further include for : -

(a) Making all necessary arrangements with public electricity supply companies and other public utility companies as may be required.

(b) Connecting supply to and energizing all new or "re-used" fittings including provision of associated materials.

(c) Disconnecting existing supply when existing fittings are taken down and properly sealing off the supply.

(d) Submission of Completion Certificate (Form WR1).

(e) Warning notice for installation having both new and old cable colours.

Rates for conduits and flexible conduits

SC27.13

The rates for conduits and flexible conduits shall further include for : -

(a) Draw wires, draw cable and the like.

(b) Bends, bushes, couplers, adaptors, expansion joints and the like.

(c) All bending, setting, cutting, screwing, threading, jointing and providing all conduit fixings.

(d) All conduit boxes, adaptable junction boxes, covers, and fittings

(e) Provision of all sleeves for casting in or building in where conduits pass through slabs, walls or beams and caulking between conduit and sleeve where required.

(f) Components and the forming of holes for making connections into trunking.

(g) Bonding as specified between adjacent component parts.

(h) Cleaning out and testing of the conduit system for continuity.

(i) Provision of expansion joints in services runs wherever they coincide with structural expansion joints.

SPECIAL CONDITIONS

Rates for trunkings

SC27.14 The rates for trunkings shall further include for : -

(a) All joints in the running lengths and components for bonding.

(b) All cutting and jointing to fittings.

(c) All cutting, drilling, bushing and jointing to equipment or control gear including all necessary connection accessories.

(d) Pin-racks for supporting cables.

(e) Internal fire barriers as required.

(f) Bonding as specified between adjacent component parts.

(g) Covers, cross units, tee units and elbow units

Rates for trays and ladders

SC27.15 The rates for trays and ladders shall further include for : -

(a) Cutting openings as required.

(b) All joints in the running lengths.

(c) All cutting and jointing to fittings.

(d) Pin-racks for supporting cables.

(e) Bonding as specified between adjacent component parts.

(f) Cable ties for securing cables.

SPECIAL CONDITIONS

Rates for cables **SC27.16** The rates for cables shall further include for : -

(a) Laying or fixing in different locations, such as laying in trenches or open ducts, laying on arms or hangers, fixing to cable trays, ladders or other surfaces, drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment, unless specifically provided in this Schedule.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like.

(e) Components for supporting cables including combination system cable supports, two piece cleats, trefoil cleats, multiway cleats, hangers, channels and the like.

(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

(g) Bonding as specified between adjacent component parts.

(h) Provision of lettered or numbered ferrules for 1 core PVC cable at terminations where required for identification.

Rates for cable termination glands **SC27.17** The rates for cable termination glands shall further include for : -

(a) Assembling and mounting.

(b) Insulating material, jointing material, locknuts, bushes, couplers and the like.

SPECIAL CONDITIONS

Rates for fittings and accessories **SC27.18**

The rates for fittings and accessories shall further include for : -

(a) All boxes, cover plates, connector blocks, cable terminations, bonding and connecting of cable tails.

(b) All necessary bushes, nipples, locknuts, couplers and the like.

(c) Assembling and fixing in position.

(d) Bonding as specified between adjacent component parts.

Rates for equipment and control gear **SC27.19**

The rates for equipment (e.g. motors, fans, starter panels, circuit breakers, batteries, rectifiers and the like) and control gear (e.g. fuse-and-link disconnecting boxes, isolating switches, changeover switches, switch fuses, fused switches, distribution boards, connectors, starters, busbar chambers and the like) shall further include for : -

(a) Connecting cable ends or cable tails to which they are connected.

(b) Coupling to and forming holes for conduit entry.

(c) Links, fuses, gland plates, terminal boxes and the like which form part of the item.

(d) Bonding as specified between adjacent component parts.

Rates for lighting fittings **SC27.20**

The rates for lighting fittings shall further include for : -

(a) Reflectors, shades, lamps, control gear, ballasts, transformers, light troughs, diffusers and the like.

(b) All connection/ terminal boxes, connector blocks, plugs and connecting of cable tails including all necessary grommets, bushes, nipples, locknuts and the like.

(c) Assembling and fixing in position including all forms of suspensions, supports, safety chains with attachments and the like.

(d) Adjustment, alignment and the like.

(e) Bonding as specified between adjacent component parts.

The rates for "Fix only" or "Take down and clear away" or "Take down and set aside for re-use" for a normal lighting fitting shall also apply to the similar items equipped with the emergency power pack but the emergency power pack shall not be measured separately.

Rates for dimmer switches **SC27.21**

The rates for dimmer switchees shall further include for on/ off function.

SPECIAL CONDITIONS

Rates for ventilation fans, air curtains and appliances

SC27.22 The rates for ventilation fans, air curtains and appliances shall further include for : -

(a) All connection/ terminal boxes, connector blocks, plugs and connecting of cable tails including all necessary grommets, bushes, nipples, locknuts and the like.

(b) Assembling and fixing in position including all supporting devices, hangers and the like.

(c) Bonding as specified between adjacent component parts.

(d) Taking down existing power connection units for cable connection and subsequent refixing as required.

Rates for earthing, lightning protection and bonding items

SC27.23 The rates for earthing, lightning protection and bonding items shall further include for : -

(a) Bends, twists and through joints.

(b) Cables and tape connections and junctions including tinning, sweating and provision of any jointing materials, heat, holes, rivets, bolts, nuts, washers and clamps.

(c) Saddles, cleats, clips, holdfasts and the like which form part of the tape and rod conductor items.

(d) Driving electrodes into the ground and connecting electrodes to connectors.

Unless otherwise stated as being included in the items, bonding shall be measured and paid for at the appropriate rates under Sections 27 to 30.

Rates for simplified items

SC27.24 (1) The rates for lighting points/ occupancy sensor points/ motion detector points/ door bell points and lighting switch points shall include the cabling and wiring facilities starting from the over-current protection device or adjacent points as the case may be, complete with cable termination, conduits/ trunking, draw wires, flexible conduits, adaptors, boxes and all necessary accessories. However, MCBs/ RCDs/ RCBOs in the MCB board, lighting fittings, motion sensors, lighting switches door bells and the like shall be measured separately and paid for at the appropriate rates under Sections 27 and 28.

(2) The number of lighting points/ occupancy sensor points/ motion detector points/ door bell points shall be measured as the number of new lighting fittings/ sensors/ door bells installed. Lighting circuits with ELV provision for lighting dimming control, motion sensor control, etc. shall be measured separately.

(3) The number of lighting switch points shall be measured as the number of new lighting switch gang installed. Therefore, the number of lighting switch points for lighting switches and grid switch panel shall be measured as number of gangs installed on the lighting switches and grid switch panel.

SPECIAL CONDITIONS

Rates for simplified items (Cont'd)

SC27.24 (Cont'd)

(4) The rates for power points shall include the cabling and wiring facilities starting from the over-current protection device or adjacent points as the case may be, complete with cable termination, conduits/ trunking, draw wires, flexible conduits, adaptors, boxes and all necessary accessories. The rates for power points shall further include the cabling and wiring facilities from the MCB unit to the contactor/ time switch but exclude the by-pass switch. RCD, contactor and time switch shall not be measured separately as a power point/ lighting point. However, MCBs/ RCDs/ RCBOs in the MCB board, socket outlets, power connection units and the like shall be measured separately and paid for at the appropriate rates under Sections 27 and 28.

(5) The rates for telephone points, LAN points and service outlet points shall include for cabling and wiring facilities starting from the telephone distribution room/ server room/ control point on the same floor complete with conduit/ trunking, draw wires, boxes, blanking plates and all necessary accessories. Each point shall have a starting point and an end point. In case if there is a ring of multiple end points, one point shall be taken as a common start point. In case different rings are interconnected with each other, the interconnection shall be taken as a new point.

Rates for periodic inspection, testing and certification of electrical installation

SC27.25

The rates provided for the relevant work under periodic inspection, testing and certification of electrical installation shall generally include for : -

(a) Testing, inspection and measuring of electrical installation comprising rising mains, feeder circuits, sub-main circuits, final circuits, protective conductors, earthing facilities, power supplies to all communal services of the premises and all necessary testing and inspection to satisfy the requirements as stipulated in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department.

(b) Provision of electrical schematic, test report, test readings and test certificate which should be certified by a Registered Electrical Worker of the appropriate grade of the EMSD.

(c) Submission of duly completed and signed Form WR2.

(d) The testing and inspection, if necessary, to be scheduled in phases and/ or arranged in non-office hours/ night time/ on Sundays and holidays, to suit the allowable working schedule for such work of the premises as advised by the premises management office or the occupants of the premises or per the instruction given by the project officer.

SPECIAL CONDITIONS

Rates for periodic inspection, testing and certification of electrical installation (Cont'd)

SC27.25 (Cont'd)

For the purpose of assessment of the payment for periodic inspection, testing and certification of electrical installation under Section 30, the Contractor shall submit to the Maintenance Surveyor a detailed report which shall include, but not limited to, the value of works claimed in the Works Order, photographic records, electrical schematic diagrams, test report and test certificate which should be certified by the Registered Electrical Worker of the appropriate grade of the EMSD and the submission of Form WR2.

For government premises, Form WR2 shall be submitted to the Maintenance Surveyor for record. The Submission of Form WR2 to the EMSD including the endorsement fee shall only be paid for non-government premises with the L.V. switchboard not maintained by the EMSTF, for which WR2 shall be submitted to the EMSD for endorsement.

The Contractor shall submit the format of the report to the Maintenance Surveyor for approval upon commencement of the Contract; once endorsed, the details of the report shall be submitted by the Contractor together with any application for such payment.

In order to justify any payment, the Contractor shall demonstrate that the conditions as laid down in the Special Conditions under Section 27 of this Schedule have been satisfied.

No payment shall be made in respect of any work if the Contractor failed to submit the report, or if the Maintenance Surveyor considers that the work as stated in the report fails to satisfy the Special Conditions under Section 27 of this Schedule.

Rates for Buildings Energy Efficiency Ordinance Submission

SC27.26

(a) In order to fulfill the energy efficiency requirements by the Buildings Energy Efficiency Ordinance, the Contractor is required to appoint a Registered Energy Assessor (REA) at his own cost for the completion and submission of the Form of Compliance - Form EE4 to the EMSD for approval including but not limited to compilation and certification of the required forms and worksheets for the electrical installations, lighting installations and air-conditioning installations, where applicable, including any necessary endorsement fees.

(b) The rates as separately scheduled for the Buildings Energy Efficiency Ordinance submission shall generally include for the preparation of the installation summaries, worksheets, relevant drawings, drawing lists and other supportive documents by the Contractor. The Contractor shall further coordinate with the REA and provide the required information at no extra cost for his submission of the Form of Compliance to the EMSD as required to fulfill the latest requirements of the Buildings Energy Efficiency Ordinance.

SPECIAL CONDITIONS

PART II - BEDHEAD TRUNKING SYSTEM AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM

Rates for bedhead trunking system and staff/ emergency/ nurse call system generally

SC27.27 The rates for bedhead trunking system and staff/ emergency/ nurse call system shall further include for : -

(a) All components and parts building up the system.

(b) Interconnecting wirings and signal cables including conduits and/ or flexible conduits, trunkings, trays, junction boxes and the like necessary to complete the system.

(c) All electricity supply and control circuits from the supply points including cables, wirings, conduits and/ or flexible conduits, trunkings, cable trays, fuses, control boxes and necessary accessories required to energize the system.

(d) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

Rates for call units

SC27.28 The rates for call units shall further include for push button package, flashlights, flexible cables, flexible conduits and all associated components.

Rates for power supply units

SC27.29 The rates for power supply units for call system shall further include for : -

(a) Uninterruptible power supply system and associated accessories.

(b) Well-ventilated and earthed metal enclosures.

(c) Transformers, fused spur units, termination blocks and the like.

(d) Rectifying, filtering and control circuits and associated accessories.

(e) Circuit protection devices.

(f) All cable and wiring facilities including necessary conduits, trunking and the like.

Rates for control panels

SC27.30 The rates for control panels shall further include for visual indications, audible alarm, indication lamps, switches and the internal wiring of the control panel. The cable and cable containment to external equipment or existing panel shall be measured separately and paid for at the appropriate rates under Sections 27 to 30.

SPECIAL CONDITIONS

PARTICULAR SPECIFICATION

Particular Specification for electrical installation	**SC27.31**	The Particular Specification for electrical installation can be found in the Contract.
Particular Specification for bedhead trunking system and staff/ emergency/ nurse call system	**SC27.32**	The Particular Specification for bedhead trunking system and staff/ emergency/ nurse call system can be found in the Contract.

LAMPHOLDERS

The rates include for the provision of fixing screws and rawplugs of approved sizes and types.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27001	Lampholder, bakelite, batten type, with shade carrier skirt or home office type, shield for all lamp with Edison Screw/ Bayonet cap	36.19	6.51	8.03	20.78	27001
27002	Lampholder, bakelite, cordgrip type, with shade carrier etc. for all lamps with Edison Screw/ Bayonet cap	25.61	4.61	5.74	15.01	27002
27003	Lampholder, porcelain, backplate type, for all lamps with Edison Screw/ Bayonet cap	32.41	6.51	8.03	20.78	27003
27004	Lampholder, porcelain, backplate type, skirted for all lamps with Edison Screw/ Bayonet cap	31.73	6.51	8.03	20.78	27004
27005	Lampholder, bakelite, angle batten type, with home office type, shield for all lamps with Edison Screw/ Bayonet cap	32.54	6.51	8.03	20.78	27005
27006	Lampholder, brass, threaded for all lamps with Edison Screw/ Bayonet cap	45.11	6.51	8.03	20.78	27006
27007	Lock ring for lampholder	9.06	2.00	2.38	6.11	27007
27008	Wedge lampholder for B.C. lamps	9.12	2.25	2.75	6.92	27008
27009	Lampholder for high pressure sodium type lamps (all types)	162.79	15.84	19.63	54.01	27009
27010	Ditto but for low pressure sodium type lamps (all types)	76.53	11.15	13.76	38.47	27010
27011	Ditto but for tungsten halogen type lamps (all types)	-	11.15	13.76	38.47	27011
27012	Ditto but for metal halide MBIL type lamps (all types)	171.40	15.84	19.63	54.01	27012
27013	Lampholder for tubular fluorescent lamp (all types)	35.60	4.61	5.74	15.01	27013
27014	Lampholder for compact fluorescent lamp (all types)	40.54	4.61	5.74	15.01	27014
27015	Lampholder for circular fluorescent lamp (all types)	34.49	4.61	5.74	15.01	27015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LAMPS					
	T5 tubular fluorescent tube, 2700K to 6500K : -					
		A	B	C	D	
	Each	$	$	$	$	
27016	549 mm long, 14W	48.13	3.29	3.96	9.98	27016
27017	549 mm long, 24W	56.93	3.29	3.96	9.98	27017
27018	849 mm long, 21W	50.66	3.29	3.96	9.98	27018
27019	849 mm long, 39W	57.80	3.29	3.96	9.98	27019
27020	1149 mm long, 28W	50.96	3.29	3.96	9.98	27020
27021	1449 mm long, 35W	53.71	3.92	4.57	10.91	27021
27022	1449 mm long, 49W	72.04	3.92	4.57	10.91	27022
27023	1149 mm long, 54W	59.02	3.92	4.57	10.91	27023
27024	1449 mm long, 80W	72.04	3.92	4.57	10.91	27024
	LED lighting tube, suitable for T5/ T8 lighting panel with length : -					
	Each					
27025	Up to 600 mm long, min. lumen output 800 lm each tube	107.85	3.29	3.96	9.98	27025
27026	600 - 900 mm long, min. lumen output 1200 lm each tube	109.96	3.29	3.96	9.98	27026
27027	900 - 1200 mm long, min. lumen output 1600 lm each tube	112.07	3.29	3.96	9.98	27027
27028	1200 - 1500 mm long, min. lumen output 2000 lm each tube	180.48	3.92	4.57	10.91	27028

Item	LAMPS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Circular fluorescent lamp : -					
	Each	A $	B $	C $	D $	
27029	22W	32.72	4.59	5.74	14.87	27029
27030	32W	35.80	4.59	5.74	14.87	27030
27031	40W	50.91	4.59	5.74	14.87	27031
27032	60W	56.05	4.59	5.74	14.87	27032
	Compact fluorescent lamp : -					
	Each					
27033	2 pin single turn, 5/ 7W	22.53	2.25	2.75	6.87	27033
27034	Ditto but 9/ 11W	25.14	2.25	2.75	6.87	27034
27035	2 pin double turn, 10/ 13W	38.07	2.25	2.75	6.87	27035
27036	Ditto but 18/ 26W	47.43	2.25	2.75	6.87	27036
27037	4 pin biaxial long turn, 18/ 24/ 34W	68.21	2.25	2.75	6.87	27037
27038	Ditto but 36/ 40/ 55W	68.21	2.25	2.75	6.87	27038
27039	4 pin double turn, 10/ 13W	49.34	2.25	2.75	6.87	27039
27040	Ditto but 18/ 26W	56.13	2.25	2.75	6.87	27040
27041	2 or 4 pin triple turn, 13/ 18/ 26W	97.65	2.25	2.75	6.87	27041
27042	4 pin triple turn, 32/ 42W	112.20	2.25	2.75	6.87	27042
27043	2 pin 2D compact fluorescent lamp	53.56	2.25	2.75	6.87	27043
27044	Ditto but 4 pin 28/ 38/ 55 W	85.89	2.25	2.75	6.87	27044

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LAMPS (CONT'D)					
	Incandescent lamp : -					
		A	B	C	D	
	Each	$	$	$	$	
27045	15/ 25/ 40/ 60W, B15/ B22/ E14/ E27 cap, 35 mm diameter candle type or 45 mm diameter golf ball type lamps	-	1.32	2.64	5.02	27045
27046	25/ 40/ 60/ 100W, G.L.S. lamp B15/ B22/ E14/ E27 cap, with clear, pearl or colour finish	-	1.32	2.64	5.02	27046
27047	150W/ 200W, G.L.S. lamp G.E.S. cap, clear or pearl finishes	-	2.25	2.80	6.96	27047
	Halogen lamp : -					
	Each					
27048	Dichroic lamp; in any power rating	-	2.25	2.80	6.96	27048
27049	Aluminium reflector lamp; in any power rating	-	2.25	2.80	6.96	27049
27050	Reflector lamp (spot/ flood/ wide flood); in any power rating	-	2.25	2.80	6.96	27050
27051	Single-end/ double-end; in any power rating	-	2.25	2.80	6.96	27051
	Induction lamp : -					
	Each					
27052	Up to 60W	679.25	2.25	2.80	6.96	27052
27053	60 - 80W	836.93	2.25	2.80	6.96	27053
27054	80 - 120W	994.61	2.25	2.80	6.96	27054
27055	120 - 200W	1,310.20	2.25	2.80	6.96	27055
	Low pressure sodium lamp : -					
	Each					
27056	26/ 35W	247.55	8.82	10.70	26.56	27056
27057	35/ 55W	259.91	8.82	10.70	26.56	27057
27058	66/ 90W	354.97	8.82	10.70	26.56	27058
27059	90/ 135W	368.29	8.82	10.70	26.56	27059

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LAMPS (CONT'D)					
	Metal halide lamp : -					
		A	B	C	D	
	Each	$	$	$	$	
27060	35W reflector - ceramic	486.06	8.82	10.70	26.56	27060
27061	70/ 150W double-end compact	154.65	8.82	10.70	26.56	27061
27062	250W double-end compact	765.01	8.82	10.70	26.56	27062
27063	400W double-end compact	796.48	8.82	10.70	26.56	27063
27064	70/ 150W double-end compact - ceramic	368.21	8.82	10.70	26.56	27064
27065	70/ 150W single-end compact	197.83	8.82	10.70	26.56	27065
27066	200W single-end compact	387.19	8.82	10.70	26.56	27066
27067	35/ 70W single-end compact - ceramic	413.05	8.82	10.70	26.56	27067
27068	150W single-end compact - ceramic	426.29	8.82	10.70	26.56	27068
27069	70W MBIF, elliptical coated	321.42	8.82	10.70	26.56	27069
27070	100/ 250W MBIF, elliptical coated	330.68	8.82	10.70	26.56	27070
27071	400W MBIF, elliptical coated	365.60	8.82	10.70	26.56	27071
27072	250W tubular clear	307.20	8.82	10.70	26.56	27072
27073	400W tubular clear	324.22	8.82	10.70	26.56	27073
27074	1000W tubular clear	931.84	10.75	13.34	36.60	27074
27075	750W MBIL double-end	497.35	10.75	13.34	36.60	27075
27076	1500W MBIL double-end	1,059.95	10.75	13.34	36.60	27076
27077	2000W MBIL double-end	2,106.09	10.75	13.34	36.60	27077
27078	70/ 150W compact metal halide	429.33	8.82	10.70	26.56	27078
27079	1000W compact metal halide	1,757.07	10.75	13.34	36.60	27079
	High pressure sodium lamp (Standard) : -					
	Each					
27080	50/ 70W SON-E	154.34	8.82	10.70	26.56	27080
27081	70W SON-I/ SON-T	167.39	8.82	10.70	26.56	27081
27082	100W SON-E/ SON-T	193.78	8.82	10.70	26.56	27082
27083	110/ 150W SON-E/ SON-T	204.87	8.82	10.70	26.56	27083
27084	250W SON/ SON-T	214.28	8.82	10.70	26.56	27084
27085	400W SON/ SON-T	217.58	8.82	10.70	26.56	27085
27086	1000W SON-T	833.24	8.82	10.70	26.56	27086

Item	LAMPS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	High pressure sodium lamp (Special) : -					
	Each	A $	B $	C $	D $	
27087	50/ 70W high lumen output	185.16	8.82	10.70	26.56	27087
27088	100/ 150W high lumen output	218.25	8.82	10.70	26.56	27088
27089	250/ 400W high lumen output	232.50	8.82	10.70	26.56	27089
27090	150W colour temperature not less than 2150K	267.34	8.80	10.69	26.54	27090
27091	250W colour temperature not less than 2150K	323.97	8.80	10.69	26.54	27091
27092	400W colour temperature not less than 2150K	403.17	8.80	10.69	26.54	27092
27093	35/ 50W WHITE SON	373.97	8.80	10.69	26.54	27093
27094	100W WHITE SON	400.45	8.80	10.69	26.54	27094
27095	150W WHITE SON	431.69	8.80	10.69	26.54	27095
27096	250W WHITE SON	473.28	8.80	10.69	26.54	27096
27097	70/ 150W double-end	385.01	8.80	10.69	26.54	27097
27098	250W double-end	480.74	8.80	10.69	26.54	27098
27099	400W double-end	533.54	8.80	10.69	26.54	27099
27100	70W reflector	329.17	8.80	10.69	26.54	27100
	High pressure mercury discharge lamp : -					
	Each					
27101	50/ 80/ 125/ 250/ 400/ 450/ 700 W MBF	-	8.80	10.69	26.54	27101
	Other lamps : -					
	Each					
27102	Energy saving lamp 9/ 11/ 13/ 15/ 18W, E14/ E27 lamp base	45.02	1.32	1.75	4.98	27102
27103	Energy saving lamp 20/ 25W, E14/ E27 lamp base	72.35	1.32	1.75	4.98	27103
27104	Energy saving lamp, globe type 9/ 11/ 13/ 15/ 18W	53.18	1.32	1.75	4.98	27104
27105	Energy saving lamp, globe type 20/ 25W	61.49	1.32	1.75	4.98	27105
27106	24V, 75/ 55W, sealed beam lamp bulb for underwater floodlight	79.63	8.80	11.27	26.54	27106
27107	Dimmable energy saving lamp 9/ 11/ 13/ 15/ 18W	209.11	1.32	1.75	4.98	27107

LAMPS (CONT'D)

Other lamps : - (Cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27108	LED lamp, 12V 3 - 5W, GU 5.3	91.71	11.80	15.78	40.86	27108
27109	LED lamp, 12V 5 - 7W, GU 5.3	97.36	11.80	15.78	40.86	27109
27110	LED lamp, 10 - 20W	86.06	11.80	15.78	40.86	27110
27111	LED lamp, 20 - 30W	165.16	11.80	15.78	40.86	27111

FLUORESCENT LIGHTING FITTINGS

Surface mounted modular vandal resistant fluorescent lighting fitting c/w T5 electronic ballast, fluorescent tube, (one electronic ballast for each set of fluorescent tube), aluminium louvres/ reflectors, anti-vibration devices and polycarbonate diffusers : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27112	200 x 600 mm, 1 x 14W, single tube	962.94	34.39	40.73	109.25	27112
27113	200 x 600 mm, 1 x 14W, single tube, impact resistance IK10, c/w 2-hour NiMH emergency power pack	2,147.00	34.39	40.73	109.25	27113
27114	200 x 600 mm, 1 x 14W, single tube, impact resistance IK10 c/w night light	3,220.50	34.39	40.73	109.25	27114
27115	200 x 600 mm, 1 x 14W, single tube, IP54, impact resistance IK10	1,328.93	34.39	40.73	109.25	27115
27116	300 x 600 mm, 1 x 14W, single tube, matt-satin polycarbonate cross blades, dimmable electronic ballast	982.42	38.53	45.62	116.45	27116
27117	300 x 600 mm, 2 x 14W, twin tube	1,049.62	38.53	45.62	116.45	27117
27118	300 x 600 mm, 2 x 14W, twin tube, IP54 c/w 2-hour NiMH emergency power pack	2,155.07	38.53	45.62	116.45	27118
27119	300 x 600 mm, 2 x 14W, twin tube, IP54 c/w 1 x 10W PLC night light	1,888.40	38.53	45.62	116.45	27119
27120	300 x 600 mm, 2 x 14W, twin tube, IP54, impact resistance IK10	2,486.00	38.53	45.62	116.45	27120
27121	300 x 600 mm, 2 x 14W, twin tube, IP54, impact resistance IK10, c/w night light	2,938.00	38.53	45.62	116.45	27121
27122	600 x 600 mm, 3 x 14W, triple tube, IP54, impact resistance IK10	2,324.13	38.53	45.62	116.45	27122
27123	600 x 600 mm, 3 x 14W, triple tube, IP54, impact resistance IK10 c/w 2-hour NiMH emergency power pack	2,606.26	38.53	45.62	116.45	27123
27124	200 x 1200 mm, 1 x 28W, single tube	1,002.47	34.39	40.73	109.25	27124
27125	200 x 1200 mm, 1 x 28W, single tube, IP54, impact resistance IK10	1,552.21	34.39	40.73	109.25	27125
27126	300 x 1200 mm, 2 x 28W, twin tube	1,230.36	38.53	45.62	116.45	27126
27127	300 x 1200 mm, 2 x 28W, twin tube, IP54, impact resistance IK10 c/w 2-hour NiMH emergency power pack	2,163.27	38.53	45.62	116.45	27127

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS					
	Surface mounted modular vandal resistant fluorescent lighting fitting c/w T5 electronic ballast, fluorescent tube, (one electronic ballast for each set of fluorescent tube), aluminium louvres/ reflectors, anti-vibration devices and polycarbonate diffusers : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
27128	300 x 1200 mm, 2 x 28W, twin tube, impact resistance IK10 c/w parabolic side reflector	1,449.40	38.53	45.62	116.45	27128
27129	300 x 1200 mm, 2 x 28W, twin tube, IP54, impact resistance IK10 c/w night light	1,946.95	38.53	45.62	116.45	27129
27130	250 x 1200 mm, 2 x 28W, twin tube, impact resistance IK10	1,683.22	38.53	45.62	116.45	27130
27131	200 x 1500 mm, 1 x 35W, single tube	1,399.22	36.52	44.20	115.91	27131
27132	200 x 1500 mm, 1 x 35W, single tube, IP54, impact resistance IK10	1,966.56	36.52	44.20	115.91	27132
27133	300 x 1500 mm, 2 x 35W, twin tube	1,493.49	42.85	50.20	123.92	27133
27134	300 x 1500 mm, 2 x 35W, twin tube, IP54, impact resistance IK10 c/w 2-hour NiMH emergency power pack	3,008.39	42.85	50.20	123.92	27134
27135	300 x 1500 mm, 2 x 35W, twin tube c/w parabolic side reflector	2,015.62	42.85	50.20	123.92	27135
27136	600 x 1200 mm, 3 x 28W, triple tube c/w parabolic side reflector	2,821.37	42.85	50.20	123.92	27136
27137	600 x 1200 mm, 3 x 28W, triple tube, IP54 c/w emergency power pack, impact resistance IK10	4,209.37	42.85	50.20	123.92	27137
27138	600 x 1200 mm, 3 x 28W, triple tube, IP54 c/w night light, impact resistance IK10	3,786.16	42.85	50.20	123.92	27138
	Surface mounted fluorescent light fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube) : -					
	Each					
27139	600 mm, 1 x 14W, batten type similar to SFA 50	246.91	23.91	29.84	80.12	27139
27140	600 mm, 2 x 14W, batten type similar to SFA 69	359.07	26.16	33.18	92.45	27140
27141	600 mm, 1 x 14W, batten type with plastic diffuser similar to SFA 51	342.73	25.16	30.97	84.55	27141
27142	600 mm, 2 x 14W, batten type with plastic diffuser similar to SFA 74	507.12	28.07	34.51	97.03	27142
27143	1200 mm, 1 x 28W, batten type similar to SFA 50	276.93	26.55	32.34	89.68	27143
27144	1200 mm, 2 x 28W, batten type similar to SFA 69	425.39	28.56	34.95	103.84	27144
27145	1200 mm, 1 x 28W, batten type with metal trough reflector similar to SFA 58	361.42	27.81	34.44	95.10	27145
27146	1200 mm, 2 x 28W, batten type with metal trough reflector similar to SFA 72	549.40	30.48	37.64	109.65	27146
27147	1200 mm, 1 x 28W, batten type with metal angle reflector similar to SFA 56	367.76	28.07	34.51	95.10	27147
27148	1200 mm, 1 x 28W, batten type with plastic diffuser similar to SFA 51	407.51	28.07	34.51	95.10	27148
27149	1200 mm, 2 x 28W, batten type with plastic diffuser similar to SFA 74	628.43	30.48	37.64	109.65	27149
27150	1500 mm, 1 x 35W, batten type similar to SFA 50	324.69	27.63	34.12	94.66	27150

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Surface mounted fluorescent light fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube) : - (Cont'd)					
	Each	A $	B $	C $	D $	
27151	1500 mm, 2 x 35W, batten type similar to SFA 69	505.73	32.17	39.30	111.48	27151
27152	1500 mm, 1 x 35W, batten type with metal trough reflector similar to SFA 58	392.02	31.30	38.06	100.55	27152
27153	1500 mm, 1 x 49W, batten type similar to SFA 50	330.31	27.63	34.12	94.66	27153
27154	1500 mm, 2 x 49W, batten type similar to SFA 69	515.80	32.17	39.30	111.48	27154
27155	1500 mm, 1 x 80W, batten type similar to SFA 50	469.94	27.63	34.12	94.66	27155
27156	1500 mm, 2 x 80W, batten type similar to SFA 69	736.67	32.17	39.30	111.48	27156
27157	1500 mm, 1 x 80W, batten type with metal trough reflector similar to SFA 58	565.20	31.30	38.06	100.55	27157
27158	1500 mm, 1 x 35W, batten type with metal angle reflector similar to SFA 56	374.60	31.19	37.82	99.96	27158
27159	1500 mm, 1 x 35W, batten type with plastic diffuser similar to SFA 51	373.22	31.19	37.82	99.96	27159
27160	1500 mm, 2 x 35W, batten type with metal trough reflector similar to SFA 72	599.32	33.29	41.70	117.87	27160
27161	1500 mm, 2 x 35W, batten type with plastic diffuser similar to SFA 74	605.57	33.18	41.45	117.15	27161
27162	1500 mm, 1 x 49W, batten type with metal angle reflector similar to SFA 56	378.32	31.19	37.82	99.96	27162
27163	1500 mm, 1 x 49W, batten type with metal trough reflector similar to SFA 58	406.87	31.30	38.06	100.55	27163
27164	1500 mm, 1 x 49W, batten type with plastic diffuser similar to SFA 51	384.42	31.19	37.82	99.96	27164
27165	1500 mm, 2 x 49W, batten type with metal trough reflector similar to SFA 72	611.47	33.29	41.70	117.87	27165
27166	1500 mm, 2 x 49W, batten type with plastic diffuser similar to SFA 74	626.08	33.18	41.45	117.15	27166
	Surface mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types) : -					
	Each					
27167	150 x 1500 mm, 1 x 35W similar to SFA 110	512.91	28.45	34.81	103.42	27167
27168	300 x 600 mm, 1 x 14W similar to SFA 110	538.68	28.45	34.81	103.42	27168
27169	300 x 600 mm, 2 x 14W similar to SFA 110	743.16	34.34	40.66	109.04	27169
27170	300 x 1200 mm, 1 x 28W similar to SFA 110	705.18	34.34	40.66	109.04	27170
27171	300 x 1500 mm, 1 x 35W similar to SFA 110	765.70	36.46	44.02	115.43	27171
27172	300 x 1500 mm, 1 x 49W similar to SFA 110	774.07	36.46	44.02	115.43	27172
27173	300 x 1200 mm, 2 x 28W similar to SFA 110	774.67	38.46	45.43	116.00	27173

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Surface mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types) : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
27174	300 x 1200 mm, 2 x 28W c/w nano reflectors.....	1,118.92	38.46	45.43	116.00	27174
27175	300 x 1500 mm, 2 x 35W similar to SFA 110.....	909.75	42.85	50.09	123.68	27175
27176	300 x 1500 mm, 2 x 35W c/w emergency power pack.....	1,078.38	42.85	50.09	123.68	27176
27177	300 x 1500 mm, 2 x 49W similar to SFA 110.....	923.61	42.85	50.09	123.68	27177
27178	400 x 1500 mm, 3 x 35W.....	1,053.81	42.85	50.09	123.68	27178
27179	600 x 600 mm, 2 x 14W similar to SFA 111.....	812.52	36.52	44.11	115.67	27179
27180	600 x 1200 mm, 2 x 28W similar to SFA 110.....	893.74	46.43	54.72	135.62	27180
27181	600 x 600 mm, 3 x 14W similar to SFA 111.....	886.52	42.85	50.09	123.68	27181
27182	600 x 1200 mm, 3 x 28W similar to SFA 110.....	1,051.05	50.31	59.43	141.02	27182
	Surface mounted modular fluorescent lighting fitting c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one T5 electronic ballast for each set of T5 fluorescent tube) : -					
	Each					
27183	1200 mm, 1 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,173.05	35.02	40.87	93.76	27183
27184	1200 mm, 2 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,404.85	35.02	40.87	93.76	27184
27185	1500 mm, 1 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,403.38	36.26	41.49	96.01	27185
27186	1500 mm, 2 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,566.32	36.26	41.49	96.01	27186
	Surface mounted modular LED T5 lighting fitting c/w T5 LED tube/ LED driver					
	Each					
27187	600 x 600 mm, 3 x 14W similar to SFA 111.....	1,065.68	42.85	50.09	123.68	27187
27188	600 x 1200 mm, 3 x 28W similar to SFA 110.....	1,234.38	50.31	59.43	141.02	27188
27189	1200 mm, 1 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,234.16	35.02	40.87	93.76	27189
27190	1200 mm, 2 x 28W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,527.07	35.02	40.87	93.76	27190
27191	1500 mm, 1 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,530.15	36.26	41.49	96.01	27191
27192	1500 mm, 2 x 35W track light module luminaire for continuous lighting with housing c/w louver similar to SFA 201.....	1,819.86	36.26	41.49	96.01	27192

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Surface mounted modular fluorescent lighting fitting c/w ball-proof hinged wire guard, with/ without transparent polycarbonate/ plastic cover, T5 fluorescent tube, T5 electronic control gear/ electronic ballast (one T5 electronic ballast for each set of T5 fluorescent tube) : -					
	Each	A $	B $	C $	D $	
27193	300 x 1200 mm, 2 x 28W similar to SFA 112	531.17	35.02	40.87	93.76	27193
27194	300 x 1500 mm, 1 x 35W similar to SFA 112	912.36	30.58	36.68	78.90	27194
27195	300 x 1500 mm, 2 x 35W similar to SFA 112	1,054.63	36.26	41.49	96.01	27195
27196	300 x 1500 mm, 2 x 35W c/w 2-hour NiMH emergency power pack	1,656.80	36.26	41.49	96.01	27196
27197	450 x 1200 mm, 3 x 28W similar to SFA 112	856.39	50.31	59.43	141.02	27197
27198	450 x 1500 mm, 3 x 35W similar to SFA 112	1,700.36	52.48	60.81	149.21	27198
27199	450 x 1500 mm, 3 x 35W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover c/w emergency power pack	2,302.54	52.48	60.81	149.21	27199
27200	600 x 1500 mm, 3 x 35W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112	1,382.31	52.48	60.81	149.21	27200
27201	600 x 1200 mm, 3 x 54W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112	1,262.08	50.31	59.43	141.02	27201
27202	600 x 1500 mm, 4 x 49W with ball-proof hinged wire guard and with/ without transparent polycarbonate/ plastic cover similar to SFA 112	1,817.52	56.58	65.59	155.37	27202
	Surface/ pendant mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), die cast aluminium body : -					
	Each					
27203	1 x 28W similar to SFA 113	888.22	29.98	35.82	78.10	27203
27204	2 x 28W similar to SFA 113	1,151.61	35.02	40.87	93.76	27204
27205	3 x 28W similar to SFA 113	1,597.93	40.71	47.59	108.47	27205
27206	1 x 35W similar to SFA 113	959.36	30.58	36.68	78.90	27206
27207	2 x 35W similar to SFA 113	1,424.12	36.26	41.49	96.01	27207
27208	3 x 35W similar to SFA 113	1,678.67	44.11	52.05	113.09	27208

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Recess mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), with/ without air slot : -					
	Each	A $	B $	C $	D $	
27209	200 x 600 mm, 1 x 14W, vandal resistant	1,562.75	28.28	34.66	102.99	27209
27210	300 x 600 mm, 1 x 14W similar to SFA 114	678.86	28.28	34.66	102.99	27210
27211	300 x 600 mm, 1 x 14W c/w nano reflectors	700.48	28.28	34.66	102.99	27211
27212	300 x 600 mm, 1 x 14W c/w air slots	846.74	28.28	34.66	102.99	27212
27213	300 x 600 mm, 1 x 14W c/w air slots with perforated white panel	1,262.90	28.28	34.66	102.99	27213
27214	300 x 600 mm, 1 x 14W c/w air slots with perforated white panel and 2-hour NiMH emergency power pack	1,622.39	28.28	34.66	102.99	27214
27215	300 x 600 mm, 2 x 14W similar to SFA 114	839.53	34.11	40.49	108.59	27215
27216	300 x 600 mm, 2 x 14W, vandal resistant	1,812.00	34.11	40.49	108.59	27216
27217	300 x 1200 mm, 1 x 28W similar to SFA 114	731.95	34.11	40.49	108.59	27217
27218	300 x 1200 mm, 1 x 28W c/w air slots with perforated white panel	1,281.43	34.11	40.49	108.59	27218
27219	300 x 1200 mm, 1 x 28W c/w air slots with perforated white panel and 2-hour NiMH emergency power pack	1,804.35	34.11	40.49	108.59	27219
27220	300 x 1200 mm, 2 x 28W similar to SFA 114	872.03	38.23	45.34	115.75	27220
27221	300 x 1200 mm, 2 x 28W c/w dimmable electronic ballast, 3-level dimmer switch and 2-hour NiMH emergency power pack	1,093.90	38.23	45.34	115.75	27221
27222	300 x 1500 mm, 1 x 35W similar to SFA 114	784.90	42.50	49.88	123.19	27222
27223	300 x 1500 mm, 1 x 35W c/w white powder coated sheet steel with perforated white panel	1,292.82	42.50	49.88	123.19	27223
27224	300 x 1500 mm, 1 x 35W c/w white powder coated sheet steel with perforated white panel and 2-hour NiMH emergency power pack	1,986.29	42.50	49.88	123.19	27224

Item	FLUORESCENT LIGHTING FITTINGS (CONT'D) Recess mounted modular fluorescent light fitting c/w T5 fluorescent tube, electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types), with/ without air slot : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27225	300 x 1500 mm, 1 x 49W similar to SFA 114	790.59	42.50	49.88	123.19	27225
27226	300 x 1500 mm, 2 x 35W similar to SFA 114	944.16	42.50	49.88	123.19	27226
27227	300 x 1500 mm, 2 x 49W similar to SFA 114	955.69	42.50	49.88	123.19	27227
27228	600 x 600 mm, 2 x 14W similar to SFA 115	847.66	42.50	49.88	123.19	27228
27229	600 x 600 mm, 2 x 14W c/w nano reflectors	892.76	42.50	49.88	123.19	27229
27230	600 x 600 mm, 2 x 14W c/w air slots with perforated white panel and 2-hour NiMH emergency power pack	1,912.08	42.50	49.88	123.19	27230
27231	600 x 600 mm, 3 x 14W similar to SFA 115	917.08	42.50	49.88	123.19	27231
27232	600 x 600 mm, 4 x 14W similar to SFA 115	1,150.23	42.50	49.88	123.19	27232
27233	600 x 1200 mm, 2 x 28W c/w air slots with perforated white panel and 2-hour NiMH emergency power pack	2,080.92	42.50	49.88	123.19	27233
27234	600 x 1500 mm, 2 x 35W c/w white powder coated sheet steel with perforated white panel	1,556.29	42.50	49.88	123.19	27234
27235	600 x 1500 mm, 2 x 35W c/w white powder coated sheet steel with perforated white panel and 2-hour NiMH emergency power pack	2,249.75	42.50	49.88	123.19	27235
27236	300 x 600 mm, 1 x 14W c/w dimmable electronic ballast	955.66	46.06	54.50	135.06	27236
27237	300 x 600 mm, 2 x 14W c/w dimmable electronic ballast	1,116.32	46.06	54.50	135.06	27237
27238	300 x 1200 mm, 1 x 28W c/w dimmable electronic ballast	1,019.14	46.06	54.50	135.06	27238
27239	300 x 1200 mm, 2 x 28W c/w dimmable electronic ballast	1,159.23	46.06	54.50	135.06	27239
27240	600 x 1200 mm, 2 x 28W c/w dimmable electronic ballast	1,221.47	46.06	54.50	135.06	27240
27241	600 x 1200 mm, 2 x 28W similar to SFA 114	934.28	46.06	54.50	135.06	27241
27242	600 x 1200 mm, 2 x 28W c/w nano reflectors	1,285.59	46.06	54.50	135.06	27242
27243	600 x 1200 mm, 2 x 28W c/w mirror aluminium back reflector, dimmable electronic ballast, 3-level dimmer switch and 2-hour NiMH emergency power pack	1,277.03	46.06	54.50	135.06	27243
27244	600 x 1200 mm, 3 x 28W similar to SFA 114	1,163.91	49.89	59.21	140.44	27244
27245	600 x 1200 mm, 4 x 28W similar to SFA 114	1,325.52	49.89	59.21	140.44	27245

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Compact fluorescent down light fitting, recess mounted to false ceiling, integral electronic control gear/ ballast, white stove enameled steel/ die cast aluminium body and anodized aluminium reflector with/ without metal trim:-					
	Each	A $	B $	C $	D $	
27246	Down light with 7/ 9/ 11W PL lamp similar to SFA 224.....	266.21	19.75	24.17	68.58	27246
27247	Down light with 7/ 9/ 11W PL lamp c/w glass diffuser similar to SFA 224.....	355.54	19.75	24.17	68.58	27247
27248	Down light with 13/ 18/ 26W PL lamp similar to SFA 224.....	287.52	19.75	24.17	68.58	27248
27249	Down light with 13/ 18/ 26W PL lamp c/w glass diffuser similar to SFA 224.....	373.33	19.75	24.17	68.58	27249
27250	Down light with 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp similar to SFA 224.....	380.27	19.75	24.17	68.58	27250
27251	Down light with 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp c/w glass diffuser similar to SFA 224.....	475.37	19.75	24.17	68.58	27251
27252	Down light with 13/ 18/ 26W PL lamp, IP 65 c/w safety glass diffuser similar to SFA 224.....	2,412.13	19.75	24.17	68.58	27252
27253	Down light with dimmable electronic ballast, 13/ 18/ 26W PL lamp similar to SFA 224.....	1,533.77	19.75	24.17	68.58	27253
27254	Down light with dimmable electronic ballast, 2 x 13W/ 2 x 18W/ 2 x 26W PL lamp similar to SFA 224.....	1,716.07	19.75	24.17	68.58	27254
	Recessed downlight : -					
	Each					
27255	Ceiling recessed downlight similar to SFA 224, die cast aluminium body and front ring, anodised aluminium reflector, 150 mm diameter, IP65 c/w safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp c/w 2-hour NiMH emergency power pack.....	1,467.15	22.67	27.22	82.27	27255

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Surface mounted fluorescent light fitting c/w T5 circular fluorescent tube, electronic control gear/ electronic ballast and diffuser : -					
		A	B	C	D	
	Each	$	$	$	$	
27256	1 x 22W	1,022.76	26.99	34.28	103.03	27256
27257	1 x 40W	1,305.02	26.99	34.28	103.03	27257
	Surface mounted compact fluorescent light fitting, integral electronic control gear/ ballast : -					
	Each					
27258	Twin compact fluorescent 9W c/w prismatic controller	572.30	25.01	30.85	84.38	27258
27259	Twin compact fluorescent 11W c/w prismatic controller	617.00	25.01	30.85	84.38	27259
27260	Circular/ diamond shape compact fluorescent lighting fitting opal/ clear prismatic polycarbonate diffuser, die cast aluminium/ polycarbonate body c/w 16/ 21W 2D lamp	512.74	25.16	30.97	84.55	27260
27261	Circular/ diamond shape compact fluorescent lighting fitting opal/ clear prismatic polycarbonate diffuser, die cast aluminium/ polycarbonate body c/w 28/ 38W 2D lamp	619.52	25.16	30.97	84.55	27261
27262	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 16/ 21W 2D electronic ballast and lamp tube	1,026.17	25.16	30.97	84.55	27262
27263	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 28/ 38W 2D electronic ballast and lamp tube	1,120.59	25.16	30.97	84.55	27263
27264	Circular/ diamond shape compact fluorescent lighting fitting vandal resistant prismatic diffuser, die-cast aluminium base with IP65 protection body c/w 28/ 38W 2D electronic ballast, lamp tube and 2-hour NiMH emergency power pack	1,921.37	25.16	30.97	84.55	27264

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Self-contained and maintained type for 2-hour duration emergency fluorescent lighting fitting c/w 2-hour NiMH emergency power pack, battery charger, inverter and : -					
	Each	A $	B $	C $	D $	
27265	600/ 900 mm, 1 x 14W/ 21W single fluorescent tube (electronic ballast).....	486.78	24.76	30.48	84.99	27265
27266	600/ 900 mm, 2 x 14W/ 21W twin fluorescent tubes (electronic ballasts).....	617.96	27.23	33.18	92.45	27266
27267	1200/ 1500 mm, 1 x 28W/ 35W single fluorescent tube (electronic ballast).....	716.04	28.22	33.87	98.72	27267
27268	1200/ 1500 mm, 2 x 28W/ 35W twin fluorescent tubes (electronic ballasts).....	832.69	29.68	35.16	106.68	27268
27269	Bulk head fitting, 1 x 13/ 18/ 26W compact fluorescent tube.....	637.03	26.55	32.34	89.68	27269
27270	Ditto but 2 x 13/ 18/ 26W compact fluorescent tubes.....	731.52	26.55	32.34	89.68	27270
27271	Bulk head fitting, 1 x 7/ 9/ 11W compact fluorescent tube.....	568.99	26.55	32.34	89.68	27271
27272	Ditto but 2 x 7/ 9/ 11W compact fluorescent tubes.....	638.84	26.55	32.34	89.68	27272
	Weather proof, IP65 self-contained and maintained type for 2-hour duration emergency fluorescent lighting fitting with polycarbonate/ slab cover, 2-hour NiMH emergency power packbattery charger, inverter and : -					
	Each					
27273	600/ 900 mm, 1 x 14W/ 21W single fluorescent tube (electronic ballast).....	649.83	24.64	30.24	84.31	27273
27274	600/ 900 mm, 2 x 14W/ 21W twin fluorescent lamp tubes (electronic ballasts).....	856.72	26.00	32.90	91.73	27274
27275	1200/ 1500 mm, 1 x 28W/ 35W single fluorescent tube (electronic ballast).....	829.46	28.85	34.78	105.48	27275
27276	1200/ 1500 mm, 2 x 28W/ 35W twin fluorescent lamp tubes (electronic ballasts).....	1,048.37	29.53	34.90	105.82	27276
27277	Bulk head fitting, 1 x 13/ 18/ 26W compact fluorescent tube.....	837.49	26.39	32.08	88.98	27277
27278	Ditto but 2 x 13/ 18/ 26W compact fluorescent tubes.....	985.19	26.39	32.08	88.98	27278
27279	Bulk head fitting, 1 x 7/ 9/ 11W compact fluorescent tube.....	791.97	26.39	32.08	88.98	27279
27280	Ditto but 2 x 7/ 9/ 11W compact fluorescent tubes.....	863.96	26.39	32.08	88.98	27280

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Corrosion resistant fluorescent light fitting c/w polycarbonate diffuser, IP65, T5 fluorescent tube and electronic ballast (one electronic ballast for each set of fluorescent tube) : -					
	Each	A $	B $	C $	D $	
27281	600 mm, 1 x 14W similar to SFA 116	645.90	33.12	39.95	120.40	27281
27282	600 mm, 2 x 14W similar to SFA 117	812.87	34.82	41.84	137.12	27282
27283	1200 mm, 1 x 28W similar to SFA 116	743.76	38.59	45.14	130.14	27283
27284	1200 mm, 2 x 28W similar to SFA 117	959.27	40.45	47.61	152.34	27284
27285	1500 mm, 1 x 35W similar to SFA 116	1,135.27	41.33	49.37	136.09	27285
27286	1500 mm, 2 x 35W similar to SFA 117	1,332.28	44.33	52.82	159.15	27286
27287	1500 mm, 1 x 49W similar to SFA 116	1,199.97	42.60	50.39	136.09	27287
27288	1500 mm, 2 x 49W similar to SFA 117	1,381.41	45.60	53.83	159.15	27288
	Corrosion resistant IP65 fluorescent lighting fitting c/w T8 electronic ballast and self-contained battery (NiCd)/ (NiMH) for 2 hours discharge (emergency of the normal length) : -					
	Each					
27289	600 mm, 1 x 18/ 20W, single tube	-	24.66	30.44	82.94	27289
27290	600 mm, 2 x 18/ 20W, twin tube	-	27.75	34.36	96.83	27290
27291	1200 mm, 1 x 36/ 40W, single tube	-	26.49	32.28	89.52	27291
27292	1200 mm, 2 x 36/ 40W, twin tube	-	28.73	35.19	103.62	27292
27293	1500 mm, 1 x 58/ 60W, single tube	-	27.75	34.36	96.83	27293
27294	1500 mm, 2 x 58/ 60W, twin tube	-	32.11	39.22	111.26	27294

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic ballast and self-contained battery (NiCd) for 2 hours discharge (emergency of the normal length) : -					
	Each	A $	B $	C $	D $	
27295	600 mm, 1 x 14W, single tube	-	24.66	30.44	82.94	27295
27296	600 mm, 2 x 14W, twin tube	-	27.75	34.36	96.83	27296
27297	1200 mm, 1 x 28W, single tube	-	26.49	32.28	89.52	27297
27298	1200 mm, 2 x 28W, twin tube	-	28.73	35.19	103.62	27298
27299	1500 mm, 1 x 35W, single tube	-	27.57	34.07	94.51	27299
27300	1500 mm, 2 x 35W, twin tube	-	32.10	39.22	111.26	27300
27301	1500 mm, 1 x 49W, single tube	-	27.75	34.36	96.83	27301
27302	1500 mm, 2 x 49W, twin tube	-	32.30	39.55	114.01	27302
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic ballast and self-contained battery (NiMH) for 2 hours discharge (emergency of the normal length) : -					
	Each					
27303	600 mm, 1 x 14W, single tube	940.77	24.66	30.44	82.94	27303
27304	600 mm, 2 x 14W, twin tube	1,132.07	27.75	34.36	96.83	27304
27305	1200 mm, 1 x 28W, single tube	1,010.11	26.49	32.28	89.52	27305
27306	1200 mm, 2 x 28W, twin tube	1,222.87	28.73	35.19	103.62	27306
27307	1500 mm, 1 x 35W, single tube	1,649.26	27.57	34.07	94.51	27307
27308	1500 mm, 2 x 35W, twin tube	1,955.27	32.10	39.22	111.26	27308
27309	1500 mm, 1 x 49W, single tube	1,655.00	27.75	34.36	96.83	27309
27310	1500 mm, 2 x 49W, twin tube	1,970.39	32.30	39.55	114.01	27310

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic dimmable ballast and self-contained battery (NiMH) for 2 hours discharge (emergency of the normal length) : -					
	Each	A $	B $	C $	D $	
27311	1200 mm, 1 x 28W, single tube	1,158.82	26.49	32.28	89.52	27311
27312	1200 mm, 2 x 28W, twin tube	1,518.54	28.73	35.19	103.62	27312
27313	1500 mm, 1 x 35W, single tube	1,799.45	27.57	34.07	94.51	27313
27314	1500 mm, 2 x 35W, twin tube	2,253.64	32.10	39.22	111.26	27314
27315	1200 mm, 1 x 28W, single tube c/w light sensor	1,180.23	26.49	32.28	89.52	27315
27316	1500 mm, 1 x 35W, single tube c/w light sensor	1,820.86	27.57	34.07	94.51	27316
	Corrosion resistant IP65 fluorescent lighting fitting c/w T8 electronic ballast : -					
	Each					
27317	600 mm, 1 x 18/ 20W, single tube	-	24.66	30.44	82.94	27317
27318	600 mm, 2 x 18/ 20W, twin tube	-	27.75	34.36	96.83	27318
27319	1200 mm, 1 x 36/ 40W, single tube	-	26.49	32.28	89.52	27319
27320	1200 mm, 2 x 36/ 40W, twin tube	-	28.73	35.19	103.62	27320
27321	1500 mm, 1 x 58/ 60W, single tube	-	27.75	34.36	96.83	27321
27322	1500 mm, 2 x 58/ 60W, twin tube	-	32.10	39.22	107.72	27322
	Corrosion resistant IP65 fluorescent lighting fitting c/w T5 electronic dimmable ballast : -					
	Each					
27323	1200 mm, 1 x 28W, single tube	871.63	26.45	32.24	89.35	27323
27324	1200 mm, 2 x 28W, twin tube	1,231.34	28.65	35.11	103.42	27324
27325	1500 mm, 1 x 35W, single tube	1,506.98	27.54	33.99	94.29	27325
27326	1500 mm, 2 x 35W, twin tube	1,961.19	32.03	39.15	111.04	27326
27327	1200 mm, 1 x 28W, single tube c/w light sensor	893.04	26.45	32.24	89.35	27327
27328	1500 mm, 1 x 35W, single tube c/w light sensor	1,528.39	27.54	33.99	94.29	27328

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Surface mounted modular fluorescent light fitting c/w T5 fluorescent tube, dimmable electronic control gear/ electronic ballast (one electronic ballast for each set of fluorescent tube), aluminium louvre/ reflector/ plastic diffuser (all types) : -					
	Each	A $	B $	C $	D $	
27329	300 x 600 mm, 1 x 14W similar to SFA 110	675.86	28.45	34.81	103.42	27329
27330	300 x 600 mm, 2 x 14W similar to SFA 110	1,017.52	34.34	40.66	109.04	27330
27331	300 x 1200 mm, 1 x 28W similar to SFA 110	774.01	34.34	40.66	109.04	27331
27332	300 x 1200 mm, 2 x 28W similar to SFA 110	1,099.27	38.46	45.52	116.22	27332
27333	300 x 1500 mm, 1 x 35W similar to SFA 110	904.04	36.46	44.11	115.67	27333
27334	300 x 1500 mm, 2 x 35W similar to SFA 110	1,263.31	42.76	50.09	123.68	27334
27335	300 x 1500 mm, 1 x 49W similar to SFA 110	921.97	36.46	44.11	115.67	27335
27336	300 x 1500 mm, 2 x 49W similar to SFA 110	1,299.06	42.76	50.09	123.68	27336
	Flameproof IP66 fluorescent fitting c/w T5 electronic ballast for use in Zone 1 hazardous area and for gas groups IIA & IIB conform to FSD requirements : -					
	Each					
27337	600 mm, 1 x 14W, single tube batten	5,992.44	63.99	80.23	239.84	27337
27338	600 mm, 2 x 14W, twin tube batten	6,416.01	69.99	86.53	254.59	27338
27339	1200 mm, 1 x 28W, single tube batten	6,360.40	63.99	80.23	239.84	27339
27340	1200 mm, 2 x 28W, twin tube batten	6,737.86	69.99	86.53	254.59	27340
27341	1500 mm, 1 x 35W, single tube batten	7,411.33	63.99	80.23	239.84	27341
27342	1500 mm, 2 x 35W, twin tube batten	7,852.39	69.99	86.53	254.59	27342
27343	1500 mm, 1 x 49W, single tube batten	8,471.32	63.99	80.23	239.84	27343
27344	1500 mm, 2 x 49W, twin tube batten	8,921.88	69.99	86.53	254.59	27344
	X-ray view boxes : -					
	Each					
27345	X-ray view box, twin type, 1 mm thick aluminium x-ray viewing boxes; fluorescent tubes with color temperature 6500K to suit viewing box; 3 mm thick transparent perspex; including all necessary electrical connection to adjacent power source	3,578.56	26.34	32.14	89.14	27345
27346	Ditto but stainless steel x-ray viewing box	4,106.05	26.34	32.14	89.14	27346

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Emergency power pack (with inverter, battery charger, indication lights, test button and 2-hour NiMH emergency power pack) for fluorescent light/ compact fluorescent light/ LED light fitting : -					
	Each	A $	B $	C $	D $	
27347	Not exceeding 18W	395.61	8.88	10.75	27.56	27347
27348	18W - 28W power pack	522.92	8.88	10.75	27.56	27348
27349	28W - 35W power pack	602.17	8.88	10.75	27.56	27349
27350	35W - 58W power pack	862.57	8.88	10.75	27.56	27350
	Reflector for surface mounted fluorescent light fittings (batten type) : -					
	Each					
27351	Metal angle reflector, 1200 mm for SFA 56	92.93	10.18	11.51	29.62	27351
27352	Metal angle reflector, 1500 mm for SFA 56	102.43	10.18	11.51	29.62	27352
27353	Metal trough reflector, 600 mm for single tube batten similar to SFA 58	98.73	10.25	11.59	29.80	27353
27354	Metal trough reflector, 1200 mm for single tube batten similar to SFA 58	105.27	10.25	11.59	29.80	27354
27355	Metal trough reflector, 1200 mm for twin tube batten similar to SFA 72	128.39	10.25	11.59	29.80	27355
27356	Metal trough reflector, 1500 mm for single tube batten similar to SFA 58	115.61	10.25	11.59	29.80	27356
27357	Metal trough reflector, 1500 mm for twin tube batten similar to SFA 72	143.73	10.25	11.59	29.80	27357

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Plastic diffuser for surface mounted fluorescent light fittings (batten type) : -					
		A	B	C	D	
	Each	$	$	$	$	
27358	600 mm for single tube batten similar to SFA 51	75.04	6.63	7.17	17.82	27358
27359	1200 mm for single tube batten similar to SFA 51	84.96	6.63	7.17	17.82	27359
27360	1200 mm for twin tube batten similar to SFA 74	137.86	6.63	7.17	17.82	27360
27361	1500 mm for single tube batten similar to SFA 51	95.50	6.63	7.17	17.82	27361
27362	1500 mm for twin tube batten similar to SFA 74	155.53	6.63	7.17	17.82	27362
	Plastic panel diffuser					
	Per square metre					
27363	for surface/ recess mounted modular fluorescent light fitting size	247.53	23.20	25.08	62.39	27363
	Starter for fluorescent lighting fittings : -					
	Each					
27364	18/ 30/ 36/ 58/ 85 W	-	2.38	2.64	7.06	27364
	Condenser for fluorescent lighting fittings : -					
	Each					
27365	18/ 30/ 36/ 58/ 85W	-	10.85	13.20	33.65	27365

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Quick start unit for fluorescent lighting fittings : -					
		A	B	C	D	
	Each	$	$	$	$	
27366	30/ 36/ 58/ 85W	-	10.78	13.20	33.65	27366
	Ballast for fluorescent lighting fittings : -					
	Each					
27367	18/ 30/ 36/ 58/ 85W single	-	8.88	10.75	25.99	27367
	Socket for starter unit of fluorescent lighting fittings : -					
	Each					
27368	Starter unit 2/ 4 pin	-	6.60	7.11	17.73	27368
	Electronic ballast for T5 fluorescent light fitting and compact fluorescent light fitting : -					
	Each					
27369	Not exceeding 14W	185.41	8.88	10.75	25.99	27369
27370	14W - 21W	187.53	8.88	10.75	25.99	27370
27371	21W - 28W	189.82	8.88	10.75	25.99	27371
27372	35W	192.11	8.88	10.75	25.99	27372
27373	49W	198.80	8.88	10.75	25.99	27373
27374	54W	200.90	8.88	10.75	25.99	27374
27375	80W	203.20	8.88	10.75	25.99	27375

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FLUORESCENT LIGHTING FITTINGS (CONT'D)					
	Dimmable electronic ballast for T5 fluorescent light/ compact fluorescent light fitting : -					
		A	B	C	D	
	Each	$	$	$	$	
27376	Not exceeding 14W	267.53	8.88	10.75	25.99	27376
27377	14W - 21W	272.61	8.88	10.75	25.99	27377
27378	21W - 28W	277.57	8.88	10.75	25.99	27378
27379	35W	282.67	8.88	10.75	25.99	27379
27380	49W	297.81	8.88	10.75	25.99	27380
27381	54W	302.93	8.88	10.75	25.99	27381
27382	80W	308.02	8.88	10.75	25.99	27382
	Sundry fittings : -					
	Each					
27383	Brackets, tubular, comprise flange plate and nipple and 20 mm diameter tube bent to required shape, all galvanized, n.e. 450 mm projection	46.66	7.94	9.92	25.32	27383
27384	Ditto but 450 mm - 600 mm projection	49.33	7.94	9.92	25.32	27384
27385	Brackets, corner fitting, comprise 20 mm diameter tube bent to required shape n.e. 450 mm projection	49.23	8.92	10.95	27.49	27385
27386	Pendant, tubular, comprise male pendant plates, conduit, socket, adaptors and male bush as required and 20 mm diameter tube n.e. 300 mm length, all galvanized	44.47	7.94	9.92	25.32	27386
27387	Extra over modular fluorescent fitting for provision of ball-proof wire mesh, 300 x 600 mm	142.16	8.39	10.53	23.20	27387
27388	Ditto but 600 x 600 mm	164.50	8.39	10.53	23.20	27388
27389	Ditto but 300 x 1200 mm	165.88	8.61	10.98	23.91	27389
27390	Ditto but 600 x 1200 mm	212.57	8.61	10.98	23.91	27390
27391	Ditto but 300 x 1500 mm	185.56	8.90	11.17	25.44	27391
27392	Ditto but 600 x 1500 mm	238.30	8.90	11.17	25.44	27392
27393	T8 to T5 Bi-pin lampholder adaptor	31.99	2.00	2.38	6.11	27393
	Per linear metre					
27394	Extra over items 27383 - 27386 for each additional length of 20 mm diameter tube all galvanized for tubular pendant mounting	32.45	3.99	4.65	12.11	27394
27395	Brass chain for lighting fitting, chromium plated, 20 mm oval link with brazed ends	23.73	2.39	2.82	7.01	27395
27396	Chain, hot dip galvanized steel, bright, for lighting fitting c/w screw eyes, screw hocks and 20 mm oval link with welded ends	25.27	2.39	2.82	7.01	27396

Item	LIGHTING FITTINGS LED down light fitting, recess mounted to false ceiling, integral electronic control gear/ driver, white stove enameled steel/ die cast aluminium body and anodized aluminium reflector (all types) with/ without metal trim : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27397	Down light with up to 3W LED lamp, IP54	753.80	19.93	24.44	69.35	27397
27398	Down light with 3 - 7W LED lamp similar to SFA 224	1,107.83	21.83	26.17	74.25	27398
27399	Down light with 7 - 12W LED lamp similar to SFA 224	1,375.67	21.83	26.17	74.25	27399
27400	Down light with 12 - 16W LED lamp similar to SFA 224	1,681.96	21.83	26.17	74.25	27400
27401	Down light with 3 - 7W LED lamp c/w glass diffuser similar to SFA 224	1,567.81	21.83	26.17	74.25	27401
27402	Down light with 7 - 12W LED lamp c/w glass diffuser similar to SFA 224	1,837.93	21.83	26.17	74.25	27402
27403	Down light with 12 - 16W LED lamp c/w glass diffuser similar to SFA 224	2,179.46	21.83	26.17	74.25	27403
27404	Down light with 3 - 7W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224	2,915.38	21.83	26.17	74.25	27404
27405	Down light with 7 - 12W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224	3,173.00	21.83	26.17	74.25	27405
27406	Down light with 12 - 16W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224	3,488.46	21.83	26.17	74.25	27406
27407	Down light with infra-red lamp, 175 mm diameter	461.11	19.93	24.44	69.35	27407
27408	Down light with 8 - 10W LED lamp c/w dimmable driver	1,574.65	19.93	24.44	69.35	27408
27409	Down light with 10 - 13W LED lamp c/w dimmable driver	1,681.79	19.93	24.44	69.35	27409
27410	Down light with 13 - 22W LED lamp c/w dimmable driver	2,207.74	19.93	24.44	69.35	27410
27411	Down light with 22 - 24W LED lamp c/w dimmable driver	2,324.62	19.93	24.44	69.35	27411
27412	Down light with 8 - 10W LED lamp c/w dimmable driver and 2-hour NiMH emergency power pack	1,928.87	19.93	24.44	69.35	27412
27413	Down light with 10 - 13W LED lamp c/w dimmable driver and 2-hour NiMH emergency power pack	2,060.11	19.93	24.44	69.35	27413
27414	Down light with 13 - 22W LED lamp c/w dimmable driver and 2-hour NiMH emergency power pack	2,704.37	19.93	24.44	69.35	27414
27415	Down light with 22 - 24W LED lamp c/w dimmable driver and 2-hour NiMH emergency power pack	2,847.54	19.93	24.44	69.35	27415
27416	Down light with 10 - 12W LED lamp c/w clear tempered glass lens, IP65 and 2-hour NiMH emergency power pack	2,615.92	19.93	24.44	69.35	27416
27417	Down light with 10 - 12W LED lamp c/w matt diffuser	1,837.93	19.93	24.44	69.35	27417
27418	Down light with 18 - 20W LED lamp c/w satin glass diffuser	2,270.09	19.93	24.44	69.35	27418
27419	Down light with 12 - 16W LED lamp, IP54 c/w safety glass diffuser and 2-hour NiMH emergency power pack, similar to SFA 223	3,390.00	19.93	24.44	69.35	27419
27420	Down light with 16 - 18W LED lamp, IP54 c/w safety glass diffuser and 2-hour NiMH emergency power pack, similar to SFA 223	4,068.00	19.93	24.44	69.35	27420

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	Self-contained and maintained type for down light fittings c/w 2-hour NiMH emergency power pack, inverter, transformer and : -					
	Each	A $	B $	C $	D $	
27421	3 - 7W LED lamp similar to SFA 224	1,453.08	26.74	32.65	90.54	27421
27422	7 - 12W LED lamp similar to SFA 224	1,711.94	26.74	32.65	90.54	27422
27423	12 - 16W LED lamp similar to SFA 224	2,007.95	26.74	32.65	90.54	27423
	Surface mounted modular LED lighting fitting c/w LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and with/ without polycarbonate diffusers : -					
	Each					
27424	200/ 300 mm x 600 mm long, single tube, IP65, min. lumen output 800 lm each tube	913.67	31.44	38.70	119.18	27424
27425	200/ 300 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube	1,267.22	34.93	43.16	134.34	27425
27426	600 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube	1,419.28	34.93	43.16	134.34	27426
27427	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube	723.41	29.85	36.75	112.61	27427
27428	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube	1,000.84	33.18	40.99	127.00	27428
27429	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube	1,120.94	33.18	40.99	127.00	27429
27430	200/ 300 mm x 900 mm long, single tube, IP65, min. lumen output 1200 lm each tube	1,002.73	33.84	41.64	127.53	27430
27431	200/ 300 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube	1,366.90	37.42	45.56	144.05	27431
27432	600 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube	1,530.95	37.42	45.56	144.05	27432
27433	200/ 300 mm x 900 mm long, single tube, min. lumen output 1200 lm each tube	802.96	32.17	39.59	120.64	27433
27434	200/ 300 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube	1,088.35	35.57	43.35	136.32	27434
27435	600 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube	1,218.94	35.57	43.35	136.32	27435

LIGHTING FITTINGS (CONT'D)

Surface mounted modular LED lighting fitting c/w LED driver,
LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube),
aluminium louvres/ reflectors and with/ without polycarbonate diffusers : - (Cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27436	200/ 300 mm x 1200 mm long, single tube, IP65, min. lumen output 1600 lm each tube	1,044.58	34.87	42.87	131.19	27436
27437	200/ 300 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube	1,435.42	38.34	46.04	148.42	27437
27438	600 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube	1,607.66	38.34	46.04	148.42	27438
27439	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube	867.64	33.09	40.70	123.97	27439
27440	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube	1,172.09	36.42	43.79	140.29	27440
27441	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube	1,312.73	36.42	43.79	140.29	27441
27442	1200 mm long, single tube, corrosion resistant, IP65, min lumen output 2200 lm each tube c/w 2-hour NiMH emergency power pack	3,164.00	33.09	40.70	123.97	27442
27443	1200 mm long, single tube, corrosion resistant, IP65, min lumen output 2200 lm each tube	2,373.00	33.09	40.70	123.97	27443
27444	120 mm x 1350 mm long, single tube, IP67, min. lumen output 2200 lm each tube	3,164.00	33.09	40.70	123.97	27444
27445	120 mm x 1350 mm long, single tube, IP67, min. lumen output 2200 lm each tube, c/w 2-hour NiMH emergency power pack	3,955.00	33.09	40.70	123.97	27445
27446	200/ 300 mm x 1500 mm long, single tube, IP65, min. lumen output 2000 lm each tube	1,380.61	37.63	46.19	159.53	27446
27447	200/ 300 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube	1,881.03	48.71	59.47	173.24	27447
27448	600 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube	2,106.76	48.71	59.47	173.24	27448
27449	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube	1,170.17	35.63	43.75	154.43	27449
27450	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube	1,527.88	47.30	57.73	167.46	27450
27451	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube	1,711.23	47.30	57.73	167.46	27451

LIGHTING FITTINGS (CONT'D)

Surface mounted modular LED lighting fitting c/w dimmable
LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube),
aluminium louvres/ reflectors and with/ without polycarbonate diffusers : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27452	200/ 300 mm x 600 mm long, single tube, IP65, min. lumen output 800 lm each tube	982.46	31.44	38.70	119.18	27452
27453	200/ 300 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube	1,362.60	34.93	43.16	134.34	27453
27454	600 mm x 600 mm long, twin tube, IP65, min. lumen output 800 lm each tube	1,526.11	34.93	43.16	134.34	27454
27455	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube	777.87	29.85	36.75	112.61	27455
27456	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube	1,076.17	33.18	40.99	127.00	27456
27457	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube	1,205.30	33.18	40.99	127.00	27457
27458	200/ 300 mm x 900 mm long, single tube, IP65, min. lumen output 1200 lm each tube	1,078.20	33.84	41.64	127.53	27458
27459	200/ 300 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube	1,469.80	37.42	45.56	144.05	27459
27460	600 mm x 900 mm long, twin tube, IP65, min. lumen output 1200 lm each tube	1,646.18	37.42	45.56	144.05	27460
27461	200/ 300 mm x 900 mm long, single tube, min. lumen output 1200 lm each tube	863.38	32.17	39.59	120.64	27461
27462	200/ 300 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube	1,170.27	35.57	43.35	136.32	27462
27463	600 mm x 900 mm long, twin tube, min. lumen output 1200 lm each tube	1,310.70	35.57	43.35	136.32	27463
27464	200/ 300 mm x 1200 mm long, single tube, IP65, min. lumen output 1600 lm each tube	1,123.22	34.87	42.87	131.19	27464
27465	200/ 300 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube	1,543.46	38.34	46.04	148.42	27465
27466	600 mm x 1200 mm long, twin tube, IP65, min. lumen output 1600 lm each tube	1,728.66	38.34	46.04	148.42	27466
27467	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube	932.94	33.09	40.70	123.97	27467
27468	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube	1,260.30	36.42	43.79	140.29	27468
27469	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube	1,411.55	36.42	43.79	140.29	27469
27470	200/ 300 mm x 1500 mm long, single tube, IP65, min. lumen output 2000 lm each tube	1,484.53	37.63	46.19	159.53	27470
27471	200/ 300 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube	2,022.63	48.71	59.47	173.24	27471
27472	600 mm x 1500 mm long, twin tube, IP65, min. lumen output 2000 lm each tube	2,265.33	48.71	59.47	173.24	27472
27473	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube	1,258.26	35.63	43.75	154.43	27473
27474	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube	1,642.88	47.30	57.73	167.46	27474
27475	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube	1,840.04	47.30	57.73	167.46	27475

Item	LIGHTING FITTINGS (CONT'D) LED down light fitting, surface mounted, integral electronic control gear/ driver, stove enameled steel/ die cast aluminium body and anodized aluminium reflector (all types) with/ without metal trim : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27476	Down light with 12 - 16W LED lamp c/w 2-hour NiMH emergency power pack similar to SFA 223.....	3,277.00	26.55	33.15	98.70	27476
27477	Down light with 12 - 16W LED lamp, IP54 c/w safety glass diffuser similar to SFA 223.....	5,311.00	26.55	33.15	98.70	27477
27478	Down light with 12 - 16W LED lamp, IP54 c/w safety glass diffuser and 2-hour NiMH emergency power pack, similar to SFA 223.....	6,215.00	26.55	33.15	98.70	27478
27479	Down light with 16 - 18W LED lamp, IP54 c/w safety glass diffuser and 2-hour NiMH emergency power pack, similar to SFA 223.....	6,215.00	26.55	33.15	98.70	27479
27480	Down light with 18 - 20W LED lamp similar to SFA 223.....	3,503.00	26.55	33.15	98.70	27480
27481	Down light with up to 3W LED lamp, IP54.....	1,582.00	26.55	33.15	98.70	27481
27482	Down light with 3 - 7W LED lamp similar to SFA 224.....	2,260.00	26.55	33.15	98.70	27482
27483	Down light with 7 - 12W LED lamp similar to SFA 224.....	2,373.00	26.55	33.15	98.70	27483
27484	Down light with 12 - 16W LED lamp similar to SFA 224.....	1,582.00	26.55	33.15	98.70	27484
27485	Down light with 3 - 7W LED lamp c/w glass diffuser similar to SFA 224.....	2,147.00	26.55	33.15	98.70	27485
27486	Down light with 7 - 12W LED lamp c/w glass diffuser similar to SFA 224.....	2,429.50	26.55	33.15	98.70	27486
27487	Down light with 12 - 16W LED lamp c/w glass diffuser similar to SFA 224.....	1,695.00	26.55	33.15	98.70	27487
27488	Down light with 3 - 7W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	2,825.00	26.55	33.15	98.70	27488
27489	Down light with 7 - 12W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	3,051.00	26.55	33.15	98.70	27489
27490	Down light with 12 - 16W LED lamp c/w safety glass diffuser to IP54 similar to SFA 224.....	2,203.50	26.55	33.15	98.70	27490
27491	Down light with infra-red lamp, 175 mm diameter.....	2,938.00	26.55	33.15	98.70	27491
27492	Down light with 8 - 10W LED lamp c/w dimmable driver.....	2,405.72	26.55	33.15	98.70	27492
27493	Down light with 10 - 13W LED lamp c/w dimmable driver.....	2,569.40	26.55	33.15	98.70	27493
27494	Down light with 13 - 22W LED lamp c/w dimmable driver.....	3,372.94	26.55	33.15	98.70	27494
27495	Down light with 22 - 24W LED lamp c/w dimmable driver.....	3,551.50	26.55	33.15	98.70	27495
27496	Down light with 22 - 24W LED lamp c/w dimmable driver and 2-hour NiMH emergency power pack.....	4,350.41	26.55	33.15	98.70	27496
27497	Down light with 10 - 12W LED lamp c/w clear tempered glass lens, IP65 and 2-hour NiMH emergency power pack.....	3,996.54	26.55	33.15	98.70	27497
27498	Down light with 10 - 12W LED lamp c/w matt diffuser	2,807.95	26.55	33.15	98.70	27498
27499	Down light with 18 - 20W LED lamp c/w satin glass diffuser.....	3,468.19	26.55	33.15	98.70	27499

Item	LIGHTING FITTINGS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Recess mounted modular LED lighting fitting c/w LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and with/ without polycarbonate diffusers : -					
	Each	A $	B $	C $	D $	
27500	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	921.04	32.02	39.26	116.65	27500
27501	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,014.33	38.63	45.86	123.00	27501
27502	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,136.06	38.63	45.86	123.00	27502
27503	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	1,104.80	38.63	45.86	123.00	27503
27504	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,196.88	43.30	51.36	131.10	27504
27505	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,340.50	43.30	51.36	131.10	27505
27506	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,166.67	41.04	49.75	130.51	27506
27507	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,239.84	48.13	56.49	139.53	27507
27508	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,388.62	48.13	56.49	139.53	27508
	Recess mounted modular LED lighting fitting c/w dimmable LED driver, LED T5/ T8 tube, (one driver for each set of LED T5/ T8 tube), aluminium louvres/ reflectors and with/ without polycarbonate diffusers : -					
	Each					
27509	200/ 300 mm x 600 mm long, single tube, min. lumen output 800 lm each tube.....	988.93	32.02	39.26	116.65	27509
27510	200/ 300 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,143.22	38.63	45.86	123.00	27510
27511	600 mm x 600 mm long, twin tube, min. lumen output 800 lm each tube.....	1,280.40	38.63	45.86	123.00	27511
27512	200/ 300 mm x 1200 mm long, single tube, min. lumen output 1600 lm each tube.....	1,173.18	38.63	45.86	123.00	27512
27513	200/ 300 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,271.25	43.29	51.36	131.10	27513
27514	600 mm x 1200 mm long, twin tube, min. lumen output 1600 lm each tube.....	1,423.83	43.29	51.36	131.10	27514
27515	200/ 300 mm x 1500 mm long, single tube, min. lumen output 2000 lm each tube.....	1,252.48	41.04	49.75	130.51	27515
27516	200/ 300 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,313.49	48.13	56.49	139.53	27516
27517	600 mm x 1500 mm long, twin tube, min. lumen output 2000 lm each tube.....	1,471.11	48.13	56.49	139.53	27517

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	LED circular lighting fitting, pendant mounted to ceiling, integral electronic control gear/ driver, die cast aluminium body, high transmittance diffuser : -					
	Each	A $	B $	C $	D $	
27518	LED circular lighting fitting with 18W LED lamp, diameter up to 600 mm.....	3,517.13	29.98	35.82	78.10	27518
27519	LED circular lighting fitting with 18W LED lamp, diameter up to 600 mm, c/w dimmable driver.....	4,517.13	29.98	35.82	78.10	27519
27520	LED circular lighting fitting with 25W LED lamp, diameter up to 600 mm.....	3,847.65	29.98	35.82	78.10	27520
27521	LED circular lighting fitting with 25W LED lamp, diameter up to 600 mm, c/w dimmable driver.....	4,847.65	29.98	35.82	78.10	27521
27522	LED circular lighting fitting with 35W LED lamp, diameter up to 600 mm.....	4,240.33	30.58	36.68	78.90	27522
27523	LED circular lighting fitting with 35W LED lamp, diameter up to 600 mm, c/w dimmable driver.....	5,240.33	30.58	36.68	78.90	27523
27524	LED circular lighting fitting with 45W LED lamp, diameter up to 600 mm.....	4,350.50	30.58	36.68	78.90	27524
27525	LED circular lighting fitting with 45W LED lamp, diameter up to 600 mm, c/w dimmable driver.....	5,350.50	30.58	36.68	78.90	27525
	Track lighting system : -					
	Each					
27526	Single-circuit extruded monorail aluminium lighting track, surface/ suspended mounted, 1000 mm in length, 16A max. rating, mains voltage.....	292.59	24.08	30.12	80.86	27526
27527	Single-circuit extruded monorail aluminium lighting track, surface/ suspended mounted, 2000 mm in length, 16A max. rating, mains-voltage	428.42	22.77	34.45	95.55	27527
27528	End cap for monorail lighting track	27.36	2.54	2.82	7.38	27528
27529	Three phase four circuit six conductor slimline lighting track made from extruded aluminum with powder coated finish c/w components including push-up live end, plug-in coupler, push-up coupler, plug-in coupler, rigid L/ T/ X coupler, flexible coupler, mounting clip, end cap, suspension, mains supply kit, cable entry moulding, etc., two 16 A fused feeds, 1000 mm in length.....	1,222.11	30.72	38.00	110.70	27529
27530	Spot light with 7 - 9W LED lamp, 90° tiltable bracket, 360° spot/ flood rotatable transadapter, for light track mounting similar to SFA 244.....	833.85	21.83	26.17	74.25	27530

Item	LIGHTING FITTINGS (CONT'D) Bulkhead light fitting c/w electronic control gear/ electronic ballast, lamps, side/ back entry cutting and rubber grommet or stop : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27531	2 x 8W vandal resistant fluorescent bulkhead with injection moulded polycarbonate diffuser, IP65	697.99	26.48	33.08	98.48	27531
27532	Ditto but 3 x 8W fluorescent light, IP65	947.22	26.48	33.08	98.48	27532
27533	Ditto but for 1 x 11W PL fluorescent light, IP65	623.36	26.48	33.08	98.48	27533
27534	Ditto but for 2 x 11W PL fluorescent light, IP65	709.69	26.48	33.08	98.48	27534
27535	Bulkhead lighting fitting IP65 with die-cast aluminium body, moulded glass lens c/w built-in control gear and 1 x 70W CDMT lamp	1,569.71	26.48	33.08	98.48	27535
27536	Bulkhead fitting of IP65 protection c/w 70W CDMT lamp, polycarbonate cover	1,882.34	26.48	33.08	98.48	27536
27537	Bulkhead luminaire c/w 2 x 8W fluorescent lamps, 2-hour NiMH emergency power pack & control gear	594.36	26.48	33.08	98.48	27537
27538	Traditional bulkhead fitting similar to SFA 203, die cast aluminium casing with polyester powder coated finish, hinged anti vandal polycarbonate diffuser, to IEC 60598, IP 64 c/w 1 x 13W PLC lamp	356.71	26.48	33.08	98.48	27538
27539	Bulkhead fitting, prismatic type, glass diffuser, 35W CDMT lamp similar to SFA 35	1,686.79	26.48	33.08	98.48	27539
27540	Ditto but for 70W SON	2,271.19	26.48	33.08	98.48	27540
27541	Ditto but for 70W CDMT	2,113.63	26.48	33.08	98.48	27541
27542	Bulkhead fitting, IP65 c/w up to 10W LED lamps	2,825.00	26.48	33.08	98.48	27542
27543	Bulkhead fitting, IP65 c/w 10W - 20W LED lamps	3,164.00	26.48	33.08	98.48	27543
27544	Bulkhead fitting, IP65 c/w 20W - 30W LED lamps	3,729.00	26.48	33.08	98.48	27544
27545	Bulkhead fitting, IP65 c/w 30W - 40W LED lamps	4,294.00	26.48	33.08	98.48	27545
27546	Gasket for retaining flange for bulkhead fitting	32.02	4.83	6.52	17.73	27546
27547	Glassware only for bulkhead fitting similar to SFA 35	419.83	13.23	15.83	48.80	27547
27548	Key for bulkhead (supply only) lighting fitting	20.42	-	-	-	27548
27549	Bulkhead lighting fitting, IP65 c/w polycarbonate diffuser and 1 x 26W PLC lamp	646.43	26.48	33.08	98.48	27549

Item	LIGHTING FITTINGS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop : -					
	Each	A $	B $	C $	D $	
27550	MBIL floodlighting fitting IP54 c/w 750/ 1000/ 1500W control gear	11,834.40	64.79	80.69	248.15	27550
27551	Ditto but 2000W	19,482.07	64.79	80.69	248.15	27551
27552	H.P. sodium (SON) floodlighting fitting IP65, die cast aluminium housing c/w 70W lamp, control gear and anodized aluminium reflector (all types) similar to SFA 205	1,505.99	60.83	76.79	230.52	27552
27553	Ditto but for 150W lamp	2,072.64	60.83	76.79	230.52	27553
27554	Ditto but for 250W lamp	2,780.94	60.83	76.79	230.52	27554
27555	Ditto but for 400W lamp	3,843.41	60.83	76.79	230.52	27555
27556	Ditto but for 70W MBIF lamp	2,155.76	60.83	76.79	230.52	27556
27557	Ditto but for 150W MBIF lamp	2,623.84	60.83	76.79	230.52	27557
27558	Ditto but for 250W MBIF lamp	3,208.96	60.83	76.79	230.52	27558
27559	Ditto but for 400W MBIF lamp	4,086.64	60.83	76.79	230.52	27559
27560	Tungsten halogen floodlight fitting, IP54 c/w lamp, 500W	-	26.65	33.29	99.10	27560
27561	Ditto but with 1000W lamp	-	26.65	33.29	99.10	27561
27562	Ditto but with 1500W lamp	-	26.65	33.29	99.10	27562
27563	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2, IP54 body; extruded aluminium body with high temperature polypropylene side casing and high temperature nylon body; vertical lamp, prismatic glass reflector c/w 250W MBIF lamp, control gear and safety chain	4,722.46	60.83	76.79	230.52	27563
27564	Ditto but with 400W MBIF lamp	5,347.99	60.83	76.79	230.52	27564
27565	Ditto but with 250W SON lamp	3,811.16	60.83	76.79	230.52	27565
27566	Ditto but with 400W SON lamp	4,145.17	60.83	76.79	230.52	27566
27567	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2, IP54 body; extruded aluminium body with high temperature polypropylene side casing and high temperature nylon body; vertical lamp, self-cleaning high purity spun aluminium reflector c/w 250W MBIF lamp, control gear and safety chain	4,036.55	60.83	76.79	230.52	27567
27568	Ditto but with 400W MBIF lamp	4,479.96	60.83	76.79	230.52	27568
27569	Ditto but with 250W SON lamp	3,263.33	60.83	76.79	230.52	27569
27570	Ditto but with 400W SON lamp	3,511.21	60.83	76.79	230.52	27570

Item	LIGHTING FITTINGS (CONT'D) Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27571	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP65 body; technopolymer reinforced with fiber glass body; turned aluminium sheet upper housing with grey powder paint; toughened glass cover with gasket clips; elliptical lamp, polished and anodized aluminium reflector c/w 250W MBIF lamp control gear and safety chain	2,994.07	60.97	76.95	230.98	27571
27572	Ditto but with 400W MBIF lamp	3,253.44	60.97	76.95	230.98	27572
27573	Ditto but with 250W SON lamp	2,147.65	60.97	76.95	230.98	27573
27574	Ditto but with 400W SON lamp	2,294.65	60.97	76.95	230.98	27574
27575	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP54 body; prismatic borosilicate glass retained by a spun aluminium cover sealed reflector; tempered glass cover with stainless steel clips c/w 250W MBIF lamp, control gear and safety chain	4,594.43	60.97	76.95	230.98	27575
27576	Ditto but with 400W MBIF lamp	4,930.80	60.97	76.95	230.98	27576
27577	Ditto but with 250W SON lamp	3,575.02	60.97	76.95	230.98	27577
27578	Ditto but with 400W SON lamp	3,971.86	60.97	76.95	230.98	27578
27579	High bay floodlight fittings designed and manufactured to comply with IEC 60598-2 IP54 body; prismatic borosilicate glass retained by a spun aluminium cover sealed reflector c/w 250W MBIF lamp, control gear and safety chain	3,858.13	60.97	76.95	230.98	27579
27580	Ditto but with 400W MBIF lamp	4,172.81	60.97	76.95	230.98	27580
27581	Ditto but with 250W SON lamp	3,054.21	60.97	76.95	230.98	27581
27582	Ditto but with 400W SON lamp	3,219.07	60.97	76.95	230.98	27582
27583	High bay floodlight c/w up to 60W LED lamp	4,179.38	60.97	76.95	230.98	27583
27584	High bay floodlight c/w 60 - 80W LED lamp	4,665.36	60.97	76.95	230.98	27584
27585	High bay floodlight c/w 80 - 100W LED lamp	4,859.75	60.97	76.95	230.98	27585
27586	High bay floodlight c/w 100 - 150W LED lamp	5,345.72	60.97	76.95	230.98	27586
27587	High bay floodlight, IP65, c/w 200W LED lamp	8,475.00	60.97	76.95	230.98	27587
27588	High bay floodlight, IP65, c/w 250W LED lamp	8,814.00	60.97	76.95	230.98	27588

Item	LIGHTING FITTINGS (CONT'D) Floodlighting fittings including control gear, side/ back entry, cutting, and rubber grommet or stop : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27589	Twin lamp tennis-court floodlight with heavy gauge aluminium housing, reflector with forward throw cut-off pattern, clear tempered lens c/w 1 x 250W HP sodium lamp and 1 x 400W metal halide lamp and integral control gears, IP65	7,745.99	92.24	115.09	345.19	27589
27590	Tennis court lighting similar to SFA 267, aluminium housing, 4mm toughened glass lens, hinged aluminium lens frame with reinforced corners, sharp cut-off forward throw anodised aluminium reflector c/w control gear and 1 x 1000W/ 1500W metal halide lamp	11,691.08	26.57	32.35	96.90	27590
27591	400W MBI/ T floodlight fitting IP65 c/w GRP body, anodized aluminium reflector, toughened glass front cover, steel galvanized cradle, integral control gear and lamp	4,222.36	79.41	96.33	296.74	27591
27592	1000W SON/ T floodlight fitting IP65 c/w aluminium reflector, galvanized steel body, integral control gear and lamp	8,998.86	79.41	96.33	296.74	27592
27593	Floodlight fitting with mounting box similar to SFA 204, die cast aluminium housing, anodised aluminium reflector, 160° tiltable and 360° rotatable c/w safety glass and 1 x 35W metal halide lamp, IP65	2,246.09	60.58	76.49	229.60	27593
27594	Asymmetrical floodlight fitting similar to SFA 205, marine grade 316 stainless steel construction, anodised aluminium reflector, IP67 c/w safety chain and quick release clips at front cover, adjustable stirrup bracket, internal control gear and 1 x 250W high pressure sodium or metal halide lamp	5,954.37	60.58	76.49	229.60	27594
27595	Floodlight fitting similar to SFA 206, die cast aluminium housing with integral cooling ribs, hinged door frame for reflector changing, cast aluminium swivel with locking teeth at 5° intervals, mounting onto 50 mm square tenon c/w control gear, 1 x 400W high pressure sodium or metal halide lamp, and reflector for narrow vertical flood beam, IP67	8,799.10	60.58	76.49	229.60	27595
27596	Ditto but reflector for wide flood beam	7,522.12	60.58	76.49	229.60	27596
27597	Floodlight fitting similar to SFA 206, die cast aluminium housing with integral cooling ribs, hinged door frame for reflector changing, cast aluminium swivel with locking teeth at 5° intervals, wall mounted c/w control gear, 1 x 70W high pressure sodium or metal halide lamp, and reflector for wide flood beam, IP67	6,254.10	60.58	76.49	229.60	27597
27598	Ditto but stanchion mounted and reflector for wide flood beam	6,084.18	60.58	76.49	229.60	27598
27599	Adjustable compact outdoor floodlight similar to SFA 207, injection moulded polyester body, glass-filled nylon base or spike for mounting, IP54 c/w 1 x 150W high pressure sodium or metal halide lamp	461.78	19.30	23.84	73.70	27599
27600	Floodlight fitting, IP65 c/w 60W or below induction lamp	2,459.99	60.58	76.49	229.60	27600
27601	Floodlight fitting, IP65 c/w 80W induction lamp	2,625.10	60.58	76.49	229.60	27601
27602	Floodlight fitting, IP65 c/w 120W induction lamp	2,790.22	60.58	76.49	229.60	27602
27603	Floodlight fitting, IP65 c/w 200W induction lamp	3,120.67	60.58	76.49	229.60	27603
27604	Floodlight fitting, IP65 c/w up to 70W LED lamp	4,215.66	60.58	76.49	229.60	27604
27605	Floodlight fitting, IP65 c/w 70W - 100W LED lamp	6,102.00	60.58	76.49	229.60	27605
27606	Floodlight fitting, IP65 c/w 100W - 200W LED lamp	7,345.00	60.58	76.49	229.60	27606
27607	Floodlight fitting, IP65 c/w 200W - 250W LED lamp	9,040.00	60.58	76.49	229.60	27607
27608	Floodlight fitting, IP65 c/w 250W - 400W LED lamp	11,074.00	60.58	76.49	229.60	27608

Item	LIGHTING FITTINGS (CONT'D) Floodlight fitting accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27609	Heat shield for floodlight	1,289.85	13.35	15.98	49.31	27609
27610	Wire guard for floodlight	550.24	13.35	15.98	49.31	27610
27611	Front glass assembly c/w silicone rubber gasket for floodlight	765.75	13.35	15.98	49.31	27611
27612	Floodlight louvre for 750W fitting	1,580.93	19.46	23.97	71.03	27612
27613	Ditto but for 1000W fitting	1,607.86	19.46	23.97	71.03	27613
27614	Ditto but for 1500W fitting	1,646.77	19.46	23.97	71.03	27614
27615	Multi-use or cross arm mounting bracket c/w 2"U" clamps (hot dip galvanized steel)	349.68	19.46	24.01	74.29	27615
27616	Wall bracket (hot dip galvanized steel)	292.58	17.22	21.94	63.82	27616
27617	Stainless steel (304) mounting bracket for floodlight	769.74	17.22	21.94	63.82	27617
27618	Ditto but of stainless steel (316)	873.09	17.22	21.94	63.82	27618
27619	Hot dip galvanized steel universal pole clamp for floodlight fitting	112.06	7.11	9.53	26.43	27619
27620	Stainless steel (304) universal pole clamp for floodlight fitting	278.02	7.11	9.53	26.43	27620
27621	Ditto but of stainless steel (316)	310.39	7.11	9.53	26.43	27621
27622	Stirrup assembly (hot dip galvanized steel)	444.01	19.46	24.01	74.29	27622
27623	Stirrup assembly c/w blanking plate and gland (hot dip galvanized)	492.54	19.46	24.01	74.29	27623
27624	Stirrup assembly c/w blanking plate and gland (304 stainless steel)	1,409.07	19.46	24.01	74.29	27624
27625	Stirrup assembly c/w blanking plate and gland (316 stainless steel)	1,473.93	19.46	24.01	74.29	27625
27626	Special wall bracket, hot dip galvanized	461.04	19.46	24.01	74.29	27626
27627	Step up transformer c/w weatherproof metal box rated IP65	1,803.23	24.85	31.35	93.31	27627
27628	Step down transformer c/w enclosure, 220/ 12V, 50 VA	933.84	10.44	13.07	37.67	27628

Item	LIGHTING FITTINGS (CONT'D) Floodlight fitting accessories : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
27629	Ballast for 70/ 150/ 250W H.P. Sodium lamp	260.74	13.34	15.96	49.21	27629
27630	Ballast for 400W H.P. Sodium lamp	305.98	13.34	15.96	49.21	27630
27631	Ballast for 150/ 250/ 400W white SON lamp	480.72	13.34	15.96	49.21	27631
27632	Ballast for 250/ 400W MBIF lamp	314.21	13.34	15.96	49.21	27632
27633	Ballast for 750W MBIL lamp	1,310.54	13.34	15.96	49.21	27633
27634	Ballast for 1000W MBIL lamp	1,310.54	13.34	15.96	49.21	27634
27635	Ballast for 1500W MBIL lamp	1,322.22	13.34	15.96	49.21	27635
27636	Ballast for 2000W MBIL lamp	1,333.09	13.34	15.96	49.21	27636
27637	Transformer for 1500W MBIL lamp	2,092.22	13.34	15.96	49.21	27637
27638	Ballast for 50/ 80/ 125W MBF lamp	-	13.34	15.96	49.21	27638
27639	Ballast for 250/ 400W MBF lamp	-	13.34	15.96	49.21	27639
27640	Electronic Ballast for 150W Metal Halide Lamp	971.52	13.34	15.96	49.21	27640
27641	Capacitor for 250W H.P. Sodium white SON lamp 30 mF + 10%	135.80	11.31	14.61	42.11	27641
27642	Capacitor for 400W H.P. Sodium white SON lamp 40 mF + 10%	185.41	11.31	14.61	42.11	27642
27643	Capacitor for 250W/ 400W MBIF lamp	145.24	11.31	14.61	42.11	27643
27644	Capacitor for 750W MBIL lamp	345.06	11.31	14.61	42.11	27644
27645	Capacitor for 1000W MBIL lamp	349.19	11.31	14.61	42.11	27645
27646	Capacitor for 1500W MBIL lamp	358.21	11.31	14.61	42.11	27646
27647	Capacitor for 2000W MBIL lamp	419.42	11.31	14.61	42.11	27647
27648	Ignitor for 70W H.P. Sodium lamp	174.17	11.31	14.61	42.11	27648
27649	Ignitor for 150/ 250/ 400W H.P. Sodium lamp	193.66	11.31	14.61	42.11	27649
27650	Ignitor for 150/ 250/ 400W white SON lamp	197.56	11.31	14.61	42.11	27650
27651	Ignitor for 250W/ 400W MBIF lamp	367.32	11.31	14.61	42.11	27651
27652	Ignitor for 1000W MBIL lamp	472.03	11.31	14.61	42.11	27652
27653	Ignitor for 1500W MBIL lamp	645.25	11.31	14.61	42.11	27653
27654	Ignitor for 2000W MBIL lamp	711.99	11.31	14.61	42.11	27654
	Per linear meter					
27655	Safety chain, hot dipped galvanized steel (or wrought iron) chain 25 mm oval link c/w shackles	58.76	2.39	2.82	7.01	27655

Item	LIGHTING FITTINGS (CONT'D) Pole top light fitting, minimum IP65 :-	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27656	Pole top lantern c/w 35W/ 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp and control gear similar to SFA 46 with large canopy	1,582.60	36.64	44.93	136.93	27656
27657	Pole top lantern c/w 35W/ 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp and control gear similar to SFA 46 with small canopy	1,520.68	36.64	44.93	136.93	27657
27658	Lighting fitting, c/w 70W SON lamp	1,624.20	36.64	44.93	136.93	27658
27659	Ditto but for 70W metal halide lamp	1,432.58	36.64	44.93	136.93	27659
27660	Pole top adaptor for above	502.43	14.98	19.71	58.75	27660
27661	Pole top fitting similar to SFA 208, 500 mm diameter opal/ clear globe made of impact resistant plastic on a black console, IP44 c/w 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp	2,529.88	77.39	97.07	287.52	27661
27662	Ditto but 1 x 26W PLC lamp	1,886.93	77.39	97.07	287.52	27662
27663	500 mm unbreakable globe only for pole top fitting similar to SFA 208	1,023.31	26.55	33.15	98.70	27663
27664	Pole top luminaire similar to SFA 209, cast aluminium alloy housing with hinged top, clear acrylic lens, IP54 c/w cast aluminium mounting arm, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp or 1 x 20 - 30W LED lamp	16,379.88	52.34	64.37	194.33	27664
27665	Symmetrical pole top luminaire similar to SFA 210, aluminium alloy body, white/ clear plastic diffuser with optical texture, anodised aluminium reflector, IP44 c/w control gear and 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp	5,105.43	36.64	44.93	136.93	27665
27666	Pole top luminaire with additional upper light output similar to SFA 211, aluminium alloy body, crystal glass diffuser with optical texture, white louvred reflector, mounting height 3.5m to 5m, IP44 c/w control gear and 1 x 70W/ 100W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp	6,068.50	36.64	44.93	136.93	27666
27667	Cylindrical pole top luminaire similar to SFA 212, seamless aluminium housing, die cast aluminium door frame, tempered glass or polycarbonate lens, anodised aluminium reflector, schedule 40 steel yoke c/w control gear and 1 x 70W/ 100W/ 150W high pressure sodium/ metal halide lamp 1 x 35W/ 70W CDMT lamp	9,036.76	36.74	45.03	137.21	27667
27668	Single pole top fitting similar to SFA 213, hinged cylindrical aluminium top housing of over 500 mm diameter, injection moulded clear acrylic diffuser, hydroformed specular reflector, c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp or 1 x 20 - 30W LED lamp	12,611.37	36.74	45.03	137.21	27668
27669	Ditto but 1 x 150W high pressure sodium or metal halide lamp	13,075.21	36.74	45.03	137.21	27669
27670	Pole top fitting similar to SFA 214, cylindrical aluminium top housing of 565 mm diameter with polyester powder finish, thermoformed clear acrylic lens, hydroformed anodised aluminium reflector c/w control gear and 1 x 150W high pressure sodium or metal halide lamp	6,358.88	36.74	45.03	137.21	27670
27671	Pole top fitting similar to SFA 214, cylindrical aluminium top housing of 565 mm diameter with polyester powder finish, thermoformed clear acrylic lens, hydroformed anodised aluminium reflector c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp	6,143.20	36.74	45.03	137.21	27671
27672	Pole top mounted area light similar to SFA 215, one piece spun aluminium housing with cast aluminium door, clear contoured tempered glass or polycarbonate lens, perimeter forward throw reflector c/w extruded mounting arm, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp	3,515.77	42.68	53.64	160.05	27672

Item	LIGHTING FITTINGS (CONT'D) Pole top light fitting, minimum IP65 : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27673	Pole top mounted area light similar to SFA 215, one piece spun aluminium housing with cast aluminium door, clear contoured tempered glass or polycarbonate lens, perimeter forward throw reflector c/w extruded mounting arm, 3.5m/ 4.5m lamp pole, control gear and 1 x 70W/ 150W high pressure sodium/ metal halide lamp or 1 x 35W/ 70W CDMT lamp.....	6,905.09	282.94	352.91	1,069.26	27673
27674	Ditto but twin lantern.....	10,515.84	284.60	356.47	1,070.52	27674
27675	Pole top fitting similar to SFA 216, injection moulded frosted clear polycarbonate globe with decorative finial on top of globe and spun aluminium hood c/w 3.4m lamp pole from the fitting manufacturer, control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	40,158.64	282.94	352.91	1,069.26	27675
27676	Lighting fixture similar to SFA 217, moulded aluminium housing and hood, cage of 4 moulded aluminium rods, welded aluminium louvre, symmetrical light distribution, overall height over 1m c/w control gear and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	18,880.24	59.64	69.10	193.67	27676
27677	Pole top luminaire similar to SFA 218, die cast aluminium alloy body, vandal resistant polycarbonate globe of 500 mm diameter, anodised aluminium reflector, IP54 c/w control gear and 1 x 70W/ 150W high pressure sodium/ metal halide lamp or 1 x 35W/ 70W CDMT lamp.....	5,176.05	36.57	44.84	136.66	27677
27678	Pole top globe fitting similar to SFA 219, top half of 400 mm diameter globe being spun aluminium with outside mat and inside anodised, acrylic or polycarbonate diffuser, IP44, c/w control gear and 1 x 50W/ 70W HPS lamp or 1 x 35W/ 70W CDMT lamp or 1 x 20 - 30W LED lamp.....	6,670.29	36.64	44.93	136.93	27678
27679	Pole top luminaire similar to SFA 220, die cast aluminium alloy body, vandal resistant polycarbonate diffuser, anodised aluminium reflector, IP54 c/w control gear and 1 x 50W/ 70W HPS lamp or 1 x 35W/ 70W CDMT lamp.....	4,752.85	36.64	44.93	136.93	27679
27680	Ditto but double heads and c/w mounting bracket.....	10,448.46	38.56	49.38	146.88	27680
27681	Side road lantern similar to SFA 221, single piece compression moulded canopy in glass reinforced polyester resin, hinged anti-vandal polycarbonate bowl, anodised aluminium reflector c/w control gear in separate compartment of body and 1 x 70W high pressure sodium/ metal halide lamp or 1 x 35W CDMT lamp.....	2,613.15	36.64	44.93	136.93	27681
27682	Rectangular road lighting similar to SFA 222, body of extruded aluminium sides and sheet aluminium top, toughened soda lime glass lens, anodised aluminium reflector, IP54 c/w control gear in hinged extruded aluminium gear tray and 1 x 100W/ 150W CDMT lamp.....	4,833.80	36.64	44.93	136.93	27682
27683	Stand-alone all-in-one type solar power LED pole top luminaire c/w die cast aluminium body, IP65, battery, self contained with mono-crystalline solar panel, electronic control gear/ driver, automatic switch to grid supply, timer, birds anti-perching device, 10W-24W LED lamp and 25-70Wp solar panel.....	9,831.00	36.74	45.03	137.21	27683
27684	Ditto but 25 - 34W LED lamp and 60 - 120Wp solar panel.....	11,300.00	36.74	45.03	137.21	27684
27685	Ditto but 35 - 50W LED lamp and 100 - 200Wp solar panel.....	16,950.00	36.74	45.03	137.21	27685

Item	LIGHTING FITTINGS (CONT'D) Wall/ Ceiling mounting luminaire : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27686	100 mm diameter white opal glass cylindrical glassware and gallery similar to SFA 6	169.29	19.30	23.84	73.70	27686
27687	115 mm diameter white opal glass cylindrical glassware and gallery similar to SFA 7	257.22	19.30	23.84	73.70	27687
27688	Surface mounted ceiling downlight similar to SFA 223, die cast aluminium body of 150 mm diameter, anodised aluminium reflector, IP65 c/w safety glass, control gear and 1 x 35W metal halide discharge lamp	2,770.95	26.55	33.15	98.70	27688
27689	Surface mounted ceiling downlight similar to SFA 223, die cast aluminium body of 150 mm diameter, anodised aluminium reflector, IP65 c/w safety glass, control gear and 1 x 18W compact fluorescent lamp	1,673.04	26.55	33.15	98.70	27689
27690	Circular surface mounted fluorescent light fitting c/w opal diffuser, 1 x 13W/ 18W compact fluorescent lamp and electronic ballast	559.99	27.14	34.52	103.79	27690
27691	Surface mounted downlight, white colour cylindrical metal in specular finish, aluminium reflector, 240 mm diameter c/w integral electronic ballast and 2 x 18W PLC lamps (4000K)	349.09	26.65	33.29	99.10	27691
27692	Surface mounted light fitting c/w 1 x 18W compact fluorescent lamp and electronic ballast	1,119.36	23.02	29.02	83.29	27692
27693	Ditto with 2-hour NiMH emergency power pack	1,825.53	23.02	29.02	83.29	27693
27694	Surface mounted light fitting, die cast aluminium body, polycarbonate diffuser, IP65, c/w driver and 1 x 9 - 12W 2D LED lamp	1,695.00	26.65	33.29	99.10	27694
27695	Surface mounted light fitting, die cast aluminium body, polycarbonate diffuser, IP65, c/w driver and 1 x 12 - 20W 2D LED lamp	2,742.19	26.65	33.29	99.10	27695
27696	Vandal resistant wall mounted luminaire similar to SFA 225, injection moulded polycarbonate body, hinged injection moulded clear prismatic polycarbonate diffuser, IP65 c/w control gear in galvanised steel tray and 1 x 13/ 18/ 26W compact fluorescent lamp	1,128.75	19.37	23.92	73.99	27696
27697	Ditto but with 1 x 70W high pressure sodium lamp	1,606.31	19.37	23.92	73.99	27697
27698	Ditto but with 1 x 70W metal halide lamp	1,394.10	19.37	23.92	73.99	27698
27699	Wall mounted downlight similar to SFA 226, die cast aluminium body, anodised aluminium reflector, 190 mm diameter, IP65 c/w mounting bracket with adjustable joint up to 12°, safety glass, control gear and 1 x 35W/ 70W CDMT lamp	3,109.71	19.37	23.92	73.99	27699
27700	Surface mounted circular luminaire similar to SFA 227, die cast aluminium alloy body, polycarbonate lens, IP55 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp	913.46	26.65	33.29	99.10	27700
27701	Wall mounted downlight similar to SFA 226, die cast aluminium body, anodised aluminium reflector, 190 mm diameter, IP65 c/w mounting bracket with adjustable joint up to 12°, safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp	3,000.98	19.37	23.92	73.99	27701
27702	Enclosed polycarbonate wall mounting luminaries c/w 35W/ 70W CDMT lamp with IP65 protection and vandal-resistant fixings	1,356.89	19.37	23.92	73.99	27702
27703	Surface ceiling and wall luminaire similar to SFA 228, die cast aluminium body, crystal glass with optical texture or impact resistant polycarbonate diffuser, IP65 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp	1,610.01	26.65	33.29	99.10	27703
27704	Recessed wall luminaire similar to SFA 229, marine grade aluminium alloy body and frame, tempered prismatic glass lens, shielded light source, IP55 c/w control gear and 1 x 70W high pressure sodium or 1 x 70W metal halide lamp	4,793.40	26.65	33.29	99.10	27704

Item	LIGHTING FITTINGS (CONT'D) Wall/ Ceiling mounting luminaire : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27705	Wall mounted luminaire with directed light, IP55, c/w 1 x 12W LED lamp similar to SFA 231	2,847.60	26.65	33.29	99.10	27705
27706	Wall luminaire similar to SFA 230, die cast aluminium body, fully shielded light source, IP43, c/w control gear and 1x 18W/ 26W compact fluorescent lamp or 1 x 35W CDMT lamp	1,910.93	26.65	33.29	99.10	27706
27707	Wall luminaire with directed light similar to SFA 231, die cast aluminium body, anodised aluminium reflector, safety glass with optical texture, IP55 c/w control gear and 1 x 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp	2,924.77	26.65	33.29	99.10	27707
27708	Wall luminaire with double-sided light output similar to SFA 232, die cast aluminium body, glass optical lens, anodised aluminium reflector, IP44 c/w safety glass, control gear and 1 x 14/ 18W/ 26W compact fluorescent lamp or 1 x 35W metal halide lamp	1,694.89	26.65	33.29	99.10	27708
27709	Recessed circular luminaire with shielded light similar to SFA 233, die cast aluminium body, 250 mm outside diameter, c/w matt safety glass, control gear and 1 x 18W/ 26W compact fluorescent lamp	1,343.52	26.65	33.29	99.10	27709
27710	Surface mounted downlight, die cast aluminium housing, IP65 and up to 12W LED lamp	1,760.93	26.65	33.29	99.10	27710
27711	Single mode LED, surface mounted luminaire, IP65 c/w 18 - 20W LED lamp	1,496.21	26.65	33.29	99.10	27711
27712	Ditto c/w 2-hour NiMH emergency power pack	1,749.09	26.65	33.29	99.10	27712
27713	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x up to 3W LED lamp & 1 x 28W 2D lamp	916.27	26.65	33.29	99.10	27713
27714	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x up to 3W LED lamp & 1 x 28W 2D lamp and 2-hour NiMH emergency power pack	1,071.84	26.65	33.29	99.10	27714
27715	Surface mounted dual light , die cast aluminium body, polycarbonate diffuser, IP65, c/w 120 x 360 PIR detector, electronic ballast, 1 x 7W energy saving lamp & 1 x 28W 2D lamp and 2-hour NiMH emergency power pack	1,549.06	26.65	33.29	99.10	27715
27716	Surface mounted dual light, die cast aluminium body, polycarbonate diffuser, IP65, c/w microwave sensor, electronic ballast, 1 x 28W 2D lamp and 2-hour NiMH emergency power pack	999.44	26.65	33.29	99.10	27716
27717	Surface mounted dual light, IP65 c/w, microwave sensor, 18 - 20W LED lamp and 2-hour NiMH emergency power pack	1,908.99	26.65	33.29	99.10	27717
27718	Weatherproof ceiling/ wall mounted down light, IP65 c/w 5 - 7W LED lamp	1,605.02	26.65	33.29	99.10	27718
27719	13W 600 mm horizontal fluorescent lighting unit c/w dual voltage safety shaver and lamp tube	1,149.62	26.43	33.01	98.29	27719
27720	Wall mounted fluorescent luminaire c/w 13W fluorescent lamp and control gear with shaver supply unit to BS EN 60742	1,368.25	39.06	44.47	106.54	27720
27721	Wall mounted vandal resistant light fitting similar to SFA 234, oval polycarbonate housing and guard, opal polycarbonate diffuser, polished aluminium reflector, IP65 c/w control gear and 2 x 9W PL lamp	568.49	26.43	33.01	98.29	27721
27722	Wall mounted vandal resistant light fitting similar to SFA 235, circular polycarbonate housing and guard, opal polycarbonate diffuser, polished aluminium reflector, IP65 c/w control gear and 2 x 9W PL lamp	597.04	26.43	33.01	98.29	27722

Item	LIGHTING FITTINGS (CONT'D) Wall/ Ceiling mounting luminaire : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27723	Rectangular recessed fitting similar to SFA 236, aluminium housing, opal toughened glass diffuser, IP54 c/w control gear and 1 x 18W PLC lamp.....	808.77	33.08	41.23	123.35	27723
27724	Ditto but similar to SFA 237 with 45° grille for directed light.....	808.23	33.08	41.23	123.35	27724
27725	Wall mounted luminaire similar to SFA 238, corrosion resistant aluminium alloy body, vandal resistant polycarbonate diffuser, IP55 c/w wall mounting base and arm, control gear and 1 x 18W PLC lamp.....	1,775.89	26.43	33.01	98.29	27725
27726	Wall mounted circular luminaire similar to SFA 239, die cast aluminium alloy body, over 250 mm diameter, half shielded and polycarbonate lens the other half, IP55 c/w control gear and 1 x 18W PLC lamp.....	1,036.25	26.43	33.01	98.29	27726
27727	Hemispherical surface bulkhead similar to SFA 240, die cast aluminium body, over 250 mm diameter, opal polycarbonate bowl with 4-ring quarter sphere grille, IP65 c/w control gear and 1 x 50W HPS lamp or 1 x 35W/ 70W CDMT lamp.....	2,499.96	26.43	33.01	98.29	27727
27728	Lantern similar to SFA 241, hinged transparent acrylic or polycarbonate refractor bowl, IP54 c/w control gear in separate compartment and 1 x 70W HPS or CDMT lamp.....	1,671.24	36.49	44.75	136.34	27728
27729	Vertical fixing adaptor for lantern similar to SFA 241.....	429.82	14.87	19.03	57.22	27729
27730	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 70W/ 100W CDMT lamp.....	2,696.42	36.64	44.93	136.93	27730
27731	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 150W CDMT lamp.....	2,717.51	36.64	44.93	136.93	27731
27732	Side entry lantern similar to SFA 242, glass reinforced polyester body, hinged injection moulded bowl, 2 aluminium alloy reflectors c/w control gear and 1 x 250W CDMT lamp.....	3,234.06	36.64	44.93	136.93	27732
27733	Side entry lantern similar to SFA 243, die cast aluminium body, injection moulded acrylic or polycarbonate refractor bowl c/w control gear and 1 x 70W/ 100W CDMT lamp.....	2,697.57	36.64	44.93	136.93	27733
27734	Special made wall mount bracket arm for side entry lantern comprising 1 no. 300 x 300 x 9 mm thick mild steel base plate and 1 no. 25 mm diameter x 900 mm long galvanized steel pipe bent to shape and welded to base plate fixed to wall with 4 nos. anchor bolt (9 mm diameter x 75 mm long).....	369.11	24.66	31.10	92.56	27734

Item	LIGHTING FITTINGS (CONT'D) Spot lights : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
27735	Weatherproof spot light of die cast aluminium body c/w wire guard, stand base and 1 x 500W lamp with built-in reflector	235.50	14.98	19.71	58.75	27735
27736	Spot light, in black/ white/ bronze finish with extruded aluminium profile, 90° tiltable bracket, 360° spot/ flood rotatable transadapter, reflector for 1 x 3 - 5W LED lamp suitable for light track mounting similar to SFA 244	722.92	14.98	19.71	58.75	27736
27737	Recessed LED spot light, 1 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tube and accessories	348.84	14.98	19.71	58.75	27737
27738	Recessed LED spot light, 2 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	513.68	14.98	19.71	58.75	27738
27739	Recessed LED spot light, 3 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	640.49	14.98	19.71	58.75	27739
27740	Recessed LED spot light, 4 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	729.26	14.98	19.71	58.75	27740
27741	Surface LED spot light, star wire suspended, 3 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	754.62	14.98	19.71	58.75	27741
27742	Surface LED spot light, row/ matrix wire suspended, 4 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	868.75	14.98	19.71	58.75	27742
27743	Surface LED spot light, circle wire suspended, 6 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	1,312.57	14.98	19.71	58.75	27743
27744	Surface LED spot light, matrix wire suspended, 6 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	1,312.57	14.98	19.71	58.75	27744
27745	Surface LED spot light, matrix wire suspended, 8 x 3 - 5W LED lamp c/w hanger, anodized aluminium reflector, lamp tubes and accessories	1,781.74	14.98	19.71	58.75	27745
27746	Beacon light fitting, 400 mm in height and diameter 150 mm	1,292.56	26.55	33.15	98.70	27746
27747	PAR 38, 120W or 100W GLS eyeball spotlight for light track mounting	-	19.30	23.84	73.70	27747
27748	Surface mounted spot light accent, aluminium housing and reflector, IP65, integral control gear c/w 1 x 35W HITT lamp (metal halide)	1,244.59	19.30	23.84	73.70	27748

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	Recessed steplight : -					
		A	B	C	D	
	Each	$	$	$	$	
27749	Recessed rectangular steplight similar to SFA 246, die cast aluminium body, anodised aluminium reflector, glare suppression and 60° light output, IP65 c/w control gear and 1 x 18W PLC lamp.....	1,418.17	26.65	33.29	99.10	27749
27750	Recessed circular steplight similar to SFA 247, die cast aluminium body, IP65 c/w safety glass, control gear and 1 x 26W PLC lamp.....	1,427.78	26.65	33.29	99.10	27750
27751	Recessed rectangular steplight similar to SFA 248, die cast aluminium housing with 45° grille, opal toughened glass diffuser anodised aluminium reflector, IP65 c/w control gear and 1 x 18W PLC lamp.....	1,392.01	26.65	33.29	99.10	27751
27752	Recessed rectangular steplight similar to SFA 249, die cast aluminium body, anodised aluminium reflector, IP64 c/w safety glass, control gear and 1 x 7W/ 9W PL lamp.....	931.84	26.65	33.29	99.10	27752
27753	Recessed rectangular steplight similar to SFA 250, die cast aluminium body, anodised aluminium reflector, glare suppression and 45° light output, IP64 c/w matt safety glass, control gear and 1 x 11W fluorescent lamp.....	1,059.35	26.65	33.29	99.10	27753
	Buried uplight : -					
	Each					
27754	Buried uplight similar to SFA 251, die cast aluminium housing and protective front grille, toughened transparent glass diffuser, glass surface temperature 100℃, IP67 c/w matt safety glass, control gear and 1 x 19W/ 23W CFL PAR 38 lamp.....	2,301.20	36.80	45.12	137.49	27754
27755	Buried uplight similar to SFA 252, die cast aluminium housing and protective front grille, aluminium rotosymmetric reflector, toughened transparent glass diffuser, glass surface temperature 72℃, IP67 c/w control gear and 1 x 70W MBI lamp.....	4,202.65	36.80	45.12	137.49	27755
27756	Buried drive-over luminaire similar to SFA 253, die cast aluminium housing, 15 mm thick toughened glass with maximum surface temperature 75℃, aluminium reflector, internal anti-glare grid in die cast aluminium, IP67 c/w control gear and 1 x 70W metal halide lamp.....	6,170.87	36.80	45.12	137.49	27756
27757	Buried drive-over floodlight similar to SFA 254, glass fiber reinforced polymer housing, tempered heat resistant glass lens, adjustable hydroformed reflector c/w control gear and 1 x 70W metal halide lamp	2,316.44	36.80	45.12	137.49	27757
27758	Semi-buried fixture similar to SFA 255 for low level illumination, glass fiber reinforced polymer housing, tempered heat resistant glass multiple zone prismatic refractor at side c/w control gear and 1 x 50W/ 70W metal halide lamp.....	5,751.73	36.80	45.12	137.49	27758
27759	Buried uplight similar to SFA 256, injection moulded ABS housing with cast aluminium/ bronze doors, spun aluminium reflector, tempered glass lens, IP67 c/w control gear and 1 x 70W metal halide lamp.....	6,621.97	26.65	33.29	99.10	27759
27760	Well light similar to SFA 257 for installation in 230 mm diameter 375 mm deep direct burial pipe, spun copper housing with bronze clamping ring, convex tempered clear glass lens, cast aluminium louvre at grade, IP67 c/w control gear in separate ballast box and 6 - 13W LED lamp.....	8,337.12	26.65	33.29	99.10	27760
27761	Buried drive-over uplight similar to SFA 258, corrosion resistant aluminium housing of 150 mm diameter, 12 mm thick toughened glass lens, internal die cast aluminium anti-glare grid, drive over load 3500 kg at 30 km/ h, IP67 c/w control gear and LED lamp up to 6W.....	3,134.54	36.80	45.12	137.49	27761

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	Buried uplight : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
27762	Buried uplight similar to SFA 259, grade 304 stainless steel body of 250 mm diameter, thermal shock resistant borosilicate glass lens, internal louvred glare shield, IP67 c/w control gear and 1 x 26W compact fluorescent lamp	2,817.89	36.80	45.12	137.49	27762
	Indicating lamp : -					
	Each					
27763	Indicating lamp with polycarbonate diffuser c/w LED lamp up to 3W	339.30	19.88	24.40	69.20	27763
	Bollard fittings, minimum IP44 : -					
	Each					
27764	1m - 1.1m high bollard similar to SFA 260, extruded aluminium housing of 180 mm diameter, vandal resistant clear polycarbonate diffuser, anodised aluminium louvre c/w control gear and 1 x 35W/ 50W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp	2,240.22	36.74	45.03	137.21	27764
27765	1m - 1.1m high bollard similar to SFA 260, extruded aluminium housing of 180 mm diameter, vandal resistant clear polycarbonate diffuser, anodised aluminium louvre c/w control gear and 3 - 6W LED lamp	3,165.03	36.74	45.03	137.21	27765
27766	Concrete bollard similar to SFA 261, one piece precast concrete body of minimum 75 mm thickness reinforced with internal steel cage, 13 mm thick hot dip galvanised base plate for anchoring, clear/ opal acrylic inner lens, horizontal cast aluminium grille of minimum thickness 6 mm, vandal resistant clear polycarbonate diffuser c/w control gear and 1 x 70W/ 100W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp	15,497.67	36.74	45.03	137.21	27766
27767	1m - 1.1m high bollard similar to SFA 262, extruded aluminium pole, aluminium alloy top and flange, clear polycarbonate prismatic lens c/w control gear and 1 x 18W/ 26W fluorescent lamp	6,652.37	23.06	29.08	83.43	27767
27768	Border lighting for low level illumination similar to SFA 263, cast aluminium housing, frosted tempered borosilicate fresnel lens at side c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp	3,227.43	36.74	45.03	137.21	27768
27769	1m - 1.1m high bollard similar to SFA 264, cylindrical aluminium body of 150 mm diameter, clear glass bowl with decorative ring, IP44 c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp	3,980.71	36.74	45.03	137.21	27769
27770	1m - 1.1m high bollard similar to SFA 265, extruded aluminium pole of diameter 160 mm, die cast aluminium body and louvre, vandal resistant clear polycarbonate lens, IP54 c/w control gear and 1 x 50W/ 70W metal halide/ high pressure sodium lamp or 1 x 35W CDMT lamp	3,415.70	36.74	45.03	137.21	27770
27771	Stand-alone solar power LED bollard c/w vandal resistant cast aluminium body, IP65, impact resistance IK10, polycarbonate diffuser, self contained with solar panel, batteries and 1 x up to 3W LED lamp	4,378.59	36.74	45.03	137.21	27771
27772	Stand-alone solar power LED bollard c/w vandal resistant cast aluminium body, IP65, impact resistance IK10, polycarbonate diffuser, self contained with solar panel, batteries and 1 x 3 - 6W LED lamp	3,955.00	36.74	45.03	137.21	27772
27773	Stand-alone solar power LED bollard c/w vandal resistant cast aluminium body, IP65, impact resistance IK10, polycarbonate diffuser, self contained with solar panel, batteries and 1 x 6 - 9W LED lamp	5,311.00	36.74	45.03	137.21	27773

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	Fiber optic lighting system : -					
		A	B	C	D	
	Each	$	$	$	$	
27774	Light generator with closed halogen dichroic lamp (12V/ 50W 24 deg., Ra=100 and colour temperature 3000K). The generator shall concentrate the luminous flux of lamps into a fiber optic harness. Housing to be cast aluminium c/w built in transformer (230V/ 12V 50 VA) and protective dichroic filter	1,707.22	10.49	13.24	42.05	27774
27775	Harness, 2 meters each, made of 16 nos. of fiber optic cables (bundle of 19 optical fibers in a cable diameter of 5 mm) meeting in parallel at the connecting end. Optical fiber to be made of glass (70 µm diameter) or P.M.M.A. of 1 mm diameter (polymethylmethacrylate) suitable to connect to the light generator and the optical termination	8,305.98	17.34	22.29	68.71	27775
27776	Termination and accessories to put at the end of fiber optic cable equipped with an adjustable glass lens-holder to focus from 19° to 30°	442.66	17.34	21.79	66.70	27776
27777	Ditto with 12V/ 75W 24° lamp	2,560.11	17.34	21.79	66.70	27777
27778	Ditto with 150W metal halide lamp	9,796.12	17.34	21.79	66.70	27778
27779	Ditto with 200W metal halide lamp	10,681.37	17.34	21.79	66.70	27779
	Per linear metre					
27780	Diffusing optical cable suitable to connect to the light generator of 17 mm P.M.M.A. cable with a reflective centre core, an ultra-violet stabilized clear PVC outer protective sheath and a clear mylar wrapping around fiber optics	98.29	14.86	18.79	55.04	27780
	Bedhead light fitting : -					
	Each					
27781	Bedhead lighting fitting with lamp	852.15	16.21	18.02	61.42	27781
27782	Angle poise bedhead lighting fitting c/w lamp	1,232.38	19.41	23.97	74.14	27782
	External lighting for construction site : - (Items 27783 to 27787 will only be paid for, if ordered by the Maintenance Surveyor in writing.)					
	Isolating step down transformer 220/ 110V, single phase, having centre tap with secondary winding earthed so that the normal voltage of circuit to earth does not exceed 55V : -					
	Per set					
27783	500 VA	784.88	10.59	13.05	39.74	27783
27784	1000 VA	1,374.48	10.59	13.05	39.74	27784
27785	Weatherproof surface mounted fluorescent light fitting, IP65 c/w T5 fluorescent tube, T5 electronic control gear/ electronic ballast, 1 x 28W	1,272.75	28.85	34.78	91.92	27785
27786	Weatherproof bulkhead fittings rated IP65 c/w glassware, 100W, 110V lamp, side/ back cable entry, cutting, and rubber grommet or stop where applicable	559.81	26.48	33.08	98.48	27786

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	External lighting for construction site : - (Items 27783 to 27787 will only be paid for, if ordered by the Maintenance Surveyor in writing.) (Cont'd)					
	Isolating step down transformer 220/ 110V, single phase, having centre tap with secondary winding earthed so that the normal voltage of circuit to earth does not exceed 55V : - (Cont'd)					
	Per set	A $	B $	C $	D $	
27787	Weatherproof bulkhead fittings rated IP65 c/w polycarbonate diffuser, 100W lamp, 110V, side/ back cable entry, cutting, and rubber grommet or stop where applicable	611.98	26.48	33.08	98.48	27787
	Miscellaneous lighting fittings : -					
	Each					
27788	Surface luminaire similar to SFA 256, circular die cast aluminium casing of minimum overall diameter 380 mm, IP65 c/w control gear and 1 x 70W SON lamp.....	2,477.04	26.25	32.71	99.63	27788
27789	Garage pit luminaire c/w lamp and control gear suitable for use in Zone 2 hazardous area to IEC 60079-10.....	4,749.73	26.57	32.35	96.90	27789
	Shades : -					
	Each					
27790	Shades n.e. 150 mm.....	29.82	3.15	3.55	9.34	27790
27791	Shades (locally made) n.e. 150 mm diameter.....	17.13	3.15	3.55	9.34	27791
27792	Coolicon shades 230 mm diameter.....	35.34	3.15	3.55	9.34	27792
27793	Coolicon shades (locally made) 230 mm diameter.....	22.68	3.15	3.55	9.34	27793
27794	Coolicon shades 280 mm diameter.....	35.43	3.15	3.55	9.34	27794
27795	Coolicon shades (locally made) 280 mm diameter.....	25.12	3.15	3.55	9.34	27795

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIGHTING FITTINGS (CONT'D)					
	Dome cover, wall mounting : -					
		A	B	C	D	
	Each	$	$	$	$	
27796	65 mm diameter	28.12	4.37	5.29	15.23	27796
27797	87 mm diameter	31.53	4.37	5.29	15.23	27797
27798	125 mm diameter	37.49	4.37	5.29	15.23	27798
27799	Dome back plate, side entry	36.98	4.37	5.29	15.23	27799
	Dome cover : -					
	Each					
27800	Dome cover 65 mm diameter	27.19	4.37	5.29	15.23	27800
27801	Dome cover 87 mm diameter	28.97	4.37	5.29	15.23	27801
27802	Dome cover 125 mm diameter	35.02	4.37	5.29	15.23	27802
27803	Dome back plate, side entry	35.38	4.37	5.29	15.23	27803
	Sundries : -					
	Each					
27804	Weatherproof metal box for 250/ 400W SON control gear	721.55	30.18	37.01	109.90	27804
27805	Weatherproof metal box for 250/ 400W MBIL control gear	756.19	38.70	46.88	143.07	27805
27806	Weatherproof metal box for 750W/ 1000W MBIL control gear	895.40	38.70	46.88	143.07	27806
27807	Weatherproof metal box for 1500/ 1600W MBIL control gear	917.87	38.70	46.88	143.07	27807
27808	External control gear box c/w gear for 250W SON	1,467.91	31.60	39.06	114.13	27808
27809	External control gear box c/w gear for 400W SON	1,705.39	31.60	39.06	114.13	27809
27810	Pendant, plain, comprising ceiling rose, flex and B.C. lampholder (labour rates including fixing of shade)	60.91	8.96	10.84	32.61	27810

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LAMP POLES AND ACCESSORIES					
	Lamp poles, mild steel c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. : -					
	Each	A $	B $	C $	D $	
27811	n.e. 3.5 m	2,841.17	228.08	298.48	874.33	27811
27812	3.5 m - 4.5 m	3,310.57	279.56	350.82	1,067.64	27812
27813	4.5 m - 7.0 m	9,027.71	425.68	534.34	1,627.57	27813
27814	7.0 m - 7.5 m	10,321.09	514.74	642.24	1,962.47	27814
27815	7.5 m - 8.0 m	12,259.83	639.15	797.37	2,441.71	27815
27816	8.0 m - 10.0 m	16,520.54	877.00	1,099.28	3,344.97	27816
27817	10.0 m - 12.0 m	19,481.25	1,063.45	1,329.91	4,058.28	27817
	Twin heads lamp pole for SFA 215, 127 mm square straight steel pole flange mounting, gauge 11 galvanised steel with bronze enamel finish : -					
	Each					
27818	4.2 m nominal height	6,120.84	284.60	356.47	1,070.52	27818
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461 c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. : -					
	Each					
27819	n.e. 4.0 m	3,926.75	269.64	340.58	1,019.07	27819
27820	4.0 m - 4.5 m	4,224.09	302.76	379.89	1,156.11	27820
27821	4.5 m - 7.0 m	10,015.69	425.77	534.48	1,627.99	27821
27822	7.0 m - 7.5 m	11,390.11	500.99	625.02	1,909.78	27822
27823	7.5 m - 8.0 m	13,657.09	649.66	810.45	2,481.77	27823
27824	8.0 m - 12.0 m	21,719.90	1,054.82	1,319.13	4,025.30	27824
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461, wall mounted c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. : -					
	Each					
27825	n.e. 3.5 m	3,608.23	236.06	308.94	904.93	27825
27826	3.5 m - 4.0 m	4,097.58	268.86	339.61	1,016.12	27826
27827	4.0 m - 4.5 m	4,468.43	293.59	368.36	1,121.06	27827
27828	4.5 m - 7.0 m	9,127.91	433.17	543.71	1,656.20	27828

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LAMP POLES AND ACCESSORIES (CONT'D)					
	Lamp poles, tubular steel, hot dipped galvanized to BS EN ISO 1461, wall mounted c/w pole cap, compression gland, mounting ring, pole bracket, connector box, service box, control box and base plate etc. : - (Cont'd)					
	Each	A $	B $	C $	D $	
27829	7.0 m - 7.5 m	11,581.40	519.06	647.65	1,978.98	27829
27830	Hot-dip galvanized flange mounted type tapered polygonal high mast of 30 m nominal mounting height c/w raising and lowering system and head frame for mounting maximum 24 nos. of luminaires with the supply of foundation bolts/ nuts/ washers. (The actual rate should be : $451,147.00 for Item 27830A)	45,114.70	7,464.61	12,441.23	32,017.05	27830
27831	4.8 m - 5.0 m aluminium lamp pole	27,912.42	290.14	362.64	1,111.30	27831
	Accessories : -					
	Each					
27832	Compression gland	207.46	13.30	17.23	50.77	27832
27833	Working platform (hot dip galvanized steel)	1,680.69	228.28	275.00	692.81	27833
27834	Metal hot dip galvanized cover for weatherproof service box on lamp pole c/w gaskets, screws and washers	501.55	10.07	12.03	30.34	27834
27835	Double head lamp pole bracket at 4.5 m lamp pole, including modification of the 4.5 m lamp pole and removal of the original bracket	398.46	23.09	28.22	83.15	27835
27836	Pole cap	268.57	18.96	23.96	72.41	27836
27837	Connector box	305.59	16.21	20.50	63.29	27837
27838	Service box	306.11	21.03	26.56	80.29	27838
27839	Control box	316.60	21.03	26.56	80.29	27839
27840	Grade 316 stainless steel angle adjustable mounting frame for 400W floodlight	346.26	8.22	11.39	31.64	27840

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY LIGHTING					
	Exit sign box to BS EN 60598-1: 2008, BS EN 60598-2-22: 1998+A2: 2008, BS EN 50172: 2004 and BS EN 1838: 1999 c/w lamp, 2-hour NiMH emergency power pack, charger, automatic changeover device, inverter/ ballast indications and switch, cables, conduits (surface or concealed in partitions and ceiling), all necessary accessories and connection to power supply switch/ terminal : -					
	Each	A $	B $	C $	D $	
27841	Exit sign box, 400 - 650 mm long	1,071.16	72.70	84.82	310.13	27841
27842	Exit sign box without battery, charger and changeover, 400 - 650 mm long	759.42	72.70	84.82	310.13	27842
27843	Exit sign box using LED as light source, 400 - 650 mm long	1,095.42	72.70	84.82	310.13	27843
27844	Exit sign box using LED as light source without battery, charger and changeover, 400 - 650 mm long	833.23	72.70	84.82	310.13	27844
27845	Exit sign box using LED as light source, 400 - 650 mm long, c/w 3-hour NiMH emergency power pack	2,147.00	72.70	84.82	310.13	27845
27846	Exit sign box, 650 - 1200 mm long	1,078.84	72.70	84.82	310.13	27846
27847	Exit sign box using LED as light source, 650 - 1200 mm long, automatic discharge and recharge monthly	1,198.86	72.70	84.82	310.13	27847
27848	Exit sign box using LED as light source, 650 - 1200 mm long, c/w 3-hour NiMH emergency power pack	2,114.50	72.70	84.82	310.13	27848
27849	Exit sign box using LED as light source, 650 - 1200 mm long, automatic discharge and recharge monthly, c/w 3-hour NiMH emergency power pack	2,373.00	72.70	84.82	310.13	27849
	Exit sign plate or directional sign plate to BS EN 60598-1: 2008, BS EN 60598-2-22: 1998+A2: 2008, BS 5266-1: 2011, BS EN 50172: 2004 and BS EN 1838: 1999 c/w lamp, NiMH 2-hour NiMH emergency power pack, charger, automatic changeover device, clear perspex front plate, coloured perspex back plates plugging and screwing to wall and all necessary accessories and connection to power supply switch/ terminal, suitable for ceiling suspension/ wall mounting : -					
	Each					
27850	Exit sign plate or directional sign plate, using fluorescent tube as light source, 400 - 650 mm long	1,035.54	72.70	84.82	310.13	27850
27851	Exit sign plate or directional sign plate using LED as light source, 400 - 650 mm long	346.26	72.70	84.82	310.13	27851
27852	Exit sign plate or directional sign plate using LED as light source, 1200 mm long	1,183.46	72.70	84.82	310.13	27852
27853	Exit sign plate or directional sign plate using LED as light source, 400 - 600 mm long, automatic discharge and recharge monthly	1,065.11	72.70	84.82	310.13	27853
27854	Exit sign plate or directional sign plate using LED as light source, 400 mm long c/w 3-hour NiMH emergency power pack	1,269.78	72.70	84.82	310.13	27854
27855	Exit sign plate or directional sign plate using LED as light source, 400 mm long, recess mounted	1,101.95	72.70	84.82	310.13	27855

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY LIGHTING (CONT'D)					
	Central battery power supply system for emergency lighting					
	Central power supply, monitoring and control panel c/w rectifier/ charger, inverter, storage and all necessary accessories of the battery, switchgear, zone indication and control software and instrumentation, controlling following capacity : -					
	Each	A $	B $	C $	D $	
27856	below 100 Ah.....	24,821.73	39.97	43.61	175.67	27856
27857	100 - 200 Ah.....	46,692.25	41.18	44.84	196.26	27857
27858	200 - 300 Ah.....	67,513.30	42.40	46.06	213.22	27858
27859	300 - 400 Ah.....	86,927.13	43.61	47.25	232.61	27859
27860	400 - 500 Ah.....	93,706.55	52.10	55.74	291.98	27860
	UPS or static inverter system c/w static transfer switch with synchronizing and phase maintenance bypass switch, storage battery, charger, rectifier, inverter and lock equipment, controlling following capacity : -					
	Each					
27861	below 100 Ah.....	28,389.50	27.86	47.25	202.32	27861
27862	100 - 200 Ah.....	52,539.82	48.47	52.10	225.34	27862
27863	200 - 300 Ah.....	77,258.23	49.67	53.30	248.37	27863
27864	300 - 400 Ah.....	99,717.03	52.10	54.51	271.38	27864
27865	400 - 500 Ah..... (The actual rate should be : $106,958.20 for Item 27865A)	10,695.82	61.79	64.20	336.81	27865

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY LIGHTING (CONT'D)					
	Emergency lighting fittings : -					
		A	B	C	D	
	Each	$	$	$	$	
27866	Centrally supplied emergency lighting unit 5W - 40W, to BS EN 60598-2-22 (without battery) c/w heat resistant cable, conduits, all necessary accessories and connection to central control panel	699.79	55.74	64.20	236.24	27866
27867	Emergency luminaire, 10W, 12V, to BS EN60598-2-22 c/w heat resistant cable, conduits, all necessary accessories and connection to central control panel	744.46	55.74	64.20	236.24	27867
	Self-contained emergency lighting unit, weather and vandal resistant c/w NiMH battery, charger, automatic changeover device and all necessary accessories : -					
	Each					
27868	Luminaire 28W, 2D, with 2-hour NiMH emergency power pack.....	918.78	58.17	67.84	247.15	27868
27869	T8 fluorescent lamp with 2-hour NiMH emergency power pack, electronic ballast, 18/ 36/ 54 W.....	-	58.17	67.84	247.15	27869
27870	T5 fluorescent lamp with 2-hour NiMH emergency power pack, electronic ballast, 14W.....	918.50	58.17	67.84	247.15	27870
27871	Ditto, 28W.....	1,030.18	58.17	67.84	247.15	27871
27872	Ditto, 35W.....	1,145.04	58.17	67.84	247.15	27872
27873	Ditto, 49W.....	1,301.01	58.17	67.84	247.15	27873
27874	Ditto, 54W.....	1,548.47	58.17	67.84	247.15	27874

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY LIGHTING (CONT'D)					
	Self-contained emergency lighting unit c/w NiMH battery, charger, automatic changeover device and all necessary accessories : -					
	Each	A $	B $	C $	D $	
27875	Non-maintained type 6V, 10W tungsten halogen recessed emergency luminaries with a red LED to indicate lamp filament failure c/w nickel-metal hydride emergency power pack and silver aluminum reflector of 112 mm diameter.....	-	27.04	33.25	91.61	27875
27876	Non-maintained type 12V, 2 x 2W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	1,913.78	34.90	46.72	182.30	27876
27877	Non-maintained type 12V, 2 x 2W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	1,794.13	32.53	42.46	167.31	27877
27878	Non-maintained type 12V, 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 2-hour NiMH emergency power pack.....	1,093.19	34.90	46.72	182.30	27878
27879	Non-maintained type 12V, 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 3-hour NiMH emergency power pack.....	1,226.44	34.90	46.72	182.30	27879
27880	Non-maintained type 12V, 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	1,024.84	32.53	42.46	167.31	27880
27881	Non-maintained type 12V, 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 3-hour NiMH emergency power pack.....	1,031.35	32.53	42.46	167.31	27881
27882	Non-maintained type 12V, 2 x 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 2-hour NiMH emergency power pack.....	2,567.47	34.90	46.72	182.30	27882
27883	Non-maintained type 12V, 2 x 3W LED Light source, recessed ceiling mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal c/w 3-hour NiMH emergency power pack.....	2,880.41	34.90	46.72	182.30	27883
27884	Non-maintained type 12V, 2 x 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 2-hour NiMH emergency power pack.....	2,406.96	32.53	42.46	167.31	27884
27885	Non-maintained type 12V, 2 x 3W LED Light source, wall mounted type emergency luminaries with Green/ Red/ Yellow LED to indicate main on/ charging/ fault signal, c/w 3-hour NiMH emergency power pack.....	2,717.46	32.53	42.46	167.31	27885
27886	Modification of the luminaire for connection to the central control panel and centrally supplied emergency lighting point including power supply and control cable installed inside flexible conduit.....	345.37	-	-	-	27886

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY LIGHTING (CONT'D)					
	NiMH battery and charger kit for self-contained emergency luminaire : -					
		A	B	C	D	
	Each	$	$	$	$	
27887	Charger kit installed inside surface mounted luminaire including necessary modification for the addition of the kit.....	319.36	12.85	13.51	78.75	27887
27888	Charger kit installed inside recessed mounted luminaire including necessary modification for the addition of the kit.....	317.83	12.85	13.51	78.75	27888
27889	Charger kit installed inside a metal box mounted next to and connected to the recessed mounted luminaire including necessary modification for the addition of the kit.....	548.19	12.85	13.51	78.75	27889
	LED LIGHT STRIPS					
	Surface mounted flexible LED light strips; LED mounted on printed circuit board, complete with power input cables, power lead connectors, strip to strip connectors, corner connectors, self adhesive backing, etc. : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
	Per linear metre	$	$	$	$	
27890	Single colour flexible LED light strips; 12V DC; 4 to 8W/ m.....	147.91	8.25	9.90	13.18	27890
27891	Single colour flexible LED light strips; 12V DC; 8 to 12W/ m.....	169.61	8.25	9.90	13.18	27891
27892	Single colour flexible LED light strips; 12V DC; 12 to 16W/ m.....	192.82	8.25	9.90	13.18	27892
27893	Single colour flexible LED light strips; 12V DC; 4 to 8W/ m; IP68.....	194.85	8.25	9.90	13.18	27893
27894	Single colour flexible LED light strips; 12V DC; 8 to 12W/ m; IP68.....	216.54	8.25	9.90	13.18	27894
27895	Single colour flexible LED light strips; 12V DC; 12 to 16W/ m; IP68.....	239.77	8.25	9.90	13.18	27895
	Surface mounted modular LED lighting fittings c/w LED driver, IP67, aluminium housing and tempered glass diffuser : -					
	Each					
27896	120 mm x 650 mm long, replaceable LED strip board, min. lumen output 2200 lm.....	2,825.00	31.44	38.70	119.18	27896
27897	120 mm x 1350 mm long, replaceable LED strip board, min. lumen output 4400 lm.....	6,215.00	31.44	38.70	119.18	27897
	Surface mounted modular LED lighting fittings c/w LED driver, IP67, self-contained battery (NiMH) for 2 hours discharge (emergency of the normal length), aluminium housing and tempered glass diffuser : -					
	Each					
27898	120 mm x 650 mm long, replaceable LED strip board, min. lumen output 2200 lm.....	3,955.00	31.44	38.70	119.18	27898
27899	120 mm x 1350 mm long, replaceable LED strip board, min. lumen output 4400 lm.....	7,910.00	31.44	38.70	119.18	27899

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LED LIGHT STRIPS (CONT'D)					
	LED driver power supply c/w metal/ PVC casing : -					
		A	B	C	D	
	Each	$	$	$	$	
27900	12W; 12V	217.80	16.49	19.78	26.38	27900
27901	18W; 12V	227.15	16.49	19.78	26.38	27901
27902	36W; 12V	270.31	16.49	19.78	26.38	27902
27903	60W; 12V	287.46	16.49	19.78	26.38	27903
27904	100W; 12V	498.71	16.49	19.78	26.38	27904
27905	150W; 12V	523.69	16.49	19.78	26.38	27905
27906	240W; 12V	810.17	16.49	19.78	26.38	27906
27907	320W; 12V	850.53	16.49	19.78	26.38	27907
27908	18W; 12V; IP67	218.55	16.49	19.78	26.38	27908
27909	36W; 12V; IP67	276.11	16.49	19.78	26.38	27909
27910	60W; 12V; IP67	289.74	16.49	19.78	26.38	27910
27911	100W; 12V; IP67	521.42	16.49	19.78	26.38	27911
27912	150W; 12V; IP67	565.35	16.49	19.78	26.38	27912
27913	240W; 12V; IP67	845.37	16.49	19.78	26.38	27913

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SIMPLIFIED ITEMS					
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system					
	Lighting point/ occupancy sensor point/ motion detector point : -					
	Each	A $	B $	C $	D $	
27914	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	444.50	115.43	-	-	27914
27915	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, OHLS cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	458.46	115.43	-	-	27915
	Add 8% to either of Items 27914 to 27915 inclusive for provision of circuit protective conductor to MCB board in full length of conduit, another 8% for provision of additional cable to feed maintained light point and again another 8% for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting.					
	Lighting switch point : -					
	Each					
27916	Lighting switch point c/w trunking, conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	227.52	56.87	-	-	27916
27917	Lighting switch point c/w trunking, conduits, boxes, OHLS cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	261.18	62.69	-	-	27917
	Add 8% to either of Items 27916 to 27917 inclusive for provision of additional cable to dimmer switches.					

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SIMPLIFIED ITEMS (CONT'D)					
	Section 2 : Installation by PVC surface conduit system					
	Lighting point/ occupancy sensor point/ motion detector point : -					
	Each	A $	B $	C $	D $	
27918	Lighting point/ occupancy sensor point/ motion detector point c/w trunking, conduits, boxes, PVC cables, circuit protective conductor and all necessary accessories.....	333.85	83.18	-	-	27918
	Add 8% to Item 27918 for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting					
	Lighting switch point : -					
	Each					
27919	Lighting switch point c/w trunking, conduits, boxes, PVC cables and all necessary accessories	153.92	36.93	-	-	27919
	Add 8% to Item 27919 inclusive for provision of additional cable to dimmer switches					
	Section 3 : Installation by surface wiring system					
	Lighting point : -					
	Each					
27920	Lighting point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	232.99	36.80	-	-	27920
	Add 8% to item 27920 for provision of additional cable to feed reasonable & separate control of a twin/ triplet light fitting					
	Lighting switch point : -					
	Each					
27921	Lighting switch point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	88.47	13.26	-	-	27921

Section 28

ELECTRICAL INSTALLATION -

SMALL POWER DISTRIBUTION

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	KWH METERS AND BOXES					
	KWH Meter : -					
	Each	A $	B $	C $	D $	
28001	63A single-phase meter	753.36	17.26	22.49	66.97	28001
28002	80A ditto	762.82	17.26	22.49	66.97	28002
28003	100A ditto	926.45	17.26	22.49	66.97	28003
28004	63A/ 100A three-phase (4-wire) whole current meter	1,534.78	21.66	26.89	84.10	28004
28005	200A to 2000A current transformers operated meter (current transformers to be measured separately)	1,534.78	21.66	26.89	84.10	28005
	Metal boxes for above KWH meters, approved type : -					
	Each					
28006	Up to 100A single-phase	200.70	13.59	17.26	54.12	28006
28007	Up to 2000A three-phase	200.70	13.59	17.26	54.12	28007
28008	Metal box for 4 nos. current transformers	213.83	17.26	22.49	67.44	28008
	Measuring Current Transformer : -					
	Each					
28009	100/ 5A ratio	200.44	16.53	21.04	65.01	28009
28010	200/ 5A ratio	209.89	16.53	21.04	65.01	28010
28011	400/ 5A ratio	307.77	16.53	21.04	65.01	28011
28012	500/ 5A ratio	313.24	16.53	21.04	65.01	28012
28013	600/ 5A ratio	316.76	16.53	21.04	65.01	28013
28014	1000/ 5A ratio	328.23	16.53	21.04	65.01	28014
28015	2000/ 5A ratio	465.46	16.53	21.04	65.01	28015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	KWH METERS AND BOXES (CONT'D)					
	Measuring Current Transformer (Split Type) : -					
		A	B	C	D	
	Each	$	$	$	$	
28016	100 or 200/ 5A	916.23	16.57	21.09	65.15	28016
28017	400 or 500/ 5A	951.89	16.57	21.09	65.15	28017
28018	600/ 5A	956.33	16.57	21.09	65.15	28018
28019	1000/ 5A	1,064.55	16.57	21.09	65.15	28019
28020	2000/ 5A	2,034.73	16.57	21.09	65.15	28020
	Each					
28021	60A neutral link for meter board loop wire	100.15	10.25	12.80	39.28	28021
	MOUNTING BLOCKS					
	Each					
28022	Mounting blocks, solid hardwood, 20 mm thick, 75 mm diameter or 75 x 75 mm or 120 x 70 mm	28.75	7.74	9.33	23.82	28022
28023	Ditto but 100 mm diameter or 75 x 150 mm	30.93	7.74	9.33	23.82	28023
28024	Ditto but 150 mm diameter or 150 x 150 mm	39.47	7.74	9.33	23.82	28024
28025	Ditto but 250 mm diameter	58.53	8.97	11.24	28.71	28025
28026	Ditto but 150 x 250 mm	51.17	8.97	11.24	28.71	28026
28027	Ditto but 180 x 250 mm	54.32	8.97	11.24	28.71	28027
28028	Ditto but 200 x 300 mm	58.99	8.97	11.24	28.71	28028
28029	Ditto but 250 x 300 mm	59.99	8.97	11.24	28.71	28029
28030	Ditto but 150 x 380 mm	60.35	8.97	11.24	28.71	28030
28031	Ditto but 200 x 380 mm	62.32	8.97	11.24	28.71	28031
28032	Ditto but 250 x 380 mm	80.56	10.67	12.75	32.45	28032
28033	Ditto but 300 x 300 mm	80.90	10.67	12.75	32.45	28033
28034	Ditto but 300 x 450 mm	97.64	10.67	12.75	32.45	28034
28035	Ditto but 350 x 400 mm	97.85	10.67	12.75	32.45	28035
28036	Mounting blocks, solid hardwood, 32 mm thick, 150 mm diameter, centre pack sunk for BESA box and conduit entry.	114.04	10.67	12.75	32.45	28036
28037	Mounting blocks, solid hardwood, 250 mm x 400 mm x 20 mm thick (approved type) for bell and indicators, etc. c/w hinged cover over transformer and bell units	223.36	14.74	18.64	56.71	28037
28038	Wooden board (approved type) for desk fan fixed to wall	207.21	23.42	29.18	89.05	28038

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Plugs only, fused or unfused, bakelite : -					
	Each	A $	B $	C $	D $	
28039	15A/ 13A, 3 pin	24.66	5.01	5.79	18.04	28039
28040	5A, 3 pin	21.54	5.01	5.79	18.04	28040
28041	2A, 3 pin	-	5.01	-	-	28041
28042	Cartridge fuse link to B.S. 1362 (2A to 15A)	8.69	1.39	1.72	4.79	28042
	Plugs only, moulded rubber : -					
	Each					
28043	15A, 3 pin	54.16	5.01	5.79	18.04	28043
28044	13A/ 5A, 3 pin, fused	49.99	5.01	5.79	18.04	28044
	Socket outlets, shuttered type, bakelite : -					
	Each					
28045	15A, 3 pin	58.12	11.14	13.75	42.04	28045
28046	13A, 3 pin	56.71	11.14	13.75	42.04	28046
28047	13A, 3 pin, twin	73.19	11.14	13.75	42.04	28047
28048	5A, 3 pin	56.56	11.14	13.75	42.04	28048
28049	2A, 3 pin (unshuttered)	-	11.14	-	-	28049
28050	13A, 3 pin, socket integrated with 30 mA RCD	539.67	12.00	14.43	46.52	28050
28051	13A, 3 pin, twin socket integrated with 30 mA RCD	674.82	12.00	14.43	46.52	28051
28052	13A, 3 pin c/w minimum 2.0A Universal Serial Bus (USB) port	395.50	11.14	13.75	42.04	28052

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS (CONT'D)					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Socket outlet, shuttered type, metalclad : -					
	Each	A $	B $	C $	D $	
28053	15A, 3 pin	160.66	11.07	13.70	41.85	28053
28054	13A, 3 pin	144.56	11.07	13.70	41.85	28054
28055	13A, 3 pin, twin	184.95	11.07	13.70	41.85	28055
28056	5A, 3 pin	141.76	11.07	13.70	41.85	28056
28057	13A, 3 pin socket with cover plate	174.62	11.07	13.70	41.85	28057
28058	13A, 3 pin twin socket with cover plate	228.20	11.07	13.70	41.85	28058
28059	13A, 3 pin, socket integrated with 30 mA RCD	677.94	11.97	14.38	46.31	28059
28060	13A, 3 pin, twin socket integrated with 30 mA RCD	772.87	11.97	14.38	46.31	28060
	Socket outlet, round type, 50 mm fixing centre with over lapping or non-over lapping plate : -					
	Each					
28061	2A, 3 pin	-	11.07	-	-	28061
28062	5A, 3 pin	167.00	11.07	13.70	41.85	28062
	Switched-socket outlets with pilot light, shuttered type, bakelite : -					
	Each					
28063	15A, 3 pin	68.73	11.17	13.81	42.21	28063
28064	13A, 3 pin	68.46	11.17	13.81	42.21	28064
28065	13A, 3 pin, twin	100.65	11.17	13.81	42.21	28065
28066	5A, 3 pin	61.78	11.17	13.81	42.21	28066
28067	13A, 3 pin socket with cover plate	96.17	11.17	13.81	42.21	28067
28068	13A, 3 pin twin socket with cover plate	143.13	11.17	13.81	42.21	28068
28069	13A, 3 pin, socket integrated with 30 mA RCD	551.98	12.06	14.49	46.72	28069
28070	13A, 3 pin, twin socket integrated with 30 mA RCD	698.59	12.06	14.49	46.72	28070

Item	PLUGS AND SOCKET OUTLETS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Switched-socket outlets with pilot light, shuttered type, metalclad :-					
	Each	A $	B $	C $	D $	
28071	5A, 3 pin	177.43	10.95	13.52	40.90	28071
28072	15A, 3 pin	228.42	10.95	13.52	40.90	28072
28073	13A, 3 pin	204.25	10.95	13.52	40.90	28073
28074	13A, 3 pin, twin	303.29	10.95	13.52	40.90	28074
28075	13A, with 30 mA RCD	734.34	11.90	14.25	45.49	28075
	Switched-socket outlets, shuttered type, bakelite : -					
	Each					
28076	15A, 3 pin	66.07	10.95	13.52	40.90	28076
28077	13A, 3 pin	62.41	10.95	13.52	40.90	28077
28078	13A, 3 pin, with 30 mA RCD	530.89	11.90	14.25	45.49	28078
28079	13A, 3 pin, twin	85.16	10.95	13.52	40.90	28079
28080	Ditto but with 30 mA RCD	566.12	11.90	14.25	45.49	28080
28081	13A, 3 pin, triple	200.03	10.95	13.52	40.90	28081
28082	5A, 3 pin	59.58	10.95	13.52	40.90	28082

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS (CONT'D)					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Switched-socket outlets, shuttered type, metalclad : -					
	Each	A $	B $	C $	D $	
28083	15A, 3 pin.....	195.22	10.98	13.57	40.99	28083
28084	13A, 3 pin.....	164.42	10.98	13.57	40.99	28084
28085	Ditto but with 30 mA RCD.....	658.12	11.93	14.29	45.59	28085
28086	13A, 3 pin, twin.....	266.41	10.98	13.57	40.99	28086
28087	Ditto but with 30 mA RCD.....	766.54	11.93	14.29	45.59	28087
28088	5A, 3 pin.....	153.33	10.98	13.57	40.99	28088
28089	13A, 3 pin with cover plate.....	260.59	10.98	13.57	40.99	28089

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS (CONT'D)					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Splashproof, flush mounted socket outlet, IP56 : -					
	Each	A $	B $	C $	D $	
28090	13A	317.63	22.91	28.61	86.82	28090
28091	13A, twin	555.50	22.91	28.61	86.82	28091
28092	13A, DP, switch and with 30 mA RCD	1,599.82	24.11	30.11	92.48	28092
	Enclosure for flush mounted splashproof socket : -					
	Each					
28093	1 gang	226.18	10.94	13.51	40.86	28093
28094	2 gang	327.23	10.94	13.51	40.86	28094
	Splashproof, surface mounted socket outlet, IP44 : -					
	Each					
28095	13A, socket with cover plate	146.18	22.91	28.61	86.82	28095
	Splashproof, socket outlets with plugs, IP44 : -					
	Each					
28096	16A, 3 pin	189.31	21.78	27.22	82.59	28096
28097	16A, 5 pin	207.58	27.37	33.36	103.48	28097
28098	32A, 3 pin	280.38	21.78	27.22	82.59	28098
28099	32A, 5 pin	286.92	33.76	42.50	127.37	28099
28100	63A, 3 pin	744.26	33.76	42.50	127.37	28100
28101	63A, 5 pin	848.89	37.90	47.94	145.21	28101

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS (CONT'D)					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Socket outlet with plug, weatherproof type rated IP65 : -					
	Each	A $	B $	C $	D $	
28102	13A, 3 pin	396.11	22.81	28.49	86.46	28102
28103	15A, 3 pin	467.62	22.81	28.49	86.46	28103
28104	30A, 3 pin	729.14	22.81	28.49	86.46	28104
28105	60A, 3 pin	1,206.28	33.62	42.31	126.83	28105
28106	15A, 5 pin	796.55	27.98	34.07	105.68	28106
28107	30A, 5 pin	863.86	33.62	42.31	126.83	28107
28108	60A, 5 pin	1,452.32	39.06	49.40	149.63	28108
	Switched socket outlet with plug, weatherproof type rated IP65 : -					
	Each					
28109	13A, 3 pin	575.54	22.81	28.49	86.46	28109
28110	15A, 3 pin	827.52	22.81	28.49	86.46	28110
28111	30A, 3 pin	1,202.37	22.81	28.49	86.46	28111
28112	60A, 3 pin	1,911.85	33.62	42.31	126.83	28112
28113	15A, 5 pin	1,090.22	27.98	34.07	105.68	28113
28114	30A, 5 pin	1,326.33	33.62	42.31	126.83	28114
28115	60A, 5 pin	1,927.70	39.06	49.40	149.63	28115
	Switched socket outlet assemblies, sparkless, c/w plug, chromium plated brass cover, flush or surface pattern : -					
	Each					
28116	13A, 3 pin	1,287.07	22.81	28.49	86.46	28116
28117	13A, 3 pin, twin	2,379.01	22.81	28.49	86.46	28117
28118	15A, 3 pin	1,443.74	22.81	28.49	86.46	28118
28119	30A, 3 pin	2,226.59	22.81	28.49	86.46	28119

Item	PLUGS AND SOCKET OUTLETS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Switched socket outlet assemblies, flameproof, c/w plug : -					
	Each	A $	B $	C $	D $	
28120	5A, 3 pin	2,674.52	22.84	28.56	86.63	28120
28121	13A, 3 pin	3,101.65	22.84	28.56	86.63	28121
28122	15A, 3 pin	3,312.87	22.84	28.56	86.63	28122
28123	30A, 3 pin c/w 30 mA RCD	4,766.93	24.35	30.38	92.29	28123
	Shaver supply unit to IEC 61558-1 with isolating transformer to IEC 61558-2-5: -					
	Each					
28124	Dual socket of voltage 110V and 220V	402.71	11.85	14.21	45.31	28124
	Connection unit, Bakelite : -					
	Each					
28125	20A, connection unit, DP	63.98	10.94	13.51	40.86	28125
28126	32A, connection unit, DP	77.30	10.94	13.51	40.86	28126
28127	45A, connection unit, DP	77.72	10.94	13.51	40.86	28127
28128	Fused spur (2 - 13A), DP, with cable outlet	70.03	10.89	13.49	40.73	28128
28129	Fused spur (2 - 13A), DP, switch	81.96	10.89	13.49	40.73	28129
28130	Fused spur (2 - 13A), DP, switch, with pilot light	109.98	10.89	13.49	40.73	28130
28131	Fused spur (2 - 13A), DP, switch, with cable outlet	78.87	10.89	13.49	40.73	28131
28132	Fused spur (2 - 13A), DP, switch, with cable outlet and pilot light	108.55	10.89	13.49	40.73	28132
28133	Fused spur (2 - 13A), DP, switch, with cable outlet and pilot light, IP55	217.75	11.67	14.31	55.46	28133
28134	Fused spur (2 - 13A), DP, switch, with cable outlet, IP65	239.18	11.67	14.31	55.46	28134
28135	32A, TPN connection unit	242.78	33.70	42.40	127.11	28135
28136	30A, 3 terminal junction box	205.16	10.89	13.49	40.73	28136

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PLUGS AND SOCKET OUTLETS (CONT'D)					
	The rates include for mounting boxes frames and cutting into wall where applicable.					
	Connection unit, metalclad : -					
	Each	A $	B $	C $	D $	
28137	Fused spur (2 - 13A fuse), DP	211.15	10.89	13.49	40.73	28137
28138	Fused spur (2 - 13A fuse), DP, with cable outlet	241.04	10.89	13.49	40.73	28138
28139	Fused spur (2 - 13A fuse), DP, with cable outlet and pilot light	277.45	10.89	13.49	40.73	28139
28140	Fused spur (2 - 13A fuse), DP, switch	247.81	10.89	13.49	40.73	28140
28141	Fused spur (2 - 13A fuse), DP, switch, with pilot light	310.69	10.89	13.49	40.73	28141
28142	Fused spur (2 - 13A fuse), DP, switch, with cable outlet	296.16	10.89	13.49	40.73	28142
28143	Fused spur (2 - 13A fuse), DP, switch, with cable outlet and pilot light	351.57	10.89	13.49	40.73	28143
	Metal casing and socket c/w 30 mA RCD : -					
	Each					
28144	Galvanized iron casing, single socket	769.82	22.91	28.61	86.82	28144
28145	Ditto but twin	795.43	22.91	28.61	86.82	28145
28146	Ditto but with four sockets	913.91	22.91	28.61	86.82	28146
28147	Stainless steel casing, single socket	799.89	22.91	28.61	86.82	28147
28148	Ditto but twin	839.00	22.91	28.61	86.82	28148
28149	Ditto but with four sockets	981.83	22.91	28.61	86.82	28149
28150	Metal casing, single socket	613.45	22.91	28.61	86.82	28150
	Telephone outlets : -					
	Each					
28151	1-gang 6-pin telephone socket outlet	59.98	10.89	13.49	40.73	28151

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Plates only, bakelite to suit switches to IEC 60669-1 and socket to BS546 : -					
	Each	A $	B $	C $	D $	
28152	1 switch, 10A, flush.....	21.03	4.53	5.32	17.24	28152
28153	2 switches, 10A, flush.....	22.37	4.53	5.32	17.24	28153
28154	3 switches, 10A, flush.....	23.89	4.53	5.32	17.24	28154
28155	4 switches, 10A, flush.....	33.22	4.53	5.32	17.24	28155
28156	1 socket, 5/ 13/ 15A, 3 pin, flush.....	42.48	4.53	5.32	17.24	28156
	Moulded switch plates, c/w fixing screws suitable for 1 gang or 2 gang boxes : -					
	Each					
28157	1 gang plate for 1 gang box.....	29.88	4.53	5.32	17.24	28157
28158	2 gang plate for 1 gang box.....	32.80	4.53	5.32	17.24	28158
28159	2 gang plate for 2 gang box.....	55.44	4.53	5.32	17.24	28159
28160	3 gang plate for 2 gang box.....	59.80	4.53	5.32	17.24	28160
28161	4 gang plate for 2 gang box.....	65.54	4.53	5.32	17.24	28161

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES (CONT'D)					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Stainless steel or brass switch plates, c/w fixing screws suitable for 1 gang or 2 gang boxes : -					
	Each	A $	B $	C $	D $	
28162	1 gang plate for 1 gang box.....	119.61	4.53	5.33	17.28	28162
28163	2 gang plate for 1 gang box.....	138.22	4.53	5.33	17.28	28163
28164	2 gang plate for 2 gang box.....	152.03	4.53	5.33	17.28	28164
28165	3 gang plate for 2 gang box.....	166.51	4.53	5.33	17.28	28165
28166	4 gang plate for 2 gang box.....	181.98	4.53	5.33	17.28	28166
	White bakelite light switch to IEC 60669-1 : -					
	Each					
28167	10A, 1 gang SP 1 way.....	47.38	10.89	13.42	40.58	28167
28168	10A, 1 gang SP 2 way.....	54.03	10.89	13.42	40.58	28168
28169	10A, 2 gang SP 1 way or 2 way.....	60.44	10.89	13.42	40.58	28169
28170	10A, 3 gang SP 1 way or 2 way.....	69.45	10.89	13.42	40.58	28170
28171	10A, 2 way with or without "centre off" SP	58.24	10.89	13.42	40.58	28171
28172	10A, intermediate, SP.....	92.31	10.89	13.42	40.58	28172
28173	10A, 1 way DP.....	78.58	10.89	13.42	40.58	28173

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES (CONT'D)					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Chromium plated grid switch assemblies : -					
	Each	A $	B $	C $	D $	
28174	10A, 1 gang SP 1 way	249.24	10.87	13.43	41.07	28174
28175	10A, 1 gang SP 2 way	260.24	10.87	13.43	41.07	28175
28176	10A, 2 gang SP 1 way or 2 way	287.13	10.87	13.43	41.07	28176
28177	10A, 3 gang SP 1 way or 2 way	426.06	10.87	13.43	41.07	28177
28178	10A, 4 gang SP 1 way or 2 way	462.78	10.87	13.43	41.07	28178
28179	10A, DP 1 way	311.50	10.87	13.43	41.07	28179
28180	20A, DP 1 way	331.87	10.87	13.43	41.07	28180
28181	20A, 1 gang DP with pilot light	351.58	10.87	13.43	41.07	28181
28182	Ditto but 45A	390.28	10.87	13.43	41.07	28182
	Dimmer switch, white, bakelite : -					
	Each					
28183	250W, 1 gang, 1 way or 2 way	173.74	10.87	13.43	41.07	28183
28184	500W, 1 gang, 1 way or 2 way	174.25	10.87	13.43	41.07	28184
28185	250W, 2 gang, 1 way or 2 way	310.48	10.87	13.43	41.07	28185
28186	3 level dimmer switch (50%, 70%, 100%)	131.94	8.45	12.06	37.43	28186
28187	250V/ 6A dimmer switch for any combination of 10 lamps, 0 - 10 V interface	530.48	8.45	12.06	39.12	28187
28188	Multi-sensor dimmer with housing for control of light internist and occupancy switching operation	1,388.50	8.45	12.06	39.12	28188
	Dimmer switch, chromium plated : -					
	Each					
28189	400W, 1 gang, 1 way or 2 way	382.98	10.87	13.43	41.07	28189
28190	500W, 2 gang, 1 way or 2 way	458.95	10.87	13.43	41.07	28190

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES (CONT'D)					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	White bakelite DP switch : -					
	Each	A $	B $	C $	D $	
28191	20A	72.65	10.98	13.59	41.51	28191
28192	32A	108.63	10.98	13.59	41.51	28192
28193	45A	135.91	10.98	13.59	41.51	28193
	White bakelite DP switch with pilot light : -					
	Each					
28194	20A	82.84	10.98	13.59	41.51	28194
28195	32A	119.23	10.98	13.59	41.51	28195
28196	45A	143.24	10.98	13.59	41.51	28196
	Metalclad, surface mounted switch : -					
	Each					
28197	10A, 1 gang 1 way or 2 way	124.40	10.98	13.59	41.51	28197
28198	10A, 2 gang 1 way or 2 way	141.57	10.98	13.59	41.51	28198
28199	10A, 3 gang 1 way or 2 way	192.99	10.98	13.59	41.51	28199
28200	20A, DP with pilot light	202.30	10.98	13.59	41.51	28200
28201	45A, DP with pilot light	566.11	10.98	13.59	41.51	28201
28202	32A, TPN with pilot light	681.41	33.56	42.44	127.83	28202
28203	10A, lighting switch, 1 gang chromium plated brass cover	255.19	10.98	13.59	41.51	28203
28204	Ditto but 2 gang	281.63	10.98	13.59	41.51	28204
	Splashproof, flush mounted switch, protection class IP 56 : -					
	Each					
28205	10A, 1 gang 1 way SP	202.60	22.69	28.45	86.90	28205
28206	10A, 1 gang 2 way SP	205.63	22.69	28.45	86.90	28206
28207	10A, 1 gang 1 way DP	318.42	22.69	28.45	86.90	28207
28208	Ditto but 20A	437.33	22.69	28.45	86.90	28208
28209	10A, 2 gang 1 way SP	298.34	22.69	28.45	86.90	28209

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES (CONT'D)					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Splashproof, surface mounted switch, protection class IP44 : -					
	Each	A $	B $	C $	D $	
28210	10A, 1 gang 1 way SP	175.75	22.61	28.36	86.56	28210
28211	10A, 1 gang 2 way SP	178.08	22.61	28.36	86.56	28211
28212	10A, 2 gang 1 way SP	264.59	22.61	28.36	86.56	28212
28213	10A, 1 gang 1 way DP	185.72	22.61	28.36	86.56	28213
28214	Ditto but 20A, c/w pilot light	270.96	22.61	28.36	86.56	28214
28215	Switch, flameproof 10A	1,758.65	22.61	28.36	86.56	28215
28216	Ditto but 16A	2,283.35	22.61	28.36	86.56	28216
	Stainless steel (304) plated grid switch c/w metal casing : -					
	Each					
28217	Grid switch plate for 2 gang (switch measured separately)	367.25	16.95	20.34	62.15	28217
28218	Grid switch plate for 3 gang (switch measured separately)	457.65	16.95	20.34	62.15	28218
28219	Grid switch plate for 4 gang (switch measured separately)	514.15	16.95	20.34	62.15	28219
28220	Grid switch plate for 5 gang (switch measured separately)	666.70	16.95	20.34	62.15	28220
28221	Grid switch plate for 6 gang (switch measured separately)	858.80	16.95	20.34	62.15	28221
28222	Grid switch plate for 8 gang (switch measured separately)	983.10	22.60	28.25	90.40	28222
28223	Grid switch plate for 9 gang (switch measured separately)	1,107.40	22.60	28.25	90.40	28223
28224	Grid switch plate for 10 gang (switch measured separately)	1,124.35	22.60	28.25	90.40	28224
28225	Grid switch plate for 12 gang (switch measured separately)	1,299.50	22.60	28.25	90.40	28225
28226	Grid switch plate for 14 gang (switch measured separately)	1,785.40	22.60	28.25	90.40	28226
28227	Grid switch plate for 16 gang (switch measured separately)	2,260.00	22.60	28.25	90.40	28227
28228	Grid switch plate for 18 gang (switch measured separately)	2,994.50	33.90	39.55	113.00	28228
28229	Grid switch plate for 24 gang (switch measured separately)	4,859.00	33.90	39.55	113.00	28229

SUB-SWITCHES (CONT'D)

The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.

Grid switch, with/ without printed message : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
28230	10A, 1 way SP	203.40	16.95	20.34	67.80	28230
28231	10A, 2 way SP	203.40	16.95	20.34	67.80	28231
28232	10A, 2 way SP, retractive	226.00	16.95	20.34	67.80	28232
28233	10A, 2 way SP, centre off retractive	226.00	16.95	20.34	67.80	28233
28234	10A, 1 way DP	316.40	16.95	20.34	67.80	28234
28235	20A, 1 way DP	316.40	16.95	20.34	67.80	28235
28236	20A, 1 way DP, with pilot light	361.60	16.95	20.34	67.80	28236
28237	20A, 1 way DP, push to make	361.60	16.95	20.34	67.80	28237
28238	20A, 1 way DP, push to break, retractive	361.60	16.95	20.34	67.80	28238
28239	20A, intermediate	452.00	16.95	20.34	67.80	28239
28240	Dimmer switch	621.50	16.95	20.34	67.80	28240
28241	Indicator unit	621.50	16.95	20.34	67.80	28241
28242	Blank plate	45.20	11.30	16.95	11.30	28242

Keyswitch : -

	Each					
28243	Keytag	59.35	-	-	-	28243
28244	10A, wall unit keyswitch	369.20	22.61	28.36	86.56	28244
28245	20A, DP wall unit keyswitch	409.86	22.61	28.36	86.56	28245

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUB-SWITCHES (CONT'D)					
	The rates for sub-switches include the mounting boxes frames and cutting into wall where applicable.					
	Float switch : -					
	Each	A $	B $	C $	D $	
28246	Mercury float switch	448.88	29.55	37.06	112.10	28246
28247	Galvanized steel bracket for mercury float switch	147.63	14.31	17.85	54.22	28247
28248	Ditto but of stainless steel 316	350.31	14.31	17.85	54.22	28248
	Ceiling switch, cord or chain operated : -					
	Each					
28249	6A, 1 way or 2 way SP	72.50	10.89	13.47	41.15	28249
28250	10A, 1 way SP	75.29	10.89	13.47	41.15	28250
28251	10A, 2 way SP	80.63	10.89	13.47	41.15	28251
28252	15A, 1 way SP	84.29	10.89	13.47	41.15	28252
28253	16A, 1 way DP	88.14	10.89	13.47	41.15	28253
	Miscellaneous switch : -					
	Each					
28254	Emergency stop switch, metalclad, heavy duty type	412.77	14.31	17.85	54.22	28254
28255	Push button switch, 5A, bakelite miniature panel mounting	251.75	4.53	5.33	17.28	28255
28256	On-off pull switch, 2A, for fluorescent fitting, fitted with ball chain and metal tassel	66.72	4.53	5.33	17.28	28256
28257	Toggle switch, 10/ 15A, 2 way	53.78	7.63	9.12	26.98	28257
28258	Photo electric daylight switch 220V 50Hz	511.48	28.45	36.77	110.70	28258
28259	Dusk/ Dawn Photo electric switch, light threshold from 20 - 500 lux, adjustable	1,411.02	21.40	26.83	81.84	28259
28260	Photo-electric control 1000W/ 1500VA 220 - 240V with standard 3-prong EEI-NEMA twist lock mounting	600.08	30.29	38.00	114.95	28260
28261	Socket (or mount) with standard EEI-NEMA twist lock receptacle for photo-electric control	110.73	14.61	18.30	55.67	28261

Item	BELLS AND BELL ACCESSORIES	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
28262	Door bell with bakelite case, battery operated type, of any rating	148.71	15.01	17.70	46.12	28262
28263	Door bell, 2 notes, 8V, without transformer	168.74	15.01	17.70	46.12	28263
28264	Door bell, 2 notes, 8V, with 220V/ 8V transformer	208.21	15.01	17.70	46.12	28264
28265	Bell, underdome type, circular 75 mm diameter, 4.5, 6.0 or 12.0V	264.27	15.01	17.70	46.12	28265
28266	Ditto but circular and insulated pattern, 100 mm diameter, 12 or 24V	292.90	15.01	17.70	46.12	28266
28267	Alarm bell, waterproof, 150 mm diameter gong, cast iron pattern continuous ringing, 220V A.C. or 24V D.C.	374.27	15.01	17.70	46.12	28267
28268	Alarm bell, waterproof, 225 mm diameter gong, cast iron pattern continuous ringing, 220V A.C. or 24V D.C.	738.95	15.01	17.70	46.12	28268
28269	Mini buzzer, 51 mm diameter, 8/ 12V A.C.	82.95	15.01	17.70	46.12	28269
28270	Mini buzzer, 71 mm diameter, 8/ 12V A.C.	99.86	15.01	17.70	46.12	28270
28271	Buzzer 24V A.C. with case	136.29	15.01	17.70	46.12	28271
28272	Buzzer 8V A.C. with case	149.27	15.01	17.70	46.12	28272
28273	Bell indicator, unit pendulum type, 6 - 9 ways	62.97	15.01	17.70	46.12	28273
28274	Bell push, flush type with bakelite plate on BS 4662 Box/ IEC 60670 Box	64.50	12.17	15.08	37.56	28274
28275	Weatherproof bell push, rated IP65	294.98	21.12	26.14	79.37	28275
28276	Bell push, foot operated floor type	216.40	12.17	15.08	37.56	28276
28277	Bell push, surface mounted	52.61	12.17	15.08	37.56	28277
28278	Bell transformer, 220/ 4V	203.13	15.01	17.70	46.12	28278
28279	Bell transformer, 220/ 8V	204.42	15.01	17.70	46.12	28279
28280	Bell transformer, 220/ 12V	285.26	15.01	17.70	46.12	28280
28281	Bell transformer, 220/ 24V	298.38	15.01	17.70	46.12	28281
28282	Control relay, with bakelite case plug-in type coil voltage 12/ 24/ 48V	169.41	15.01	17.70	46.12	28282
28283	Ditto but coil voltage 110/ 220V	196.96	15.01	17.70	46.12	28283

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING					
	Heavy gauge galvanized welded screwed steel conduit to IEC 61386-21, c/w all necessary accessories and fixed in saddles, chases, screed, within dry partition or on shuttering : -					
	Concealed conduit : -					
	Per linear metre	A $	B $	C $	D $	
28284	20 mm diameter.....	47.60	-	-	20.28	28284
28285	25 mm diameter	54.21	-	-	20.28	28285
28286	32 mm diameter.....	63.27	-	-	25.99	28286
	Surface mounted conduit including all types of spacing saddles : -					
	Per linear metre					
28287	20 mm diameter.....	78.07	10.70	13.06	43.12	28287
28288	25 mm diameter	96.87	10.70	13.06	43.12	28288
28289	32 mm diameter.....	116.23	12.17	15.07	48.11	28289
28290	40 mm diameter.....	121.08	12.33	15.81	50.01	28290
28291	50 mm diameter.....	150.89	12.89	16.53	56.87	28291
	Heavy gauge PVC conduit c/w all necessary accessories and fixed in saddles, chases, screed, within dry partition, or on shuttering : -					
	Per linear metre					
28292	20 mm diameter.....	32.58	5.37	6.59	16.44	28292
28293	25 mm diameter.....	40.85	6.32	7.83	20.16	28293
28294	32 mm diameter.....	51.28	6.61	8.24	21.74	28294
	Draw wire in conduit : -					
	Per linear metre					
28295	Draw wire.....	2.09	-	-	1.85	28295

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	Watertight flexible metallic conduit c/w all necessary accessories : -					
	Per linear metre	A $	B $	C $	D $	
28296	20 mm diameter.....	37.63	9.67	11.60	15.08	28296
28297	25 mm diameter.....	46.36	9.67	11.60	15.08	28297
28298	32 mm diameter.....	54.56	9.67	11.60	15.08	28298
28299	40 mm diameter.....	82.08	10.57	12.67	16.40	28299
28300	50 mm diameter.....	117.03	10.57	12.67	16.40	28300
	Watertight flexible metallic conduit with PVC sheathed c/w all necessary accessories : -					
	Per linear metre					
28301	20 mm diameter.....	37.63	9.67	11.60	15.08	28301
28302	25 mm diameter.....	46.36	9.67	11.60	15.08	28302
28303	32 mm diameter.....	54.56	9.67	11.60	15.08	28303
28304	40 mm diameter.....	68.13	10.57	12.67	16.40	28304
28305	50 mm diameter.....	125.33	10.57	12.67	16.40	28305
	Adaptors male/ female for flexible metallic conduit, brass, sweated or screwed onto conduit of the following sizes : -					
	Each					
28306	20 mm diameter.....	10.95	2.80	3.26	8.30	28306
28307	25 mm diameter.....	13.15	2.80	3.26	8.30	28307
28308	32 mm diameter.....	17.44	2.80	3.26	8.30	28308
28309	40 mm diameter.....	24.19	2.80	3.26	8.30	28309
28310	50 mm diameter.....	32.08	3.38	4.15	10.48	28310

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	Brass female bushes for conduit of the following sizes : -					
	Each	A $	B $	C $	D $	
28311	20 mm diameter	3.19	0.78	0.93	2.25	28311
28312	25 mm diameter	3.89	0.78	0.93	2.25	28312
28313	32 mm diameter	4.62	0.78	0.93	2.25	28313
28314	40 mm diameter	5.97	0.93	1.12	2.57	28314
28315	50 mm diameter	12.10	1.34	1.52	4.04	28315
	Brass male bushes for conduit of the following sizes : -					
	Each					
28316	20 mm diameter	3.38	0.78	0.93	2.25	28316
28317	25 mm diameter	4.20	0.78	0.93	2.25	28317
28318	32 mm diameter	4.85	0.78	0.93	2.25	28318
28319	40 mm diameter	7.02	0.93	1.12	2.57	28319
28320	50 mm diameter	11.82	1.34	1.52	4.04	28320
	Rubber grommets of the following sizes : -					
	Each					
28321	20 mm diameter	2.46	0.78	0.93	2.25	28321
28322	25 mm diameter	2.79	0.78	0.93	2.25	28322
28323	32 mm diameter	3.16	0.78	0.93	2.25	28323
28324	40 mm diameter	4.03	0.93	1.12	2.57	28324
28325	50 mm diameter	6.10	1.34	1.52	4.04	28325

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	Conduit boxes, malleable iron (galvanized) for heavy gauge steel conduits, round without lids for conduit of the following sizes : -					
		A	B	C	D	
	Each	$	$	$	$	
28326	20 mm diameter standard BESA boxes with 51 mm fixing centres.....	34.11	7.70	9.30	23.75	28326
28327	20 mm diameter deep pattern standard BESA boxes with 51 mm fixing centres.....	38.08	7.70	9.30	23.75	28327
28328	Lids and screws for standard BESA boxes.....	10.17	1.90	2.34	5.80	28328
28329	Break joint ring, galvanized iron.....	9.02	1.90	2.34	5.80	28329
28330	Metal break ring, or overlapping plate, galvanized iron, suitable for steel conduit box with 51 mm fixing centre.....	8.01	1.90	2.34	5.80	28330
	Heavy spacing saddles for steel conduit of the following sizes : -					
	Each					
28331	20 mm diameter.....	17.72	4.53	5.28	13.74	28331
28332	25 mm diameter.....	18.20	4.53	5.28	13.74	28332
28333	32 mm diameter.....	19.22	4.53	5.28	13.74	28333
28334	40 mm diameter.....	26.37	5.28	6.32	15.96	28334
28335	50 mm diameter.....	27.91	5.28	6.32	15.96	28335
	Spacing saddles for PVC conduit of the following sizes : -					
	Each					
28336	20 mm diameter.....	15.68	4.10	4.99	12.56	28336
28337	25 mm diameter.....	16.72	4.10	4.99	12.56	28337
28338	32 mm diameter.....	17.58	4.10	4.99	12.56	28338

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	Solid couplers, screwed, malleable iron, galvanized, for steel conduit of the following sizes : -					
		A	B	C	D	
	Each	$	$	$	$	
28339	20 mm diameter	6.70	1.52	1.83	4.54	28339
28340	25 mm diameter	7.67	1.52	1.83	4.54	28340
28341	32 mm diameter	8.81	1.52	1.83	4.54	28341
28342	40 mm diameter	11.59	1.52	1.83	4.54	28342
28343	50 mm diameter	16.11	1.52	1.83	4.54	28343
	Adaptable junction boxes, cast iron/ sheet steel, galvanized, c/w cover (including cutting and drilling holes into wall and ceiling as required)					
	Cast iron, square : -					
	Each					
28344	75 x 75 x 50 mm	55.86	10.17	12.75	39.77	28344
28345	100 x 100 x 50 mm	63.08	11.24	13.49	42.11	28345
28346	100 x 100 x 75 mm	66.81	11.24	13.49	42.11	28346
28347	150 x 150 x 75 mm	80.75	11.24	13.49	44.45	28347
28348	225 x 225 x 75 mm	152.38	13.49	17.22	55.02	28348
28349	300 x 300 x 75 mm	252.67	17.22	22.46	68.93	28349
	Cast iron, oblong : -					
	Each					
28350	150 x 75 x 50 mm	66.49	11.24	13.49	42.12	28350
28351	225 x 150 x 75 mm	110.34	11.24	13.49	44.45	28351
28352	300 x 200 x 90 mm	174.40	13.49	17.22	55.02	28352
28353	450 x 300 x 100 mm	316.15	17.22	22.46	68.93	28353

Item	CONDUITS AND CONDUIT FITTING (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Sheet steel, square : -					
		A	B	C	D	
	Each	$	$	$	$	
28354	75 x 75 x 50 mm	53.64	10.19	12.77	39.85	28354
28355	100 x 100 x 50 mm	57.09	10.68	13.25	42.19	28355
28356	150 x 150 x 75 mm	64.38	11.43	14.29	44.54	28356
28357	225 x 225 x 75 mm	89.74	15.03	18.79	58.48	28357
28358	300 x 300 x 75 mm	114.12	17.13	22.50	69.09	28358
	PVC adaptable junction box c/w cover (including cutting and drilling holes into wall and ceiling as required) : -					
	Each					
28359	75 x 75 x 44 mm	32.41	7.74	9.35	23.28	28359
28360	100 x 100 x 50 mm	37.45	8.85	10.76	27.00	28360
28361	150 x 150 x 50 mm	60.40	10.37	12.60	31.78	28361
28362	150 x 150 x 75 mm	69.94	10.37	12.60	31.78	28362
28363	225 x 225 x 75 mm	104.53	13.92	17.85	53.87	28363
	Sheet metal cover plate c/w screws for adaptable junction box of the following sizes : -					
	Each					
28364	75 x 75 mm	11.14	2.80	3.25	8.09	28364
28365	100 x 100 mm	12.18	2.80	3.25	8.09	28365
28366	150 x 150 mm	14.80	2.80	3.25	8.09	28366
28367	225 x 225 mm	25.62	2.80	3.25	8.09	28367
28368	300 x 300 mm	37.95	3.86	4.62	11.43	28368
28369	150 x 75 mm	12.35	2.80	3.25	8.09	28369
28370	225 x 150 mm	19.36	2.80	3.25	8.09	28370
28371	300 x 200 mm	27.94	2.80	3.25	8.09	28371
28372	450 x 300 mm	48.31	3.86	4.62	11.43	28372

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	Galvanized cast iron box for surface mounting, to IEC 60670 or BS 4662 boxes : -					
	Each	A $	B $	C $	D $	
28373	35 mm deep, 1 gang	11.04	2.80	3.29	5.45	28373
28374	47 mm deep, 1 gang	12.03	2.80	3.29	5.45	28374
28375	35 mm deep, 2 gang	14.44	2.80	3.29	5.45	28375
28376	47 mm deep, 2 gang	17.49	2.80	3.29	5.45	28376
	Galvanized steel box for flush mounting, to IEC 60670 or BS 4662 boxes : -					
	Each					
28377	25 mm deep, 1 gang	24.71	7.54	9.27	15.33	28377
28378	25 mm deep, 2 gang	28.02	8.71	10.37	17.47	28378
28379	25 mm deep, 3 gang	31.66	9.66	11.64	19.51	28379
28380	35 mm deep, 1 gang	25.62	7.54	9.27	15.33	28380
28381	35 mm deep, 2 gang	28.49	8.71	10.37	17.47	28381
28382	47 mm deep, 1 gang	27.45	7.54	9.27	15.33	28382
28383	47 mm deep, 2 gang	30.60	8.71	10.37	17.47	28383
28384	44 mm deep for shaver unit	39.72	7.50	9.21	15.24	28384
	Galvanized steel box for surface mounting, to IEC 60670 or BS 4662 boxes : -					
	Each					
28385	41 mm deep, 1 gang with knockout	22.83	6.65	8.12	13.49	28385
28386	41 mm deep, 2 gang with knockout	27.30	7.27	9.09	14.81	28386
28387	17 mm deep, 1 gang	21.52	6.44	7.69	13.04	28387
28388	25 mm deep, 1 gang	21.97	6.44	7.69	13.04	28388
28389	30 mm or 32 mm deep, 1 gang	22.17	6.44	7.69	13.04	28389
28390	30 mm or 32 mm deep, 2 gang	23.61	6.87	8.35	13.25	28390
28391	30 mm or 32 mm deep, 3 gang	25.15	6.87	8.35	13.25	28391
28392	38 mm or 40 mm deep, 1 gang	23.99	6.65	8.12	13.49	28392
28393	38 mm or 40 mm deep, 2 gang	27.53	7.27	9.09	14.81	28393
28394	38 mm or 40 mm deep for 2 x 1 gang with partition	28.51	7.27	9.09	14.81	28394
28395	44 mm deep, 1 gang	25.03	6.65	8.12	13.49	28395
28396	44 mm deep for shaver unit	35.36	6.65	8.12	13.49	28396

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONDUITS AND CONDUIT FITTING (CONT'D)					
	PVC switch box : -					
	Each	A $	B $	C $	D $	
28397	35 mm deep, 1 gang	10.74	2.77	3.26	8.12	28397
28398	47 mm deep, 1 gang	11.16	2.77	3.26	8.12	28398
28399	47 mm deep, 2 gang	17.94	2.77	3.26	8.12	28399
28400	surface switch box 35 mm deep, 1 gang	11.18	2.77	3.26	8.12	28400
28401	surface switch box 47 mm deep, 1 gang	11.24	2.77	3.26	8.12	28401
28402	surface switch box 47 mm deep, 2 gang	17.92	2.77	3.26	8.12	28402
	Steel base box for grid switch : -					
	Each					
28403	73 x 73 x 40 mm	73.55	9.67	11.67	29.33	28403
28404	73 x 133 x 40 mm	88.60	10.68	12.85	32.35	28404
28405	133 x 133 x 40 mm	224.18	11.55	13.83	44.15	28405
28406	194 x 133 x 40 mm	245.30	12.58	16.75	48.16	28406
	Moulded base box for grid switch : -					
	Each					
28407	1 gang or 2 gang	33.53	7.55	9.05	23.06	28407
28408	3 gang or 4 gang	47.61	7.55	9.05	23.06	28408
	Blank plate : -					
	Each					
28409	White bakelite, 1 gang	13.50	1.63	1.96	4.69	28409
28410	White bakelite, 2 gang	21.39	1.63	1.96	4.69	28410
28411	Stainless steel, 1 gang	45.77	4.73	5.52	17.51	28411
28412	Stainless steel, 2 gang	49.92	4.73	5.52	17.51	28412

Item	CONDUITS AND CONDUIT FITTING (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Accessories for weatherproof switch/ socket, IP 65 : -					
	Each	A $	B $	C $	D $	
28413	Entry blank	24.36	3.42	4.02	10.40	28413
28414	PVC cable entry	24.71	3.42	4.02	10.40	28414
28415	20 mm conduit entry	26.40	3.42	4.02	10.40	28415
28416	Box coupler	13.79	0.75	0.92	2.29	28416
28417	Gel seal for socket	28.82	2.62	3.21	7.96	28417
28418	Surface mounting 1 gang box	85.34	7.55	9.28	23.06	28418
28419	Surface mounting 2 gang box	113.10	7.55	9.28	23.06	28419
28420	1 gang flush mounting frame	189.07	10.75	13.14	39.69	28420
28421	2 gang flush mounting frame	280.23	11.20	13.57	40.77	28421

	UNDERFLOOR BUSBAR TRUNKING UNIT	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Underfloor busbar trunking unit (with colour) for final circuit distribution c/w trunking coupler, all necessary interconnection wirings and accessories : -					
	Each	A $	B $	C $	D $	
28422	32A SPN, 1200 mm long	1,044.99	69.44	86.54	120.38	28422
28423	32A SPN, 2400 mm long	2,074.99	133.45	151.18	171.21	28423
	Underfloor busbar trunking accessories : -					
	Each					
28424	Flexible connector assembly c/w 2 m long flexible conduit and all necessary wirings	146.36	33.85	50.79	51.55	28424
28425	Cross over bridge assembly for four compartments trunking	1,079.58	66.23	82.28	129.46	28425

FLOOR OUTLET BOX

Floor outlet box or trunking service box c/w base box, cover including carpet frame & lid assembly, blank plate for spare outlet hole, mounting plate with outlet hole suitable for installing power socket, LAN socket and Telephone socket (socket outlet, cabling & wiring facilities to be measured separately) : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
28426	Two compartment type with 3/ 4 outlet holes	1,124.06	69.44	86.54	186.66	28426
28427	Three compartment type with 6/ 9 outlet holes	1,129.58	69.44	86.54	195.83	28427
28428	Four compartment type with 8 outlet holes	1,134.33	69.44	86.54	204.52	28428

CABLE TRUNKING AND CABLE TRAY

Cable trunking galvanized sheet steel suspended from ceiling soffit or fixed to wall with cover, an addition of fifty (50) percent will be made to the rate involving hanger or bracket for trunking installed all the way exceeding 450 mm from ceiling soffit or wall : -

Trunking : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
28429	50 x 50 mm 1 compartment	117.80	15.96	20.32	71.03	28429
28430	50 x 75 mm ditto	125.74	16.53	21.04	74.45	28430
28431	75 x 75 mm ditto	130.45	17.26	22.49	77.68	28431
28432	50 x 100 mm ditto	130.45	17.26	22.49	77.68	28432
28433	75 x 100 mm ditto	135.11	19.43	23.92	87.02	28433
28434	100 x 100 mm ditto	148.13	19.43	23.92	87.02	28434
28435	100 x 150 mm ditto	159.30	20.87	26.71	94.65	28435
28436	150 x 150 mm ditto	184.64	23.89	28.85	104.41	28436
28437	150 x 200 mm ditto	197.59	25.37	31.92	113.22	28437
28438	150 x 250 mm ditto	210.53	28.10	35.57	121.37	28438
28439	150 x 500 mm ditto	280.38	36.93	43.00	145.60	28439
28440	200 x 200 mm ditto	165.25	36.93	43.00	145.60	28440
28441	300 x 300 mm ditto	266.23	36.93	43.00	145.60	28441
28442	50 x 100 mm 2 compartments	141.65	17.26	22.49	77.68	28442

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Cable trunking galvanized sheet steel suspended from ceiling soffit or fixed to wall with cover, an addition of fifty (50) percent will be made to the rate involving hanger or bracket for trunking installed all the way exceeding 450 mm from ceiling soffit or wall : - (Cont'd)					
	Trunking : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
28443	50 x 150 mm 2 compartments	191.32	20.15	24.64	89.14	28443
28444	75 x 100 mm ditto	182.39	20.15	24.64	89.81	28444
28445	75 x 150 mm ditto	199.99	20.15	24.64	89.81	28445
28446	100 x 150 mm ditto	227.40	20.87	26.71	94.65	28446
28447	75 x 100 mm 3 compartments	201.51	20.15	24.64	89.81	28447
28448	75 x 150 mm ditto	219.07	20.15	24.64	89.81	28448
28449	100 x 150 mm ditto	236.93	20.87	26.71	94.65	28449
28450	150 x 150 mm ditto	289.83	23.89	28.85	104.41	28450
28451	150 x 200 mm ditto	315.42	25.37	31.92	113.22	28451
	Trunking cover : -					
	Per linear metre					
28452	50 mm wide	103.95	2.35	2.84	6.78	28452
28453	75 mm wide	107.49	2.35	2.84	6.78	28453
28454	100 mm wide	109.82	2.35	2.84	6.78	28454
28455	150 mm wide	118.36	3.48	4.25	10.25	28455
28456	200 mm wide	127.24	4.25	5.19	12.48	28456
28457	300 mm wide	139.60	5.19	6.26	15.17	28457
28458	500 mm wide	166.37	6.59	7.83	18.86	28458
	Extra over trunking of the following sizes for cross unit 4-way, with 4 connectors : -					
	Each					
28459	50 x 50 mm	114.55	13.60	17.30	52.60	28459
28460	75 x 75 mm	122.23	14.96	18.70	55.33	28460
28461	100 x 100 mm	131.67	15.83	19.60	59.04	28461
28462	100 x 150 mm	139.92	16.57	20.36	61.47	28462
28463	150 x 150 mm	156.41	17.30	22.54	67.02	28463

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Extra over trunking for reducer unit with 2 connectors : -					
	Each	A $	B $	C $	D $	
28464	75 x 75 mm to 100 x 100 mm	113.67	12.85	16.57	49.37	28464
28465	100 x 100 mm to 100 x 150 mm	117.80	13.60	17.30	52.90	28465
28466	100 x 100 mm to 150 x 150 mm	126.04	14.96	18.70	56.28	28466
	Extra over trunking of the following size for flat tee, edge tee unit with connectors : -					
	Each					
28467	50 x 50 mm	107.19	12.85	15.84	47.13	28467
28468	50 x 100/ 75 x 75 mm	112.19	12.85	16.57	49.37	28468
28469	75 x 100 mm	113.97	13.60	17.30	52.90	28469
28470	100 x 100 mm	118.07	13.60	17.30	52.90	28470
28471	100 x 150 mm	123.11	14.96	18.70	56.28	28471
28472	150 x 150 mm	133.41	16.57	20.36	61.47	28472
28473	200 x 200 mm	143.41	17.30	22.54	67.02	28473
	Extra over trunking of the following size for flat elbow, internal or external elbow unit with connectors : -					
	Each					
28474	50 x 50 mm	105.11	12.35	15.90	47.31	28474
28475	50 x 100/ 75 x 75 mm	108.98	12.93	16.64	49.56	28475
28476	50 x 150/ 100 x 100 mm	113.67	13.68	17.38	53.10	28476
28477	75 x 100 mm	110.40	13.68	17.38	53.10	28477
28478	75 x 150 mm	116.30	15.03	18.79	56.50	28478
28479	100 x 150 mm	117.80	15.03	18.79	56.50	28479
28480	150 x 150 mm	126.04	16.64	20.43	61.72	28480
28481	150 x 500 mm	207.03	18.93	25.08	75.97	28481

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Extra over trunking of the following size for flat elbow, internal or external elbow unit with connectors : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
28482	200 x 200 mm	133.97	17.38	22.61	67.28	28482
28483	300 x 300 mm	175.22	18.93	25.08	75.97	28483
28484	50 x 100 mm 2 compartments	111.92	12.93	16.64	49.56	28484
28485	50 x 150 mm 2 compartments	117.21	13.68	17.38	53.10	28485
28486	100 x 150 mm 2 compartments	121.33	15.03	18.79	56.50	28486
28487	75 x 100 mm 3 compartments	116.30	13.68	17.38	53.10	28487
28488	75 x 150 mm 3 compartments	123.34	14.36	18.10	54.86	28488
28489	100 x 150 mm 3 compartments	124.87	15.03	18.79	56.50	28489
28490	150 x 150 mm 3 compartments	134.89	15.90	19.71	58.64	28490
	Blank end for cable trunking of the following sizes : -					
	Each					
28491	50 x 50 mm	51.06	5.32	6.87	15.94	28491
28492	50 x 100/ 75 x 75 mm	52.49	5.32	6.87	15.94	28492
28493	50 x 150/ 100 x 100 mm	53.93	5.32	6.87	15.94	28493
28494	75 x 100 mm	53.27	5.32	6.87	15.94	28494
28495	100 x 150 mm	57.25	5.32	6.87	15.94	28495
28496	150 x 150 mm	58.68	5.33	6.88	15.96	28496
28497	150 x 500 mm	82.34	7.87	10.16	24.13	28497
28498	300 x 300 mm	80.23	7.87	10.16	24.13	28498
28499	Wiring clip for cable trunking	48.17	0.49	0.63	1.32	28499

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	PVC mini-trunking to IEC 61084-1, c/w all cross over, elbow, tee, blank end and all necessary fixing accessories : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
28500	16 x 16 mm	31.46	3.68	4.69	14.25	28500
28501	16 x 25/ 16 x 40/ 25 x 25 mm	40.82	5.62	6.87	17.30	28501
28502	25 x 40/ 25 x 50 mm	48.94	5.62	6.87	17.30	28502
28503	32 x 50/ 50 x 50 mm	75.42	5.62	6.87	17.30	28503
	Surface galvanized sheet steel weatherproof trunking, including all cross over, tee, bend, blank end and fixing accessories : -					
	Per linear metre					
28504	100 x 100 mm	384.51	46.10	57.54	181.73	28504
28505	150 x 150 mm	539.07	55.49	68.65	214.17	28505
	Exposed floor trunking, including all trunking fittings, crossover, tee, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers, pyramid sides : -					
	Per linear metre					
28506	153 mm x 38 mm (2 compartments) trunking	204.22	18.95	23.39	69.41	28506
28507	228 mm x 38 mm (3 compartments) trunking	244.05	22.76	28.02	85.53	28507
	Each					
28508	153 mm x 38 mm (2 compartments) junction box	401.44	12.36	15.62	48.14	28508
28509	228 mm x 38 mm (3 compartments) junction box	455.89	15.62	19.34	60.20	28509

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Flush floor trunking, including all trunking fittings, tee, cross over, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
28510	153 mm x 38 mm (2 compartments) trunking.....	237.85	18.85	23.24	68.99	28510
28511	228 mm x 38 mm (3 compartments) trunking.....	293.62	22.61	27.85	85.03	28511
	Each					
28512	153 mm x 38 mm (2 compartments) junction box.....	430.91	12.57	15.84	46.78	28512
28513	228 mm x 38 mm (3 compartments) junction box.....	482.09	15.84	19.63	58.55	28513
	Underfloor trunking, including all trunking fittings, tee, cross over, riser bend, outlet box and other accessories, manufactured from 1.6 mm galvanized steel, lids of 3 mm galvanized steel, flush or recessed covers : -					
	Per linear metre					
28514	153 mm x 38 mm (2 compartments) trunking.....	94.33	18.85	23.24	68.99	28514
28515	228 mm x 38 mm (3 compartments) trunking.....	109.58	22.61	27.85	85.03	28515
	Each					
28516	153 mm x 38 mm (2 compartments) junction box.....	170.90	12.57	15.84	46.78	28516
28517	228 mm x 38 mm (3 compartments) junction box.....	179.93	15.84	19.63	113.67	28517
	Skirting trunking, including all trunking fittings, riser bend, outlet lid and other accessories, manufactured from 1.6 mm sheet steel, stove epoxy polyester powder finish : -					
	Per linear metre					
28518	153 mm x 38 mm (2 compartments).....	187.96	18.85	23.24	68.99	28518
28519	225 mm x 50 mm (2 compartments).....	248.79	22.61	27.85	86.21	28519
28520	228 mm x 38 mm (3 compartments)	247.55	22.61	27.85	85.03	28520
28521	228 mm x 50 mm (3 compartments).....	249.96	23.18	28.29	87.10	28521
28522	300 mm x 50 mm (3 compartments).....	336.64	27.85	34.35	104.35	28522
	Sill trunking, including all trunking fittings, riser bend, outlet lid and other accessories, manufactured from 1.2 mm sheet steel, stove epoxy polyester powder finish : -					
	Per linear metre					
28523	102 mm x 38 mm (2 compartments).....	166.51	18.85	23.24	68.99	28523
28524	153 mm x 38 mm (2 compartments).....	187.96	18.85	23.24	68.99	28524

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Galvanized metal sheet tray suspended from ceiling soffit, including all fittings, cross, tee, bend and other accessories : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
28525	75 mm wide	106.31	14.93	18.68	59.64	28525
28526	100 mm wide	127.79	15.83	19.60	65.89	28526
28527	150 mm wide	151.39	17.10	20.79	70.58	28527
28528	225 mm wide	182.57	18.79	23.20	78.14	28528
28529	300 mm wide	221.48	19.43	23.92	81.49	28529
28530	450 mm wide	272.09	22.58	27.79	91.50	28530
28531	600 mm wide	331.23	23.89	30.46	98.22	28531
	Each					
28532	650 mm high power post, anodised aluminium body with uPVC cover, twin compartments in cross-section of 100 x 100 mm, composed of one full length post body, two full length cover section, 5 nos. outlet box assembly, one end load plate, one top cover, one end load plate, one earth link strap, and all necessary accessories	1,357.94	26.62	32.44	101.23	28532
28533	3.6 m high power post, anodised aluminium body with uPVC cover, twin compartments in cross-section of 100 x 100 mm, composed of one full length post body, two full length cover section, two 3 m long dividing strip, 6 nos. outlet box assembly, one end load plate, one top end collar with jacking assembly, two end load plate, 3 nos. earth link strap, and all necessary accessories	3,980.49	248.12	303.75	911.13	28533
	3 compartments PVC trunking to IEC 1084-1 or BS4678 part 4, size 145 mm x 40 mm : -					
	Per linear metre					
28534	Straight section of trunking, including blank end, cover and fixing accessories	831.61	21.97	27.12	83.22	28534
	Each					
28535	Angle unit - flat, external or internal, including cover	174.43	15.79	19.51	60.93	28535
28536	Flat tee unit, including cover	191.15	15.79	19.51	60.93	28536
	Plastic cable tray					
	Per linear metre					
28537	Plastic cable tray, 150 mm wide	390.90	14.50	18.21	58.55	28537

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE TRUNKING AND CABLE TRAY (CONT'D)					
	Stainless steel weatherproof cable trunking, size 100 x 100 mm : -					
	Per linear metre	A $	B $	C $	D $	
28538	Straight section of trunking, including blank end, cover and fixing accessories.....	281.19	19.43	23.92	87.27	28538
	Each					
28539	Extra over trunking for flat tee unit, including cover and connector.....	222.81	13.59	17.26	53.37	28539
28540	Extra over trunking for elbow - flat, internal or external, including cover and connector.....	203.90	13.59	17.26	53.37	28540
	Glass Reinforced Polyester (GRP) cable tray c/w hangers at 1.5m support span : -					
	Per linear metre					
28541	200 mm width.....	572.35	15.41	19.30	63.08	28541
28542	300 mm width.....	659.45	15.41	19.30	63.08	28542
	Stainless steel 304 sheet tray suspended from ceiling soffit, including all fittings, cross, tee, bend and other accessories : -					
	Per linear metre					
28543	200 mm wide	125.32	18.22	22.40	75.63	28543
28544	300 mm wide.....	181.23	19.43	23.92	81.50	28544

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SIMPLIFIED ITEMS					
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system					
	Power point : -					
	Power point c/w conduits, trunking, boxes, PVC cables and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately), same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables					
	Each	A $	B $	C $	D $	
28545	Single phase, 13A or below	483.82	115.43	-	-	28545
28546	Single phase, 13 - 20A	637.83	138.04	-	-	28546
28547	Single phase, 20 - 45A	704.50	138.04	-	-	28547
28548	Three phases, 45A or below	901.58	138.04	-	-	28548
28549	Three phases, 45 - 65A	1,130.47	138.04	-	-	28549
28550	Extra over power point for twin type outlet	4.14	-	-	-	28550
	Add 13% to either of Items 28545 to 28550 inclusive for provision of circuit protective conductor to MCB board in full length of conduit					
	Power point c/w conduits, trunking, boxes, OHLS cables and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately), same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables					
	Each					
28551	Single phase, 13A or below	568.31	115.43	-	-	28551
28552	Single phase, 13 - 20A	699.10	138.81	-	-	28552
28553	Single phase, 20 - 45A	738.52	138.81	-	-	28553
28554	Three phases, 45A or below	986.60	138.81	-	-	28554
28555	Three phases, 45 - 65A	1,222.23	138.81	-	-	28555
28556	Extra over power point for twin type outlet	4.23	-	-	-	28556
	Add 16% to either of Items 28551 to 28556 inclusive for provision of circuit protective conductor to MCB board in full length of conduit					

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SIMPLIFIED ITEMS (CONT'D)					
	Section 1 : Installation by galvanized steel surface conduit system/ concealed conduit system (Cont'd)					
	Door bell point : -					
	Each	A $	B $	C $	D $	
28557	Door bell point c/w conduits, boxes, PVC cables and all necessary accessories, same rate as (supply & fix) rate will be made even if there is no provision of new concealed conduit facilities, but the rate shall further include the taking down and clearing away of existing cables.....	429.99	115.43	-	-	28557
	Telephone, LAN and services outlet point : -					
	Each					
28558	Telephone point/ LAN point/ services point c/w trunking, conduit, boxes, draw wire, blank plate and all necessary accessories.....	427.08	80.51	-	-	28558
	Section 2 : Installation by PVC surface conduit system					
	Power point : -					
	Power point c/w conduits, trunking, boxes, PVC cables, circuit protective conductor and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately)					
	Each					
28559	Single phase, 13A or below.....	426.48	83.23	-	-	28559
28560	Single phase, 13 - 20A.....	507.83	101.71	-	-	28560
28561	Single phase, 20 - 45A.....	564.33	101.71	-	-	28561
28562	Three phases, 45A or below.....	836.06	101.71	-	-	28562
28563	Three phases, 45 - 65A.....	1,033.45	101.71	-	-	28563
28564	Extra over power point for twin type outlet.....	2.44	-	-	-	28564

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SIMPLIFIED ITEMS (CONT'D)					
	Section 2 : Installation by PVC surface conduit system (Cont'd)					
	Door bell point : -					
		A	B	C	D	
	Each	$	$	$	$	
28565	Door bell point c/w conduits, boxes, PVC cables and all necessary accessories	319.69	83.18	-	-	28565
	Telephone, LAN and services outlet point : -					
	Each					
28566	Telephone point/ LAN point/ service point c/w trunking, conduit, boxes, draw wire, blank plate and all necessary accessories.....	209.31	51.77	-	-	28566
	Section 3 : Installation by surface wiring system					
	Power point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories (socket outlet, switch, fuse spur, connection unit, RCD and the like to be measured separately)					
	Each					
28567	Single phase, 13A or below.....	326.10	36.80	-	-	28567
28568	Single phase, 13 - 20A.....	404.14	39.36	-	-	28568
28569	Single phase, 20 - 45A.....	466.07	39.36	-	-	28569
28570	Three phases, 45A or below.....	600.74	39.36	-	-	28570
28571	Three phases, 45 - 65A.....	747.25	39.36	-	-	28571
	Door bell point : -					
	Each					
28572	Door bell point c/w PVC/ PVC cables, circuit protective conductor, boxes and all necessary accessories.....	224.75	36.80	-	-	28572

Section 29

ELECTRICAL INSTALLATION -

MAIN DISTRIBUTION SYSTEMS

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER)					
	300/ 500V TRS or PVC sheathed flexible cords, twisted core to IEC 60245 or BS 6500 or acceptable recognized international standard, such as BS 7919 : -					
	Per linear metre	A $	B $	C $	D $	
29001	0.5 mm² 2-core	21.48	1.91	2.35	6.02	29001
29002	0.75 mm² 2-core	21.84	1.91	2.35	6.02	29002
29003	1.5 mm² 2-core	24.34	1.91	2.35	6.02	29003
29004	0.75 mm² 3-core	22.81	1.91	2.35	6.02	29004
29005	1.5 mm² 3-core	28.24	1.91	2.35	6.02	29005
29006	2.5 mm² 3-core	30.74	1.91	2.35	6.02	29006
29007	0.5 mm² 2-core, PVC flexible cords, unsheathed	21.24	1.91	2.35	6.02	29007
29008	0.75 mm² 2-core, PVC flexible cords, unsheathed	21.72	1.91	2.35	6.02	29008
29009	0.75 mm² 3-core, PVC flexible cords, unsheathed	22.65	1.91	2.35	6.02	29009
	450/ 750V PVC insulated cable, all colours, to IEC 60227-3, drawn into conduits/ trunkings (conduits and trunkings measured separately) : -					
	Per linear metre					
29010	1.5 mm² 1 core	5.09	0.74	0.92	2.29	29010
29011	2.5 mm² ditto	6.29	0.74	0.92	2.29	29011
29012	4 mm² ditto	8.72	0.74	0.92	2.29	29012
29013	6 mm² ditto	12.78	1.10	1.24	3.06	29013
29014	10 mm² ditto	22.17	1.10	1.24	3.06	29014
29015	16 mm² ditto	27.78	1.10	1.24	3.06	29015
29016	25 mm² ditto	40.12	1.27	1.48	3.97	29016
29017	35 mm² ditto	56.43	1.27	1.48	3.97	29017
29018	50 mm² ditto	74.87	1.48	1.91	4.64	29018
29019	70 mm² ditto	100.26	2.55	2.82	7.36	29019
29020	95 mm² ditto	136.63	2.77	3.39	8.78	29020
29021	120 mm² ditto	186.85	3.46	4.28	11.75	29021
29022	150 mm² ditto	304.35	4.14	5.02	14.40	29022
29023	185 mm² ditto	363.35	5.16	6.47	17.76	29023
29024	240 mm² ditto	531.33	5.99	7.54	20.72	29024

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	450/ 750V PVC insulated cable, all colours, to IEC 60227-3, drawn into conduits/ trunkings (conduits and trunkings measured separately) : - (Cont'd)					
		A	B	C	D	
	Per linear metre	$	$	$	$	
29025	300 mm² 1 core	642.64	5.99	7.54	20.72	29025
29026	400 mm² ditto	785.47	5.99	7.54	20.72	29026
29027	500 mm² ditto	1,038.90	6.47	8.06	24.59	29027
29028	630 mm² ditto	1,281.11	6.80	8.53	26.14	29028
	PVC insulated and PVC sheathed all colours, to IEC 60502-1 (for cables of 600/ 1000V with CSA 50 mm² & above), c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -					
	Per linear metre					
29029	1.5 mm² 1 core	14.45	2.82	3.46	7.36	29029
29030	2.5 mm² ditto	18.25	2.82	3.46	7.36	29030
29031	4 mm² ditto	27.23	3.39	4.05	8.79	29031
29032	6 mm² ditto	36.33	3.39	4.05	8.79	29032
29033	10 mm² ditto	45.22	3.39	4.05	8.79	29033
29034	16 mm² ditto	51.30	3.39	4.05	8.79	29034
29035	25 mm² ditto	86.91	4.80	5.56	13.11	29035
29036	35 mm² ditto	98.15	4.80	5.56	13.11	29036
29037	50 mm² ditto	150.15	4.80	5.56	13.11	29037
29038	70 mm² ditto	179.49	6.28	7.40	17.38	29038
29039	95 mm² ditto	198.37	7.92	9.46	22.00	29039
29040	120 mm² ditto	220.94	9.35	10.90	25.90	29040
29041	150 mm² ditto	324.90	11.24	13.25	30.97	29041
29042	185 mm² ditto	330.78	12.34	14.65	34.24	29042
29043	240 mm² ditto	419.61	15.33	18.28	42.78	29043
29044	300 mm² ditto	513.43	19.30	22.86	53.59	29044
29045	400 mm² ditto	619.90	22.31	26.30	61.91	29045
29046	500 mm² ditto	809.88	25.96	30.58	72.06	29046

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	PVC insulated and PVC sheathed all colours, to IEC 60502-1 (for cables of 600/ 1000V with CSA 50 mm² & above), c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29047	630 mm² 1 core	975.17	28.76	33.96	79.52	29047
29048	800 mm² ditto	1,501.56	37.20	44.03	103.66	29048
29049	1000 mm² ditto	1,766.72	48.33	57.18	134.27	29049
29050	1.5 mm² 2-core	17.40	3.39	4.06	8.90	29050
29051	2.5 mm² ditto	23.23	4.52	5.31	11.93	29051
29052	4 mm² ditto	32.65	4.81	5.60	13.17	29052
29053	6 mm² ditto	42.76	4.81	5.60	13.17	29053
29054	10 mm² ditto	76.74	4.88	5.80	14.42	29054
29055	16 mm² ditto	102.58	6.34	7.44	17.44	29055
29056	25 mm² ditto	165.90	6.94	8.22	19.22	29056
	450/ 750V low emission and corrosive gases, thermosetting insulated, non-sheathed, single core cable to BS 7211 drawn into conduits/ trunkings (conduits and trunkings measured separately) : -					
	Per linear metre					
29057	1.5 mm² 1 core	6.61	0.74	0.92	2.29	29057
29058	2.5 mm² ditto	7.58	0.74	0.92	2.29	29058
29059	4 mm² ditto	10.52	0.74	0.92	2.29	29059
29060	6 mm² ditto	15.49	1.10	1.34	3.29	29060
29061	10 mm² ditto	26.81	1.10	1.34	3.29	29061
29062	16 mm² ditto	34.95	1.10	1.34	3.29	29062
29063	25 mm² ditto	49.66	1.34	1.52	4.06	29063
29064	35 mm² ditto	69.66	1.34	1.52	4.06	29064
29065	50 mm² ditto	85.71	1.52	1.99	4.64	29065
29066	70 mm² ditto	116.50	2.43	2.73	7.11	29066
29067	95 mm² ditto	166.16	2.80	3.42	8.80	29067
29068	120 mm² ditto	219.42	3.50	4.29	11.97	29068

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	450/ 750V low emission and corrosive gases, thermosetting insulated, non-sheathed, single core cable to BS 7211 drawn into conduits/ trunkings (conduits and trunkings measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29069	150 mm² 1 core	302.99	4.33	5.31	14.58	29069
29070	185 mm² ditto	423.64	5.19	6.47	17.71	29070
29071	240 mm² ditto	532.78	6.28	7.70	20.02	29071
29072	300 mm² ditto	683.84	6.28	7.70	20.02	29072
29073	400 mm² ditto	826.24	6.28	7.70	20.02	29073
29074	500 mm² ditto	1,254.99	6.89	8.43	24.04	29074
29075	630 mm² ditto	1,588.17	7.18	8.92	26.00	29075
	450/ 750V low emission of smoke and corrosive gases, thermosetting insulated and sheathed cable to BS 7211, c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -					
	Per linear metre					
29076	1.5 mm² 2-core	63.88	3.24	3.90	8.90	29076
29077	2.5 mm² ditto	69.89	4.28	5.13	12.03	29077
29078	4 mm² ditto	81.50	4.81	5.60	13.18	29078
29079	6 mm² ditto	89.79	4.81	5.60	13.18	29079
29080	10 mm² ditto	118.47	5.16	6.15	14.65	29080
29081	16 mm² ditto	150.46	6.09	7.27	17.79	29081
29082	25 mm² ditto	206.34	6.96	8.24	19.28	29082
29083	35 mm² ditto	285.44	7.46	8.74	20.10	29083
29084	1.5 mm² 4-core	83.46	4.81	5.60	13.18	29084
29085	2.5 mm² ditto	90.93	5.16	6.09	14.65	29085
29086	4 mm² ditto	129.53	6.09	7.27	17.79	29086
29087	6 mm² ditto	149.01	6.96	8.24	19.28	29087
29088	10 mm² ditto	185.33	7.46	8.74	20.10	29088
29089	16 mm² ditto	229.67	7.94	9.13	22.00	29089
29090	25 mm² ditto	342.92	8.68	10.00	24.13	29090
29091	35 mm² ditto	399.36	9.18	10.51	26.09	29091

CABLES (COPPER) (CONT'D)

600/ 1000V low emission of smoke and corrosive gases, cross-linked polyethylene insulated and sheathed, steel wire armoured cable to IEC 60502-01, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : -

Item	*Per linear metre*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
29092	1.5 mm² 2-core	83.22	7.29	8.90	25.78	29092
29093	2.5 mm² ditto	87.36	7.29	8.90	25.78	29093
29094	4 mm² ditto	105.98	12.88	17.03	49.56	29094
29095	6 mm² ditto	114.91	12.88	17.03	49.56	29095
29096	10 mm² ditto	150.19	16.21	19.96	61.22	29096
29097	16 mm² ditto	174.40	16.21	19.96	61.22	29097
29098	25 mm² ditto	233.39	18.67	23.39	71.43	29098
29099	35 mm² ditto	295.91	20.38	25.37	76.63	29099
29100	50 mm² ditto	402.64	20.52	25.55	77.67	29100
29101	70 mm² ditto	603.75	23.66	29.82	86.33	29101
29102	95 mm² ditto	736.50	25.01	30.66	95.17	29102
29103	120 mm² ditto	889.99	26.22	33.10	102.51	29103
29104	150 mm² ditto	1,202.25	29.36	37.14	113.75	29104
29105	1.5 mm² 4-core	125.69	15.03	18.73	57.07	29105
29106	2.5 mm² ditto	143.34	16.21	19.96	61.22	29106
29107	4 mm² ditto	177.68	16.90	21.29	63.07	29107
29108	6 mm² ditto	188.48	17.79	22.69	69.92	29108
29109	10 mm² ditto	207.85	18.70	24.10	72.60	29109
29110	16 mm² ditto	250.02	20.15	24.82	73.67	29110
29111	25 mm² ditto	337.90	20.25	24.92	76.57	29111
29112	35 mm² ditto	387.95	20.94	25.78	78.59	29112
29113	50 mm² ditto	457.41	21.04	26.00	79.70	29113
29114	70 mm² ditto	551.20	22.52	28.70	85.30	29114
29115	95 mm² ditto	761.09	25.92	30.79	95.55	29115

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	600/ 1000V low emission of smoke and corrosive gases, cross-linked polyethylene insulated and sheathed, steel wire armoured cable to IEC 60502-01, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29116	120 mm² 4-core	894.14	26.12	32.96	102.09	29116
29117	150 mm² ditto	1,143.10	29.26	36.98	113.28	29117
29118	185 mm² ditto	1,229.55	32.36	40.10	121.44	29118
29119	240 mm² ditto	1,577.08	34.02	42.53	132.63	29119
29120	300 mm² ditto	1,875.64	36.89	46.15	140.07	29120
29121	400 mm² ditto	2,383.58	38.22	48.05	146.92	29121
	300/ 500V PVC insulated and PVC sheathed, all colours cores, to IEC 60227-4, c/w brass buckle clips or brass fasteners, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -					
	Per linear metre					
29122	1.5 mm² 2-core with E.C.C.	17.38	3.21	3.83	8.78	29122
29123	2.5 mm² ditto	21.84	3.21	3.83	8.78	29123
29124	4 mm² ditto	34.40	4.77	5.54	13.06	29124
29125	6 mm² ditto	43.91	4.77	5.54	13.06	29125
29126	10 mm² ditto	80.91	6.04	7.19	17.61	29126
29127	16 mm² ditto	103.23	6.04	7.19	17.61	29127
	450/ 750V PVC insulated or ethylene-vinylacetate rubber insulated or other equivalent synthetic insulated, heat resistant, single core, copper cable to IEC 60245-7, all colours, drawn into conduits/ trunking (conduits and trunkings measured separately) : -					
	Per linear metre					
29128	1.5 mm² 1 core	5.37	0.74	0.92	2.29	29128
29129	2.5 mm² ditto	6.77	0.74	0.92	2.29	29129
29130	4 mm² ditto	9.27	0.74	0.92	2.29	29130
29131	6 mm² ditto	14.46	1.10	1.34	3.29	29131
29132	10 mm² ditto	25.38	1.10	1.34	3.29	29132

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	450/ 750V PVC insulated or ethylene-vinylacetate rubber insulated or other equivalent synthetic insulated, heat resistant, single core, copper cable to IEC 60245-7, all colours, drawn into conduits/ trunking (conduits and trunkings measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29133	16 mm² 1 core	35.62	1.10	1.34	3.29	29133
29134	25 mm² ditto	50.08	1.34	1.52	4.06	29134
29135	35 mm² ditto	75.03	1.34	1.52	4.06	29135
29136	50 mm² ditto	104.82	1.52	1.99	4.64	29136
29137	70 mm² ditto	143.67	2.43	2.73	7.11	29137
29138	95 mm² ditto	196.20	2.80	3.42	8.80	29138
29139	120 mm² ditto	265.84	3.33	4.10	11.33	29139
29140	150 mm² ditto	418.10	4.33	5.31	14.58	29140
29141	185 mm² ditto	522.81	4.96	6.09	17.60	29141
29142	240 mm² ditto	667.21	5.78	7.11	19.86	29142
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1 c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : -					
	Per linear metre					
29143	1.5 mm² 2-core	53.13	7.33	8.92	25.89	29143
29144	2.5 mm² ditto	57.94	7.33	8.92	25.89	29144
29145	4 mm² ditto	89.94	12.93	17.10	49.74	29145
29146	6 mm² ditto	101.11	12.93	17.10	49.74	29146
29147	10 mm² ditto	144.56	16.29	20.03	61.43	29147
29148	16 mm² ditto	149.33	16.29	20.03	61.43	29148
29149	25 mm² ditto	255.62	17.04	20.94	64.90	29149
29150	35 mm² ditto	319.24	17.95	22.02	66.33	29150
29151	50 mm² ditto	424.78	18.10	22.17	67.24	29151
29152	70 mm² ditto	613.27	30.97	37.81	112.92	29152
29153	95 mm² ditto	804.77	32.71	39.80	116.73	29153
29154	120 mm² ditto	988.07	34.45	41.79	120.54	29154
29155	1.5 mm² 4-core	96.90	15.28	18.86	58.14	29155
29156	2.5 mm² ditto	106.36	16.29	20.03	61.43	29156
29157	4 mm² ditto	127.08	16.97	21.38	63.29	29157

CABLES (COPPER) (CONT'D)

600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1 c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : - (Cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
29158	6 mm² 4-core	132.87	17.88	22.78	70.22	29158
29159	10 mm² ditto	174.70	18.80	24.22	72.91	29159
29160	16 mm² ditto	196.33	19.11	24.55	73.98	29160
29161	25 mm² ditto	240.95	20.32	25.07	76.88	29161
29162	35 mm² ditto	304.35	21.03	25.90	78.94	29162
29163	50 mm² ditto	401.88	21.12	26.09	80.04	29163
29164	70 mm² ditto	516.40	22.61	28.85	85.65	29164
29165	95 mm² ditto	631.14	26.01	30.89	95.92	29165
29166	120 mm² ditto	769.25	26.32	33.24	102.91	29166
29167	150 mm² ditto	1,146.02	29.48	37.31	114.24	29167
29168	185 mm² ditto	1,198.91	32.63	40.41	122.43	29168
29169	240 mm² ditto	1,499.09	34.02	42.53	132.63	29169
29170	300 mm² ditto	1,756.19	36.89	46.15	140.07	29170
29171	400 mm² ditto	2,243.40	38.22	48.05	146.92	29171
29172	1.5 mm² 7-core	186.27	18.64	23.97	72.31	29172
29173	1.5 mm² 12-core	230.79	18.64	23.97	72.31	29173
29174	1.5 mm² 19-core	300.32	21.36	26.83	80.74	29174
29175	1.5 mm² 27-core	378.26	21.41	27.16	82.19	29175
29176	1.5 mm² 37-core	432.10	23.28	29.33	87.38	29176
29177	1.5 mm² 48-core	749.59	24.64	30.53	92.70	29177
29178	2.5 mm² 7-core	234.15	22.42	28.59	84.94	29178
29179	2.5 mm² 12-core	290.31	22.42	28.59	84.94	29179
29180	2.5 mm² 19-core	400.31	24.47	29.97	90.59	29180
29181	2.5 mm² 27-core	504.49	25.26	32.03	94.57	29181
29182	2.5 mm² 37-core	846.51	25.95	32.82	96.59	29182
29183	2.5 mm² 48-core	1,334.06	26.80	33.94	99.63	29183

CABLES (COPPER) (CONT'D)

Fire resistant, low emission of smoke and corrosive gases, thermosetting insulated and sheathed, steel wire armoured multi-core cable to BS 7846 (for voltage rating 600/ 1000V) c/w cleats or saddles, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
29184	1.5 mm² 2-core	111.68	7.29	8.90	25.73	29184
29185	2.5 mm² ditto	136.57	7.29	8.90	25.76	29185
29186	4 mm² ditto	173.77	12.88	16.97	49.46	29186
29187	6 mm² ditto	178.56	12.88	16.97	49.46	29187
29188	10 mm² ditto	202.07	16.16	19.93	61.07	29188
29189	16 mm² ditto	222.11	16.16	19.93	61.07	29189
29190	25 mm² ditto	345.35	18.61	23.35	71.30	29190
29191	35 mm² ditto	384.65	20.34	25.32	76.45	29191
29192	50 mm² ditto	502.59	20.52	25.48	77.48	29192
29193	70 mm² ditto	703.89	21.73	28.57	84.82	29193
29194	95 mm² ditto	875.78	24.99	30.61	94.99	29194
29195	120 mm² ditto	1,141.84	26.20	33.03	102.33	29195
29196	150 mm² ditto	1,351.16	29.31	37.06	113.54	29196
29197	185 mm² ditto	1,484.81	32.43	40.14	121.68	29197
29198	240 mm² ditto	1,823.22	34.10	42.62	132.91	29198
29199	300 mm² ditto	2,209.44	36.93	46.23	140.34	29199
29200	400 mm² ditto	2,616.31	38.33	48.16	147.20	29200

CABLES (COPPER) (CONT'D)

Fire resistant, low emission of smoke and corrosive gases, thermosetting insulated and sheathed, steel wire armoured multi-core cable to BS 7846 (for voltage rating 600/ 1000V) or BS 7629-1 (for voltage rating 300/ 500V), c/w cleats or saddles, or fixed to cable trays, or fixed in conduits/ trunkings (cable trays, conduits and trunkings measured separately) : -

Item	*Per linear metre*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
29201	1.5 mm² 4-core	151.50	15.28	18.86	58.14	29201
29202	2.5 mm² ditto	179.83	16.29	20.07	61.43	29202
29203	4 mm² ditto	197.30	16.97	21.38	63.29	29203
29204	6 mm² ditto	234.51	17.88	22.78	70.22	29204
29205	10 mm² ditto	276.97	18.80	24.22	72.95	29205
29206	16 mm² ditto	311.17	20.25	24.92	73.98	29206
29207	25 mm² ditto	430.20	20.32	25.01	76.88	29207
29208	35 mm² ditto	483.13	21.03	25.90	78.94	29208
29209	50 mm² ditto	609.84	21.12	26.09	80.04	29209
29210	70 mm² ditto	774.08	22.61	28.85	85.65	29210
29211	95 mm² ditto	903.64	26.01	30.89	95.92	29211
29212	120 mm² ditto	1,062.90	26.32	33.24	102.91	29212
29213	150 mm² ditto	1,282.24	29.48	37.32	114.24	29213
29214	185 mm² ditto	1,389.59	32.63	40.41	122.43	29214
29215	240 mm² ditto	1,742.00	34.32	42.88	133.73	29215
29216	300 mm² ditto	2,047.44	37.17	46.53	141.17	29216
29217	400 mm² ditto	2,530.10	38.55	48.47	148.11	29217

Item	CABLES (COPPER) (CONT'D) 600/ 1000V fire resistant, low emission of smoke and corrosive gases insulated, non-sheathed, single core cables to IEC 60332-1, IEC 61034-2, IEC 60754-1 and BS 6387 Cat. CWZ in conduits or trunkings (conduits and trunkings measured separately) : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
29218	1.5 mm²	28.98	2.21	3.01	7.25	29218
29219	2.5 mm²	31.45	2.21	3.01	7.25	29219
29220	4 mm²	37.65	2.50	3.29	8.42	29220
29221	6 mm²	44.16	2.50	3.29	8.42	29221
29222	10 mm²	84.14	2.50	3.29	8.42	29222
29223	16 mm²	109.36	2.50	3.29	8.42	29223
29224	25 mm²	145.11	3.42	4.23	13.07	29224
29225	35 mm²	321.38	3.42	4.23	13.07	29225
29226	50 mm²	363.78	3.42	4.23	13.07	29226
29227	70 mm²	450.99	4.81	5.69	17.88	29227
29228	95 mm²	537.79	5.71	7.87	20.94	29228
29229	120 mm²	632.71	7.36	8.96	25.95	29229
29230	150 mm²	796.11	8.08	9.82	30.78	29230
29231	185 mm²	881.55	9.62	12.13	35.42	29231
29232	240 mm²	1,050.34	11.97	14.29	43.78	29232
29233	300 mm²	1,170.83	13.83	17.62	53.87	29233
29234	400 mm²	1,362.37	16.29	20.10	61.55	29234
29235	500 mm²	1,626.91	18.75	23.53	71.87	29235
29236	630 mm²	2,073.97	22.66	28.89	85.83	29236

CABLES (COPPER) (CONT'D)

600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1, laid in trench or cable ducts including suitable cable bed (excavation backfilling and cable ducts measured separately) : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
29237	1.5 mm² 2-core	41.97	4.29	4.82	17.11	29237
29238	2.5 mm² ditto	47.90	4.29	4.82	17.11	29238
29239	4 mm² ditto	67.91	8.06	9.34	30.78	29239
29240	6 mm² ditto	76.30	8.06	9.34	30.78	29240
29241	10 mm² ditto	113.16	9.34	11.42	34.80	29241
29242	16 mm² ditto	135.49	9.34	11.42	34.80	29242
29243	25 mm² ditto	211.91	10.81	12.84	41.59	29243
29244	35 mm² ditto	282.07	12.50	15.44	43.14	29244
29245	50 mm² ditto	366.38	12.50	15.44	43.14	29245
29246	1.5 mm² 4-core	68.90	9.41	12.32	37.46	29246
29247	2.5 mm² ditto	79.27	11.52	14.05	42.77	29247
29248	4 mm² ditto	99.73	12.32	14.76	44.93	29248
29249	6 mm² ditto	114.86	12.32	14.76	44.93	29249
29250	10 mm² ditto	148.70	12.77	15.53	47.25	29250
29251	16 mm² ditto	194.48	12.77	15.53	47.25	29251
29252	25 mm² ditto	240.18	13.18	16.12	49.44	29252
29253	35 mm² ditto	309.04	14.09	17.38	51.86	29253
29254	50 mm² ditto	405.74	14.09	17.38	51.86	29254
29255	70 mm² ditto	517.60	15.62	19.00	56.16	29255
29256	95 mm² ditto	643.03	16.55	20.33	58.83	29256
29257	120 mm² ditto	753.52	16.55	20.33	58.83	29257
29258	150 mm² ditto	1,083.03	17.49	21.04	63.07	29258

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	600/ 1000V PVC insulated and sheathed single steel wire armoured and PVC sheathed overall to IEC 60502-1, laid in trench or cable ducts including suitable cable bed (excavation backfilling and cable ducts measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29259	185 mm² 4-core	1,106.82	17.61	22.40	67.61	29259
29260	240 mm² ditto	1,376.07	20.33	24.89	75.74	29260
29261	300 mm² ditto	1,654.72	22.95	28.28	85.05	29261
29262	400 mm² ditto	2,124.72	23.66	29.22	89.64	29262
29263	1.5 mm² 7-core	151.76	12.47	14.96	47.07	29263
29264	1.5 mm² 12-core	200.00	12.47	14.96	47.07	29264
29265	1.5 mm² 19-core	269.12	16.50	20.27	58.61	29265
29266	1.5 mm² 27-core	342.08	16.50	20.27	58.61	29266
29267	1.5 mm² 37-core	404.04	16.50	20.27	61.31	29267
29268	1.5 mm² 48-core	692.93	16.50	20.27	61.31	29268
29269	2.5 mm² 7-core	217.57	15.75	19.66	58.36	29269
29270	2.5 mm² 12-core	276.42	15.75	19.66	58.36	29270
29271	2.5 mm² 19-core	368.63	16.47	21.04	63.15	29271
29272	2.5 mm² 27-core	478.18	17.14	21.79	64.28	29272
29273	2.5 mm² 37-core	817.54	17.82	23.24	68.53	29273
29274	2.5 mm² 48-core	1,246.50	17.87	23.32	69.85	29274

Item	CABLES (COPPER) (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, c/w spacing bar type saddles : -					
	Per linear metre	A $	B $	C $	D $	
29275	6 mm² 1-core	97.34	8.90	11.35	33.27	29275
29276	10 mm² ditto	145.28	8.91	11.41	34.26	29276
29277	16 mm² ditto	180.34	10.26	13.63	38.89	29277
29278	25 mm² ditto	230.66	11.75	14.47	40.97	29278
29279	35 mm² ditto	417.91	12.71	15.25	44.42	29279
29280	50 mm² ditto	476.00	13.52	16.74	46.53	29280
29281	70 mm² ditto	560.43	14.47	18.28	50.39	29281
29282	95 mm² ditto	701.49	18.27	22.83	64.35	29282
29283	120 mm² ditto	824.76	18.27	22.83	64.35	29283
29284	150 mm² ditto	1,002.28	18.27	22.83	64.35	29284
29285	185 mm² ditto	1,161.89	19.00	24.28	68.78	29285
29286	240 mm² ditto	1,420.88	20.70	25.40	72.17	29286
29287	1.5 mm² 2-core	88.90	7.96	9.59	30.53	29287
29288	2.5 mm² ditto	100.50	8.90	11.35	33.27	29288
29289	4 mm² ditto	117.67	8.91	11.41	34.26	29289
29290	6 mm² ditto	144.22	9.98	12.26	36.55	29290
29291	10 mm² ditto	190.17	10.26	13.63	38.89	29291
29292	16 mm² ditto	233.14	11.75	14.42	40.98	29292
29293	25 mm² ditto	366.67	12.24	14.66	44.65	29293
29294	1.5 mm² 3-core	102.59	8.43	10.47	31.90	29294
29295	2.5 mm² ditto	114.23	8.91	11.38	33.77	29295
29296	4 mm² ditto	141.84	9.29	12.01	35.45	29296
29297	6 mm² ditto	175.25	10.12	12.95	37.72	29297
29298	10 mm² ditto	232.46	11.01	14.03	39.94	29298
29299	16 mm² ditto	302.38	12.00	14.54	42.82	29299
29300	25 mm² ditto	439.68	12.71	15.44	46.17	29300

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, c/w spacing bar type saddles : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29301	1.5 mm² 4-core	109.00	8.90	11.35	33.27	29301
29302	2.5 mm² ditto	119.86	8.91	11.41	34.26	29302
29303	4 mm² ditto	155.95	9.67	12.61	36.63	29303
29304	6 mm² ditto	193.89	10.26	13.63	38.89	29304
29305	10 mm² ditto	258.27	11.75	14.42	40.98	29305
29306	16 mm² ditto	350.21	12.24	14.66	44.65	29306
29307	25 mm² ditto	481.53	13.17	16.21	47.69	29307
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, with an overall protection of PVC sheath, c/w spacing bar type saddles : -					
	Per linear metre					
29308	1 mm² 1-core	32.66	3.24	4.06	12.05	29308
29309	1.5 mm² ditto	37.62	3.24	4.06	12.05	29309
29310	2.5 mm² ditto	41.98	3.24	4.06	12.05	29310
29311	4 mm² ditto	72.40	8.90	11.31	33.15	29311
29312	6 mm² ditto	93.63	8.90	11.31	33.15	29312
29313	10 mm² ditto	142.59	8.90	11.36	34.10	29313
29314	16 mm² ditto	179.31	10.19	13.57	38.72	29314
29315	25 mm² ditto	225.10	11.70	14.38	40.80	29315
29316	35 mm² ditto	411.92	12.68	15.15	44.24	29316
29317	50 mm² ditto	462.78	13.47	16.66	46.34	29317
29318	70 mm² ditto	556.16	14.38	18.20	50.20	29318
29319	95 mm² ditto	705.40	15.22	19.03	55.92	29319
29320	120 mm² ditto	813.22	16.69	20.45	59.17	29320
29321	150 mm² ditto	1,006.37	18.18	22.70	64.06	29321
29322	185 mm² ditto	1,151.49	18.89	24.17	68.51	29322
29323	240 mm² ditto	1,392.40	20.64	25.29	71.88	29323

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, with an overall protection of PVC sheath, c/w spacing bar type saddles : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29324	1 mm² 2-core	76.84	7.94	9.57	30.39	29324
29325	1.5 mm² ditto	86.64	7.94	9.57	30.39	29325
29326	2.5 mm² ditto	98.86	8.90	11.31	33.15	29326
29327	4 mm² ditto	115.49	8.90	11.36	34.10	29327
29328	6 mm² ditto	145.10	9.94	12.23	36.35	29328
29329	10 mm² ditto	191.05	10.19	13.56	38.72	29329
29330	16 mm² ditto	231.68	11.70	14.38	40.86	29330
29331	25 mm² ditto	375.02	12.17	14.59	44.45	29331
29332	1.5 mm² 4-core	107.42	8.90	11.33	33.19	29332
29333	2.5 mm² ditto	120.50	8.90	11.41	34.19	29333
29334	4 mm² ditto	149.79	9.95	12.24	36.47	29334
29335	6 mm² ditto	190.72	10.19	13.59	38.81	29335
29336	10 mm² ditto	249.27	11.73	14.41	40.92	29336
29337	16 mm² ditto	352.13	12.18	14.65	44.54	29337
29338	25 mm² ditto	490.58	13.18	16.15	47.59	29338
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and backing-filling measured separately) : -					
	Per linear metre					
29339	1 mm² 2-core	58.23	3.86	4.77	14.57	29339
29340	1.5 mm² ditto	69.54	4.36	5.40	16.96	29340
29341	2.5 mm² ditto	79.69	4.36	5.40	16.96	29341
29342	4 mm² ditto	110.42	7.96	9.24	30.53	29342
29343	6 mm² ditto	131.78	7.96	9.24	30.53	29343
29344	10 mm² ditto	188.83	9.95	12.26	36.47	29344
29345	16 mm² ditto	231.37	9.95	12.26	36.47	29345
29346	25 mm² ditto	364.28	12.40	14.93	46.86	29346
29347	1.5 mm² 4-core	112.13	10.19	13.59	38.81	29347

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	Mineral insulated copper sheathed, 750V (heavy duty grade) cable to IEC 60702-1 and IEC 60702-2, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and backing-filling measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29348	2.5 mm² 4-core	129.36	11.73	14.41	40.92	29348
29349	4 mm² ditto	161.36	12.06	14.87	43.05	29349
29350	6 mm² ditto	204.18	12.56	15.49	44.35	29350
29351	10 mm² ditto	259.72	12.75	16.15	45.33	29351
29352	16 mm² ditto	366.58	13.08	16.71	46.86	29352
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : -					
	Per linear metre					
29353	500 mm² 1-core	1,328.26	20.46	25.46	72.32	29353
29354	630 mm² ditto	1,472.19	22.54	28.79	85.46	29354
29355	800 mm² ditto	1,716.11	26.25	33.16	102.71	29355
29356	1000 mm² ditto	2,080.56	35.28	44.11	137.04	29356
29357	4 mm² 2-core	89.08	14.61	17.91	50.38	29357
29358	6 mm² ditto	102.62	15.12	18.75	51.93	29358
29359	10 mm² ditto	142.26	15.20	18.80	55.83	29359
29360	16 mm² ditto	162.01	15.98	19.37	58.83	29360
29361	25 mm² ditto	243.81	16.66	20.01	60.13	29361
29362	35 mm² ditto	307.57	17.14	21.28	63.85	29362
29363	50 mm² ditto	407.93	21.19	26.67	75.66	29363
29364	70 mm² ditto	526.76	22.86	27.85	78.94	29364
29365	95 mm² ditto	638.28	24.41	29.55	84.13	29365
29366	4 mm² 4-core	102.54	14.76	17.95	55.19	29366
29367	6 mm² ditto	120.29	15.28	19.22	58.00	29367
29368	10 mm² ditto	147.16	16.35	20.25	59.55	29368
29369	16 mm² ditto	195.33	17.26	21.06	62.83	29369
29370	25 mm² ditto	233.55	18.18	22.00	65.15	29370
29371	35 mm² ditto	297.71	18.43	23.01	68.53	29371
29372	50 mm² ditto	397.16	23.35	29.07	83.27	29372

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, c/w cleats or saddles or fixed to cable trays (cable trays measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29373	70 mm² 4-core	513.37	25.17	30.15	86.86	29373
29374	95 mm² ditto	624.07	26.62	31.55	92.58	29374
29375	120 mm² ditto	753.42	27.56	33.66	97.95	29375
29376	150 mm² ditto	1,014.50	28.52	34.45	101.62	29376
29377	185 mm² ditto	1,066.37	29.89	35.15	104.94	29377
29378	240 mm² ditto	1,345.13	31.01	37.50	114.09	29378
29379	300 mm² ditto	1,591.32	33.85	39.85	122.71	29379
29380	400 mm² ditto	1,990.11	34.87	42.18	128.59	29380
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and back-filling measured separately) : -					
	Per linear metre					
29381	4 mm² 2-core	65.90	6.90	8.36	25.73	29381
29382	6 mm² ditto	74.16	7.19	8.68	27.07	29382
29383	10 mm² ditto	113.80	7.59	9.09	28.02	29383
29384	16 mm² ditto	125.36	8.25	10.36	29.07	29384
29385	25 mm² ditto	207.13	8.41	10.53	30.03	29385
29386	35 mm² ditto	274.67	9.18	11.24	32.73	29386
29387	50 mm² ditto	366.63	10.51	12.63	34.45	29387
29388	70 mm² ditto	469.54	11.18	13.32	37.06	29388
29389	95 mm² ditto	586.84	11.86	14.61	39.73	29389
29390	4 mm² 4-core	88.82	7.36	9.18	29.63	29390
29391	6 mm² ditto	108.37	7.63	9.46	30.60	29391
29392	10 mm² ditto	133.61	7.96	9.85	31.53	29392
29393	16 mm² ditto	174.19	8.74	11.33	32.73	29393
29394	25 mm² ditto	220.89	8.74	11.52	33.78	29394
29395	35 mm² ditto	294.99	9.49	12.26	37.40	29395
29396	50 mm² ditto	396.02	10.81	13.63	39.95	29396
29397	70 mm² ditto	500.09	11.55	14.34	43.42	29397
29398	95 mm² ditto	621.90	12.22	15.71	47.07	29398
29399	120 mm² ditto	784.25	12.93	16.97	52.52	29399

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	600/ 1000V XLPE/ SWA/ PVC cable to IEC 60502-1, laid in trenches (including suitable cable bed) or ducting (ducting, excavation and back-filling measured separately) : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
29400	150 mm² 4-core	1,076.72	14.87	18.89	57.37	29400
29401	185 mm² ditto	1,102.76	15.83	19.78	62.45	29401
29402	240 mm² ditto	1,465.84	16.78	21.19	66.59	29402
29403	300 mm² ditto	1,697.03	17.77	22.61	71.55	29403
29404	400 mm² ditto	2,096.90	19.37	23.50	75.27	29404
	Multi-core twisted signal cable, AWG 24, unarmoured, c/w aluminum shield as : -					
	Per linear metre					
29405	1-pair	33.99	7.20	8.80	26.87	29405
29406	6-pair	99.21	18.46	23.66	72.06	29406
29407	10-pair	129.71	21.57	25.71	82.93	29407
	Multi-core twisted signal cable, fire resistant, to IEC60331 as : -					
	Per linear metre					
29408	1.5 mm² 2-core	30.96	7.20	8.80	26.87	29408
	450/ 750V PVC insulated cable to IEC 60227, c/w brass buckle clips or brass fasteners, or fixed to cable trays (cable trays, measured separately) : -					
	Per linear metre					
29409	1.5 mm² 1-core	8.32	1.41	1.88	5.78	29409
29410	2.5 mm² ditto	9.49	1.41	1.88	5.78	29410
29411	4 mm² ditto	11.82	1.41	1.88	5.78	29411
29412	6 mm² ditto	14.43	1.41	1.88	5.78	29412
29413	10 mm² ditto	25.37	1.41	1.88	5.78	29413
29414	16 mm² ditto	32.30	1.88	2.35	7.18	29414
29415	25 mm² ditto	45.95	1.88	2.35	7.18	29415
29416	35 mm² ditto	66.74	2.29	2.80	8.25	29416
29417	50 mm² ditto	86.28	2.29	2.80	8.25	29417
29418	70 mm² ditto	118.19	3.97	4.74	12.94	29418
29419	95 mm² ditto	164.79	4.89	5.61	17.62	29419
29420	120 mm² ditto	224.98	5.92	8.14	21.20	29420

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLES (COPPER) (CONT'D)					
	Cast iron cable end boxes, double loop in type. Suitable for cables with maximum cross sectional area of conductor up to : -					
	Each	A $	B $	C $	D $	
29421	2 x 16 mm² (conduit outlet).....	868.20	116.08	144.83	437.56	29421
29422	2 x 16 mm² (PVC tails outlet).....	946.48	133.99	167.49	507.85	29422
29423	16 mm² x 2-core (conduit outlet).....	925.21	121.48	151.61	458.85	29423
29424	16 mm² x 2-core (PVC tails outlet).....	987.29	137.96	172.76	522.79	29424
29425	1 x 16 mm² x 3-core (conduit outlet).....	985.38	124.01	155.06	470.17	29425
29426	1 x 16 mm² x 3-core (PVC tails outlet).....	1,049.00	142.71	178.17	538.43	29426
	Cast iron cable end boxes, flat type, wall mounting : -					
	Each					
29427	16 mm² x 4-core.....	942.25	119.41	149.69	451.12	29427
29428	25 mm² x 4-core.....	1,001.72	126.61	158.71	479.24	29428
29429	35 - 50 mm² x 3-core.....	1,147.83	135.33	169.32	511.18	29429
29430	35 - 50 mm² x 4-core.....	1,324.41	148.10	185.09	560.83	29430
29431	70 mm² x 4-core.....	1,514.92	168.81	211.14	638.59	29431
29432	95 mm² x 4-core.....	1,643.72	178.63	223.31	676.68	29432
29433	120 - 150 mm² x 4-core.....	1,869.38	182.56	228.54	692.36	29433
29434	185 mm² x 4-core.....	2,238.68	190.99	238.96	722.88	29434
29435	240 mm² x 4-core.....	2,634.38	212.62	266.01	804.55	29435
29436	300 mm² x 4-core.....	2,947.57	234.05	292.87	885.02	29436

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SERVICE CABLE BOXES					
	Service cable boxes, cast iron, for PVC insulated, sheathed and armoured cables, as comprising armoured bonds, claw connectors and filling with cold compound, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to : -					
	Each	A $	B $	C $	D $	
29437	16 - 25 mm²2-core	1,077.76	144.79	-	548.64	29437
29438	35 - 50 mm²2-core and 16 mm²4-core	1,165.22	155.11	-	588.57	29438
29439	70 - 95 mm²2-core and 25 - 50 mm²4-core	1,518.67	171.47	-	635.40	29439
29440	120 - 185 mm²2-core and 70 - 120 mm²4-core	1,883.90	190.87	-	711.60	29440
29441	240 - 300 mm²2-core and 150 - 185 mm²4-core	2,693.54	216.19	-	817.52	29441
29442	400 mm²2-core and 240 - 300 mm²4-core	3,124.16	247.63	-	916.63	29442
	Straight through boxes, cast iron for PVC insulated, sheathed and armoured cables as comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductors up to : -					
	Each					
29443	16 - 25 mm²2-core	1,000.58	144.77	-	553.04	29443
29444	35 - 50 mm²2-core and 16 mm²4-core	1,202.63	158.00	-	603.08	29444
29445	70 - 95 mm²2-core and 25 - 50 mm²4-core	1,395.02	174.28	-	665.50	29445
29446	120 - 185 mm²2-core and 70 - 120 mm²4-core	1,864.43	191.20	-	730.36	29446
29447	240 - 300 mm²2-core and 150 - 185 mm²4-core	2,669.49	212.86	-	813.63	29447
29448	400 mm²2-core and 240 - 300 mm²4-core	3,472.31	245.31	-	937.14	29448

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SERVICE CABLE BOXES (CONT'D)					
	Plastic straight through cable joint comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to : -					
	Each	A $	B $	C $	D $	
29449	1.5 - 4 mm²2-core	604.92	104.88	-	387.45	29449
29450	6 - 10 mm²2-core	653.80	117.51	-	439.63	29450
29451	16 - 25 mm²2-core	722.95	129.55	-	487.70	29451
29452	35 - 50 mm²2-core and 16 mm²4-core	920.79	142.25	-	535.31	29452
29453	70 - 95 mm²2-core and 25 - 50 mm²4-core	1,127.42	158.69	-	597.47	29453
29454	120 - 185 mm²2-core and 70 - 120 mm²4-core	2,254.93	172.34	-	648.21	29454
29455	Link box for 240mm²1 core MICS cable	1,932.23	23.20	28.95	87.93	29455
	Plastic tee cable joint comprising armoured bonds, jointing sleeves and filling with cold compounds, fixed complete. Suitable for cables with maximum cross sectional area of conductor up to : -					
	Each					
29456	1.5 - 6 mm²2-core	978.32	102.76	-	379.63	29456

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE FIXING					
	Terminating glands for PVC insulated steel wire armoured and PVC sheathed overall c/w PVC shroud suitable for cable of overall diameter with maximum outer sheath of : -					
	Each	A $	B $	C $	D $	
29457	500 mm² 1-core	174.00	33.71	41.96	129.46	29457
29458	630 mm² ditto	174.00	33.71	41.96	129.46	29458
29459	800 mm² ditto	235.07	41.27	51.55	151.80	29459
29460	1000 mm² ditto	262.16	47.86	61.03	178.17	29460
29461	1.5 - 4 mm² 2-core	84.66	20.47	25.57	74.91	29461
29462	1.5 - 2.5 mm² 4-core, 6 - 10 mm² 2-core	99.12	24.49	30.24	87.62	29462
29463	4 - 6 mm² 4-core, 16 - 35 mm² 2-core	113.08	26.34	33.73	96.75	29463
29464	10 - 35 mm² 4-core, 50 - 95 mm² 2-core	134.49	30.58	38.17	112.97	29464
29465	50 - 95 mm² 4-core	159.12	32.11	41.59	121.62	29465
29466	120 - 150 mm² ditto	171.15	33.42	43.05	126.08	29466
29467	185 mm² ditto	236.70	40.30	50.01	150.22	29467
29468	240 mm² ditto	262.61	48.35	59.90	176.14	29468
29469	300 mm² ditto	343.06	57.62	72.22	218.62	29469
29470	400 mm² ditto	438.08	66.92	82.43	245.82	29470
	PVC shroud only for PVC / SWA / PVCS cable of size : -					
	Each					
29471	1.5 - 4 mm² 2-core	9.33	-	-	-	29471
29472	1.5 - 2.5 mm² 4-core, 6 - 10 mm² 2-core	14.05	-	-	-	29472
29473	4 - 6 mm² 4-core, 16 - 35 mm² 2-core	14.29	-	-	-	29473
29474	10 - 35 mm² 4-core, 50 - 95 mm² 2-core	25.53	-	-	-	29474
29475	50 - 95 mm² 4-core	26.72	-	-	-	29475
29476	120 - 150 mm² ditto	33.55	-	-	-	29476
29477	185 mm² ditto	38.83	-	-	-	29477
29478	240 mm² ditto	45.47	-	-	-	29478
29479	300 mm² ditto	56.70	-	-	-	29479
29480	400 mm² ditto	62.24	-	-	-	29480

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE FIXING (CONT'D)					
	Saddle clips or bridge, heavy gauge tinned brass, fixed to wood battens with round head brass screws (battens measured separately) : -					
	Each	A $	B $	C $	D $	
29481	20 x 40 mm	7.49	1.27	1.48	4.14	29481
29482	20 x 50 mm	7.92	1.27	1.48	4.14	29482
29483	20 x 60 mm	8.51	1.27	1.48	4.14	29483
29484	20 x 70 mm	10.72	1.41	1.83	5.62	29484
29485	20 x 80 mm	11.51	1.41	1.83	5.62	29485
29486	20 x 100 mm	12.42	1.41	1.83	5.62	29486
29487	20 x 120 mm	12.79	1.41	1.83	5.62	29487
	Complete termination for MICS cables : -					
	Including : -					
	(a) a complete seal, (brass pot, disc, compound and required number of 150 mm PVC insulating sleeves for the conductor) and					
	(b) a complete gland (gland body, gland nut and compression ring).					
	Each					
29488	6 mm² 1-core	60.42	13.06	16.66	50.74	29488
29489	10 mm² ditto	70.58	13.79	17.51	53.11	29489
29490	16 mm² ditto	84.93	15.31	18.93	56.84	29490
29491	25 mm² ditto	90.39	16.13	19.85	62.07	29491
29492	35 - 50 mm² ditto	102.94	17.53	22.31	68.13	29492
29493	70 mm² ditto	112.23	20.37	24.81	76.30	29493
29494	95 mm² ditto	118.31	21.19	27.00	80.98	29494
29495	120 mm² ditto	124.06	22.54	27.85	86.53	29495
29496	150 mm² ditto	139.04	23.97	29.04	91.95	29496
29497	185 mm² ditto	156.87	24.73	30.95	97.83	29497
29498	240 mm² ditto	184.45	25.47	31.26	100.97	29498

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE FIXING (CONT'D)					
	Complete termination for MICS cables : - (Cont'd) Including : - (a) a complete seal, (brass pot, disc, compound and required number of 150 mm PVC insulating sleeves for the conductor) and (b a complete gland (gland body, gland nut and compression ring).					
	Each	A $	B $	C $	D $	
29499	1 mm² 2-core	95.82	16.53	20.15	61.37	29499
29500	1.5 mm² ditto	99.82	17.26	21.94	65.53	29500
29501	2.5 mm² ditto	107.87	18.70	22.84	71.74	29501
29502	4 mm² ditto	113.37	20.32	25.13	76.57	29502
29503	6 mm² ditto	118.40	21.20	27.03	80.98	29503
29504	10 mm² ditto	119.64	21.20	27.03	82.47	29504
29505	16 mm² ditto	128.84	21.92	27.88	87.89	29505
29506	25 mm² ditto	135.01	24.24	29.67	92.93	29506
29507	1.5 mm² 4-core	115.60	20.15	24.64	74.16	29507
29508	2.5 mm² ditto	122.45	21.20	26.57	80.43	29508
29509	4 mm² ditto	126.65	21.48	26.98	82.91	29509
29510	6 mm² ditto	130.29	22.78	28.20	85.69	29510
29511	10 mm² ditto	134.78	22.78	28.20	88.59	29511
29512	16 mm² ditto	141.05	24.24	29.36	93.67	29512
29513	25 mm² ditto	172.14	24.98	31.36	99.96	29513
	Cables cleats, 2-bolt cleat for cable with overall diameter of the following : -					
	Each					
29514	50 mm - 75 mm	31.36	5.54	7.11	19.85	29514
29515	75 mm - 100 mm	47.46	6.98	8.61	26.48	29515
	Cable tiles approved type (sample to be produced) : -					
	Each					
29516	450 x 100 x 25 mm	17.74	1.42	1.92	5.72	29516
29517	600 x 175 x 50 mm	27.56	1.92	2.84	8.59	29517

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CABLE FIXING (CONT'D)					
	Cable sockets, forged copper, tinned, for the following size single core cables : -					
	Each	A $	B $	C $	D $	
29518	2.5 mm²	8.14	-	-	7.92	29518
29519	4 mm²	11.68	-	-	11.31	29519
29520	6 mm²	11.88	-	-	11.43	29520
29521	10 mm²	13.18	-	-	12.88	29521
29522	16 mm²	14.62	-	-	14.01	29522
29523	25 mm²	15.22	-	-	14.08	29523
29524	35 mm²	19.72	-	-	18.39	29524
29525	50 mm²	23.13	-	-	20.67	29525
29526	70 mm²	29.57	-	-	24.92	29526
29527	95 mm²	37.27	-	-	31.15	29527
29528	120 mm²	45.63	-	-	36.52	29528
29529	150 mm²	53.27	-	-	40.92	29529
29530	185 mm²	63.60	-	-	47.02	29530
29531	240 mm²	76.85	-	-	52.49	29531
29532	300 mm²	93.69	-	-	59.11	29532
29533	400 mm²	119.62	-	-	68.62	29533
29534	500 mm²	146.04	-	-	75.90	29534
29535	630 mm²	196.64	-	-	84.20	29535
29536	800 mm²	304.58	-	-	95.60	29536
29537	1000 mm²	390.62	-	-	111.11	29537
	Cable marker : -					
	Each					
29538	Concrete cable marker 230 x 180 x 100 mm	60.12	3.12	3.80	10.72	29538
29539	Cable tape off unit with insulating shroud	90.33	9.09	11.42	34.82	29539
	Jointing compound : -					
	Per kg					
29540	Jointing compound, cold pouring (Supply only)	141.23	-	-	-	29540

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT					
	Busbar trunking, IP54, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -					
	Per linear metre	A $	B $	C $	D $	
29541	600A	5,832.72	110.57	165.22	577.63	29541
29542	800A	6,153.65	192.79	246.80	866.31	29542
29543	1000A	7,081.36	223.63	286.37	1,009.22	29543
29544	1200A	8,814.85	255.35	327.57	1,155.17	29544
29545	1350A	9,684.18	276.22	353.50	1,234.33	29545
29546	1600A	11,186.73	306.32	391.29	1,364.67	29546
29547	2000A	13,136.34	336.40	429.91	1,503.69	29547
29548	2500A	17,968.40	369.68	473.71	1,641.51	29548
	Busbar trunking, IP65, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -					
	Per linear metre					
29549	600A	6,019.86	110.14	164.59	575.41	29549
29550	800A	6,342.66	192.04	245.83	863.00	29550
29551	1000A	7,293.95	222.79	285.28	1,005.37	29551
29552	1200A	9,025.67	254.36	326.34	1,150.75	29552
29553	1350A	9,970.00	275.14	352.17	1,229.63	29553
29554	1600A	11,572.08	305.13	389.80	1,359.46	29554
29555	2000A	13,468.42	335.11	428.30	1,497.95	29555
29556	2500A	18,422.31	368.28	471.89	1,635.33	29556

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	Busbar trunking, IP66, all-insulated, TPN, c/w ends, elbows and tee units, etc., copper busbar, trunking, supports, hangers, fixing accessories, labels and warning notice of the rated current : -					
	Per linear metre	A $	B $	C $	D $	
29557	600A	6,309.73	110.14	164.59	575.41	29557
29558	800A	6,646.93	192.04	245.83	863.00	29558
29559	1000A	7,558.73	222.79	285.28	1,005.37	29559
29560	1200A	9,286.61	254.36	326.34	1,150.75	29560
29561	1350A	10,196.11	275.20	352.17	1,229.63	29561
29562	1600A	11,691.23	305.13	389.80	1,359.46	29562
29563	2000A	13,530.46	335.11	428.30	1,497.95	29563
29564	2500A	19,226.59	368.28	471.89	1,635.33	29564
	Cable tap box, TPN metal clad with copper busbars for all-insulated totally enclosed plug-in type or feeder type busduct of the rated current : -					
	Each					
29565	600A	13,283.00	123.85	185.66	653.46	29565
29566	800A	14,644.77	148.47	223.00	783.33	29566
29567	1000A	15,897.38	172.50	258.88	916.77	29567
29568	1200A	16,459.91	196.99	294.29	1,049.62	29568
29569	1350A	19,267.26	218.87	328.21	1,168.63	29569
29570	1600A	20,577.79	240.75	360.91	1,285.11	29570
29571	2000A	22,680.68	265.11	398.23	1,425.16	29571
29572	2500A	33,137.72	299.67	447.95	1,616.92	29572

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	90° elbow, edgewise or flatwise, IP54, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29573	600A	4,912.57	123.10	184.54	649.54	29573
29574	800A	5,075.72	147.59	221.66	778.65	29574
29575	1000A	5,464.42	171.47	257.37	911.23	29575
29576	1200A	6,022.36	195.83	292.58	1,043.29	29576
29577	1350A	6,397.88	218.87	328.21	1,168.63	29577
29578	1600A	6,920.48	240.75	360.91	1,285.11	29578
29579	2000A	7,563.67	265.11	398.23	1,425.16	29579
29580	2500A	10,443.56	299.67	447.95	1,616.92	29580
	90° elbow, edgewise or flatwise, IP65, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -					
	Each					
29581	600A	5,040.09	123.10	184.54	649.54	29581
29582	800A	5,203.90	147.59	221.66	778.61	29582
29583	1000A	5,597.74	171.47	257.37	911.23	29583
29584	1200A	6,169.19	195.83	292.58	1,043.29	29584
29585	1350A	6,552.90	218.87	328.21	1,168.63	29585
29586	1600A	7,088.24	240.75	360.91	1,285.11	29586
29587	2000A	7,745.99	265.11	398.23	1,425.16	29587
29588	2500A	10,631.63	299.67	447.95	1,616.92	29588

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	90° elbow, edgewise or flatwise, IP66, with copper busbar, trunking, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29589	600A	5,288.59	123.35	184.92	650.85	29589
29590	800A	5,453.35	147.86	222.09	780.18	29590
29591	1000A	5,804.64	171.78	257.88	913.08	29591
29592	1200A	6,377.78	196.21	293.15	1,045.42	29592
29593	1350A	6,755.85	219.28	328.88	1,171.04	29593
29594	1600A	7,263.40	241.24	361.66	1,287.76	29594
29595	2000A	7,882.24	265.62	399.03	1,428.11	29595
29596	2500A	11,293.17	300.30	448.86	1,620.29	29596
	Combination elbow, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29597	600A	9,524.50	196.21	293.15	1,045.42	29597
29598	800A	9,795.21	234.85	351.88	1,254.33	29598
29599	1000A	10,514.13	272.86	410.07	1,463.56	29599
29600	1200A	11,569.92	311.99	466.82	1,671.35	29600
29601	1350A	12,269.08	344.85	515.38	1,847.81	29601
29602	1600A	13,264.84	379.23	569.25	2,033.10	29602
29603	2000A	14,495.53	418.65	627.79	2,239.59	29603
29604	2500A	20,160.99	472.75	709.36	2,531.90	29604
	Combination elbow, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29605	600A	9,778.85	196.21	293.15	1,045.42	29605
29606	800A	10,050.95	234.85	351.88	1,254.33	29606
29607	1000A	10,780.23	272.86	410.07	1,463.56	29607
29608	1200A	11,862.79	311.99	466.82	1,671.35	29608
29609	1350A	12,578.26	344.85	515.38	1,847.81	29609

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	Combination elbow, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
29610	1600A	13,599.62	379.23	569.25	2,033.10	29610
29611	2000A	14,859.44	418.65	627.79	2,239.59	29611
29612	2500A	20,681.85	472.75	709.36	2,531.90	29612
	Combination elbow, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29613	600A	10,320.66	196.99	294.31	1,049.62	29613
29614	800A	10,596.17	235.76	353.24	1,259.39	29614
29615	1000A	11,243.38	273.91	411.69	1,469.45	29615
29616	1200A	12,334.64	313.19	468.67	1,678.08	29616
29617	1350A	13,042.08	346.20	517.39	1,855.22	29617
29618	1600A	14,012.16	380.64	571.44	2,041.22	29618
29619	2000A	15,199.31	420.30	630.23	2,248.55	29619
29620	2500A	21,954.04	474.58	712.10	2,541.99	29620
	End closer, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29621	600A	1,181.05	68.82	103.79	357.31	29621
29622	800A	1,245.19	76.22	114.24	393.28	29622
29623	1000A	1,287.75	82.92	124.04	429.08	29623
29624	1200A	1,342.65	90.09	133.82	465.74	29624
29625	1350A	1,395.10	95.98	143.96	501.16	29625
29626	1600A	1,489.33	106.70	159.39	557.32	29626
29627	2000A	1,584.08	117.66	176.76	614.61	29627
29628	2500A	1,806.18	133.27	200.31	698.97	29628

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	End closer, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29629	600A	1,181.05	68.82	103.79	357.31	29629
29630	800A	1,245.19	76.22	114.24	393.28	29630
29631	1000A	1,287.75	82.92	124.04	429.08	29631
29632	1200A	1,342.65	90.09	133.82	465.74	29632
29633	1350A	1,395.10	95.98	143.96	501.16	29633
29634	1600A	1,489.33	106.70	159.39	557.34	29634
29635	2000A	1,584.08	117.66	176.76	614.61	29635
29636	2500A	1,806.18	133.27	200.31	698.97	29636
	End closer, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29637	600A	1,181.05	68.42	103.17	355.21	29637
29638	800A	1,245.19	75.78	113.54	390.95	29638
29639	1000A	1,287.75	82.42	123.28	426.56	29639
29640	1200A	1,342.65	89.55	133.05	462.96	29640
29641	1350A	1,395.10	95.39	143.12	498.17	29641
29642	1600A	1,489.33	106.06	158.46	554.02	29642
29643	2000A	1,584.08	116.96	175.73	610.95	29643
29644	2500A	1,806.18	132.50	199.14	694.85	29644

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	Expansion joint, IP54, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29645	600A	13,768.62	123.10	184.54	649.54	29645
29646	800A	14,126.83	147.59	221.66	778.61	29646
29647	1000A	14,180.25	171.47	257.37	911.23	29647
29648	1200A	15,595.76	195.83	292.58	1,043.29	29648
29649	1350A	17,606.03	218.87	328.21	1,168.63	29649
29650	1600A	18,350.77	240.75	360.91	1,285.11	29650
29651	2000A	18,969.02	265.11	398.23	1,425.16	29651
29652	2500A	26,179.32	299.67	447.95	1,616.92	29652
	Expansion joint, IP65, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29653	600A	13,768.62	123.10	184.54	649.54	29653
29654	800A	14,126.83	147.59	221.66	778.61	29654
29655	1000A	14,180.25	171.47	257.37	911.23	29655
29656	1200A	15,595.76	195.83	292.58	1,043.29	29656
29657	1350A	17,606.03	218.87	328.21	1,168.63	29657
29658	1600A	18,350.77	240.75	360.91	1,285.11	29658
29659	2000A	18,969.02	265.11	398.23	1,425.16	29659
29660	2500A	26,179.32	299.67	447.95	1,616.92	29660

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	Expansion joint, IP66, for all-insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29661	600A	13,738.73	123.35	184.92	650.85	29661
29662	800A	14,096.08	147.86	222.15	780.18	29662
29663	1000A	14,149.60	171.78	257.88	913.08	29663
29664	1200A	15,562.07	196.21	293.15	1,045.42	29664
29665	1350A	17,568.06	219.28	328.88	1,171.04	29665
29666	1600A	18,310.84	241.24	361.60	1,287.76	29666
29667	2000A	18,927.82	265.62	399.03	1,428.11	29667
29668	2500A	26,122.21	300.30	448.86	1,620.29	29668
	Flanged end, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -					
	Each					
29669	600A	3,336.55	68.54	103.37	355.90	29669
29670	800A	3,677.45	75.90	113.76	391.71	29670
29671	1000A	3,752.55	82.63	123.54	427.41	29671
29672	1200A	4,143.92	89.71	133.36	463.92	29672
29673	1350A	4,369.31	95.57	143.40	499.19	29673
29674	1600A	4,830.68	106.30	158.80	555.14	29674
29675	2000A	5,398.83	117.23	176.07	612.20	29675
29676	2500A	7,789.36	132.74	199.54	696.22	29676

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	Fuseswitch TPN, metal clad, plug-in type c/w HRC fuses for all-insulated totally enclosed TPN copper busduct of the rated current : -					
	Each	A $	B $	C $	D $	
29677	200A	8,141.07	170.89	224.42	787.54	29677
29678	400A	14,244.97	223.16	293.15	1,045.42	29678
29679	600A	19,126.59	285.28	374.31	1,336.21	29679
	Busduct, TPN copper busbars, all-insulated, totally enclosed, indoor feeder type c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current : -					
	Per linear metre					
29680	600A	5,287.39	111.68	166.26	573.24	29680
29681	800A	5,489.02	131.82	196.44	680.02	29681
29682	1000A	6,347.22	151.56	227.39	783.92	29682
29683	1200A	8,011.27	171.90	256.94	892.31	29683
29684	1350A	8,848.37	190.08	285.28	981.72	29684
29685	1600A	10,264.95	210.87	314.85	1,088.48	29685
29686	2000A	11,979.40	232.60	348.90	1,206.54	29686
29687	2500A	16,420.99	257.23	384.88	1,327.67	29687
	Busduct, TPN copper busbars, all-insulated totally enclosed, indoor plug-in type c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current : -					
	Per linear metre					
29688	600A	6,201.13	111.68	166.26	594.36	29688
29689	800A	6,416.14	131.82	196.44	680.02	29689
29690	1000A	7,317.79	151.56	227.39	783.92	29690
29691	1200A	8,952.50	171.90	256.94	892.31	29691
29692	1350A	9,806.40	190.08	285.28	981.72	29692
29693	1600A	11,346.67	210.87	314.85	1,088.48	29693
29694	2000A	13,162.41	232.60	348.90	1,206.54	29694
29695	2500A	18,583.52	257.23	384.88	1,327.67	29695

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	MCCB, TPN, metal clad, plug-in type, minimum 40 kA at 380V, for all-insulated totally enclosed TPN copper busduct of the rated current : -					
		A	B	C	D	
	Each	$	$	$	$	
29696	200A	9,296.70	177.37	227.39	783.92	29696
29697	400A	14,669.59	231.58	297.57	1,027.34	29697
29698	600A	18,882.42	295.40	379.17	1,310.54	29698
	Busduct, TPN copper busbars, all-insulated totally enclosed, outdoor feeder c/w ends, elbows, tee unit, supports, hangers, fixing accessories, etc. of the rated current : -					
	Per linear metre					
29699	600A	6,212.85	110.79	164.97	568.83	29699
29700	800A	6,378.78	130.81	194.91	674.75	29700
29701	1000A	6,707.09	150.39	225.63	777.91	29701
29702	1200A	8,020.47	170.56	254.98	885.48	29702
29703	1350A	8,829.75	188.64	283.08	974.19	29703
29704	1600A	10,114.77	209.26	312.44	1,080.18	29704
29705	2000A	11,750.29	230.81	346.24	1,197.28	29705
29706	2500A	16,107.37	255.25	381.92	1,317.60	29706
	90° offset, edgewise or flatwise, IP54 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29707	600A	9,378.42	195.45	293.15	1,045.42	29707
29708	800A	9,644.79	234.47	350.55	1,254.35	29708
29709	1000A	10,394.69	272.39	409.32	1,461.20	29709
29710	1200A	11,392.05	312.25	466.34	1,670.49	29710
29711	1350A	12,055.98	345.91	518.77	1,855.22	29711
29712	1600A	13,138.70	380.28	571.19	2,041.33	29712
29713	2000A	14,273.58	419.58	629.23	2,251.15	29713
29714	2500A	19,851.83	474.26	711.80	2,553.32	29714

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR TRUNKING AND BUS DUCT (CONT'D)					
	90° offset, edgewise or flatwise, IP65 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each	A $	B $	C $	D $	
29715	600A	9,628.90	195.83	293.75	1,047.51	29715
29716	800A	9,896.60	234.92	351.22	1,256.90	29716
29717	1000A	10,657.71	272.93	410.09	1,464.13	29717
29718	1200A	11,680.37	312.85	467.26	1,673.86	29718
29719	1350A	12,359.77	346.59	519.78	1,858.97	29719
29720	1600A	13,470.26	381.04	572.33	2,045.43	29720
29721	2000A	14,631.93	420.42	630.46	2,255.74	29721
29722	2500A	20,364.68	475.18	713.16	2,558.46	29722
	90° offset, edgewise or flatwise, IP66 for all insulated totally enclosed TPN copper busbar trunking of the rated current (linear length excluded and measured separately) : -					
	Each					
29723	600A	10,140.10	195.83	293.75	1,047.51	29723
29724	800A	10,410.53	234.92	351.22	1,256.90	29724
29725	1000A	10,657.71	272.93	410.09	1,464.13	29725
29726	1200A	12,079.19	312.85	467.26	1,673.86	29726
29727	1350A	12,359.77	346.59	519.78	1,858.97	29727
29728	1600A	13,848.35	381.04	572.33	2,045.43	29728
29729	2000A	14,933.84	420.42	630.46	2,255.74	29729
29730	2500A	21,569.91	475.18	713.16	2,558.46	29730

BUSBAR TRUNKING AND BUS DUCT (CONT'D)

Tee unit, weatherproof type for all-insulated totally enclosed TPN copper busduct of the rated current (linear length excluded and measured separately) : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
29731	200A	4,078.00	98.68	167.75	667.70	29731
29732	400A	4,417.75	98.68	179.72	684.37	29732
29733	600A	4,632.13	135.08	202.33	698.86	29733
29734	800A	4,968.98	160.68	240.73	839.52	29734
29735	1000A	5,350.67	187.44	281.08	977.27	29735
29736	1200A	5,957.72	215.22	322.06	1,113.67	29736
29737	1350A	6,348.37	239.54	359.17	1,220.28	29737
29738	1600A	6,876.82	263.85	396.09	1,349.82	29738
29739	2000A	7,547.34	290.28	434.81	1,490.10	29739
29740	2500A	10,413.27	328.38	493.12	1,688.09	29740

Section 30

ELECTRICAL INSTALLATION -

MISCELLANEOUS

DISTRIBUTION BOARDS

Fuseboard to BS EN 60439-3 with 500V fuse base and holder, fixed, connected retained with labels, circuit list etc., including solid copper bars for neutral and for earth, suitable for fuses to IEC 60269-1 (HRC fuses measured separately) : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30001	20/ 32A SPN 4 way	1,742.34	34.60	40.81	106.35	30001
30002	20/ 32A SPN 6 way	2,227.84	37.14	44.35	118.90	30002
30003	20/ 32A SPN 8 way	2,615.69	37.14	44.35	118.90	30003
30004	20/ 32A SPN 10 way	3,033.91	39.23	49.12	150.85	30004
30005	20/ 32A SPN 12 way	3,448.88	39.23	49.12	150.85	30005
30006	20/ 32A TPN 2 way	2,323.92	34.60	40.81	106.35	30006
30007	20/ 32A TPN 4 way	3,245.53	39.23	49.12	150.85	30007
30008	20/ 32A TPN 6 way	4,277.05	39.23	49.12	150.85	30008
30009	20/ 32A TPN 8 way	5,413.05	49.12	60.93	188.64	30009
30010	63A TPN 2 way	5,180.10	34.60	40.81	106.35	30010
30011	63A TPN 4 way	7,399.60	39.23	49.12	150.85	30011
30012	63A TPN 6 way	9,656.57	39.23	49.12	150.85	30012
30013	63A TPN 8 way	11,828.79	49.12	60.93	188.64	30013

Metal boxes only for distribution boards 250/ 500 V (as per approved pattern) including solid copper earth bar, neutral bar, circuit list etc., (fuses base and holder not included), for fuse-way of the following sizes : -

	Each					
30014	32A SPN 4 - 6 way	563.27	19.59	24.66	78.02	30014
30015	32A SPN 7 - 9 way	971.45	26.34	32.80	105.23	30015
30016	32A SPN 10 - 12 way	1,046.43	36.77	46.28	147.11	30016
30017	32A TPN 2 - 4 way	1,322.83	36.77	46.28	147.11	30017
30018	63A TPN 4 way	2,152.91	36.77	46.28	147.11	30018
30019	63A TPN 6 way	2,303.60	46.99	58.64	187.51	30019
30020	63A TPN 8 way	2,453.25	56.42	70.96	225.73	30020

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	DISTRIBUTION BOARDS (CONT'D)					
	MCB distribution boards to IEC 60439-3, metal clad, flush mounting with 100 A DP isolating switch for MCB to IEC 60898 (excluding MCBs and cutting into wall measured separately where applicable) : -					
	Each	A $	B $	C $	D $	
30021	SPN 4 - 6 way	426.38	12.93	16.69	52.93	30021
30022	SPN 7 - 9 way	497.06	19.55	23.96	75.97	30022
30023	SPN 10 - 12 way	572.80	25.27	31.69	102.51	30023
30024	SPN 13 - 15 way	669.33	31.79	39.56	135.33	30024
30025	SPN 16 - 18 way	748.72	37.87	48.05	172.76	30025
	MCB distribution boards to IEC 60439-3, metal clad, surface mounting with 100 A DP isolating switch for MCB to IEC 60898 (excluding MCBs) : -					
	Each					
30026	SPN 4 - 6 way	507.60	19.59	24.66	79.28	30026
30027	SPN 7 - 9 way	621.58	26.34	32.80	106.00	30027
30028	SPN 10 - 12 way	690.46	36.77	46.28	148.33	30028
30029	SPN 13 - 15 way	759.18	57.75	71.34	234.65	30029
30030	SPN 16 - 18 way	840.30	70.08	87.78	286.27	30030
	MCB distribution boards, metal case (locally made) surface mounting, with space for isolating switch if required, fixed, connected with labels, circuit list etc., including solid copper bars for neutral and for earth (MCBs & isolating switch not included) : -					
	Each					
30031	SPN 1 - 3 way	294.18	19.19	23.57	74.08	30031
30032	TPN 2 way	410.50	19.97	25.32	80.35	30032
	MCB distribution boards, metal clad, to IEC 60439-3, surface mounting with 80A DP RCCB (30 mA) for MCBs to IEC 60898 (excluding MCBs) : -					
	Each					
30033	SPN 6 way	769.70	19.97	24.66	77.51	30033
30034	SPN 8 way	815.24	26.58	32.48	103.58	30034

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	DISTRIBUTION BOARDS (CONT'D)					
	MCB distribution boards, metal clad, to IEC 60439-3, surface mounting split bar board with 80/ 100A DP switch and 60/ 80A, 30 mA RCD for MCBs to IEC 60898 (excluding MCBs) : -					
	Each	A $	B $	C $	D $	
30035	Single-phase 4 - 6 way	855.99	20.03	24.71	77.67	30035
30036	Single-phase 7 - 9 way	912.02	26.65	32.54	103.77	30036
30037	Single-phase 10 - 12 way	978.02	36.64	46.24	146.12	30037
	MCB distribution boards, metal clad, to IEC 60439-3, surface mounting with busbar rated at not less than 200A for MCBs to IEC 60898 (excluding MCBs) : -					
	Each					
30038	TPN 4 way (Direct termination)	1,195.04	36.64	46.24	146.12	30038
30039	TPN 4 way with 100A TP isolator	1,301.64	36.64	46.24	146.12	30039
30040	TPN 6 way (Direct termination)	1,262.73	47.01	58.59	184.95	30040
30041	TPN 6 way with 100A TP isolator	1,474.15	47.01	58.59	184.95	30041
30042	TPN 8 way (Direct termination)	1,503.50	56.49	71.35	226.23	30042
30043	TPN 8 way with 100A TP isolator	1,630.83	56.49	71.35	226.23	30043
30044	TPN 10 way (Direct termination)	1,533.42	67.90	86.90	276.71	30044
30045	TPN 10 way with 100A TP isolator	1,671.74	67.90	86.90	276.71	30045
30046	TPN 12 way (Direct termination)	1,817.98	70.86	89.05	284.57	30046
30047	TPN 12 way with 100A TP isolator	2,135.01	70.86	89.05	284.57	30047
30048	TPN 14/ 16 way (Direct termination)	2,374.57	79.41	99.76	319.19	30048
30049	TPN 14/ 16 way with 100A isolator	2,769.58	79.41	99.76	319.19	30049
30050	TPN 18 way (Direct termination)	2,948.32	93.47	116.84	365.28	30050
30051	TPN 18 way with 160A TP isolator	3,462.46	93.47	116.84	365.28	30051
	MCB distribution board accessories : -					
	Each					
30052	Cable clamp	14.76	1.88	2.34	5.78	30052
30053	Blanking plate	9.18	1.88	2.34	5.78	30053
30054	Back plate for mounting 1 - 3 MCB	28.76	1.88	2.34	5.78	30054

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	DISTRIBUTION BOARDS (CONT'D)					
	Miniature circuit breakers to IEC 60898 with rated instantaneous tripping current of Type B/ Type C classification and rated short circuit breaking capacity of at least 6000 short circuit rating. The rates shall include opening and closing of MCB board covers or front plates, taking down and re-fixing of blanking plate where required : -					
		A	B	C	D	
	Each	$	$	$	$	
30055	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A SP	54.10	5.52	6.54	17.41	30055
30056	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A DP	136.50	5.52	6.54	17.41	30056
30057	5/ 10/ 16/ 20/ 32/ 40/ 50/ 63A TP	242.61	8.42	10.07	26.67	30057
30058	Complete set 40A lateral main MCB tap off unit	469.99	11.25	14.09	45.03	30058
	Isolating switches, all insulated for MCB board, include opening and closing of MCB board cover/ front plates : -					
	Each					
30059	30/ 32A DP	144.93	11.04	13.32	34.56	30059
30060	60/ 63A DP	150.78	11.04	13.32	34.56	30060
30061	100A DP	194.01	12.57	14.89	39.53	30061
30062	200A DP	782.25	13.34	17.15	53.95	30062
30063	63A TP	213.03	12.57	14.89	39.53	30063
30064	100/ 125A TP	262.14	12.57	14.89	39.53	30064
30065	160/ 200A TP	1,168.95	13.34	17.15	53.95	30065

DISTRIBUTION BOARDS (CONT'D)

MCCB distribution boards to IEC 60439-1 and 60439-3 surface mounting with moulded-case isolating switch, suitable for MCCB to IEC 60947-2 : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
30066	100A TPN 4 way	3,649.88	46.66	58.14	183.53	30066
30067	200A TPN 4 way	3,882.84	46.66	58.14	183.53	30067
30068	250A TPN 4 way	4,155.03	46.66	58.14	183.53	30068
30069	300A TPN 4 way	4,456.53	46.66	58.14	183.53	30069
30070	400A TPN 4 way	4,937.40	46.66	58.14	183.53	30070
30071	600A TPN 4 way	6,115.19	46.66	58.14	183.53	30071
30072	800A TPN 4 way	6,853.73	46.66	58.14	183.53	30072
30073	200A TPN 6 way	4,886.62	56.09	70.81	224.49	30073
30074	250A TPN 6 way	5,046.75	56.09	70.81	224.49	30074
30075	300A TPN 6 way	5,412.95	56.09	70.81	224.49	30075
30076	400A TPN 6 way	6,126.94	56.09	70.81	224.49	30076
30077	600A TPN 6 way	6,571.26	56.09	70.81	224.49	30077
30078	800A TPN 6 way	7,272.63	56.09	70.81	224.49	30078
30079	100A TPN 8 way	5,872.63	71.92	90.57	285.88	30079
30080	200A TPN 8 way	5,977.61	71.92	90.57	285.88	30080
30081	250A TPN 8 way	6,375.49	71.92	90.57	285.88	30081
30082	300A TPN 8 way	6,667.12	71.92	90.57	285.88	30082
30083	400A TPN 8 way	7,351.81	71.92	90.57	285.88	30083
30084	600A TPN 8 way	8,336.96	71.92	90.57	285.88	30084
30085	800A TPN 8 way	9,258.81	71.92	90.57	285.88	30085
30086	300A TPN 10 way	7,736.80	87.19	109.63	346.20	30086
30087	400A TPN 10 way	8,271.69	87.19	109.63	346.20	30087
30088	600A TPN 10 way	9,257.55	87.19	109.63	346.20	30088
30089	300A TPN 12 way	8,776.38	102.10	127.64	405.42	30089
30090	400A TPN 12 way	9,297.63	102.10	127.64	405.42	30090
30091	600A TPN 12 way	10,654.39	102.10	127.64	405.42	30091
30092	600A TPN 14 way	11,855.60	117.80	147.61	468.87	30092

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MOULDED CASE CIRCUIT BREAKERS					
	TP moulded case circuit breaker (MCCB), 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
		A	B	C	D	
	Each	$	$	$	$	
30093	15/ 20/ 30/ 32A	724.04	24.90	31.47	99.11	30093
30094	40/ 50/ 60/ 63A	755.63	32.06	40.19	129.51	30094
30095	75/ 100A	774.29	36.51	46.07	146.02	30095
30096	225/ 300A	2,386.99	36.51	46.07	146.02	30096
30097	400A	2,684.33	36.51	46.07	146.02	30097
	TP moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 40 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each					
30098	30/ 32/ 40/ 50A	1,117.34	27.88	35.07	110.29	30098
30099	60/ 63/ 75/ 100A	1,149.31	36.51	46.07	146.02	30099
30100	125/ 150/ 175/ 200/ 225A	1,637.09	36.51	46.07	146.02	30100
30101	250/ 300/ 315/ 350/ 400A	3,616.02	36.51	46.07	146.02	30101
30102	500/ 600/ 630A	4,958.04	43.08	54.22	170.89	30102
	TP moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 50 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each					
30103	250 - 400A	4,743.63	36.51	46.07	146.02	30103
30104	500 - 600A	6,107.34	43.08	54.22	170.89	30104
30105	630 - 800A	7,304.51	48.35	61.66	195.80	30105
	TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each					
30106	15/ 20/ 30/ 32A	789.96	24.90	31.47	99.11	30106
30107	40/ 50/ 60/ 63A	822.31	32.06	40.19	129.51	30107
30108	75/ 100A	839.52	36.51	46.07	146.02	30108
30109	225/ 300A	3,606.99	36.51	46.07	146.02	30109
30110	400A	4,138.16	36.51	46.07	146.02	30110

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MOULDED CASE CIRCUIT BREAKERS (CONT'D)					
	SP moulded case circuit breaker (MCCB), 23 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each	A $	B $	C $	D $	
30111	15/ 20/ 30/ 32A	555.77	24.85	31.42	98.89	30111
30112	40/ 50/ 60/ 63A	633.95	32.00	40.08	129.25	30112
	TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 40 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each					
30113	Up to 50A	1,443.38	27.82	35.00	110.06	30113
30114	50A to 100A	1,490.27	36.44	45.98	145.74	30114
30115	100A to 250A	2,101.12	36.44	45.98	145.74	30115
30116	250A to 400A	3,849.66	36.44	45.98	145.74	30116
30117	400A to 630A	5,535.45	42.99	54.11	170.56	30117
	TPN moulded case circuit breaker (MCCB) c/w shunt trip coil for external tripping or connection, 50 kA breaking capacity and type-tested to IEC 60947-2 of the rated current : -					
	Each					
30118	250 to 400A	6,121.83	36.44	45.98	145.74	30118
30119	500 to 600A	8,137.79	42.99	54.11	170.56	30119
30120	600 to 800A	9,664.35	48.26	61.57	195.42	30120
	Metal box for TPN MCCB : -					
	Each					
30121	Metal box for TPN MCCB up to 100A	349.24	14.98	18.65	55.76	30121
30122	Metal box for TPN MCCB of 100A to 225A	519.69	14.98	18.65	55.76	30122
30123	Metal box for TPN MCCB of 225A to 400A	689.42	21.85	27.49	86.13	30123
30124	Metal box for TPN MCCB of 400A to 800A	1,307.73	21.85	27.49	86.13	30124
	IDMT earth fault relay : -					
	Each					
30125	IDMT earth fault relay c/w necessary current transformers, accessories and interconnections etc. including site test to be witnessed and to the satisfaction of the supply company	5,894.08	42.99	54.11	170.56	30125

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MOULDED CASE CIRCUIT BREAKERS (CONT'D)					
	Metal box for IDMT relay : -					
	Each	A $	B $	C $	D $	
30126	Metal box for TPN MCCB up to 100A & IDMT relay.....	628.61	22.17	27.79	87.51	30126
30127	Metal box for TPN MCCB of 100A to 225A & IDMT relay.....	785.03	22.17	27.79	87.51	30127
30128	Metal box for TPN MCCB of 225A to 400A & IDMT relay.....	1,004.99	22.17	27.79	87.51	30128
30129	Metal box for TPN MCCB of 400A to 800A & IDMT relay.....	1,019.63	22.17	27.79	87.51	30129

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	CONTACTORS					
	Contactors to IEC 60947-4-1 : -					
	Each	A $	B $	C $	D $	
30130	40A or below TPN with 220/ 380V coil.....	283.88	13.57	17.41	55.36	30130
30131	60A TPN with 220/ 380V coil.....	432.43	22.20	27.83	88.27	30131
30132	80/ 100A TPN with 220/ 380V coil.....	702.51	27.88	35.07	110.29	30132
30133	Metal box for 40A or below TPN contactor.....	188.53	16.66	21.00	64.03	30133
30134	Metal box for 60A TPN contactor.....	278.97	19.54	24.11	74.16	30134
30135	Metal box for 80/ 100A TPN contactor.....	424.20	22.20	27.83	87.67	30135

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	BUSBAR CHAMBER UNITS AND ACCESSORIES					
	Busbar chamber units, 4 full size solid drawn copper busbars, c/w cover and main terminals : -					
	Each	A $	B $	C $	D $	
30136	200A, 600 mm long.....	2,459.46	99.01	124.76	372.16	30136
30137	200A 900 mm long.....	2,903.29	139.33	173.83	525.85	30137
30138	200A, 1200 mm long.....	3,411.31	168.22	211.38	633.90	30138
30139	200A, 1500 mm long.....	4,277.84	181.42	228.43	677.92	30139
30140	300A, 600 mm long.....	2,532.49	99.01	124.76	372.16	30140
30141	300A, 900 mm long.....	2,998.24	139.33	173.83	525.85	30141
30142	300A, 1200 mm long.....	3,612.17	168.22	211.38	633.90	30142
30143	300A, 1500 mm long.....	4,548.48	181.42	228.43	677.92	30143

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)					
	Busbar chamber units, 4 full size solid drawn copper busbars, c/w cover and main terminals : - (Cont'd)					
	Each	A $	B $	C $	D $	
30144	400A, 600 mm long	2,746.23	99.01	124.76	372.16	30144
30145	400A, 900 mm long	3,286.74	139.33	173.83	525.85	30145
30146	400A, 1200 mm long	4,648.00	168.22	211.38	633.90	30146
30147	400A, 1500 mm long	5,501.33	181.42	228.43	677.92	30147
30148	500A, 600 mm long	3,150.67	99.01	124.76	372.16	30148
30149	500A, 900 mm long	3,796.62	139.33	173.83	525.85	30149
30150	500A, 1200 mm long	5,449.23	168.22	211.38	633.90	30150
30151	500A, 1500 mm long	6,046.34	181.42	228.43	677.92	30151
30152	630A, 600 mm long	3,636.85	167.88	210.96	632.67	30152
30153	630A, 900 mm long	4,416.74	208.18	262.11	786.29	30153
30154	630A, 1200 mm long	5,962.59	243.02	306.32	917.95	30154
30155	630A, 1500 mm long	6,919.43	281.40	352.90	1,062.58	30155
30156	800A, 600 mm long	4,051.51	167.88	210.96	632.67	30156
30157	800A, 900 mm long	5,216.09	208.18	262.11	786.29	30157
30158	800A, 1200 mm long	6,557.50	243.02	306.32	917.95	30158
30159	800A, 1500 mm long	7,940.36	281.40	352.90	1,062.58	30159
	Cover for busbar chamber unit of the following length and rating between 200A and 800A : -					
	Each					
30160	600 mm	366.85	8.59	10.12	26.39	30160
30161	900 mm	427.91	8.59	10.12	26.39	30161
30162	1200 mm	508.66	8.59	10.12	26.39	30162
30163	1500 mm	578.35	8.59	10.12	26.39	30163
	Busbar clamp : -					
	Each					
30164	160A	113.42	2.96	3.71	11.58	30164
30165	160A to 400A	208.38	3.14	4.05	12.86	30165
30166	400A to 800A	288.82	3.57	4.52	13.97	30166

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)					
	Cable clamps and brass cable sockets for use with busbar chambers : -					
	Each	A $	B $	C $	D $	
30167	32A/ 63A	88.33	2.96	3.54	9.09	30167
30168	100A	115.38	2.96	3.54	9.09	30168
30169	160A	120.07	4.73	5.73	14.58	30169
30170	200A	127.05	5.56	6.61	17.14	30170
30171	315A	143.15	6.61	8.14	20.67	30171
30172	400A	220.85	7.67	9.41	26.18	30172
30173	500A	243.83	8.43	10.17	28.77	30173
30174	630A	246.65	9.49	11.36	31.79	30174
30175	800A	311.28	11.99	14.72	40.46	30175
	Connection flanges (including cutting and drilling busbar chamber, assembly of switch to flange, and flange to busbar chamber with provision and installation of interconnections as necessary) : -					
	Each					
30176	SPN 32A/ 63A	113.33	11.18	13.48	45.18	30176
30177	SPN 100A	142.59	14.87	18.42	58.86	30177
30178	TPN 32A	137.74	13.34	17.02	54.56	30178
30179	TPN 63A	172.80	14.21	17.73	55.80	30179
30180	TPN 100A	218.87	17.04	22.09	67.65	30180
30181	TPN 160/ 200A	265.30	20.52	26.45	81.71	30181
30182	TPN 300/ 315A	332.89	27.98	35.32	111.78	30182
30183	TPN 400/ 500A	375.13	34.95	43.77	138.52	30183
30184	TPN 600/ 630/ 800A	422.93	42.53	53.43	168.81	30184
	Porcelain support for busbar or for use in link box : -					
	Each					
30185	Not exceeding 300A	31.14	5.35	7.42	20.60	30185
30186	300A - 500A	39.46	6.87	8.68	26.28	30186
30187	500A - 1000A	54.08	8.24	10.49	32.01	30187

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BUSBAR CHAMBER UNITS AND ACCESSORIES (CONT'D)					
	Cable entry/ conduit box of approved type for switchfuses, all necessary work including cutting and drilling of trunking, assembly and connection of switchfuses, etc. : -					
	Each	A $	B $	C $	D $	
30188	TPN 160/ 200A	310.95	27.98	35.32	111.78	30188
30189	TPN 315A	372.32	34.95	43.77	138.52	30189
30190	TPN 400/ 500A	475.38	42.53	53.43	168.81	30190
30191	TPN 630/ 800A	588.85	49.91	62.29	197.00	30191
	Insulating sheet as paxolin or ebonite, etc., used in conjunction with distribution boxes and switch gear (to be drilled and cut to shape as required) : -					
	Per square metre					
30192	1.5 mm thick	286.38	32.93	41.15	128.91	30192
30193	3 mm thick	430.53	44.22	55.37	172.08	30193
30194	7 mm thick	729.12	55.37	68.83	214.19	30194
30195	10 mm thick	979.02	66.74	82.94	257.77	30195
30196	12 mm thick	1,366.81	88.46	110.57	344.65	30196
30197	20 mm thick	1,670.86	110.57	137.27	431.67	30197
30198	25 mm thick	1,986.37	115.91	144.43	451.95	30198

RESIDUAL CURRENT CIRCUIT BREAKERS

Residual current operated circuit breaker (RCCB) to IEC 61008-1 with minimum rated short circuit breaking capacity of 3 kA : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30199	25/ 32/ 40A DP, 30 mA trip	288.05	11.24	12.93	36.13	30199
30200	25/ 32/ 40A DP, 100 mA trip	420.51	12.36	14.21	38.69	30200
30201	25/ 32/ 40A DP, 300 mA trip	613.93	12.36	14.21	38.69	30201
30202	63A DP, 30 mA trip	388.37	11.24	12.93	36.13	30202
30203	80A DP, 30 mA trip	637.23	11.24	12.93	36.13	30203
30204	100A DP, 30 mA trip	893.50	11.24	12.93	36.13	30204
30205	10/ 13/ 16/ 20/ 25/ 32/ 40A TPN, 30 mA trip	444.12	16.66	21.10	66.34	30205
30206	25/ 40A TPN, 100 mA trip	455.60	16.66	21.10	66.34	30206
30207	63A TPN, 30 mA trip	462.33	16.66	21.10	66.34	30207
30208	63A TPN, 100 mA trip	485.57	16.66	21.10	66.34	30208
30209	63A TPN, 300/ 500 mA trip	620.02	16.66	21.10	66.34	30209
30210	100A TPN, 30 mA trip	1,356.70	16.66	21.10	66.34	30210
30211	100A TPN, 100 mA trip	1,412.97	16.66	21.10	66.34	30211

Residual current operated circuit breaker (RCCB) to IEC 61008-1 with minimum rated short circuit breaking capacity of 22 - 40 kA : -

	Each					
30212	100A TPN, 500 mA trip	2,845.96	21.94	27.40	87.69	30212
30213	200A TPN, 500 mA trip	3,554.78	24.92	31.43	101.31	30213
30214	400A TPN, 500 mA trip	4,301.25	28.00	35.35	113.22	30214

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	RESIDUAL CURRENT CIRCUIT BREAKERS (CONT'D)					
	Metal box for RCCB, 10 to 100A SP/ DP : -					
		A	B	C	D	
	Each	$	$	$	$	
30215	2 ways.....	122.37	14.79	18.39	55.60	30215
30216	4 ways.....	176.16	14.79	18.39	55.60	30216
30217	6 ways.....	313.21	21.79	27.09	84.79	30217
30218	8 ways.....	436.60	21.79	27.09	84.79	30218
30219	12 ways.....	563.34	21.79	27.09	84.79	30219
	Metal box for RCCB, 10 to 100A TP : -					
	Each					
30220	2 ways.....	174.03	14.79	18.39	55.60	30220
30221	4 ways.....	402.73	14.79	18.39	55.60	30221
30222	6 ways.....	579.97	21.79	27.09	84.79	30222
30223	8 ways.....	693.82	21.79	27.09	84.79	30223
	Residual current operated circuit breaker with integral over current protection (RCBO) to IEC 61009 with rated instantaneous tripping current of Type B/ Type C classification and minimum rated short circuit breaking capacity of 6kA : -					
	Each					
30224	10/ 13/ 16/ 20/ 25/ 32/ 40A DP, 30 mA trip.....	293.24	11.17	12.84	35.92	30224

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SWITCH AND FUSE GEAR					
	Switch fuses, metal clad, surface mounting, c/w HRC fuses : -					
	Each	A $	B $	C $	D $	
30225	Switch fuse 20A, SPN	550.89	17.31	21.66	64.85	30225
30226	Ditto 32A, SPN	582.03	19.27	23.65	72.37	30226
30227	Ditto 63A, SPN	664.64	24.41	30.69	93.03	30227
30228	Ditto 100A, SPN	839.15	37.74	47.07	143.86	30228
30229	Ditto 20A, TPN	708.68	21.94	27.56	84.73	30229
30230	Ditto 32A, TPN	751.74	21.94	27.56	84.73	30230
30231	Ditto 63A, TPN	907.06	38.13	47.93	143.86	30231
30232	Ditto 100A, TPN	1,204.11	52.15	65.29	200.33	30232
	Neutral terminal : -					
	Each					
30233	Neutral terminal for switchfuse 15A/ 30A	67.94	5.70	7.00	17.57	30233
30234	Neutral terminal for switchfuse 60A	73.89	7.42	8.87	22.29	30234
30235	Neutral terminal for switchfuse 100A	91.61	10.32	12.77	37.34	30235
	Fuse switches, metal clad, c/w conduit boxes, busbar chamber connection flanges and HRC fuses : -					
	Each					
30236	160A, TPN	1,849.49	62.58	78.21	236.20	30236
30237	200A, TPN	2,153.57	62.58	78.21	236.20	30237
30238	300A, TPN	4,005.14	100.09	124.83	379.13	30238
30239	400A, TPN	4,765.29	125.20	156.44	467.42	30239
30240	600A, TPN	6,776.14	147.51	182.89	550.06	30240
30241	800A, TPN	8,877.10	167.71	211.21	634.89	30241
	Switch fuses all insulated SPN surface mounting, back or side entry c/w IEC 60269-1 fuses : -					
	Each					
30242	20A - 80A	597.14	19.19	23.56	72.07	30242

Item	SWITCH AND FUSE GEAR (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Isolating switches, metal clad, surface mounting : -					
		A	B	C	D	
	Each	$	$	$	$	
30243	20A, DP	542.82	19.19	23.56	72.07	30243
30244	32A, DP	564.56	19.19	23.56	72.07	30244
30245	63A, DP	665.92	25.23	31.47	94.08	30245
30246	100A, DP	927.58	25.23	31.47	94.08	30246
30247	20A, TPN	627.83	25.23	31.47	94.08	30247
30248	32A, TPN	671.73	25.23	31.47	94.08	30248
30249	63A, TPN	759.24	26.54	33.37	99.86	30249
30250	100A/ 125A, TPN	1,100.25	27.90	34.92	104.72	30250
30251	160A/ 200A, TPN	1,933.61	61.99	78.10	234.32	30251
30252	250A/ 300A/ 315A, TPN	3,168.68	67.68	84.50	263.22	30252
30253	400A, TPN	3,756.52	72.68	90.41	285.06	30253
	Isolating switches, indoor type : -					
	Each					
30254	20A, DP	385.16	15.16	19.63	57.75	30254
30255	32A, DP	408.74	15.16	19.63	57.75	30255
30256	63A, DP	484.25	19.43	24.13	70.90	30256
30257	80A, DP	554.40	19.43	24.13	70.90	30257
30258	100A, DP	672.16	19.43	24.13	70.90	30258
30259	32A, TPN	592.83	19.46	24.77	71.88	30259
30260	63A, TPN	697.81	21.27	26.28	77.21	30260
30261	100A, TPN	1,032.54	23.41	27.75	82.56	30261
30262	160A, TPN	1,656.81	56.71	69.52	211.12	30262
30263	200A, TPN	1,768.64	56.71	69.52	211.12	30263

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SWITCH AND FUSE GEAR (CONT'D)					
	Isolating switch, weatherproof rated to IP65 : -					
		A	B	C	D	
	Each	$	$	$	$	
30264	20A, DP	655.87	31.25	39.95	122.86	30264
30265	32A, DP	758.04	34.11	42.40	126.03	30265
30266	63A, DP	1,037.29	43.52	55.59	171.70	30266
30267	80A, DP	1,463.98	51.11	62.91	212.72	30267
30268	100A, DP	1,569.66	54.68	67.26	227.05	30268
30269	32A, TPN	866.55	38.87	48.51	145.47	30269
30270	63A, TPN	1,050.96	50.14	63.65	189.38	30270
30271	100A, TPN	1,572.37	62.45	77.30	230.59	30271
30272	160A, TPN	2,176.30	73.73	91.49	271.91	30272
30273	200A, TPN	2,841.29	84.82	104.78	315.00	30273
	Changeover switches, metal clad : -					
	Each					
30274	30A/ 32A, DP	2,140.46	19.27	23.65	74.08	30274
30275	60A/ 63A, DP	2,630.57	25.32	31.60	96.41	30275
30276	100A, DP	3,850.69	31.57	39.61	119.22	30276
30277	30A/ 32A, TP	2,164.61	25.32	31.60	96.41	30277
30278	60A/ 63A, TP	2,635.62	31.57	39.61	119.22	30278
30279	100A, TP	3,896.81	43.24	53.69	165.05	30279
30280	30A/ 32A, TPN	2,194.39	31.57	39.61	119.22	30280
30281	60A/ 63A, TPN	3,027.33	38.81	46.66	137.87	30281
30282	100A, TPN	3,930.96	49.38	62.44	185.22	30282

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SWITCH AND FUSE GEAR (CONT'D)					
	Automatic changeover switch c/w changeover contactor sets, copper bar terminals, earthing connection, pilot lights, miniature circuit breakers, voltage measurement relays, plug-in relay and sockets, on-delay relay, control wirings, marking, terminal blocks, power links, mechanical interlock and metal casing : -					
	Each	A $	B $	C $	D $	
30283	40A, DP	1,591.62	43.85	54.67	168.81	30283
30284	60A/ 63A, DP	2,882.75	43.85	54.67	168.81	30284
30285	100A, DP	5,366.96	52.21	64.70	196.95	30285
30286	40A, TPN	1,609.58	43.85	54.67	168.81	30286
30287	60A/ 63A, TPN	2,888.28	43.85	54.67	168.81	30287
30288	100A, TPN	5,431.24	52.21	64.70	196.95	30288
30289	200A, TPN	8,725.76	57.41	71.63	216.54	30289
30290	300A/ 320A, TPN	14,003.84	57.41	71.63	216.54	30290
30291	400A, TPN	21,280.16	57.41	71.63	216.54	30291
30292	60A/ 63A, 4P	3,732.94	45.44	56.63	177.38	30292
30293	100A, 4P	8,485.33	54.85	67.57	206.76	30293
30294	200A, 4P	10,500.07	60.43	72.21	229.21	30294
30295	300A/ 320A, 4P	18,254.68	60.43	72.21	229.21	30295
30296	400A, 4P	26,500.25	60.43	72.21	229.21	30296

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	FUSE					
	The rates shall include opening and closing of switch board/ box covering, where required.					
	Metal clad cutouts, cast metal or sheet steel : -					
	Each	A $	B $	C $	D $	
30297	30A/ 32A, SPN	141.16	12.94	16.05	45.93	30297
30298	60A/ 63A, SPN	157.24	12.94	16.05	45.93	30298
30299	100A, SPN	210.88	19.28	23.85	69.67	30299
30300	30A/ 32A, TPN	227.59	19.28	23.85	69.67	30300
30301	60A/ 63A, TPN	404.87	21.94	27.56	80.87	30301
30302	100A, TPN	489.23	25.29	30.81	92.67	30302

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FUSE (CONT'D)					
	The rates shall include opening and closing of switch board/ box covering, where required.					
	Fuse holder only ceramic porcelain or thermoplastic, rewirable or cartridge type : -					
	Each	A $	B $	C $	D $	
30303	500V 30A/ 32A.....	21.21	3.34	4.06	9.76	30303
30304	500V 60A/ 63A.....	35.39	3.34	4.06	9.76	30304
30305	500V 100A.....	54.77	3.34	4.06	9.76	30305
30306	500V 200A.....	66.25	4.82	5.78	14.79	30306
	Fuse base only ceramic porcelain or thermoplastic : -					
	Each					
30307	500V 30A/ 32A.....	35.96	4.82	5.78	14.79	30307
30308	500V 60A/ 63A.....	65.72	5.80	7.08	17.87	30308
30309	500V 100A.....	88.43	6.47	7.77	20.64	30309
30310	500V 200A.....	99.30	7.77	9.43	24.66	30310
	Cartridge fuse links to IEC 60269-1: -					
	Each					
30311	Suitable for 13A plug-tops, 2A (yellow), 3A (blue), 5A (red), 10A (black) and 13A (brown).....	9.79	1.38	1.66	4.10	30311

FUSE (CONT'D)

The rates shall include opening and closing of switch board/ box covering, where required.

HRC cartridge fuses to IEC 60269-1, with off-set tags or central tags of rating : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
30312	6A or 10A	19.27	2.25	2.75	6.87	30312
30313	16A/ 20A	19.88	2.25	2.75	6.87	30313
30314	25A/ 32A	21.06	2.25	2.75	6.87	30314
30315	40A/ 50A/ 63A	27.22	2.25	2.75	6.87	30315
30316	80A	45.27	2.89	3.54	9.78	30316
30317	100A	47.06	2.89	3.54	9.78	30317
30318	125A/ 160A	66.61	3.23	3.89	11.73	30318
30319	200A	67.90	3.23	3.89	11.73	30319
30320	250A	110.56	3.89	4.53	14.49	30320
30321	315A	121.96	3.89	4.53	14.49	30321
30322	350A	162.45	3.89	4.53	14.49	30322
30323	400A	168.54	5.04	6.35	19.28	30323
30324	450A	218.29	5.04	6.35	19.28	30324
30325	500A	242.37	5.04	6.35	19.28	30325
30326	630A	287.26	6.35	7.67	22.18	30326
30327	800A	367.11	6.35	7.67	22.18	30327
	Semi-enclosed fuse to BS 3036 of rating : -					
	Each					
30328	3/ 5A	20.32	2.25	2.75	7.37	30328
30329	10/ 15/ 20A	26.25	2.25	2.75	8.18	30329
30330	25/ 30A	30.65	2.25	2.75	8.79	30330

Item	TIME SWITCHES & BOXES	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30331	20A (1-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure	366.39	5.10	7.80	19.92	30331
30332	20A (7-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure	605.84	5.10	7.80	19.92	30332
30333	30A (1-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure	481.20	5.10	7.80	19.92	30333
30334	30A (7-day) integrated with cassette type alkaline battery back-up to provide 360 hours continuous operation upon power failure	732.92	5.10	7.80	19.92	30334
30335	Up to 20A astronomical programmable (24 hours or 7-day) with digital display, integrated with battery back-up to provide 200 hours continuous operation upon power failure	839.84	5.10	7.80	19.92	30335
30336	Metal box for 20A/ 30A time switch	187.16	5.10	7.80	19.92	30336
30337	IP53 Plastic box for 20A/ 30A time switch	572.29	5.10	7.80	19.92	30337
30338	Programmable quartz class changing bell timer with two control output channels, choice of a minimum of 4 melodies, up to 120 weekly programs and 366 weekly programs of minimum one minute setting, with sockets for microphone and external speaker, power failure backup by lithium primary battery and rechargeable NiCd battery for not less than 800 hours	5,078.77	58.92	73.27	227.69	30338

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	E.L.V. TERMINAL UNITS					
	Each	A $	B $	C $	D $	
30339	Extra low voltage terminal unit with stainless steel sign plate, each unit shall incorporate a 13A fuse	277.88	8.90	11.14	34.16	30339

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EARTHING AND LIGHTNING CONDUCTOR FITTINGS					
	Per linear metre	A $	B $	C $	D $	
30340	Copper tape, without tinned, 25 x 3mm with saddles	110.88	9.44	11.45	35.36	30340
30341	Copper tape, tinned entire length 25 x 3mm with saddles	115.32	9.44	11.45	35.36	30341
30342	Copper tape, PVC sheathed, 25 x 3mm with saddles	157.65	9.44	11.45	35.36	30342
30343	Copper tape, without tinned, 25 x 3mm laid in trench or duct (ducting, excavation and back-filling measured separately)	98.91	7.55	9.25	26.08	30343
30344	Copper tape, tinned entire length, 25 x 3mm laid in trench or duct (ducting, excavation and back-filling measured separately)	99.71	7.55	9.25	26.08	30344
30345	Aluminum type 25 x 3 mm with saddles (for lightning conductors)	71.76	10.48	13.07	39.25	30345
30346	Braided copper tape with PVC sheath 25 x 3 mm	140.96	9.44	11.45	35.36	30346

Item	EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
30347	Copper bond earth rod 16 mm diameter 1.2 m long consists of pure electrolytic copper uniformly molecularly bonded onto a high tensile steel core to a minimum thickness of 0.25 mm c/w driving head and coupling	146.24	-	-	96.30	30347
30348	Ditto but 2.4 m	229.39	-	-	118.32	30348
30349	Copper earth plate, lattice type 600 x 600 mm (excavation measured separately)	2,276.39	51.11	63.48	192.96	30349
30350	Ditto but 900 x 900 mm (ditto)	3,300.47	51.68	65.14	195.44	30350
30351	Earth clips with plugs, tinned copper, for pipes n.e. 25 mm diameter	21.24	4.98	6.11	15.41	30351
30352	Ditto for pipes exc. 25 mm diameter but n.e. 38 mm diameter	22.51	4.98	6.11	15.41	30352
30353	Ditto for pipes exc. 38 mm diameter but n.e. 75 mm diameter	27.94	4.98	6.11	15.41	30353
30354	Tape clip only, for tape 25 x 3 mm wide	31.05	4.98	6.11	15.41	30354
30355	Saddle only, for securing tapes by and including single set screw	38.31	6.71	8.03	20.36	30355
30356	Light duty air terminal, with 16 mm diameter rod up to 300 mm long (copper rod taper pointed)	169.12	20.22	24.92	76.02	30356
30357	Ditto 300 mm - 500 mm long (ditto)	196.96	20.22	24.92	76.02	30357
30358	Ditto 500 mm - 1000 mm long (ditto)	268.75	20.22	24.92	76.02	30358
30359	Ditto but with 20 mm diameter rod, 1000 mm long (ditto)	304.78	20.22	24.92	76.02	30359
30360	Ditto but with 25 mm diameter rod, 1000 mm long (ditto)	331.94	20.22	24.92	76.02	30360
30361	Multi-pointed air terminal c/w 300 mm - 600 mm long copper rod and base	349.09	20.22	24.92	76.02	30361
30362	Tape connection for 25 mm tape	38.97	7.45	8.92	22.76	30362
30363	Tape to plate connector	63.70	9.27	11.28	31.28	30363
30364	Circular plate type test clamp for 25 mm tape	93.45	9.27	11.28	31.28	30364
30365	Connector clamp for 16 mm, 20 mm and 25 mm diameter rod, pressure type	60.57	9.27	11.28	31.28	30365
	Per linear metre					
30366	Down conductor for early streamer lightning protection system, composing of two identical conductors placed one coaxially about the other with separation by a layer of insulator to form a high capacitance between the conducting layers, designed to withstand 250 kV transient at 1/ 50 wave to IEC 60230 c/w saddles	924.32	16.23	21.74	54.69	30366

Item	EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30367	Early streamer emission lightning protection system to French standard NF C17-102, comprising of lightning terminal in a 2 m 316 stainless steel pole, supporting insulation mast/ stainless steel mast, connection clamps, lightning counter and all necessary accessories. The lightning terminal shall generate a leader to capture the lightning and direct it to earth during a lightning event. Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 48 m. Down conductors shall be measured separately.....	44,790.78	514.85	645.39	1,888.50	30367
30368	Ditto but radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 63 m.....	53,913.02	514.85	645.39	1,888.50	30368
30369	Ditto but radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 79 m.....	64,823.15	514.85	645.39	1,888.50	30369
30370	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 48 m.....	27,951.51	398.08	598.04	1,286.99	30370
30371	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 63 m.....	36,830.81	398.08	598.04	1,286.99	30371
30372	Early streamer lightning terminal to French standard NF C17-102; Radius of protection (level 1) with the terminal 5 m above the protected surface at 20 m striking distance being 79 m.....	46,582.15	398.08	598.04	1,286.99	30372
30373	Air termination support c/w connection clamps and all necessary accessories.....	13,274.22	210.91	263.77	638.94	30373
30374	Stainless steel mast assembly.....	4,129.28	379.64	488.15	1,533.59	30374
30375	Lightning event counter.....	4,033.13	43.17	53.95	163.50	30375

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)					
	Power surge protection devices in compliance with IEC 61643-1					
	Shunt type Surge Protection Devices for primary incoming power protection : -					
	Each	A $	B $	C $	D $	
30376	20 kA (8/ 20 µs), single-phase	870.37	10.48	14.01	40.92	30376
30377	Ditto but three phase	2,658.07	10.48	14.01	40.92	30377
30378	40 kA (8/ 20 µs), single-phase	880.44	10.48	14.01	40.92	30378
30379	Ditto but three-phase	2,662.40	10.48	14.01	40.92	30379
30380	65 kA (8/ 20 µs), single-phase	1,876.73	13.83	17.10	51.99	30380
30381	Ditto but three-phase	5,244.93	13.83	17.10	51.99	30381
30382	80 kA (8/ 20 µs), single-phase	2,496.97	13.83	17.10	51.99	30382
30383	Ditto but three-phase	7,437.38	13.83	17.10	51.99	30383
30384	100 kA (8/ 20 µs), single-phase	2,551.25	16.02	20.05	61.25	30384
30385	Ditto but three-phase	7,586.42	16.02	20.05	61.25	30385
30386	150 kA (8/ 20 µs), single-phase	3,598.08	16.02	20.05	61.25	30386
30387	Ditto but three-phase c/w counter	12,646.90	16.02	20.05	61.25	30387
	Surge Reduction Filters for electronic equipment with surge rating : -					
	Each					
30388	6A, 4 - 16 kA (8/ 20 µs), single-phase	2,835.61	10.44	13.98	40.81	30388
30389	10A/ 20A, 40 - 55 kA (8/ 20 µs), single-phase	4,322.17	10.44	13.98	40.81	30389
30390	20A, 40 - 55 kA (8/ 20 µs), three-phase	6,645.22	13.95	16.99	51.14	30390
30391	32A, 135 kA (8/ 20 µs), single-phases	5,105.62	10.44	13.98	40.81	30391
30392	63A/ 125A, 135 kA (8/ 20 µs), single-phase	5,197.10	10.44	13.98	40.81	30392
30393	32A, 135 kA (8/ 20 µs), three-phase	7,110.37	13.95	16.99	51.14	30393
30394	64A, 135 kA (8/ 20 µs), three-phase	7,203.39	13.95	16.99	51.14	30394
30395	125A, 135 kA (8/ 20 µs), three-phase	7,208.56	13.95	16.99	51.14	30395
30396	200A/ 315A, 135 kA (8/ 20 µs), three-phase	7,364.07	13.95	16.99	51.14	30396
30397	630A, 135 kA (8/ 20 µs), three-phase	7,429.46	13.95	16.99	51.14	30397

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EARTHING AND LIGHTNING CONDUCTOR FITTINGS (CONT'D)					
	Surge protectors for radio, telecommunications & signal protection : -					
	Each	A $	B $	C $	D $	
30398	500A (8/ 20 µs).....	1,688.29	10.44	13.98	40.81	30398
30399	2.5 kA (8/ 20 µs).....	1,688.49	10.44	13.98	40.81	30399
30400	10 kA (8/ 20 µs).....	1,701.89	10.44	13.98	40.81	30400
30401	20 kA (8/ 20 µs).....	1,707.74	10.44	13.98	40.81	30401
	Miscellaneous item : -					
	Each					
30402	Supplementary bonding to metal type ceiling grid, window frame and service pipes c/w box for wiring not exceeding 2 m.....	16.05	3.14	-	-	30402
	Chemicals for soil treatment : -					
	Per kg					
30403	Ammonium chloride.....	41.26	-	-	20.66	30403
30404	Copper sulphate.....	45.03	-	-	20.66	30404
30405	Bentonite.....	41.89	-	-	20.66	30405
30406	Lime powder for mixing of earthing chemical.....	25.05	-	-	20.66	30406
30407	Industrial salt for mixing of earthing chemical.....	37.98	-	-	20.66	30407
30408	Carbolic powder for mixing of earthing chemical.....	39.73	-	-	20.66	30408

Item	ELECTRICAL APPLIANCES	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30409	Electric rice cooker for 10 persons	451.47	4.44	6.24	17.82	30409
30410	Electric rice cooker for 15 persons	612.55	4.44	6.24	17.82	30410
30411	Electric cooker 2 rings	1,808.71	18.59	23.24	69.58	30411
30412	Electric cooker 3 or 4 rings	4,174.24	31.15	39.30	115.48	30412
30413	Water heater, instantaneous type, 6 kW, single-phase	1,480.15	18.59	23.24	69.58	30413
30414	Water heater, instantaneous type, 18 kW, three-phase	2,367.32	18.59	23.24	77.26	30414
30415	Water heater, instantaneous type, 24 kW, three-phase	2,561.54	31.15	39.30	115.48	30415
30416	Electric water heater, storage type, n.e. 10 litres, minimum 3kW, single-phase	2,236.80	18.59	23.24	69.58	30416
30417	Electric water heater, storage type, 13 litres, minimum 3kW, single-phase	2,236.80	18.59	23.24	69.58	30417
30418	Electric water heater, storage type, 25 litres, minimum 3kW, single-phase	2,716.80	18.59	23.24	69.58	30418
30419	Electric water heater, storage type, 38 litres, minimum 3kW, single-phase	3,742.84	18.59	23.24	69.58	30419
30420	Electric water heater, storage type, 57 litres, minimum 3kW, single-phase	4,163.50	18.59	23.24	69.58	30420
30421	Electric water heater, storage type, 90 litres, minimum 2.5kW, single-phase	5,684.23	31.15	39.30	115.48	30421
30422	Electric water heater, storage type, 135 litres, minimum 2.5kW, single-phase	7,720.11	31.15	39.30	115.48	30422
30423	Electric water heater, storage type, 135 litres, minimum 18kW, three-phase	8,593.96	31.15	39.30	115.48	30423
30424	Electric water heater, storage type, 150 litres, minimum 3kW, single-phase	8,371.89	31.15	39.30	115.48	30424
30425	Electric water heater, storage type, 150 litres, minimum 18kW, three-phase	9,324.92	31.15	39.30	115.48	30425
30426	Electric water heater, storage type, 180 litres, minimum 18kW, three-phase	12,745.32	31.15	39.30	115.48	30426
30427	Electric water heater, storage type, 225 litres, minimum 18kW, three-phase	14,820.84	31.15	39.30	115.48	30427
30428	Tubular heater, 300 mm	149.79	10.10	12.69	36.91	30428
30429	Tubular heater, 600 mm	503.20	10.10	12.69	36.91	30429
30430	Tubular heater, 1200 mm	569.24	10.10	12.69	36.91	30430
30431	Kettle, 3.5 - 4.5 litre, 2 kW (max.), single-phase	401.61	4.44	6.24	17.82	30431
30432	Water boiler, 3 kW (max.), single-phase	4,644.01	4.44	6.24	17.82	30432
30433	Tea urn, 18 litres	1,300.43	4.44	6.24	17.82	30433
30434	Electric fire, 1 kW (max.), wall mounted	246.84	12.67	15.75	48.01	30434

Item	ELECTRICAL APPLIANCES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30435	Radiator, 1.5 kW (max.), oil filled	933.57	18.68	23.33	69.86	30435
30436	Radiator, 2 kW (max.), oil filled	1,003.10	18.68	23.33	69.86	30436
30437	Radiator, 3 kW (max.), oil filled	1,011.36	18.68	23.33	69.86	30437
30438	Radiator, 1 kW (max.), infra-red	496.70	18.68	23.33	69.86	30438
30439	Radiator, 1.5 kW (max.), infra-red	578.40	18.68	23.33	69.86	30439
30440	Radiator, 2 kW (max.), infra-red	592.19	18.68	23.33	69.86	30440
30441	Convector heater, 1.2 kW (max.)	854.64	18.68	23.33	69.86	30441
30442	Wall mounted fan heater, 2 kW (max.)	544.92	18.68	23.33	69.86	30442
30443	Convection heater, heavy duty, wall mounted, 3 kW c/w temperature cut-out and thermostat	6,912.01	19.03	23.62	70.77	30443
30444	Wall clock, 300 mm diameter, battery operated, quartz	377.13	4.45	6.27	17.88	30444
30445	Hand/ face dryer, with/ without deflector for hand or face drying, heater rating not less than 2.2 kW	1,005.96	7.59	9.50	29.02	30445
30446	Electric dual jet airflow hand dryer	6,524.48	85.74	128.61	171.47	30446
30447	High speed hand dryer with sink	10,283.00	113.00	226.00	282.50	30447
30448	Hair dryer with movable track	6,215.00	113.00	226.00	282.50	30448
30449	Wall mounted hair dryer	1,071.52	7.74	10.21	29.77	30449
30450	Domestic refrigerator, 170 - 250 litres (CFC free)	3,333.34	18.68	23.33	69.86	30450
30451	Domestic refrigerator, 250 - 320 litres (CFC free)	4,377.90	18.68	23.33	69.86	30451
30452	Domestic refrigerator, 320 - 370 litres (CFC free)	5,188.47	18.68	23.33	69.86	30452
30453	Dehumidifier, moisture removal capacity 13 litres/ day	2,997.14	19.03	23.62	70.77	30453
30454	High capacity industrial type dehumidifier, air flow 2500 m^3/ hr	64,095.46	19.03	23.62	70.77	30454
30455	Ditto but air flow 5000 m^3/ hr	87,450.54	19.03	23.62	70.77	30455
30456	Insect killer, single-phase c/w twin 18W UV fluorescent tubes, effective area not less than 30 m^2 for indoor application	1,825.63	18.68	23.33	69.86	30456
30457	Ditto but weatherproof type for outdoor application	2,561.54	18.68	23.33	69.86	30457

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2.		
	Testing of installed rising mains and feeder circuit in single-phase or three-phase : - (Testing of plug-in unit/ tee-off switch, sub-main circuit/ final circuit, functional test of RCD shall be measured separately)		
	Per item	A $	
30458	Rating of outgoing switch of switchboard or cut-out switch not exceeding 630A.....	510.30	30458
30459	Rating of outgoing switch of switchboard or cut-out switch 630A – 1600A.....	682.22	30459
30460	Rating of outgoing switch of switchboard or cut-out switch 1600A – 3200A.....	1,064.77	30460
	Testing of plug-in unit/ tee-off switch		
	Each		
30461	Tee off switch/ plug in unit from the rising main.....	75.36	30461
	Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : -		
	Testing of sub-main circuit : -		
	Per circuit		
30462	Testing of single phase circuit.....	46.85	30462
30463	Testing of three phase circuit.....	62.06	30463
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30464	Testing of single phase circuit.....	207.83	30464
	Testing of residual current device (RCD) : -		
	Each		
30465	Functional test of RCD with or without tester, any rating.....	43.78	30465
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30466	Testing of single phase circuit.....	242.17	30466

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : - (Cont'd)		
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit	A $	
30467	Testing of single phase circuit.....	46.85	30467
30468	Testing of three phase circuit.....	62.06	30468

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Type of premises : Institution Buildings including Primary, Secondary and Vocational Training School; Police Stations; F.S. Stations; Ambulance Depots; Prestige Buildings including Museums, Art Galleries, Legislative Council Buildings and Court; Playground; Stadium; Sportsground; Park; Hawker Bazaars; Pier; Cemeteries; Public Latrines; Bath House; Refuse Collection Point; Toilet Block; and all other single-user building : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30469	Testing of single phase circuit.....	45.93	30469
30470	Testing of three phase circuit.....	60.81	30470
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30471	Testing of single phase circuit.....	203.68	30471
	Testing of residual current device (RCD) : -		
	Each		
30472	Functional test of RCD with or without tester, any rating.....	43.78	30472
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30473	Testing of single phase circuit.....	237.31	30473
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit		
30474	Testing of single phase circuit.....	45.93	30474
30475	Testing of three phase circuit.....	60.81	30475

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Type of premises : Office Building including Office, Government House, Carpark and Post Office; Quarters; Municipal Building including Civic Centre, Community Centre, Culture Centre, Theatre, Swimming Pool, Market, Mortuaries, Libraries, Indoor Game Hall; Industrial Building including Workshop, Depot, Laboratory and Plant; and all other multi-user building : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30476	Testing of single phase circuit.....	44.51	30476
30477	Testing of three phase circuit.....	58.94	30477
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30478	Testing of single phase circuit.....	197.43	30478
	Testing of residual current device (RCD) : -		
	Each		
30479	Functional test of RCD with or without tester, any rating.....	43.78	30479
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30480	Testing of single phase circuit.....	230.05	30480
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit		
30481	Testing of single phase circuit.....	44.51	30481
30482	Testing of three phase circuit.....	58.94	30482
	Submission of Form WR2 to EMSD		
	Per item		
30483	Submit Form WR2 to EMSD including endorsement fee.....	2,175.84	30483

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Per installation	A $	
30484	Testing of power factor correction installation up to 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	2,245.37	30484
30485	Testing of power factor correction installation exceeding 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	2,989.44	30485
	Testing and inspection of electrical installation of the low voltage cubicle switchboard where all existing switchgear, busbar, IDMT, circuit breaker, earthing devices and etc. are inspected, tested and issue of test certificate.		
	Current Capacity of Low voltage cubicle switchboard : -		
	Per item		
30486	below 800A 3 Phase (1 - 3 cubicle column)	12,739.83	30486
30487	below 800A 3 Phase (4 - 6 cubicle column)	22,596.70	30487
30488	800A/ 1000A 3 Phase (1 - 3 cubicle column)	12,739.83	30488
30489	800A/ 1000A 3 Phase (4 - 6 cubicle column)	22,596.70	30489
30490	1200A/ 1600A 3 Phase (1 - 3 cubicle column)	13,686.28	30490
30491	1200A/ 1600A 3 Phase (4 - 6 cubicle column)	26,382.49	30491
30492	1200A/ 1600A 3 Phase (7 - 9 cubicle column)	37,442.76	30492
30493	2000A/ 2250A/ 2500A 3 Phase (1 - 3 cubicle column)	13,686.28	30493
30494	2000A/ 2250A/ 2500A 3 Phase (4 - 6 cubicle column)	26,382.49	30494
30495	2000A/ 2250A/ 2500A 3 Phase (7 - 9 cubicle column)	37,442.76	30495
30496	2000A/ 2250A/ 2500A 3 Phase (10 - 12 cubicle column)	49,923.67	30496
30497	2000A/ 2250A/ 2500A 3 Phase (Extra for each addition cubicle column over 12 cubicle column)	4,160.31	30497
30498	3000A/ 3200A 3 Phase (1 - 3 cubicle column)	16,950.27	30498
30499	3000A/ 3200A 3 Phase (4 - 6 cubicle column)	26,854.74	30499
30500	3000A/ 3200A 3 Phase (7 - 9 cubicle column)	44,067.90	30500
30501	3000A/ 3200A 3 Phase (10 - 12 cubicle column)	53,709.46	30501
30502	3000A/ 3200A 3 Phase (Extra for each addition cubicle column over 12 cubicle column)	4,475.79	30502

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. - (Cont'd)		
	Testing of IDMT earth fault relay : -		
	Per item	A $	
30503	Carry out site testing work for IDMT earth fault relay including provision of full set of test report and Form WR2A	6,139.12	30503
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion.		
	Testing of installed rising mains and feeder circuit in single-phase or three-phase : - (Testing of plug-in unit/ tee-off switch, sub-main circuit/ final circuit, functional test of RCD shall be measured separately)		
	Per item		
30504	Rating of outgoing switch of switchboard or cut-out switch not exceeding 630A.....	604.94	30504
30505	Rating of outgoing switch of switchboard or cut-out switch 630A – 1600A.....	776.88	30505
30506	Rating of outgoing switch of switchboard or cut-out switch 1600A – 3200A.....	1,159.39	30506
	Testing of plug-in unit/ tee-off switch		
	Each		
30507	Tee off switch/ plug in unit from the rising main.....	122.68	30507

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
	Type of premises : Clinic & Child Care Centre; Control Point; Prison; Correctional Institution and Detention Centre : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30508	Testing of single phase circuit.....	65.79	30508
30509	Testing of three phase circuit.....	80.98	30509
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30510	Testing of single phase circuit.....	226.74	30510
	Testing of residual current device (RCD) : -		
	Each		
30511	Functional test of RCD with or without tester, any rating.....	45.59	30511
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30512	Testing of single phase circuit.....	261.08	30512
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit		
30513	Testing of single phase circuit.....	65.79	30513
30514	Testing of three phase circuit.....	80.98	30514

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
	Type of premises : Institution Buildings including Primary, Secondary and Vocational Training School; Police Stations; F.S. Stations; Ambulance Depots; Prestige Buildings including Museums, Art Galleries, Legislative Council Buildings and Court; Playground; Stadium; Sportsground; Park; Hawker Bazaars; Pier; Cemeteries; Public Latrines; Bath House; Refuse Collection Point; Toilet Block; and all other single-user building : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30515	Testing of single phase circuit.....	64.85	30515
30516	Testing of three phase circuit.....	79.75	30516
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30517	Testing of single phase circuit.....	222.60	30517
	Testing of residual current device (RCD) : -		
	Each		
30518	Functional test of RCD with or without tester, any rating.....	45.59	30518
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30519	Testing of single phase circuit.....	256.24	30519
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit		
30520	Testing of single phase circuit.....	64.85	30520
30521	Testing of three phase circuit.....	79.75	30521

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
	Type of premises : Office Building including Office, Government House, Carpark and Post Office; Quarters; Municipal Building including Civic Centre, Community Centre, Culture Centre, Theatre, Swimming Pool, Market, Mortuaries, Libraries, Indoor Game Hall; Industrial Building including Workshop, Depot, Laboratory and Plant; and all other multi-user building : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30522	Testing of single phase circuit.....	63.44	30522
30523	Testing of three phase circuit.....	77.88	30523
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30524	Testing of single phase circuit.....	216.36	30524
	Testing of residual current device (RCD) : -		
	Each		
30525	Functional test of RCD with or without tester, any rating.....	45.59	30525
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30526	Testing of single phase circuit.....	248.99	30526
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit		
30527	Testing of single phase circuit.....	63.44	30527
30528	Testing of three phase circuit.....	77.88	30528
	Submission of Form WR2 to EMSD		
	Per item		
30529	Submit Form WR2 to EMSD including endorsement fee.....	2,175.84	30529

Item		Rate	Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)		
	Per installation	A $	
30530	Testing of power factor correction installation up to 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	3,191.82	30530
30531	Testing of power factor correction installation exceeding 240 kVAr at 380V nominal voltage including PF control relays, circuit protective devices, contactors and capacitors.....	3,935.89	30531
	Testing and inspection of electrical installation of the low voltage cubicle switchboard where all existing switchgear, busbar, IDMT, circuit breaker, earthing devices and etc. are inspected, tested and issue of test certificate.		
	Current Capacity of Low voltage cubicle switchboard : -		
	Per item		
30532	below 800A 3 Phase (1 - 3 cubicle column)	13,686.28	30532
30533	below 800A 3 Phase (4 - 6 cubicle column)	23,543.15	30533
30534	800A/ 1000A 3 Phase (1 - 3 cubicle column)	13,686.28	30534
30535	800A/ 1000A 3 Phase (4 - 6 cubicle column)	23,543.15	30535
30536	1200A/ 1600A 3 Phase (1 - 3 cubicle column)	14,632.73	30536
30537	1200A/ 1600A 3 Phase (4 - 6 cubicle column)	27,328.95	30537
30538	1200A/ 1600A 3 Phase (7 - 9 cubicle column)	38,389.21	30538
30539	2000A/ 2250A/ 2500A 3 Phase (1 - 3 cubicle column)	14,632.73	30539
30540	2000A/ 2250A/ 2500A 3 Phase (4 - 6 cubicle column)	27,328.95	30540
30541	2000A/ 2250A/ 2500A 3 Phase (7 - 9 cubicle column)	38,389.21	30541
30542	2000A/ 2250A/ 2500A 3 Phase (10 - 12 cubicle column)	50,870.13	30542
30543	2000A/ 2250A/ 2500A 3 Phase (Extra for each addition cubicle column over 12 cubicle column)	4,239.18	30543
30544	3000A/ 3200A 3 Phase (1 - 3 cubicle column)	17,896.71	30544
30545	3000A/ 3200A 3 Phase (4 - 6 cubicle column)	27,801.18	30545
30546	3000A/ 3200A 3 Phase (7 - 9 cubicle column)	45,014.35	30546
30547	3000A/ 3200A 3 Phase (10 - 12 cubicle column)	54,655.92	30547
30548	3000A/ 3200A 3 Phase (Extra for each addition cubicle column over 12 cubicle column)	4,554.66	30548

Item			Item
	PERIODIC INSPECTION, TESTING AND CERTIFICATION (PITC) (CONT'D)		
	Entrusted testing and inspection of electrical installation comprising rising mains, feeder circuit, sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the provision of electrical schematic, test report and test certificate which should be certified by Registered Electrical Worker of the appropriate grade and submit Form WR2. The cost of planning and arrangement of venues, engagement of the Independent PITC Checker and uploading the PITC record to the "Electronic System for Planning, Programming, Data Inputting, Storage and Retrievals of Inspection and Maintenance Works in Buildings" shall be deemed to be included in the respective items for PITC works, in addition, the Contractor shall also proceed with the rectification work and submit the test certificate upon completion. - (Cont'd)	Rate	
	Testing of IDMT earth fault relay : -		
	Per item	A $	
30549	Carry out site testing work for IDMT earth fault relay including provision of full set of test report and Form WR2A	7,085.56	30549
	TESTING		
	Testing and inspection of electrical installation comprising sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the submission of Form WR2 for annual renewal of Dangerous Goods Licence -	Rate	
	Type of premises : Dangerous Goods store : -		
	Testing of sub-main circuit : -		
	Per circuit	A $	
30550	Testing of single phase circuit.....	93.22	30550
30551	Testing of three phase circuit.....	118.74	30551
	Testing of 13A socket outlet circuit : -		
	Per circuit		
30552	Testing of single phase circuit.....	277.35	30552
	Testing of residual current device (RCD) : -		
	Each		
30553	Functional test of RCD with or without tester, any rating.....	45.59	30553
	Testing of final circuit for lighting fittings : -		
	Per circuit		
30554	Testing of single phase circuit.....	333.73	30554

Item		Rate	Item
	TESTING (CONT'D)		
	Testing and inspection of electrical installation comprising sub-main circuit, final circuit, protective conductors, earthing facilities, power supplies to all communal services, but excluding main switch board, for the premises in accordance with the requirements as specified in Chapter 406, Electricity Ordinance and the latest edition of Code of Practice for Electricity (Wiring) Regulations published by Electrical and Mechanical Services Department and all subsequent amendments thereto issued prior to the date of first notice of tender invitation c/w the submission of Form WR2 for annual renewal of Dangerous Goods Licence - (Cont'd)		
	Type of premises : Dangerous Goods store : -		
	Testing of sub-main circuit : -		
	Testing of final circuit other than 13A socket outlet and lighting fittings : -		
	Per circuit	A $	
30555	Testing of single phase circuit.....	93.22	30555
30556	Testing of three phase circuit.....	118.74	30556
	Testing and inspection of electrical installation for domestic quarters where all existing switchgear, wiring, lighting, power points, appliances, etc. are inspected and tested, and test certificate is issued to enable the new tenant to obtain electricity supply from Power Company upon change of tenancy (with usable floor area of quarters) : -		
	Per item		
30557	Not exceeding 50 m².....	1,482.89	30557
30558	50 m² - 100 m².....	2,121.48	30558
30559	100 m² - 150 m².....	2,247.55	30559
30560	150 m² - 200 m².....	2,689.27	30560
30561	Over 200 m².....	4,272.25	30561
	Measurement of circuit : -		
	Per way		
30562	Measurement of current, single phase current.....	96.36	30562
30563	Measurement of current, three phases current, not exceeding 400A	135.03	30563
30564	Measurement of current, three phases current, exceeding 400A	148.91	30564

Item		Rate	Item
	TESTING (CONT'D)		
	(Note : The following items are not applicable for new installation. It will only be paid for testing on existing installation if ordered by the Maintenance Surveyor in writing.)		
	Testing of each emergency lighting : -		
	Per item	A $	
30565	Testing and provision of written report of emergency lighting fitting including a discharge test to the central battery, for a minute at the 10-hour discharge rate according to the Fire Services Departments latest requirements for Minimum Fire Service Installation and Equipment and Inspection, Testing and Maintenance of Installation and Equipment published by Fire Services Department and all amendment subsequent thereto issued prior to the date of first notice of tender invitation.....	140.67	30565
30566	Testing and provision of written report of single battery emergency lighting fitting including testing of self contained battery according to Fire Services Departments latest requirements for Minimum Fire Service Installation and self contained battery Inspection, Testing and Maintenance of Installation and Equipment published by Fire Services Department and all amendment subsequent thereto issued prior to the date of first notice of tender invitation.....	119.49	30566
30567	Inspection of emergency lighting by registered fire service contractor.....	88.65	30567
30568	Issue of FS251 on certification of emergency lighting installation.....	1,915.04	30568

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MISCELLANEOUS					
	Isolating transformer comply with IEC 60076, including submission of test certificates : -					
	Each	A $	B $	C $	D $	
30569	Not exceeding 5 kVA	12,240.61	726.89	908.74	2,718.63	30569
30570	5 - 25 kVA	33,136.89	1,086.23	1,355.31	4,064.91	30570
30571	25 - 50 kVA	56,432.41	1,639.24	2,048.49	6,352.02	30571
30572	50 - 100 kVA	73,314.39	2,151.35	2,686.36	8,170.39	30572
30573	Add to last item for each additional 50 kVA or part thereof	17,888.43	545.69	682.43	2,047.91	30573
	Active harmonic filter					
	Active harmonic filter c/w current transformer, wiring and all necessary accessories; with total rms current rating (Arms) rating up to : -					
	Each					
30574	50A	95,099.32	1,663.62	2,209.02	3,305.38	30574
30575	100A (The actual rate should be : $130,518.50 for Item 30575A)	13,051.85	2,202.21	2,756.25	4,246.27	30575
30576	300A (The actual rate should be : $390,079.70 for Item 30576A)	39,007.97	2,477.84	3,589.37	4,793.88	30576
	Surge protection device					
	Surge protection device c/w necessary cable and wiring, which shall be capable of diverting the following current levels : -					
	Each					
30577	80A/ 120A/ 160A per phase	10,263.54	70.09	115.43	135.33	30577
30578	200A/ 240A/ 360A/ 480A per phase	10,913.15	70.09	115.43	160.78	30578
30579	600A/ 720A per phase	14,255.22	140.08	164.82	200.88	30579
30580	960A per phase	18,460.63	200.31	250.54	275.38	30580

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MISCELLANEOUS (CONT'D)					
	Electronic power meter c/w current transformer (all types), wiring for sampling current & voltage supply sources, power point with spur/ connection unit and all necessary accessories, using in circuit current rating up to : -					
		A	B	C	D	
	Each	$	$	$	$	
30581	60A/ 100A	23,445.67	1,401.98	1,944.95	2,140.88	30581
30582	200A	26,193.97	1,401.98	1,944.95	2,140.88	30582
30583	400A/ 600A/ 800A	29,205.36	1,678.60	2,508.39	2,666.68	30583
30584	1000A/ 1600A/ 2250A	31,997.72	2,079.84	2,772.74	3,344.52	30584
	Ceiling rose and connector : -					
	Each					
30585	Ceiling rose surface 2 or 3 terminal cordgrip pattern	54.26	8.61	10.33	26.59	30585
30586	Ditto, small cap type	42.55	6.78	8.41	25.72	30586
30587	Connector porcelain, single way	9.12	1.15	1.41	3.42	30587
30588	Connector porcelain, double way	10.28	1.15	1.41	3.42	30588
	Per way					
30589	Connector moulded with non-rotable tinned brass inserts 5 - 10A	3.74	0.43	0.52	1.30	30589
30590	Ditto, 15 - 30A	4.55	0.43	0.52	1.30	30590

Item	MISCELLANEOUS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Sundries : -					
	Each	A $	B $	C $	D $	
30591	Provision of framed as-built drawing/ safety instruction/ operation instruction in an aluminium frame suitable for A2 size paper c/w 3 mm thick clear plastic front sheet & wooden back plate	938.62	11.00	13.47	34.23	30591
30592	Ditto, for A3 size paper	804.50	8.31	10.01	25.76	30592
30593	Numbered ferrule for 1 core PVC cable per way	15.99	2.87	-	11.27	30593
30594	Label for distribution board per way	9.60	0.97	1.07	2.20	30594
30595	Adhesive circuitry label at least 4mm in height showing circuit numbers	1.54	0.39	0.42	0.90	30595
30596	Traffolyte type warning notice for switch room, size 300 x 150 mm	154.71	5.49	6.88	19.48	30596
30597	Traffolyte type label with engraved English and Chinese lettering, size up to 0.002 m²	8.74	0.97	1.25	3.26	30597
30598	Traffolyte type label with engraved English and Chinese lettering, size 0.002 - 0.006 m²	19.05	0.97	1.25	3.26	30598
30599	Warning label for different cable colour code	88.04	5.49	6.88	19.48	30599
30600	Label on next date of Periodic Inspection and Testing	43.53	0.97	1.25	3.26	30600
30601	Label on testing of residual current device	29.06	0.97	1.25	3.26	30601
	Motor starter D.O.L. T.P. with enclosure : -					
	Each					
30602	15/ 30A	704.38	18.04	22.60	69.25	30602
30603	45A	1,220.05	22.01	26.87	84.30	30603
30604	60A	1,423.58	23.31	29.31	89.43	30604
30605	Packing gland for circular P.V.C. or T.R.S. flexible cord (1 mm² or 1.5 mm²) brass, with compression ring as required	18.77	0.28	0.43	1.34	30605
	Heat-shrunk corrosion protection sleeve standard length 450 mm suitable for pipe size of : -					
	Per piece					
30606	150/ 104 mm	639.52	15.12	18.77	57.48	30606
30607	165/ 127 mm	704.88	16.37	20.63	63.05	30607
30608	196/ 140 mm	767.67	17.60	21.86	67.84	30608
30609	255/ 150 mm	810.67	18.86	23.82	71.68	30609
30610	300/ 210 mm	839.11	19.54	24.44	74.45	30610

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MISCELLANEOUS (CONT'D)					
	Auto transformer : -					
		A	B	C	D	
	Each	$	$	$	$	
30611	Auto transformer 15 kVA, single phase, 50 Hz, with 400/ 260/ 240/ 220V tappings.....	13,566.89	71.85	89.99	278.90	30611
30612	Auto transformer 25 kVA, single phase, 50 Hz, with 400/ 260/ 240/ 220V tappings.....	18,827.01	71.85	89.99	278.90	30612
30613	Auto transformer 45 kVA, three phases, 50 Hz, with 600/ 420/ 400/ 380/ 346V tappings.....	26,686.04	78.61	98.23	304.19	30613
	Weatherproof stainless steel grade 316 metal box/ chamber other than those item explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume: -					
	Each					
30614	Not exceeding 0.005 m³.....	886.32	78.14	130.40	155.99	30614
30615	0.005 m³ - 0.01 m³.....	989.23	78.14	130.40	155.99	30615
30616	0.01 m³ - 0.03 m³.....	1,465.50	78.14	130.40	155.99	30616
30617	0.03 m³ - 0.05 m³.....	2,086.64	129.92	166.32	206.74	30617
30618	0.05 m³ - 0.1 m³.....	2,668.68	129.92	166.32	206.74	30618
30619	0.1 m³ - 0.3 m³.....	6,544.11	206.74	260.69	283.46	30619
	Galvanized sheet metal box/ chamber other than those items explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass, painted overall where necessary. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume : -					
	Each					
30620	Not exceeding 0.005 m³.....	327.92	12.50	15.67	46.98	30620
30621	0.005 m³ - 0.01 m³.....	359.95	12.50	15.67	46.98	30621
30622	0.01 m³ - 0.03 m³.....	448.41	15.01	19.48	57.68	30622
30623	0.03 m³ - 0.05 m³.....	689.87	18.93	23.65	71.46	30623
30624	0.05 m³ - 0.1 m³.....	975.19	21.78	27.41	83.32	30624
30625	0.1 m³ - 0.3 m³.....	2,135.45	31.36	39.47	119.54	30625

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MISCELLANEOUS (CONT'D)					
	Weather proof galvanized sheet metal box/ chamber other than those items explicitly specified for housing electrical instrument, switches, relays, socket outlets, MCB units etc. with minimum thickness 1.6 mm for casing and 2 mm for front panel, and with hinged cover, lock and handle, viewing glass, painted overall where necessary. Square or rectangular pattern, including all bends, ends, inlets, junctions, connections, flanged joints and the like of the following sizes in volume : -					
		A	B	C	D	
	Each	$	$	$	$	
30626	Not exceeding 0.005 m³	452.76	78.14	130.40	155.99	30626
30627	0.005 m³ - 0.01 m³	494.81	78.14	130.40	155.99	30627
30628	0.01 m³ - 0.03 m³	680.00	78.14	130.40	155.99	30628
30629	0.03 m³ - 0.05 m³	958.34	129.92	166.32	206.74	30629
30630	0.05 m³ - 0.1 m³	1,195.77	129.92	166.32	206.74	30630
30631	0.1 m³ - 0.3 m³	2,820.09	206.74	260.69	283.46	30631
	Emergency call system : -					
	Each					
30632	Emergency call panel, c/w emergency call button, metal case, weatherproof indication panel integrated with indicating lamp, buzzer unit, mute switch, reset switch, timer for auto-mute of buzzer unit, lamp test button, transformer, conduit and wiring	5,429.02	114.07	132.03	593.28	30632
30633	Emergency call button c/w relay and accessories connected to emergency call panel	584.09	90.56	95.67	197.86	30633
30634	Additional repeater panel connected to emergency call panel to receive repeated signals, c/w metal case, weatherproof indication panel integrated with indicating lamp, buzzer unit, mute switch, reset switch, timer for auto-mute of buzzer unit, lamp test button, transformer, conduit and wiring	3,981.38	95.36	101.91	369.77	30634
30635	Additional 1 emergency call panel connected to emergency call repeater panel, including necessary relay, indicating lamp, wiring and accessories	3,416.32	91.21	119.84	240.85	30635

Item		Rate	Item
	MISCELLANEOUS (CONT'D)		
	Buildings Energy Efficiency Ordinance (BEEO) Submission		
	All lighting installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets, including but not limited to Form EE-LG, LG-G, LG-1 and LG-2 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.		
	Type of premises : Prison; Fire Station; Judiciary Building; Police Station; Correctional Institution; Government Offices Building : - The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	Per item	A $	
30636	Not exceeding 1000 m²....	51,758.88	30636
30637	Exceeding 1000 m² but not exceeding 2000 m²....	72,462.44	30637
30638	Exceeding 2000 m² but not exceeding 3000 m²....	82,814.22	30638
30639	Exceeding 3000 m²....	12,422.13	30639
	(The actual rate should be : $124,221.30 for Item 30639A)		
	Type of premises : Hospital/ Health Care Building :- The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	Per item		
30640	Not exceeding 1000 m²....	54,346.84	30640
30641	Exceeding 1000 m² but not exceeding 2000 m²....	76,085.56	30641
30642	Exceeding 2000 m² but not exceeding 3000 m²....	86,954.93	30642
30643	Exceeding 3000 m²....	13,043.24	30643
	(The actual rate should be : $130,432.40 for Item 30643A)		

Item		Rate	Item
	MISCELLANEOUS (CONT'D)		
	Buildings Energy Efficiency Ordinance (BEEO) Submission (Cont'd)		
	Type of premises : District Open Space/ Park (with Toilet Block, Service Block and Fountain); District Open Space/ Park (with Toilet Block and Service Block); District Open Space/ Park (with Toilet Block only); Library; Indoor Games Hall; Indoor Swimming Pool; Sport Ground/ Stadium; School with Noise Abatement; School with No Noise Abatement :- The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	Per item	A $	
30644	Not exceeding 1000 m²....	53,311.66	30644
30645	Exceeding 1000 m² but not exceeding 2000 m²....	74,636.32	30645
30646	Exceeding 2000 m² but not exceeding 3000 m²....	85,298.64	30646
30647	Exceeding 3000 m²....	12,794.80	30647
	(The actual rate should be : $127,948.00 for Item 30647A)		

Item		Rate	Item
	MISCELLANEOUS (CONT'D)		
	Buildings Energy Efficiency Ordinance (BEEO) Submission (Cont'd)		
	All electrical installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets, including but not limited to Form EE-EL, EL-1 to EL-5 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.		
	Type of premises : Prison; Fire Station; Judiciary Building; Police Station; ;Correctional Institution; Government Offices Building; Hospital/ Health Care Building; District Open Space/ Park (with Toilet Block, Service Block and Fountain); District Open Space/ Park (with Toilet Block and Service Block); District Open Space/ Park (with Toilet Block only); Library; Indoor Games Hall; Indoor Swimming Pool; Sport Ground/ Stadium; School with Noise Abatement; School with No Noise Abatement : - The Area as below is independent on total floor area of superstructures inclusive of ancillary buildings within the building complex of the premises specified in the Works Order:		
	Per item	A $	
30648	Up to 50 nos. of circuits/ motors.....	4,890.00	30648
30649	51 nos. of circuits to 100 nos. of circuits/ motors.....	9,149.02	30649
30650	101 nos. of circuits to 200 nos. of circuits/ motors.....	18,613.51	30650
30651	201 nos. of circuits to 300 nos. of circuits/ motors.....	27,762.50	30651
30652	301 nos. of circuits to 400 nos. of circuits/ motors.....	37,226.98	30652
30653	401 nos. of circuits to 500 nos. of circuits/ motors.....	46,376.00	30653
30654	Every 100 nos. of additional circuits above 500 nos. of circuits/ motors.....	9,779.96	30654

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM					
	Ceiling fan, c/w regulator and down rod of any length including application of glue to all thread parts of the fan : -					
	Each	A $	B $	C $	D $	
30655	900 mm diameter.....	661.62	33.20	41.36	125.34	30655
30656	1200 mm diameter.....	713.30	37.53	43.76	132.81	30656
30657	1400 mm diameter.....	778.46	43.76	49.93	142.40	30657
30658	For existing ceiling fan only, application of rust inhibitor to screw thread, of each ceiling fan down rod (taking down and refix ceiling fan, where required, measured separately).....	31.21	-	-	-	30658
	Wall mounted fan, 3-speed c/w off pull switch and oscillation control pull switch, cord-operated : -					
	Each					
30659	400 mm diameter.....	670.04	17.98	22.60	69.35	30659
30660	500 mm diameter.....	1,438.54	24.73	27.73	78.85	30660
	Wall mounted rotary fan, industrial type, c/w selector switch for 2 or 3 speed control and oscillation control switch : -					
	Each					
30661	600 mm diameter.....	1,690.47	27.73	30.93	88.29	30661
30662	630 mm diameter.....	1,802.02	28.68	31.64	90.97	30662
	Ceiling mounted rotary fan c/w regulator : -					
	Each					
30663	400 mm diameter.....	1,028.28	25.23	28.79	85.55	30663
	Regulator for fan : -					
	Each					
30664	Regulator for fan, 3 speed or above.....	255.20	9.94	12.44	36.92	30664

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Domestic type exhaust fan, wall/ window mounted c/w automatic/ cord operated shutter : -					
		A	B	C	D	
	Each	$	$	$	$	
30665	150 mm diameter.....	431.27	19.84	24.84	76.30	30665
30666	200 mm diameter.....	434.09	19.84	24.84	76.30	30666
30667	250 mm diameter.....	464.11	19.84	24.84	76.30	30667
30668	300 mm diameter.....	560.24	19.84	24.84	76.30	30668
	Domestic type exhaust fan, wall/ window mounted c/w louvre and automatic/ cord operated shutter : -					
	Each					
30669	150 mm diameter.....	470.36	24.15	30.28	93.93	30669
30670	200 mm diameter.....	497.17	24.15	30.28	93.93	30670
30671	250 mm diameter.....	536.55	24.15	30.28	93.93	30671
30672	300 mm diameter.....	646.72	24.15	30.28	93.93	30672
	Domestic type exhaust fan, wall/ window mounted c/w louvre and electrical operated shutter : -					
	Each					
30673	150 mm diameter.....	1,302.38	19.84	24.84	76.30	30673
30674	200 mm diameter.....	1,524.60	19.84	24.84	76.30	30674
30675	230 mm diameter.....	1,805.10	19.84	24.84	76.30	30675
30676	300 mm diameter.....	2,367.81	19.84	24.84	76.30	30676
	Exhaust fan, propeller type : -					
	Each					
30677	250 mm diameter.....	692.41	25.30	32.17	97.93	30677
30678	315 mm diameter.....	885.73	25.30	32.17	97.93	30678
30679	335 mm diameter.....	989.11	25.30	32.17	97.93	30679
30680	400 mm diameter.....	1,389.40	32.17	40.14	123.47	30680
30681	450 mm diameter.....	1,536.34	36.34	45.43	138.94	30681
30682	500 mm diameter.....	1,742.85	40.14	49.95	154.56	30682
30683	630 mm diameter.....	3,246.00	67.91	84.32	261.27	30683
30684	800 mm diameter.....	5,300.80	98.79	123.68	381.73	30684

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Plate axial fan, wall mounted c/w speed controller : -					
	Each	A $	B $	C $	D $	
30685	315 mm diameter; speed up to 1000 rpm, sound level less than 39 dBA.....	3,571.36	43.29	53.81	163.78	30685
30686	375 mm diameter; speed up to 1000 rpm, sound level less than 45 dBA.....	4,340.63	53.81	67.37	204.21	30686
30687	450 mm diameter; speed up to 1000rpm, sound level less than 50 dBA.....	5,340.93	64.11	80.33	245.07	30687
30688	630 mm diameter; speed up to 750 rpm, sound level less than 51 dBA.....	7,218.29	106.49	133.12	408.73	30688
	Fume cupboard exhaust fan : -					
	Each					
30689	152 mm diameter; speed up to 3000 rpm.....	9,337.62	19.84	24.84	76.30	30689
30690	241 mm diameter; speed up to 1500 rpm.....	10,394.06	33.74	39.95	81.11	30690
30691	241 mm diameter; speed up to 3000 rpm.....	12,831.03	33.74	39.95	81.11	30691
30692	305 mm diameter; speed up to 1500 rpm.....	15,484.36	39.95	48.57	88.84	30692
	Exhaust fan, axial, speed up to 750 rpm, 380V/ 3-phase/ 50 Hz. : -					
	Each					
30693	560 mm diameter, 1.5 m^3/ sec. air volume, 30 pa static pressure.....	7,193.54	51.85	64.46	199.26	30693
30694	600 mm diameter, 2.3 m^3/ sec. air volume, 40 pa static pressure.....	8,961.38	67.91	84.32	261.27	30694
30695	800 mm diameter, 5.0 m^3/ sec. air volume, 50 pa static pressure.....	11,256.94	98.79	123.68	382.94	30695
	Wire mesh protective guard for exhaust fan (all types) :-					
	Each					
30696	250 mm diameter.....	112.10	18.22	22.50	67.69	30696
30697	315 mm diameter.....	116.62	18.22	22.50	67.69	30697
30698	335 mm diameter.....	122.84	18.79	23.06	68.53	30698
30699	400 mm diameter.....	130.24	19.39	24.28	72.12	30699
30700	450 mm diameter.....	146.11	21.79	27.12	81.20	30700
30701	500 mm diameter.....	154.01	22.36	27.73	83.06	30701
30702	630 mm diameter.....	182.37	22.92	28.82	86.48	30702
30703	800 mm diameter.....	233.11	23.49	29.40	89.09	30703

FANS & VENTILATION SYSTEM (CONT'D)

Air curtain c/w galvanized sheet metal casing with powder coating finishing coat.
Fan motor shall have 2-step air flow rate changeover and c/w a controller of on/ off and Hi/ Lo speed operation, including all supporting mild steel hanger and wall bracket fixed to structural member, c/w all necessary accessories :-

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
30704	600 mm long.....	1,591.93	32.00	39.97	119.38	30704
30705	900 mm long.....	1,935.27	45.66	52.93	129.08	30705
30706	1200 mm long.....	2,264.65	60.57	78.25	138.52	30706

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM					
	Bedhead trunking : -					
	Per linear metre	A $	B $	C $	D $	
30707	Bedhead trunking, constructed from aluminium extrusions of minimum size 180 mm(H) x 90 mm(D), 3 compartments c/w front plate and panel to accommodate electrical and medical gas bedhead services	1,999.30	16.87	18.04	54.22	30707
30708	Ditto, size 250 mm(H) x 90 mm(D)	2,314.70	17.49	18.77	56.28	30708
	Each					
30709	Right angle vertical bend for bedhead trunking	1,906.60	14.30	14.89	45.17	30709
30710	End cap for bedhead trunking	235.50	10.94	11.11	18.05	30710
30711	Bedhead 13A single socket	534.26	11.89	12.56	44.59	30711
30712	Bedhead 13A single socket (switched)	551.29	11.89	12.56	44.59	30712
30713	Bedhead 13A twin socket	806.01	11.89	12.56	44.59	30713
30714	Bedhead 13A single socket c/w RCD	1,737.41	11.89	12.56	44.59	30714
30715	Bedhead 13A single socket (switched) c/w RCD	1,759.44	11.89	12.56	44.59	30715
30716	Bedhead 13A twin socket c/w RCD	2,002.07	11.89	12.56	44.59	30716
30717	Bedhead 13A twin socket (switched) c/w RCD	2,034.34	11.89	12.56	44.59	30717
30718	Bedhead single switch c/w fuse spur	717.71	11.89	12.56	44.59	30718
30719	Bedlight switch c/w bedlight mounting bracket	970.39	11.89	12.56	44.59	30719
30720	Bedhead staff call socket	130.47	11.89	12.56	44.59	30720
30721	Angle poise bedlight unit c/w trunking mounting bracket for 11W compact fluorescent lamp	3,986.25	24.05	25.23	91.33	30721
	Bedhead trunking-mounted fluorescent luminaries : -					
	Each					
30722	400 mm length	2,623.54	18.61	19.23	109.29	30722
30723	600 mm length	2,923.57	18.61	19.23	110.46	30723
30724	1000 mm length	3,514.75	18.61	19.23	111.40	30724
	Indicator lamp : -					
	Each					
30725	Overdoor indicator lamp (red)	496.44	11.89	12.56	44.59	30725

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)					
	Hard-wire staff/ emergency/ nurse call system : -					
	Each	A $	B $	C $	D $	
30726	Bedhead staff call push/ reset	1,288.33	12.52	13.13	54.47	30726
30727	Bedhead nurse call/ present/ reset unit with reassurance indicator and handset jack socket	1,946.88	12.52	13.13	54.47	30727
30728	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push unit and handset jack socket	2,289.70	12.52	13.13	54.47	30728
30729	Bedhead RDS control station	2,509.81	11.97	12.60	44.98	30729
30730	Staff/ emergency/ nurse call panel c/w intercom	4,393.79	17.85	19.03	134.63	30730
30731	Nurse call/ reset unit with reset push	1,331.50	14.92	15.53	89.59	30731
30732	Nurse call/ reset unit with reassurance indicator	1,419.72	14.92	15.53	89.59	30732
30733	Nurse call/ reset unit with reassurance indicator and emergency pull/ push unit	1,758.68	15.53	16.15	91.61	30733
	Nurse/ staff/ emergency call control & monitoring console/ panel for hard-wire system c/w intercom and wiring : -					
	Each					
30734	Up to 10 ways	7,849.72	88.18	94.27	542.13	30734
30735	10 - 20 ways	8,382.32	94.27	100.02	592.51	30735
30736	20 - 30 ways	8,957.56	99.92	105.81	638.40	30736
30737	30 - 40 ways	10,376.26	105.81	111.69	687.99	30737
	Multiplexed/ microprocessor staff/ emergency/ nurse call system : -					
	Each					
30738	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push unit and handset jack socket	2,719.23	12.42	13.04	54.47	30738
30739	Bedhead nurse call/ present/ reset unit with reassurance indicator, RDS control and handset jack socket	4,837.24	13.04	13.62	60.22	30739
30740	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push, RDS control and handset jack socket	5,178.10	13.04	13.62	60.22	30740
30741	Bedhead nurse call/ present/ reset unit with reassurance indicator, RDS control, intercom and handset jack socket	6,734.55	13.04	13.62	60.22	30741
30742	Bedhead nurse call/ present/ reset unit with reassurance indicator, emergency pull/ push, RDS control, intercom and handset jack socket	7,018.19	13.04	13.62	60.22	30742
30743	Bedhead speaker microphone unit	1,944.64	11.89	12.56	44.59	30743

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)					
	Multiplexed/ microprocessor staff/ emergency/ nurse call system : - (Cont'd)					
	Each	A $	B $	C $	D $	
30744	Light dimmer; PCB type	1,631.89	11.89	12.56	44.59	30744
30745	Nurse call/ present/ reset unit	1,573.66	14.92	15.53	89.59	30745
30746	Nurse call/ present/ reset unit with reassurance indicator	1,677.32	14.92	15.53	89.59	30746
30747	Nurse call/ present/ reset unit with reassurance indicator and intercom	3,573.08	15.53	16.15	94.29	30747
30748	Nurse/ staff/ emergency call panel c/w touch screen control, intercom and wiring	82,833.98	73.36	91.74	587.40	30748
	Nurse/ staff/ emergency call control & monitoring console/ panel for multiplexed/ microprocessor system c/w intercom and wiring : -					
	Each					
30749	Up to 10 ways	11,695.49	94.27	100.02	595.15	30749
30750	10 - 20 ways	14,773.09	99.92	105.81	642.76	30750
30751	20 - 30 ways	18,568.39	105.81	111.69	689.32	30751
30752	30 - 40 ways	22,442.73	111.75	117.53	737.36	30752
30753	40 - 60 ways	37,101.35	123.85	129.59	831.19	30753
30754	Keyboard console, 70 ways c/w LCD display and intercom	64,582.29	132.55	144.04	1,019.10	30754
	Control circuit c/w cables/ wiring, trunking, conduits (surface or concealed in partition and ceiling) and all necessary accessories and connected to nurse/ emergency/ staff call control panel : -					
	Each					
30755	Nurse call point	474.45	72.98	79.04	327.24	30755
30756	Nurse present/ reset point	489.02	73.70	79.58	338.35	30756
30757	Nurse call/ present/ reset point	502.55	74.29	80.34	347.88	30757
30758	Emergency call point	474.45	72.98	79.04	327.24	30758
30759	Emergency reset point	474.45	72.98	79.04	327.24	30759
30760	Emergency call/ reset point	489.02	73.70	79.58	338.35	30760
30761	Staff call point	474.45	72.98	79.04	327.24	30761
30762	Staff reset point	474.45	72.98	79.04	327.24	30762
30763	Staff call/ reset point	489.02	73.70	79.58	338.35	30763

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BEDHEAD TRUNKING AND STAFF/ EMERGENCY/ NURSE CALL SYSTEM (CONT'D)					
	General items applicable to all bedhead trunking and staff/ emergency/ nurse call system : -					
	Each	A $	B $	C $	D $	
30764	Headset; stethoscope type c/w parking bracket/ hood to bedhead trunking	316.32	2.46	3.62	9.37	30764
30765	Dummy handset jack plug	59.50	2.46	3.62	9.37	30765
30766	Nurse call handset c/w call button only	813.54	6.04	6.69	14.57	30766
30767	Nurse call handset c/w call button and RDS control	940.36	6.04	6.69	14.57	30767
30768	Nurse call handset parking bracket	70.69	6.04	6.69	18.84	30768
30769	Nurse call handset linen clip	37.96	6.04	6.69	18.84	30769
30770	Nurse call handset socket	69.51	6.04	6.69	18.84	30770
30771	Nurse call handset c/w call button, RDS control and intercom microphone	4,559.79	6.04	6.69	19.11	30771
30772	Nurse call handset/ patient remote call unit with nurse call push, power supply unit, reassurance indicator, intercom, bedlight switch, sound channel selector, volume control and flexible cable	4,776.80	6.04	6.69	19.11	30772
30773	Staff call unit, vandal-proof push	438.96	14.92	15.53	89.59	30773
30774	Emergency call unit	1,066.42	14.92	15.53	89.59	30774
30775	Present/ reset unit	443.05	14.92	15.53	89.59	30775
30776	Present/ reset unit with emergency pull/ push unit	1,219.99	15.53	16.15	95.01	30776
30777	Repeater unit with indicator and mute switch	1,322.02	15.53	16.15	95.01	30777
30778	Pull-cord type nurse call unit with reassurance indicator	350.24	14.92	15.53	89.59	30778
30779	Splash-proof nurse call unit with reassurance indicator	602.75	14.92	15.53	89.59	30779
30780	Splash-proof nurse call/ present/ reset unit with reassurance indicator	1,343.89	15.53	16.15	95.01	30780
30781	Splash-proof present/ reset unit	969.26	15.53	16.15	95.01	30781
30782	RDS jack socket unit	186.28	6.04	6.69	18.84	30782
30783	Buzzer unit	550.95	11.89	12.56	44.59	30783
30784	Call indicator	351.95	11.89	12.56	44.59	30784
30785	Call indicator c/w buzzer unit	799.27	12.42	13.04	49.38	30785
30786	Power supply unit 220/ 24V or 220/ 28V for multi-zone nurse/ emergency/ staff call system	14,179.92	30.72	33.68	170.36	30786

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	DETECTION SENSOR					
	Occupancy/ Motion Sensor : -					
		A	B	C	D	
	Each	$	$	$	$	
30787	Wall mounted occupancy sensor, single pole switching, 400W 150° field of view, switches lights ON by passive infrared technology and OFF after an adjustable time delay, with manual overriding switch	405.45	13.59	16.46	40.86	30787
30788	Ditto but single pole and 3 way switching, 180° field of view	536.61	13.59	16.46	40.86	30788
30789	Ceiling mounted occupancy sensor, 10A, 360° detection using passive infrared technology, effective coverage up to 74 m² at 2.4 m ceiling height	1,184.12	13.59	17.44	42.64	30789
	Dual Technology Occupancy Sensor: -					
	Each					
30790	Ceiling mounted occupancy sensor, 360° detection using passive infrared heat change and frequency shifts in ultrasonic wave, effective coverage up to 40 m² at 2.4 m ceiling height, switches lights ON either by passive infrared technology or ultrasonic wave or both and OFF after an adjustable time delay, with manual overriding switch	2,642.20	13.59	17.44	42.64	30790
	PHOTOVOLTAIC SYSTEM					
	Photovoltaic system with photovoltaic modules to IEC 60904, mounted on fixed rack with aluminium frame, inverter, smart inverter, data logger, circuit breaker, connectors, wiring works, structurally support, controller and all necessary accessories: -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Mono-crystalline type photovoltaic panel : - (Total maximum power of PV module under standard test condition)					
		A	B	C	D	
	Each	$	$	$	$	
30791	180 - 360 Wp	35,985.19	4,567.01	6,899.42	12,549.45	30791
30792	360 - 540 Wp	58,501.33	4,577.90	6,912.27	12,579.12	30792
30793	540 - 720 Wp	72,407.03	7,886.71	11,869.96	24,955.83	30793
30794	720 - 900 Wp	90,830.26	11,209.28	16,869.71	31,338.18	30794
30795	Extra 180 Wp, up to 3,000 Wp	18,533.94	2,775.09	4,146.05	6,274.72	30795
	Multi-crystalline type photovoltaic panel : - (Total maximum power of PV module under standard test condition)					
	Each					
30796	180 - 360 Wp	34,718.02	4,325.38	6,437.65	12,368.53	30796
30797	360 - 540 Wp	52,498.80	6,919.82	10,325.71	18,743.50	30797
30798	540 - 720Wp	69,743.01	7,417.98	11,097.43	24,287.48	30798
30799	720 - 900Wp	87,662.70	10,493.09	15,643.31	30,495.12	30799
30800	Extra 180 Wp, up to 3,000 Wp	17,780.78	2,594.44	3,888.06	6,374.97	30800

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PHOTOVOLTAIC SYSTEM (CONT'D)					
	Photovoltaic system with copper indium gallium diselenide (CIGS) flexible type modules, smart inverter, data logger, circuit breaker, connectors, wiring works, structurally support, controller and all necessary accessories: -					
	Each	A $	B $	C $	D $	
30801	Module of power 70 - 90Wp.....	4,633.00	4,181.00	3,051.00	3,051.00	30801
30802	Module of power 115 - 135Wp.....	6,893.00	6,441.00	4,746.00	4,746.00	30802
30803	Module of power 270 - 350Wp.....	16,272.00	14,238.00	10,848.00	10,848.00	30803
30804	Module of power 360 - 470Wp.....	24,860.00	19,323.00	15,933.00	15,933.00	30804
	Building integrated photovoltaic system with mono-crystalline PV panels in the form of double-glazed panels c/w integrated PV cells, mounted horizontally/ vertically as glass panel, smart inverter, data logger, circuit breaker, connectors, wiring works, structurally support, controller and all necessary accessories: -					
	Each					
30805	Module of power 70 - 90Wp.....	23,391.00	2,339.10	7,017.30	4,678.20	30805
30806	Module of power 115 - 135Wp.....	35,086.50	3,508.65	10,525.95	7,017.30	30806
30807	Module of power 270 - 350Wp..... (The actual rate should be : $136,447.50 for Item 30807A)	13,644.75	13,644.75	36,386.00	22,741.25	30807
30808	Module of power 360 - 470Wp..... (The actual rate should be : $183,229.50 for Item 30808A)	18,322.95	18,322.95	48,861.20	30,538.25	30808
	Sundires : -					
	Each					
30809	LCD video display unit, active screen size 480mm diagonally measured, colour display, minimum of 1024 x 768 pixels resolutions c/w all necessary meters, cable and wiring, conduits and trunkings, software and dashboard graphic.....	22,516.14	10.89	12.85	29.67	30809

		Rate	
	RECONDITIONING OF LAMP POLE		
	Refurbishment of lamp pole including surface reconditioning, apply coating with priming paint and finishing paint of identical colours, replacement of safety chain where applicable : -		
	Each	A $	
30810	For lamp pole height up to 4.5 m.....	4,811.66	30810
30811	For lamp pole height 4.5 m to 7.5 m.....	6,258.94	30811
30812	For lamp pole height 7.5 m to 12 m.....	8,207.55	30812
30813	For lamp pole height above or equal to 12 m.....	10,900.17	30813

Item		Take down and clear away	Item
	SUNDRIES		
	Labour to disconnect all existing electrical installation for an area inside a building, take down and clear the entire electrical installation inside the area (area shall be measured net on the gross floor area of the building covered by the electrical installation) : -		
	Per square metre	A $	
30814	For area up to 100 m²....	26.03	30814
30815	For area 101 - 500 m²....	25.64	30815
30816	For area above 500 m²....	25.17	30816

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	GEARED MOTOR					
	Geared motor, 24V DC, brushed finishes, including enclosure: -					
	Each	A $	B $	C $	D $	
30817	For power rating up to 10W.....	1,376.48	25.30	32.17	97.93	30817
30818	For power rating 10W - 20W.....	1,884.15	25.30	32.17	97.93	30818
30819	For power rating 20W - 30W.....	2,807.68	25.30	32.17	97.93	30819

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	PORTABLE INDUCTION LOOP SYSTEM					
	Portable induction loop system c/w microphone, amplifier, rechargeable battery and charger and aerial : -					
	Each	A $	B $	C $	D $	
30820	Portable induction loop system (one to one type).....	6,518.28	73.13	92.40	496.94	30820

Section 31

LOW VOLTAGE CUBICLE SWITCHBOARD

SECTION 31

LOW VOLTAGE CUBICLE SWITCHBOARD

SPECIAL CONDITIONS

Measurement generally **SC31.01**

For the avoidance of doubt, all rates in this Section shall only apply to the works executed by the Approved Suppliers of Materials and Specialist Contractors for Public Works : Low Voltage Cubicle Switchboard Installation.

Unless otherwise specified separately in items under this Section, switchboard cubicle shall be measured on the basis of complete unit.

All electrical and other related work items except those items specifically included in this Section shall be measured and paid for at the appropriate rates under Section 28 - Electrical Installation - Small Power Distribution, Section 29 - Electrical Installation - Main Distribution Systems and Section 30 - Electrical Installation - Miscellaneous or other applicable Work Sections of this Schedule.

Measurement of multi-cubicle type switchboard **SC31.02**

The multi-cubicle type switchboard shall consist of cubicle columns (items are included in this Section) to accommodate different arrangement of switchgear, protective and metering units. To facilitate payment, the basic cubicle column shall consist of two base types basing on their panel widths : -

Type A Cubicle Column : cubicle width - 750mm to 900mm

The cubicle column with this width shall accommodate the major switchgear units, such as air circuit breakers (ACB), automatic changeover units, MCCBs, fuseswitches and overcurrent and earth fault relays units for ACBs etc. It may also accommodate some switchgear units of smaller ratings together with the major units in the same cubicle column as indicated in the Works Order.

Type B Cubicle Column : cubicle width - 350mm to 450mm

The cubicle column with this width shall accommodate largely the smaller switchgear units, such as MCCBs, fuseswitches, switchfuses, isolators etc. of smaller ratings.

The arrangement of a whole cubicle switchboard as specified by the Works Order shall be a combination of different cubicle columns with the abovementioned width types to suit different requirements as required by the Works Order. The rate for the combined switchboard cubicle shall be the summation of the single and/or multiples of the rates of the cubicle columns items under this Section which also describes the requirements on the height and depth of the cubicle columns. The side end panels of the utmost left and right cubicle columns shall be deemed to be included in the rates.

SPECIAL CONDITIONS

Measurement of temporary supply **SC31.03**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC31.04**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of all supporting frames, fixings, hangers, brackets, nails, bolts, nuts, holes, screws, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) Provision of all indication lamps.

(i) Earth/equipotential bonding.

(j) Design and submission of design drawings and the like.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC31.04 (Cont'd)**

(k) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(l) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(m) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(n) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(o) Provision all necessary power, labour and testing instrument of approved type for testing and commissioning.

(p) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(q) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(r) Provision of complete set of spare fuses complete with spare fuse board as specified.

(s) Provision of manufacturer's guarantee.

Rates for "Take down and clear away" or "Take down and set aside for re-use" **SC31.05**

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with low voltage cubicle switchboard installation shall further include for : -

(a) Taking down all associated building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification **SC31.06**

The Particular Specification for low voltage cubicle switchboard can be found in the Contract.

LOW VOLTAGE CUBICLE SWITCHBOARD

Multi-cubicle type switchboard, factory built assembly (suitable for incoming/ outgoing cabling from top or bottom), height : 2 to 2.2 m, depth : 1 to 1.5 m c/w compartments for switchgear/ busbars/ cables, segregations, door/ panels, indication labels, engraved labels, push buttons, selector switches, all interconnecting, control and ancillary wiring and fixings, earth terminals, rubber insulating mat, operating handles and all necessary accessories : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
31001	Type A cubicle column (750 - 900 mm).....	28,885.47	2,667.99	2,765.16	4,124.34	31001
31002	Type B cubicle column (350 - 450 mm).....	23,006.11	2,265.59	2,385.44	3,886.04	31002

Draw-out type air-circuit breaker c/w DC shunt trip coil/ release, electrical and mechanical interlock device and keys, control wiring and all necessary accessories : -

	Each					
31003	400A; 3-pole.....	18,213.16	1,453.53	1,611.12	2,576.79	31003
31004	500A; 3-pole.....	18,660.53	1,453.53	1,611.12	2,576.79	31004
31005	600A; 3-pole.....	19,043.95	1,453.53	1,611.12	2,576.79	31005
31006	800A; 3-pole.....	19,299.58	1,509.28	1,667.13	2,697.57	31006
31007	1000A; 3-pole.....	20,769.41	1,512.45	1,675.68	2,720.06	31007
31008	1200A; 3-pole.....	22,111.41	1,515.64	1,683.50	2,740.74	31008
31009	1500/ 1600A; 3-pole.....	24,475.96	1,582.27	1,758.69	2,846.87	31009
31010	2000A; 3-pole.....	28,885.47	1,654.71	1,854.13	3,001.54	31010
31011	2500A; 3-pole.....	32,080.75	1,661.00	1,864.93	3,029.91	31011
31012	3000/ 3200A; 3-pole.....	35,531.66	1,729.32	1,942.32	3,170.37	31012
31013	400A; 4-pole.....	18,858.64	1,471.32	1,639.28	2,649.59	31013
31014	500A; 4-pole.....	19,165.38	1,471.32	1,639.28	2,649.59	31014
31015	600A; 4-pole.....	19,363.49	1,471.32	1,639.28	2,649.59	31015
31016	800A; 4-pole.....	19,932.24	1,528.48	1,697.30	2,777.47	31016
31017	1000A; 4-pole.....	21,587.40	1,530.65	1,703.40	2,793.85	31017
31018	1200A; 4-pole.....	22,776.05	1,534.63	1,709.04	2,809.08	31018
31019	1500/ 1600A; 4-pole.....	24,757.12	1,597.15	1,784.97	2,916.38	31019
31020	2000A; 4-pole.....	33,486.67	1,668.09	1,876.86	3,061.60	31020
31021	2500A; 4-pole.....	37,193.22	1,672.29	1,886.70	3,087.84	31021
31022	3000/ 3200A; 4-pole.....	42,056.46	1,738.64	1,958.85	3,214.68	31022

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)					
	Four-pole air-circuit breaker (ACB) for automatic transfer switch c/w DC shunt trip coil/ release, electrical and mechanical interlock device and keys, control wiring and all necessary accessories : -					
	Each	A $	B $	C $	D $	
31023	1500/ 1600A	37,065.41	2,663.28	2,990.83	6,209.73	31023
31024	2000A	39,621.64	2,722.53	3,052.73	6,323.60	31024
	Four-pole automatic changeover switch c/w E&M interlock : -					
	Each					
31025	200A	7,988.23	217.51	230.60	557.58	31025
31026	300A	9,081.03	217.51	230.60	557.58	31026
	Four-pole automatic changeover contactor c/w E&M interlock : -					
	Each					
31027	400A	11,503.05	212.57	226.10	519.10	31027
31028	500A	15,976.48	212.57	226.10	519.10	31028
31029	600/ 630A	24,284.23	212.57	226.10	519.10	31029
31030	800A	31,313.89	215.40	230.27	527.11	31030
31031	1000A	33,231.06	215.40	230.27	527.11	31031
	Moulded case circuit breaker (MCCB) for automatic transfer switch c/w electrical and mechanical interlock device and all necessary accessories; four-pole type : -					
	Each					
31032	200A	24,284.23	212.57	226.10	519.10	31032
31033	300A/ 400A	33,231.06	212.57	226.10	519.10	31033
31034	500A/ 600A	37,257.12	212.57	226.10	519.10	31034

Item	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Moulded case circuit breaker (MCCB); breaking capacity 50 kA r.m.s. c/w shunt trip coil, wiring and all necessary accessories; three-pole type : -					
	Each	A $	B $	C $	D $	
31035	32A to 63A	1,814.93	250.78	264.16	485.87	31035
31036	100A to 200A	2,441.22	257.96	274.21	521.00	31036
31037	225A to 400A	3,534.01	271.96	285.51	557.23	31037
31038	500A	4,984.66	292.90	310.11	644.12	31038
31039	600/ 630A	5,636.50	293.65	310.80	662.83	31039
31040	800A	7,592.03	296.52	315.50	684.54	31040
	Moulded case circuit breaker (MCCB); breaking capacity 50 kA r.m.s. c/w shunt trip coil, wiring and all necessary accessories; four-pole type : -					
	Each					
31041	100A to 200A	2,888.54	270.09	280.61	544.60	31041
31042	225A to 400A	4,403.14	274.71	288.29	574.34	31042
31043	500A	7,010.47	294.70	312.98	656.63	31043
31044	600/ 630A	7,010.47	295.45	313.70	676.09	31044
31045	800A	8,863.75	297.69	317.56	694.32	31045
	Fuse-switch; TP&N c/w fuses : -					
	Each					
31046	32A	1,150.32	176.95	179.73	349.23	31046
31047	63A	1,278.11	176.95	179.73	349.23	31047
31048	100A	1,405.93	176.95	179.73	349.23	31048
31049	200A	1,789.36	182.25	188.49	383.92	31049
31050	300A	3,067.48	194.79	200.49	461.98	31050
31051	400A	3,323.12	201.09	204.53	465.34	31051
31052	500A	3,898.26	214.28	225.02	601.64	31052
31053	600A	4,984.66	214.56	225.22	602.18	31053

Item	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Isolating switch; TP & N : -					
		A	B	C	D	
	Each	$	$	$	$	
31054	32A	798.83	185.65	205.38	441.54	31054
31055	63A	1,022.49	185.65	205.38	441.54	31055
31056	100A	1,182.26	185.65	205.38	441.54	31056
31057	200A	1,597.65	190.45	205.38	469.74	31057
31058	300A	2,684.04	198.34	214.72	537.02	31058
31059	400A	3,118.61	198.34	214.72	537.02	31059
31060	500A	3,738.49	211.64	230.45	619.10	31060
31061	600A	4,345.60	211.64	230.45	619.10	31061
	Power factor correction module; 25kVAr at 380V nominal voltage per stage control c/w capacitor banks, automatic switching facilities, fuses, control relays, contactors, ammeters and all necessary control accessories; wiring and interconnection with other devices for functioning : -					
	Each					
31062	150 kVAr	18,801.11	583.39	613.12	1,714.99	31062
31063	200 kVAr	25,300.35	767.23	798.31	2,081.34	31063
31064	250 kVAr	30,994.34	951.35	983.65	2,365.85	31064
31065	300 kVAr	36,464.69	1,134.80	1,169.68	3,340.28	31065
31066	Add to last item for each additional 50 kVAr	4,984.66	183.38	186.15	605.61	31066
	Real time power factor correction module; 25/ 50kVAr at 380V nominal voltage per stage control c/w capacitor banks, automatic switching facilities, fuses, control relays, ammeters and all necessary control accessories; wiring and interconnection with other devices for functioning : -					
	Each					
31067	150 kVAr	92,663.53	583.39	613.12	1,714.99	31067
31068	200 kVAr (The actual rate should be : $102,121.60 for Item 31068A)	10,212.16	767.23	798.31	2,081.34	31068
31069	250 kVAr (The actual rate should be : $109,279.10 for Item 31069A)	10,927.91	951.35	983.65	2,365.85	31069
31070	300 kVAr (The actual rate should be : $116,308.80 for Item 31070A)	11,630.88	1,134.80	1,169.68	3,340.28	31070

Item	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D) Sundries : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
31071	Electro-mechanical type earth fault relay (single element) c/w wiring and accessories	4,160.28	233.26	252.44	549.62	31071
31072	Electro-mechanical type overcurrent relay (three element) c/w wiring and accessories	9,470.86	325.45	360.68	750.14	31072
31073	Microprocessor-based digital protection relay c/w wiring and accessories	10,371.92	303.58	335.24	634.21	31073
31074	Secondary battery system comprising trickle type battery chargers, sealed Ni-Cd/ Ni-MH batteries, voltmeter, ammeter and battery test facilities, for voltage rating below 50V D.C.	7,746.86	443.88	482.88	971.74	31074
31075	Voltmeter and associated wiring	1,520.96	269.52	275.75	417.08	31075
31076	Ammeter and associated wiring	1,425.10	269.52	275.75	417.08	31076
31077	Power factor meter and associated wiring	2,684.04	258.64	272.64	617.14	31077
31078	Maximum demand indicating meter and associated wiring	926.65	198.26	221.82	269.72	31078
31079	Microprocessor based digital multifunction power meter c/w all necessary interconnection wiring for functioning	4,364.96	287.61	317.95	534.17	31079
31080	Microprocessor based digital power analyzer c/w all necessary interconnection wiring for functioning	8,343.05	413.81	592.82	676.56	31080
31081	Anti-condensation heaters and thermostats in switchboard c/w with wiring and accessories	1,547.85	261.95	265.93	399.18	31081
31082	Undervoltage relay	722.14	175.64	199.02	233.71	31082

Item	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Current transformer (for protection) including all wiring and accessories : -					
	Each	A $	B $	C $	D $	
31083	200 or 300 or 400 or 500/ 5A	575.15	163.49	183.00	277.45	31083
31084	600 or 800 or 1000/ 5A	607.12	163.49	183.00	277.45	31084
31085	1200 or 1500/ 5A	626.29	163.49	183.00	277.45	31085
31086	1600 or 2000/ 5A	651.83	166.36	186.00	281.79	31086
31087	2250 or 2500/ 5A	671.03	170.99	190.93	292.46	31087
31088	3000/ 5A	734.92	172.89	193.00	298.11	31088
31089	3200/ 5A	798.83	172.89	193.00	298.11	31089
	Current transformer (for measurement) including all wiring and accessories : -					
	Each					
31090	200/ 5A	383.42	163.49	183.00	277.45	31090
31091	300 or 400/ 5A	396.21	163.49	183.00	277.45	31091
31092	500 or 600/ 5A	402.62	163.49	183.00	277.45	31092

Item	LOW VOLTAGE CUBICLE SWITCHBOARD (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Current transformer (for measurement) including all wiring and accessories : - (Cont'd)					
	Each	A $	B $	C $	D $	
31093	800/ 5A	415.39	163.49	183.00	277.45	31093
31094	1000/ 5A	447.34	163.49	183.00	277.45	31094
31095	1200/ 5A	460.14	163.49	183.00	277.45	31095
31096	1500 or 1600/ 5A	479.29	163.49	183.00	277.45	31096
31097	2000/ 5A	492.08	163.49	183.00	277.45	31097
31098	2250/ 5A	498.48	163.49	183.00	277.45	31098
31099	2500/ 5A	524.04	163.49	183.00	277.45	31099
31100	3000 or 3200/ 5A	549.59	163.49	183.00	277.45	31100
	Copper busbar, triple pole and full neutral, enclosed inside switchboard c/w insulation and all necessary accessories : -					
	Per linear meter					
31101	400A	2,658.48	105.08	113.04	314.65	31101
31102	600A	2,926.89	111.62	121.86	335.54	31102
31103	800A	3,502.05	116.64	127.02	356.13	31103
31104	1000A	3,847.14	122.93	133.40	375.03	31104
31105	1500A	5,457.55	128.26	139.57	390.47	31105
31106	2000A	6,627.03	133.31	144.61	405.57	31106
31107	2500A	8,224.68	144.11	156.24	446.32	31107
31108	3000A	9,585.88	144.11	156.24	446.32	31108
	Each					
31109	Portable earthing equipment for main incoming air circuit breaker	3,591.51	193.72	206.32	503.53	31109
31110	Hydraulic operated truck for handling air circuit breaker, and all necessary accessories	6,377.80	312.98	414.52	885.63	31110
	Per square meter					
31111	Rubber mats; ribbed surface comply with BS 921:1976 or IEC 6111:2009, laid in front of and at the rear of switchboard; minimum 10mm thick continuous sheet	639.07	39.74	47.69	198.76	31111

Section 32

EMERGENCY GENERATOR INSTALLATION

SECTION 32

EMERGENCY GENERATOR INSTALLATION

SPECIAL CONDITIONS

Measurement of power supply **SC32.01**

All works of electrical power supply up to power supply points (e.g. switchfuse or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Electrical Installation - Lighting System and Fixtures, Section 28 - Electrical Installation - Small Power Distribution, Section 29 - Electrical Installation - Main Distribution Systems and Section 30 - Electrical Installation - Miscellaneous or other applicable Work Sections of this Schedule.

Measurement of temporary supply **SC32.02**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC32.03**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

SPECIAL CONDITIONS

Rates generally (Cont'd)

SC32.03 (Cont'd)

(f) Any kind of fixing method including drilling of the background and provision of all fixings, hangers, nails, bolts, nuts, holes, screws, washers, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) All brackets and methods of supports including supporting frames and anti-vibration mounting.

(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(j) Submission of catalogues, technical literature, data, calculations, original official birth certificate, manufacturing certificates , official test certificates for major components and approval documentation covering the equipment and materials being supplied.

(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(n) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(o) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.

(p) Obtaining necessary approval from Environmental Protection Department including submission of all relevant documentation.

(q) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(r) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(s) Provision of manufacturer's guarantee. Submission of sample board for all materials and accessories, and supply of samples of materials for testing (including testing to destruction).

(t) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

SPECIAL CONDITIONS

Rates for emergency generator set

SC32.04 The rates for emergency generator set shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Electric starting equipment including starter motor, starting battery with hardwood stand and cover, battery charger and all necessary wiring and switchgear.

(c) Alternator complete with exciter, automatic voltage regulator and termination box including insulation as specified.

(d) Engine mounted instrument panel including gauges, tachometer and hourmeter.

(e) Protective screens for flywheel and coupling (if exposed) and other exposed moving parts.

(f) Engine cooling system including pumps, pipework and valves, regulating devices, radiator with fan, heat exchanger, expansion tank if required, ductwork and silencers.

(g) All necessary pipework and associated fittings for filling, overflow, outlet, drain, return and vent including necessary connection and jointing, valves, pipework hangers, supports, anchor and the like.

(h) Engine exhaust system including fan, silencer, bellows, hangers with anti-vibration spring mechanism, pipework, ductwork, insulation, cladding, clamps, flange couplings, heat resisting jointing and the like.

(i) All necessary operational and control accessories (e.g. selector switch, key switch, fuel control solenoid, relays, fuses, contactors, push button, indication lamp, meters and the like) that are required to put the generator set in proper operation.

(j) Anti-vibration materials and sound insulation materials in generator set bases.

(k) Earth/ equipotential bonding.

(l) All lubricating oil and greases, including initial charge and subsequent replenishment during warranty period.

SPECIAL CONDITIONS

Rates for fuel oil supply system **SC32.05** The rates for fuel oil supply system shall further include for : -

(a) Daily services fuel tank complete with socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainers, valves and the like, content gauge units, oil drip trays and all necessary accessories.

(b) All necessary pipework and associated fittings for filling, overflow, outlet, drain, return and vent including necessary connections and jointing with diesel resistant jointing materials, valves, pipework hangers, supports, anchors and the like.

(c) Oil transfer pump, injection pump, oil hand pump, injectors and filters.

(d) Dial gauge, float switch, quick closing mechanism comprising break glass unit, pull handle, pulley, steel wire rope and the like.

(e) Mild steel stand and all necessary accessories required for the completion of the system.

(f) Hydraulic test on the system including draining, drying and flushing all pipework, fittings and valves after the test.

Rates for lifting hoist **SC32.06** The rates for lifting hoist shall further include for : -

(a) Geared trolley, load chain, hooks with catch and ball or roller bearings.

(b) Submission of test certificate for the load chain.

(c) Submission of test certificate for the lift hoist.

(d) Structural calculation and surveyor's certificate of I-beam.

Rates for acoustic treatment installation **SC32.07** The rates for acoustic treatment installation shall further include for providing all necessary suitable acoustic treatment to achieve acceptable noise levels as specified, including : -

(a) Pipework acoustic sleeving to all pipes penetrating building structure and provision of split clamping rings, resilient hangers and seals.

(b) Acoustic treatment to walls, doors, louvres and ceiling of the emergency generator room and provision of galvanized steel framing with fixing accessories, polyester membrane lining and protective perforated steel sheeting.

(c) Duct silencers for ventilation fans, air inlet louvres, air discharge louvres, coupled radiators and all other air passage.

(d) Mufflers for engine exhaust air system.

SPECIAL CONDITIONS

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC32.08 The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with emergency generator set shall further include for :-

(a) Taking down all associated plumbing works and building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of plumbing works and building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification

SC32.09 The Particular Specification for emergency generator set can be found in the Contract.

EMERGENCY GENERATOR SET

Emergency generator installation comprising diesel engine, alternator, electrical starting system, cooling system, fresh air supply/ exhaust air system, exhaust air ductwork, exhaust pipework with cladding and thermal insulation (each within 10m), intake/ discharge silencers, protection device and all necessary accessories : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per item	A $	B $	C $	D $	
32001	Not exceeding 100 kVA ..... (The actual rate should be : $273,882.30 for Item 32001A)	27,388.23	2,612.48	2,893.41	7,817.66	32001
32002	100 - 150 kVA..... (The actual rate should be : $319,529.30 for Item 32002A)	31,952.93	2,993.32	3,264.37	9,588.32	32002
32003	150 - 200 kVA..... (The actual rate should be : $365,176.30 for Item 32003A)	36,517.63	3,183.25	3,449.34	10,883.19	32003
32004	200 - 250 kVA..... (The actual rate should be : $410,823.50 for Item 32004A)	41,082.35	3,511.66	3,775.79	12,309.61	32004
32005	250 - 300 kVA..... (The actual rate should be : $502,117.50 for Item 32005A)	50,211.75	3,571.02	3,830.19	12,753.76	32005
32006	300 - 350 kVA..... (The actual rate should be : $575,152.80 for Item 32006A)	57,515.28	3,752.04	4,063.64	14,281.08	32006
32007	350 - 400 kVA..... (The actual rate should be : $639,058.60 for Item 32007A)	63,905.86	3,752.04	4,063.64	14,281.08	32007
32008	400 - 450 kVA..... (The actual rate should be : $775,999.90 for Item 32008A)	77,599.99	3,917.23	4,232.79	15,553.19	32008
32009	450 - 500 kVA..... (The actual rate should be : $821,646.80 for Item 32009A)	82,164.68	3,917.23	4,232.79	15,553.19	32009
32010	500 - 550 kVA..... (The actual rate should be : $912,941.00 for Item 32010A)	91,294.10	4,295.11	4,664.09	18,171.62	32010
32011	550 - 600 kVA..... (The actual rate should be : $1,004,235.00 for Item 32011A)	10,042.35	4,295.11	4,664.09	18,171.62	32011

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY GENERATOR SET (CONT'D)					
	Emergency generator installation (remote radiator type) comprises with diesel engine, alternator, electrical starting system, cooling system (excluding remote radiator), fresh air supply/ exhaust air system, exhaust air ductwork, exhaust air pipework with cladding and thermal insulation (each within 10m), intake/ discharge silencers, protection device and all necessary accessories : -					
	Per item	A $	B $	C $	D $	
32012	for generator set n.e. 100 kVA	54,776.46	2,612.48	2,893.41	7,817.66	32012
32013	for generator set 100 - 150 kVA	56,298.02	2,993.32	3,264.37	9,588.32	32013
32014	for generator set 150 - 200 kVA	57,819.59	3,183.26	3,449.34	10,883.19	32014
32015	for generator set 200 - 250 kVA	59,341.16	3,511.66	3,775.77	12,309.62	32015
32016	for generator set 250 - 300 kVA	61,949.57	3,571.02	3,830.19	12,753.76	32016
32017	for generator set 300 - 350 kVA	64,557.96	3,752.04	4,063.64	14,281.08	32017
32018	for generator set 350 - 400 kVA	67,166.36	3,752.04	4,063.64	14,281.08	32018
32019	for generator set 400 - 450 kVA	69,774.77	3,917.23	4,232.80	15,553.19	32019
32020	for generator set 450 - 500 kVA	72,383.18	3,917.23	4,232.80	15,553.19	32020
32021	for generator set 500 - 550 kVA	74,991.58	4,295.11	4,664.08	18,171.62	32021
32022	for generator set 550 - 600 kVA	77,599.99	4,295.11	4,664.08	18,171.62	32022
	Remote radiator for emergency generator set c/w remote radiator system, cooling system and pipework, fresh air supply/ exhaust air system, exhaust air ductwork, intake/ discharge silencers, protection device, all cabling and wiring works and all necessary accessories : -					
	Per item					
32023	for generator set n.e. 100 kVA	63,905.86	2,612.48	2,893.41	7,817.66	32023
32024	for generator set 100 - 150 kVA	65,427.44	2,993.32	3,264.37	9,588.32	32024
32025	for generator set 150 - 200 kVA	66,949.01	3,183.26	3,449.34	10,883.19	32025
32026	for generator set 200 - 250 kVA	68,470.56	3,511.66	3,775.77	12,309.62	32026
32027	for generator set 250 - 300 kVA	71,078.97	3,571.02	3,830.19	12,753.76	32027
32028	for generator set 300 - 350 kVA	73,687.38	3,752.04	4,063.64	14,281.08	32028
32029	for generator set 350 - 400 kVA	76,295.78	3,752.04	4,063.64	14,281.08	32029
32030	for generator set 400 - 450 kVA	78,904.19	3,917.23	4,232.80	15,553.19	32030
32031	for generator set 450 - 500 kVA	81,512.58	3,917.23	4,232.80	15,553.19	32031
32032	for generator set 500 - 550 kVA	84,121.00	4,295.11	4,664.08	18,171.62	32032
32033	for generator set 550 - 600 kVA	86,729.40	4,295.11	4,664.08	18,171.62	32033

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY GENERATOR SET (CONT'D)					
	Exhaust pipework c/w cladding, thermal insulation and necessary accessories : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
32034	for generator set n.e. 100 kVA	3,075.96	84.08	98.92	378.87	32034
32035	for generator set 100 - 150 kVA	3,312.57	84.08	98.92	378.87	32035
32036	for generator set 150 - 200 kVA	3,549.19	102.88	113.76	428.33	32036
32037	for generator set 200 - 250 kVA	3,785.80	102.88	127.61	468.89	32037
32038	for generator set 250 - 300 kVA	4,174.51	106.84	130.58	480.75	32038
32039	for generator set 300 - 350 kVA	4,563.24	131.56	153.32	566.81	32039
32040	for generator set 350 - 400 kVA	4,951.96	135.53	158.27	608.37	32040
32041	for generator set 400 - 450 kVA	5,340.67	145.40	184.99	653.88	32041
32042	for generator set 450 - 500 kVA	5,729.40	179.05	211.68	767.62	32042
32043	for generator set 500 - 550 kVA	6,118.12	201.79	237.43	860.60	32043
32044	for generator set 550 - 600 kVA	6,506.84	224.56	256.22	958.54	32044
	Fuel oil supply system including daily services fuel tank c/w socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainer, valve and the like, content gauge unit, oil drip tray and all necessary accessories : -					
	Per item					
32045	for generator set n.e. 100 kVA	54,933.37	709.27	774.55	1,756.82	32045
32046	for generator set 100 - 150 kVA	58,262.68	877.44	952.60	2,192.07	32046
32047	for generator set 150 - 200 kVA	61,591.97	926.87	1,020.85	2,267.24	32047
32048	for generator set 200 - 250 kVA	64,921.26	996.13	1,096.05	2,441.35	32048
32049	for generator set 250 - 300 kVA	68,250.56	1,051.52	1,140.56	2,615.45	32049
32050	for generator set 300 - 350 kVA	71,579.85	1,229.55	1,318.60	3,098.17	32050
32051	for generator set 350 - 400 kVA	74,909.14	1,275.08	1,444.23	3,419.68	32051
32052	for generator set 400 - 450 kVA	78,238.43	1,414.55	1,497.65	3,623.44	32052
32053	for generator set 450 - 500 kVA	81,567.73	1,481.83	1,554.04	4,040.87	32053
32054	for generator set 500 - 550 kVA	84,897.04	1,587.66	1,674.72	4,214.99	32054
32055	for generator set 550 - 600 kVA	88,226.32	1,825.07	2,031.81	4,741.23	32055

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY GENERATOR SET (CONT'D)					
	Topping up of fuel oil tanks with fuel of 0.005% sulphur content and of capacity : -					
		A	B	C	D	
	Per item	$	$	$	$	
32056	Not exceeding 300 litres	4,259.00	-	-	-	32056
32057	300 - 400 litres	5,678.70	-	-	-	32057
32058	400 - 500 litres	7,098.35	-	-	-	32058
32059	500 - 600 litres	8,518.04	-	-	-	32059
32060	600 - 700 litres	9,937.70	-	-	-	32060
32061	700 - 800 litres	11,357.39	-	-	-	32061
32062	800 - 900 litres	12,777.05	-	-	-	32062
32063	900 -1000 litres	14,196.74	-	-	-	32063
32064	Add to last item for each additional 100 litres or part thereof	1,419.66	-	-	-	32064
	Lifting hoist c/w geared trolley and all necessary accessories : -					
	Per item					
32065	for generator set n.e. 100 kVA	20,751.63	815.10	907.09	2,786.56	32065
32066	for generator set 100 - 150 kVA	25,263.13	970.39	1,080.20	3,387.03	32066
32067	for generator set 150 - 200 kVA	26,152.70	970.39	1,080.20	3,387.03	32067
32068	for generator set 200 - 250 kVA	27,695.58	1,063.39	1,188.03	3,750.06	32068
32069	for generator set 250 - 300 kVA	29,143.77	1,126.71	1,250.36	3,968.68	32069
32070	for generator set 300 - 350 kVA	33,547.87	1,305.75	1,450.17	4,600.77	32070
32071	for generator set 350 - 400 kVA	36,224.69	1,345.30	1,474.91	4,691.77	32071
32072	for generator set 400 - 450 kVA	38,490.64	1,385.88	1,507.54	4,874.78	32072
32073	for generator set 450 - 500 kVA	41,206.81	1,430.38	1,559.98	5,076.58	32073
32074	for generator set 500 - 550 kVA	43,644.88	1,477.87	1,618.32	5,265.52	32074
32075	for generator set 550 - 600 kVA	46,993.47	1,556.01	1,681.64	5,534.56	32075

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY GENERATOR SET (CONT'D)					
	Acoustic treatment installation to the whole emergency generator set; all as necessary to achieve the specified noise levels : -					
	Per item	A $	B $	C $	D $	
32076	for generator set n.e. 100 kVA	68,900.99	3,789.63	3,898.44	13,076.25	32076
32077	for generator set 100 - 150 kVA	75,492.82	4,076.50	4,190.25	14,217.77	32077
32078	for generator set 150 - 200 kVA	79,927.56	4,304.01	4,434.58	15,012.10	32078
32079	for generator set 200 - 250 kVA	85,487.44	4,577.03	4,713.53	16,078.46	32079
32080	for generator set 250 - 300 kVA	91,999.34	4,872.80	5,013.26	17,243.74	32080
32081	for generator set 300 - 350 kVA	97,114.11	5,163.63	5,310.03	18,357.57	32081
32082	for generator set 350 - 400 kVA (The actual rate should be : $102,562.20 for Item 32082A)	10,256.22	5,454.46	5,616.67	19,452.63	32082
32083	for generator set 400 - 450 kVA (The actual rate should be : $107,118.60 for Item 32083A)	10,711.86	5,743.29	5,899.61	20,531.85	32083
32084	for generator set 450 - 500 kVA (The actual rate should be : $114,592.90 for Item 32084A)	11,459.29	6,029.18	6,186.46	21,656.55	32084
32085	for generator set 500 - 550 kVA (The actual rate should be : $119,331.40 for Item 32085A)	11,933.14	6,340.77	6,507.95	22,772.39	32085
32086	for generator set 550 - 600 kVA (The actual rate should be : $126,960.10 for Item 32086A)	12,696.01	6,659.28	6,829.45	23,843.69	32086
	Electrical installation c/w all cabling and wiring works including sensor cables, motor starters, conduits and trunking from switches to the equipment, earthing system and all necessary accessories : -					
	Per item					
32087	for generator set n.e. 100 kVA	41,975.57	1,815.18	1,978.40	5,827.38	32087
32088	for generator set 100 - 150 kVA	44,743.75	1,833.99	1,996.20	6,203.29	32088
32089	for generator set 150 - 200 kVA	46,767.04	1,895.32	2,056.55	6,441.68	32089
32090	for generator set 200 - 250 kVA	48,790.33	1,956.65	2,116.91	6,680.07	32090
32091	for generator set 250 - 300 kVA	50,298.29	1,975.43	2,133.70	6,888.79	32091
32092	for generator set 300 - 350 kVA	52,653.17	2,015.01	2,174.28	7,179.61	32092
32093	for generator set 350 - 400 kVA	54,372.42	2,057.54	2,216.79	7,371.52	32093
32094	for generator set 400 - 450 kVA	57,151.03	2,094.12	2,253.40	7,507.04	32094
32095	for generator set 450 - 500 kVA	59,071.89	2,135.69	2,294.94	7,711.82	32095
32096	for generator set 500 - 550 kVA	60,072.02	2,173.27	2,327.59	7,862.17	32096
32097	for generator set 550 - 600 kVA	61,798.73	2,210.87	2,365.18	7,999.67	32097

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EMERGENCY GENERATOR SET (CONT'D)					
	Control cubicle c/w switchgear, wiring, contactors, starters, relays, meters, air circuit breaker, switches, battery charger, push buttons, cable terminal box, safety and protection devices, timers, control equipment, indicator lights, alarm, rubber mats and all necessary accessories : -					
	Per item	A $	B $	C $	D $	
32098	for generator set n.e. 100 kVA	58,154.69	1,164.31	1,273.09	3,868.76	32098
32099	for generator set 100 - 150 kVA	61,395.00	1,317.60	1,369.05	4,468.23	32099
32100	for generator set 150 - 200 kVA	77,622.82	1,396.75	1,513.48	4,918.31	32100
32101	for generator set 200 - 250 kVA	93,850.65	1,475.89	1,657.89	5,368.39	32101
32102	for generator set 250 - 300 kVA	96,276.01	1,511.50	1,691.53	5,454.46	32102
32103	for generator set 300 - 350 kVA (The actual rate should be : $119,361.10 for Item 32103A)	11,936.11	1,631.18	1,776.61	5,975.76	32103
32104	for generator set 350 - 400 kVA (The actual rate should be : $122,200.80 for Item 32104A)	12,220.08	1,663.83	1,806.29	6,062.81	32104
32105	for generator set 400 - 450 kVA (The actual rate should be : $137,531.70 for Item 32105A)	13,753.17	1,786.49	1,932.90	6,466.41	32105
32106	for generator set 450 - 500 kVA (The actual rate should be : $140,382.20 for Item 32106A)	14,038.22	1,816.17	1,960.58	6,549.49	32106
32107	for generator set 500 - 550 kVA (The actual rate should be : $153,347.80 for Item 32107A)	15,334.78	1,890.37	2,027.85	6,976.84	32107
32108	for generator set 550 - 600 kVA (The actual rate should be : $156,119.90 for Item 32108A)	15,611.99	1,916.07	2,052.58	7,058.92	32108

Section 33

BURGLAR ALARM AND SECURITY

SECTION 33

BURGLAR ALARM AND SECURITY

SPECIAL CONDITIONS

Measurement of power supply

SC33.01

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Electrical Installation - Lighting System and Fixtures, Section 28 - Electrical Installation - Small Power Distribution, Section 29 - Electrical Installation - Main Distribution Systems and Section 30 - Electrical Installation - Miscellaneous or other applicable Work Sections of this Schedule.

Measurement of security alarm control panel

SC33.02

The interconnecting cables and the cable containment for the control panel connecting to external equipment or existing panel shall be measured separately.

Measurement of coaxial cables and shield cables

SC33.03

Cables for the equipment, control panels, push buttons, door contacts, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for coaxial cables and shield cables where specifically ordered by the Maintenance Surveyor in writing.

Coaxial cables and shield cables shall be measured the net length as fixed in linear metres.

Measurement of temporary supply

SC33.04

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC33.05** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) All brackets and methods of supports.

(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.

(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(p) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(q) Provision of manufacturer's guarantee.

SPECIAL CONDITIONS

Rates for equipment **SC33.06** The rates for equipment shall further include for : -

(a) Interfacing, connecting, interconnecting cables, jointing and making all busbar, cable, conduit, trunking and cable tray connections and the like and provision of all associated components.

(b) Provision of all components forming part of the equipment including batteries and chargers with all supply and interconnecting wiring and the like and provision of software including back-up copies (if required).

(c) All necessary sensors, instruments, devices and the like including appropriate connections thereto.

(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.

(e) Earth/ equipotential bonding.

Rates for push buttons, door contacts, etc. **SC33.07** The rates for push buttons, door contacts, window contacts, detectors, tamper switches, alarm sirens, kick bars and keyswitches shall further include for cables, conduits, trunkings and all necessary accessories including provision of all associated fixing components for connection to the security alarm control panel.

Rates for control panels **SC33.08** Control panel shall be measured on the basis of complete unit monitoring and controlling the number of zones as specified. The rates for control panels shall further include for all necessary relays, alarms, indicating lamps, buzzers, zone isolation switches, test key switches, internal wiring and all necessary accessories. The cables and cable containment between the equipment and the control/ indicating panel and/ or for connection to existing control/ indicating panel shall be measured separately and paid for at appropriate rates under this Section and Sections 27 to 30.

Rates for coaxial cables and shield cables **SC33.09** The rates for coaxial cables and shield cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) All necessary fixings complete with accessories and fittings as required.

(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

SPECIAL CONDITIONS

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC33.10 The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with burglar alarm and security installation shall further include for : -

(a) Taking down all associated building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification

SC33.11 The Particular Specification for burglar alarm and security installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CENTRAL CONTROL STATION EQUIPMENT					
	Equipment/ components c/w all necessary accessories : -	A	B	C	D	
	Per set	$	$	$	$	
33001	Security system computer designed for multi-user, multi-tasking point monitoring and control c/w CPU and mother board, disk drives/ streamer/ DVD writer drive, interface connection parts, keyboard, I/O card, mouse, cables, standard application software, software programmes for burglar alarm and security installation with unlimited usage licences	13,694.12	63.31	80.12	429.31	33001
33002	Standby computer c/w CPU and mother board, disk drives/ streamer/ DVD writer drive, interface connection ports, keyboard, I/O card, mouse, cables, standard application software	13,694.12	63.31	80.12	367.98	33002
33003	Uninterrupted power supply system for the operation of the security computer and terminal, and matrix switcher of the Closed Circuit Television System, for a minimum of 10 Ah c/w changeover switch, isolation switches, static bypass, manual bypass, microprocessor managed mimic and control panel, LCD display and keyboard	5,477.64	28.70	29.67	120.70	33003
	Each					
33004	Video display units, flat square type, active screen size 380 mm minimum diagonally measured, super high resolution colour monitor, 1024 x 768 pixels resolutions multiscanning with tilt/ swivel base c/w add-on anti-glare high quality circular polarizer screen filter	1,671.24	10.89	12.85	29.67	33004
33005	LCD video display unit, active screen size 350mm diagonally measured, colour display, minimum of 1024 x 768 pixels resolutions with tilt/ swivel base	1,795.84	10.89	12.85	29.67	33005
33006	Ditto active screen size 380 mm	1,878.44	10.89	12.85	29.67	33006
33007	Ditto active screen size 430 mm	2,231.87	10.89	12.85	29.67	33007
33008	Ditto active screen size 480 mm	2,516.14	10.89	12.85	29.67	33008
33009	Report printer, dry-type laser type, monochrome, random access memory, paper tray	1,787.23	10.89	12.85	66.27	33009
33010	Event printer, ink jet type	882.00	10.89	12.85	66.27	33010
33011	Intelligent local control units, microprocessor based controller, housed in tamper-proof housing c/w tampering switches, control programme, backup battery, database file and connector plugs and all necessary accessories	2,726.51	28.70	34.62	122.65	33011

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CENTRAL CONTROL STATION EQUIPMENT (CONT'D)					
	Alarm/ security control panel, stainless steel type c/w battery and chargers, ammeter, control components and all other necessary accessories : -					
		A	B	C	D	
	Each	$	$	$	$	
33012	Panel of 4 zones or less	3,738.25	86.05	91.01	344.26	33012
33013	Panel of 5 - 8 zones	5,193.93	91.99	96.95	363.05	33013
33014	Panel of 9 - 12 zones	6,586.52	97.93	102.88	380.84	33014
33015	Panel of 13 - 18 zones	7,876.53	103.89	107.83	398.65	33015
33016	Panel of 19 - 24 zones	9,068.65	109.79	113.76	410.51	33016
	Standby battery set : -					
33017	Standby battery set	1,606.36	28.70	29.67	58.36	33017
	Sundries : -					
33018	Interconnection point for F.S. panel	209.34	31.64	33.62	121.66	33018
33019	Interconnection point for matrix switching system of the CCTV system	204.65	31.64	33.62	121.66	33019
33020	Security equipment console and racks, hairline stainless steel, c/w a 1500 x 700 mm deep (min) horizontal flat surface section finished with plastic laminate and 1500 mm high vertical rack sections attached together to form a continuous rack system including full height locking doors, front below counter solid doors with recessed handle and lock, a armrest swivel leather chair and all necessary accessories	20,748.70	159.27	170.14	409.55	33020
	Per lot					
33021	Provide system grounding for the burglar alarm and security system	1,395.87	-	-	-	33021
33022	Provide direct link to the security control centre including the first year rental charge	5,185.39	-	-	-	33022

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	ACCESS CONTROL SYSTEM					
	Proximity card system components : -					
	Each	A $	B $	C $	D $	
33023	Proximity card reader c/w 12V power supply, tamper-proof housing with tampering switches	1,369.40	33.62	36.60	52.43	33023
33024	Interfacing module	2,693.17	33.62	36.60	52.43	33024
33025	Central card access controller	10,955.29	33.62	36.60	61.33	33025
33026	Emergency break glass; for card access reader	225.50	55.40	62.33	112.77	33026
33027	Proximity card	9.06	-	-	-	33027
	Video door phone system component including conduits, trunkings, cables, and all other accessories, and connection to the control panel : -					
33028	Intercom video handset c/w door release button	2,820.22	88.03	94.97	195.85	33028
33029	Wall mounted s.s. intercom panel c/w camera & all necessary accessories	3,978.98	91.99	97.93	261.15	33029
	Intercom door lock system component including conduits, trunkings, cables and all other accessories, and connection to the control panel : -					
33030	Intercom handset c/w door release button	1,825.88	88.03	94.97	195.85	33030
33031	Wall mounted s.s. intercom panel c/w camera & all necessary accessories	2,312.52	91.99	97.93	261.15	33031

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FIELD ALARM DEVICES SYSTEM					
	Equipment/ components c/w all necessary accessories : -					
		A	B	C	D	
	Per set	$	$	$	$	
33032	Personal attack push button c/w necessary accessories	456.47	55.40	57.37	107.83	33032
33033	Magnetic door contact for door, concealed/ surface type c/w necessary accessories	228.23	58.36	59.35	112.77	33033
33034	Magnetic door contact, heavy duty type, concealed/ surface, for roller shutter/ strong room c/w necessary accessories	456.47	58.36	59.35	112.77	33034
33035	Motion detector, combined infrared and ultrasonic detection type c/w necessary accessories	730.35	58.36	59.35	112.77	33035
33036	Magnetic window contact c/w necessary accessories	456.47	58.36	59.35	112.77	33036
33037	Glass break detectors, housed in tamper-proof housing with tampering switches c/w necessary accessories	721.63	58.36	59.35	112.77	33037
33038	Kick bar underneath counter, 450 mm length c/w necessary accessories	912.95	58.36	59.35	121.66	33038
33039	Duress push button, self-locking type c/w necessary accessories	456.47	55.40	56.38	106.84	33039
33040	Tamper switch, plunger type c/w necessary accessories	456.47	55.40	56.38	106.84	33040
33041	Alarm shunt key switch unit c/w necessary accessories	456.47	55.40	56.38	106.84	33041
33042	Alarm push button, stainless steel vandal resistant type c/w necessary accessories	456.47	55.40	56.38	106.84	33042
33043	Over-ride key switch c/w necessary accessories	228.23	55.40	56.38	106.84	33043
33044	Alarm siren c/w necessary accessories	456.47	58.36	59.35	121.66	33044
33045	Alarm siren, weatherproof type c/w necessary accessories	730.35	58.36	59.35	121.66	33045

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	EXIT CONTROL LOCK SYSTEM					
	Equipment/ components c/w all necessary accessories : -					
		A	B	C	D	
	Per set	$	$	$	$	
33046	Exit device, fail-secure or fail-open electric lock strikes, c/w internal thumb-turn, pushbar and cylinder for single door	1,279.35	18.79	21.77	58.36	33046
33047	Exit device, fail-secure or fail-open electric lock strikes, c/w internal thumb-turn, pushbar and cylinder for double door	1,933.26	18.79	21.77	65.29	33047
33048	Weather proof electronic digital keypad c/w stainless steel panel and box, numeric keypad, suitable for outdoor environment	746.82	18.79	21.77	60.35	33048
	Power supply unit : -					
33049	Power supply unit for electronic digital security c/w 6 Ah maintenance free standby-battery, 12V charger and metal box	730.35	28.70	29.67	58.36	33049
	Door lock system : -					
33050	Scramble door lock system including cable containments, cables, electronic digital push-button c/w stainless steel panel & box, combination lock, touch screen access reader, scramble keypad, suitable for outdoor environment and all other accessories and connection to the alarm panel	3,758.53	95.96	98.92	227.52	33050
33051	Push button door lock system including cable containments, trunkings, cables, electronic digital push-button c/w stainless steel panel & box, numeric keypad, combination lock, suitable for outdoor environment and all other accessories and connection to the alarm panel	2,883.31	95.96	98.92	227.52	33051
33052	Push button door lock system c/w remote door release button including cable containments, cables, electronic digital push-button c/w stainless steel panel & box, numeric keypad, combination lock, suitable for outdoor environment and all other accessories and connection to the alarm panel	3,113.44	113.76	119.69	309.62	33052
33053	Screening area door lock system for two access doors with interlock door locks and two remote release buttons, door indicator unit and associated cable containments to ensure the two doors not to be opened at one time	4,179.96	109.79	114.75	261.15	33053
	Control panel : -					
33054	Door release control panel connection to digital keypad locking devices and to a designated power supply point	1,817.09	91.99	97.93	261.15	33054
33055	Fire alarm interface control panel connection to the dry contact of fire alarm panel & door release control panel and to a designated power supply point	1,782.97	91.99	97.93	261.15	33055

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CLOSED CIRCUIT TELEVISION SURVEILLANCE SYSTEM Equipment/ components c/w all necessary accessories : -					
	Per set	A $	B $	C $	D $	
33056	Colour CCD video camera c/w lens, housing & bracket	1,933.36	51.45	59.35	189.92	33056
33057	Digital Colour CCD video camera c/w auto-iris lens, housing & bracket	2,610.23	51.45	59.35	189.92	33057
33058	Dome colour camera c/w lens	1,223.04	51.45	59.35	177.06	33058
33059	Matrix switcher c/w control keypad, 16-way	39,753.74	28.70	30.66	91.01	33059
33060	Colour CRT CCTV monitor, 390 mm	-	24.73	26.71	60.35	33060
33061	Colour CRT CCTV monitor, 550 mm	-	24.73	26.71	60.35	33061
33062	Black and white CRT CCTV monitor, 390 mm	-	24.73	26.71	60.35	33062
33063	Colour TFT LCD CCTV monitor, 430 mm with BNC in/ out	3,501.28	24.73	26.71	60.35	33063
33064	Colour TFT LCD CCTV monitor, 480 mm with BNC in/ out	4,025.65	24.73	26.71	60.35	33064
33065	Colour TFT LCD CCTV monitor, 550 mm with BNC in/ out	6,040.55	24.73	26.71	60.35	33065
33066	1/ 3" CCD colour dome camera	2,372.18	51.43	59.35	189.93	33066
33067	High resolution network/ IP based camera	1,425.03	51.43	59.35	189.93	33067
33068	DVI extender	5,610.54	28.68	30.66	91.01	33068
33069	IP based KVM with LCD display panel	6,983.57	24.73	26.71	60.35	33069
33070	Video server (32 Channels)	32,885.95	24.73	26.71	60.35	33070
33071	Video multiplexer, 16-way, duplex type	7,273.28	36.60	38.58	107.83	33071
33072	Quad unit, 4-way	2,961.37	36.60	38.58	84.08	33072
33073	Video cassette recorder, 24 hours time lapse type	-	24.73	27.70	60.35	33073
33074	Digital video recorder, DVD recording operation, with built-in hard disk of minimum 1 TB storage capacity, can record 9/ 16 channels video to up to 25 fps per channel	2,666.86	24.73	27.70	60.35	33074
33075	Extra for each additional 1 TB hard disk storage	143.58	-	-	-	33075

CLOSED CIRCUIT TELEVISION SURVEILLANCE SYSTEM (CONT'D)

Equipment/ components c/w all necessary accessories : - (Cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per set	A $	B $	C $	D $	
33076	DVD rewritable computer disc of minimum 4.7 GB storage capacity, support writing speed at least 4x	8.07	-	-	-	33076
33077	Super VHS video tapes - 180 mins	21.11	-	-	-	33077
33078	Video distribution amplifier	489.57	24.73	27.70	60.35	33078
33079	Pan/ tilt driver, 360° pan, ±75° tilt (minimum)	6,586.86	88.03	94.97	195.85	33079
33080	Pan/ tilt controller	2,441.56	24.73	27.70	60.35	33080
33081	Video splitter	91.56	4.95	6.92	17.82	33081
33082	Network switch, power over ethernet (POE) type, gigabit, up to 16 ports	2,155.41	28.70	30.66	91.01	33082
33083	Network switch, power over ethernet (POE) type, gigabit, 24 ports	2,871.01	28.70	30.66	91.01	33083
33084	Network switch, power over ethernet (POE) type, gigabit, 48 ports	19,553.68	28.70	30.66	91.01	33084
33085	Network switch, power over ethernet plus (POE+) type, gigabit, up to 16 ports	3,471.01	28.70	30.66	91.01	33085
33086	Network switch, power over ethernet plus (POE+) type, gigabit, 24 ports	11,096.01	28.70	30.66	91.01	33086
33087	Network switch, power over ethernet plus (POE+) type, gigabit, 48 ports	19,591.01	28.70	30.66	91.01	33087

DIGITAL VIDEO MOTION DETECTION SYSTEM

Equipment/ components c/w all necessary accessories : -

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Per set	A $	B $	C $	D $	
33088	Video motion detector, able to handle 16 cameras simultaneously and independently c/w remote keyboard for set up, control and all other accessories, connection to the central control station located at the same floor	30,492.04	161.24	169.14	455.02	33088

WATCHMAN TOUR SYSTEM

Equipment/ components c/w all necessary accessories : -

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	Per set	A $	B $	C $	D $	
33089	Data collector, handheld intelligent type, vandal proof and weatherproof construction, LCD readout, record minimum 2000 checkpoint readings, 99 user programmable incident codes, automatic downloading capability, pass word controller	12,690.11	-	-	-	33089
33090	Check point, magnetic type, tamper-proof, vandal resistant	283.44	28.70	29.67	60.35	33090
33091	Data transfer unit; able to transmit and receives data from data collector c/w battery charge, and necessary accessories	7,863.68	9.90	11.86	35.60	33091

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	RADIO FREQUENCY DISTRIBUTION SYSTEM					
	Equipment/ components c/w all necessary accessories : -					
		A	B	C	D	
	Per set	$	$	$	$	
33092	Radio frequency distribution system for long distance signal transmission between camera multi-channel video signals and monitors	2,811.39	56.38	68.25	240.37	33092
33093	Fibre optics transmission system c/w transmitter and receiver for convey single and multi video signals through optical fibre over long distance. Fibre optics cable shall be measured separately.....	3,338.18	56.38	68.25	198.82	33093
	CALL BELL SYSTEM					
	Call bell control/ indication panel, stainless steel type c/w all necessary accessories and connection to a designated power supply point : -					
	Each					
33094	Panel of 4 zones or less.....	2,991.02	73.19	86.05	301.70	33094
33095	Panel of 5 - 8 zones.....	4,248.85	79.12	91.99	318.53	33095
33096	Panel of 9 - 12 zones.....	5,426.72	85.05	96.95	332.37	33096
	Call push button					
33097	Call push button c/w necessary accessories and connection to the call bell control/ indication panel	388.66	79.12	82.11	189.92	33097

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	COAXIAL CABLES AND SHIELDED CABLES (Note : The following five items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	Coaxial cables : -					
	Per linear metre	A $	B $	C $	D $	
33098	Coaxial cables, RG-6 / RG-11 / RG-58 / RG-59	12.24	1.97	2.98	6.94	33098
	Twisted pair shielded cables : -					
33099	1-pair	11.02	2.29	2.77	6.94	33099
33100	2-pair	13.31	2.29	2.77	6.94	33100
33101	4-pair	16.26	2.52	3.09	7.92	33101
33102	8-pair	25.62	3.37	4.04	8.91	33102

Section 34

PUBLIC ADDRESS SYSTEM

SECTION 34

PUBLIC ADDRESS SYSTEM

SPECIAL CONDITIONS

Measurement of power supply **SC34.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Electrical Installation - Lighting System and Fixtures, Section 28 - Electrical Installation - Small Power Distribution, Section 29 - Electrical Installation - Main Distribution Systems and Section 30 - Electrical Installation - Miscellaneous or other applicable Work Sections of this Schedule.

Measurement of excavations, ducts, chases, holes and other subsidiary work **SC34.02**

All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work and Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.

Measurement of microphone cables and loudspeaker cables **SC34.03**

Cables for the equipment have been allowed in the rates under this Section. No measurement shall be made for cables except for microphone cables and loudspeaker cables where specifically ordered by the Maintenance Surveyor in writing.

Microphone cables and loudspeaker cables shall be measured the net length as fixed in linear metres.

Measurement of temporary supply **SC34.04**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC34.05** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) All brackets and methods of supports.

(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.

(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(p) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(q) Provision of manufacturer's guarantee.

SPECIAL CONDITIONS

Rates for equipment **SC34.06** The rates for equipment shall further include for : -

(a) Connecting, interconnecting cables, jointing and making all cable, conduit, trunking and cable tray connections and the like and provision of all associated components.

(b) Provision of all components forming part of the equipment complete with all supply and interconnecting wiring and the like.

(c) All necessary instruments, devices and the like including appropriate connections thereto.

(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.

(e) Earth/ equipotential bonding.

Rates for microphone cables and loudspeaker cables **SC34.07** The rates for microphone cables and loudspeaker cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) All necessary fixings completed with accessories and fittings as required.

(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for "Take down and clear away" or "Take down and set aside for re-use" **SC34.08** The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with public address installation shall further include for : -

(a) Taking down all associated building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification **SC34.09** The Particular Specification for public address system can be found in the Contract.

Item	PUBLIC ADDRESS SYSTEM Equipment/ component c/w all necessary accessories : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
34001	Ceiling panel speaker, surface-mount type, 3W c/w matching transformer	660.35	28.57	31.49	114.75	34001
34002	Ceiling panel speaker, surface-mount type, 6W c/w matching transformer	690.78	28.57	31.49	114.75	34002
34003	Ceiling panel speaker, ceiling-recessed, 3W c/w matching transformer	915.98	28.57	31.49	119.69	34003
34004	Ceiling panel speaker, ceiling-recessed, 6W c/w matching transformer	1,022.48	28.57	31.49	119.69	34004
34005	Box speaker, 3W	912.94	28.57	31.49	114.75	34005
34006	Box speaker, 6W	981.42	28.57	31.49	114.75	34006
34007	Horn speaker, 3W	934.22	28.57	31.49	114.75	34007
34008	Horn speaker, 6W	1,025.53	28.57	31.49	114.75	34008
34009	Speaker column; 95 dB/ W (min.); four dynamic cone speaker units (min.); wooden enclosure c/w front grille cloth, insulation, matching transformer	4,132.55	31.54	33.90	120.68	34009
34010	Desk top microphone c/w chime unit	2,084.52	4.50	5.65	16.82	34010
34011	Unidirectional microphone c/w built-in blast and pop protection, microphone holder, mike cable and connector	3,037.03	4.50	5.65	16.82	34011
34012	Paging microphone c/w desk stand, microphone holder, mike cable and connector	3,895.18	4.50	5.65	17.82	34012
34013	Miniature omnidirectional lavalier microphone c/w long-life-cable and lavalier holder	4,077.77	1.66	2.20	4.96	34013
34014	Microphone floor stand and boom arm c/w 900 to 1600 mm nominal length floor stand, 700 mm minimum length boom arm of 360℃ adjustment direction, locking device and microphone and boom adaptor	1,764.99	4.50	5.65	17.82	34014
34015	Microphone desk stand and flexible gooseneck shaft c/w 100 to 200 mm adjustable support and connector	2,148.44	4.50	5.65	16.82	34015
34016	Volume control unit with wall mounting box, 30W c/w all necessary accessories	836.88	74.16	88.43	262.14	34016
34017	UHF Hand-held (vocal) Wireless Microphone	1,931.78	1.66	2.20	4.96	34017
34018	UHF Tuner	2,108.90	74.16	88.43	262.14	34018
34019	UHF Wireless Tuner	4,234.40	74.16	88.43	262.14	34019
34020	UHF Wireless Antenna	1,102.44	74.16	88.43	262.14	34020

Item	PUBLIC ADDRESS SYSTEM (CONT'D) Equipment/ component c/w all necessary accessories : - (Cont'd)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
34021	Mixer power amplifier, 60W r.m.s., 3 inputs	3,803.89	22.93	25.19	67.28	34021
34022	Mixer power amplifier, 120W r.m.s., 3 inputs	5,291.97	22.93	25.19	67.28	34022
34023	Mixer pre-amplifier panel with 6-channel pre-amplifier unit (4 microphone inputs)	7,741.66	22.93	25.19	67.28	34023
34024	Cassette deck c/w tape recorder and player, microphone and headphone jacks, input/ output level control and meters, 3-digital resettable tape counter, automatic shut-off and noise reduction system	2,008.44	22.93	25.19	67.28	34024
34025	Background music CD/ DVD player	1,953.67	22.93	25.19	67.28	34025
34026	Remote microphone unit in sheet metal cabinet comprising of 1 no. flexible gooseneck microphone and zone selection buttons (6 zone)	9,540.13	11.36	12.59	23.74	34026
34027	Monitor panel; stainless steel enclosure c/w monitor speaker with volume control, system power on/ off switch, sound level meter, channel selector switch and line voltage selector switch	8,444.61	68.19	90.30	345.23	34027
	Sundries : -					
34028	Jack point c/w jack plug and socket, conduit and wiring and all necessary accessories	319.53	74.16	88.43	267.08	34028
34029	Speaker point c/w 2A - 3pin plug and socket, conduit and wiring and all necessary accessories	296.72	74.16	88.43	267.08	34029
	Equipment cabinet : -					
	Per linear metre					
34030	Equipment cabinet; well ventilated 483 mm standard high; teakwood construction c/w locking doors and 3-pin power sockets and all necessary accessories	4,016.90	19.51	20.60	28.70	34030
34031	Equipment cabinet; well ventilated 483mm standard high; stainless steel construction c/w locking doors and 3-pin power sockets and all necessary accessories	5,021.13	19.51	20.60	28.70	34031

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUBLIC ADDRESS SYSTEM (CONT'D)					
	Microphone cables and loudspeaker cables : - (Note : The following six items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	Per linear metre	A $	B $	C $	D $	
34032	Microphone cable.....	14.97	2.30	3.42	6.92	34032
34033	Loudspeaker cable.....	19.27	2.30	3.42	6.92	34033
34034	Underground microphone cable.....	38.39	2.20	3.19	5.95	34034
34035	Underground loudspeaker cable.....	58.53	2.20	3.19	5.95	34035
34036	Waterproof type microphone cable.....	33.83	2.30	3.42	6.92	34036
34037	Waterproof type loudspeaker cable.....	56.26	2.30	3.42	6.92	34037

Section 35

BROADCAST RECEPTION

SECTION 35

BROADCAST RECEPTION

SPECIAL CONDITIONS

Measurement of power supply **SC35.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Electrical Installation - Lighting System and Fixtures, Section 28 - Electrical Installation - Small Power Distribution, Section 29 - Electrical Installation - Main Distribution Systems and Section 30 - Electrical Installation - Miscellaneous or other applicable Work Sections of this Schedule.

Measurement of coaxial cables **SC35.02**

Cables for the equipment have been allowed in the rates under this Section. No measurement shall be made for cables except for coaxial cables where specifically ordered by the Maintenance Surveyor in writing.

Coaxial cables shall be measured the net length as fixed in linear metres.

Measurement of temporary supply **SC35.03**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC35.04**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC35.04 (Cont'd)**

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) All brackets and methods of supports.

(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(n) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.

(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(p) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(q) Provision of manufacturer's guarantee.

Rates for equipment **SC35.05**

The rates for equipment shall further include for : -

(a) Interfacing, connecting, interconnecting cables, jointing and making all bus bar, cable, conduit, trunking and cable tray connections and the like and provision of all associated components.

(b) Provision of all components forming part of the equipment including batteries and chargers with all supply and interconnecting wiring and the like.

SPECIAL CONDITIONS

Rates for equipment (Cont'd)

SC35.05 (Cont'd)

(c) All necessary sensors, instruments, devices and the like including appropriate connections thereto.

(d) Cables, conduits including flexible conduits and adaptors, trunkings, trays, ladders, outlet boxes, junction boxes, universal boxes including special boxes, all fixings, bending, cutting, screwing and jointing.

(e) Earth/ equipotential bonding.

Rates for coaxial cables

SC35.06

The rates for coaxial cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) All necessary fixings complete with accessories and fittings as required.

(e) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC35.07

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with broadcast reception installation shall further include for : -

(a) Taking down all associated building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification

SC35.08

The Particular Specification for broadcast reception installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BROADCAST RECEPTION INSTALLATION					
	Equipment/ components c/w necessary accessories : -					
		A	B	C	D	
	Each	$	$	$	$	
35001	FM aerial c/w stainless steel aerial masts/ poles	2,881.63	105.82	113.18	453.04	35001
35002	UHF multi-channel aerial including receiving high definition television signal, minimize ghost image type, c/w stainless steel aerial masts/ poles	3,314.54	105.82	113.18	453.04	35002
35003	Aerial, combining-unit, FM/ UHF including receiving high definition television signal, minimize ghost image type c/w stainless steel aerial masts/ poles	4,341.74	108.45	114.29	482.74	35003
35004	Pre-amplifiers	1,213.68	25.66	27.14	67.28	35004
35005	Frequency converter	2,541.99	28.55	32.42	81.11	35005
35006	Wideband and channel amplifier	3,656.72	28.55	32.42	81.11	35006
35007	TV bandpass pre-amplifier	1,235.86	25.66	27.14	67.28	35007
35008	FM bandpass pre-amplifier	951.35	25.66	27.14	67.28	35008
35009	TV bandpass filter	881.54	25.66	27.14	67.28	35009
35010	FM bandpass filter	668.66	25.66	27.14	67.28	35010
	Sundries : -					
35011	TV/ FM socket outlet c/w coaxial cables, conduits (surface or concealed type) and all necessary accessories	564.07	91.08	107.14	324.44	35011
35012	Splitter unit	76.92	2.64	3.30	9.90	35012
35013	Tee unit	79.47	2.64	3.30	9.90	35013
35014	Lockable well-ventilated metal enclosure to house all headend circuit components	1,330.04	63.71	70.59	229.50	35014
	Coaxial cable : -					
	Per linear metre					
35015	Coaxial cable, 75 ohm (Note : The above item will only be paid for if ordered by the Maintenance Surveyor in writing)	16.04	2.57	3.23	7.92	35015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	BROADCAST RECEPTION INSTALLATION (CONT'D)					
	The satellite master antenna TV sub-system c/w steel supporting framework, stray wires and certification by a Registered Structural Engineer under Section 3 of the Building Ordinance (Cap123)					
	Diameter of the antenna : -					
	Each	A $	B $	C $	D $	
35016	4 metres.....	12,570.94	2,561.81	3,882.06	6,734.47	35016
	(The actual rate should be : $125,709.40 for Item 35016A)					
35017	6 metres.....	31,239.34	3,240.06	5,166.06	9,328.17	35017
	(The actual rate should be : $312,393.40 for Item 35017A)					
	Feedhorn c/w low noise block down converter and mounting supports : -					
35018	Ku-Band.....	5,533.29	26.01	38.44	67.28	35018
35019	C-Band.....	5,085.77	26.01	38.44	67.28	35019
	Satellite receivers/ modulators c/w racks : -					
35020	Analogue type.....	8,845.61	26.01	38.44	67.28	35020
35021	Digital type.....	5,555.11	26.01	38.44	67.28	35021
35022	Satellite amplifier.....	3,065.77	28.77	32.70	80.14	35022

Section 36

HEATING, VENTILATION AND AIR-CONDITIONING - PIPEWORK

SECTION 36

HEATING, VENTILATION AND AIR-CONDITIONING

SPECIAL CONDITIONS

(Note: The following special conditions shall apply equally where appropriate to rates under Sections 36 to 39)

Measurement of power supply	**SC36.01**	All works of electrical power supply up to power supply points (e.g. MCB switchboard or switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Sections 28 to 30 or other applicable Work Sections of this Schedule.
Measurement of water supply or gas supply	**SC36.02**	All works of water supply and gas supply up to the respective termination points for the equipment and boilers shall be measured separately and paid for at the appropriate rates under applicable Work Sections of this Schedule.
Measurement of pipework	**SC36.03**	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches (but not through the items of in-line equipment, headers and trapping sets).
Measurement of ductwork	**SC36.04**	Ductwork rectangular in section shall be measured in square metres whereas ductwork circular and oval in section shall be measured in linear metres. All types of ductwork shall be measured over all in-line fittings, short running lengths and branches (but not through the items of in-line equipment). Ductwork rectangular in section shall be measured net as the area of sheet material fabricated. Allowance for seams, joints and the like shall be included in the rates.
Measurement of insulation to rectangular ductwork	**SC36.05**	Insulation to ductwork rectangular in section shall be measured in square metres and to the net area in contact with the base of all ducting as installed and over all ducting fittings and joints.
Measurement of insulation to pipework	**SC36.06**	Insulation to pipework shall be measured in linear metres for the diameter of the pipes to be insulated.

SPECIAL CONDITIONS

Measurement of temporary supply **SC36.07**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings, switchgear and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC36.08**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All supports in outdoor environment which shall be hot dip galvanized, unless they are part of the ex-factory painted proprietary equipment in which case the ex-factory paint finish may be accepted.

(f) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(g) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, spring compensated and seismic restraints and isolated components and the like.

(h) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

SPECIAL CONDITIONS

Rates generally (Cont'd)

SC36.08 (Cont'd)

(i) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(j) Preparing and submitting detail working drawings and combined services drawings as required and all shop drawings for the fabrication and installation.

(k) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(l) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(m) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(n) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.

(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works including soft copies as required.

(p) Provision of schematic diagrams in plastic envelopes including fixing to wall.

(q) Provision of manufacturer's guarantee.

(r) Attending fault and complaint during the Maintenance Period.

(s) Meeting statutory requirements for disposal of waste materials

(t) Submission of sample board for all compact sized materials and accessories, and supply of samples of materials for testing (including testing to destruction).

Rates for equipment

SC36.09

The rates for equipment (e.g. chillers, heat pumps, air handling units, variable refrigerant volume air-conditioning units, fresh air pre-conditioner, split type air-conditioning units, fan coil units, room coolers, fans, pumps, tanks, heat exchangers and the like) shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) All supporting frames required for proper installation of equipment except the supporting frames for floor slab structure, reinforcement or other special requirements. When the equipment supporting beams have to be extended beyond the requirements, or have to be incorporated into the elevated structure, the extra structural cost of the supporting frames shall be measured separately and paid for at the appropriate rates under Section 10 Steel and Metal Work. For major equipment or equipment as requested by the Maintenance Surveyor, the Contractor shall submit the installation and structural details of the supporting frames for endorsement by the Maintenance Surveyor before carrying out the installation works.

SPECIAL CONDITIONS

Rates for equipment (Cont'd) **SC36.09 (Cont'd)**

(c) Connections including flexible joints between pipework and equipment.

(d) All necessary operational and control accessories (e.g. valves, gauges, mechanical flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

(e) Condensate drain pipes forming part of the equipment.

(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(g) Anti-vibration mountings for plant, machinery and the like.

(h) Anti-vibration materials and sound insulating materials in plant and machinery bases, so that when the installed equipment is put into operation, the resulting noise and vibration level at the location within the building and at the building adjacent or nearby shall not exceed the acceptable limit as promulgated by the latest statutory requirements of the Environmental Protection Department.

(i) Thermal insulation for plant, machinery and the like if required.

(j) Direct-on-line or Star-Delta motor starters (if the equipment requires motor starters).

(k) Earth/ equipotential bonding.

Rates for ductwork generally **SC36.10**

The rates for ductwork (rectangular in section or circular or oval in section) shall further include for :-

(a) All short lengths, cutting and waste, joints including stiffeners and flanges in the running length and forming openings for branches.

(b) All connections to fittings, equipment and ancillaries including flexible connections and providing all necessary materials, bolts, nuts, washers, brackets, supports, hangers and everything necessary for making joints and connections.

(c) Alternative method of jointing and fixing as specified (if any).

(d) Connections between ductwork of different materials.

(e) Spring compensated components of ductwork supports.

(f) Ductwork turns, splitter dampers, mid-feathers, air duct cleaning points, access doors and openings, test holes and covers, flashing plates, companion frames and the like.

(g) In-line fittings (e.g. bends, branches, elbows, reducers, tees, air turning vanes and the like).

(h) All necessary components for earth continuity as specified.

SPECIAL CONDITIONS

Rates for ductwork circular or oval in section

SC36.11 The rates for ductwork circular or oval in section shall, in addition to the appropriate sub-clauses of Clause SC36.10, include for insulation including working or cutting around supports, small drains, vents or similar obstructions, joints, bends, tees, duct fittings, stiffeners, access doors, ancillaries and the like, and provision of adhesive, sealing tapes and vapour barriers, and finishing with aluminium foil or cement plaster and painting or metal cladding as required.

Rates for pipework

SC36.12 The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All in-line pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Spring compensated components of pipework supports.

(g) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(h) Trapping sets.

(i) Any flanges, unions or other devices used solely for erection purposes.

(j) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(k) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(l) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(m) Fixing in any position to floors, walls and ceilings and fixing in chases, ducts, false ceilings and similar positions.

SPECIAL CONDITIONS

Rates for in-line pipework equipment

SC36.13 The rates for in-line pipework equipment (e.g. valves, mechanical flow meters, gauges, strainers and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for supervisory panel

SC36.14 The supervisory panel shall be measured on the basis of complete unit monitoring and controlling a series of equipment with interaction. Rates for supervisory panel shall further include for all necessary relays, contactors, circuit protection devices, indicating lamps, push button package and selector switches and the like for the supervising the operation of the whole series of equipment. The cable and cable containment to existing equipment or existing panel shall be measured separately and paid for at the appropriate rates under Sections 28 to 30.

For the avoidance of doubt, every set of pump (i.e. one duty pump and one standby pump), condenser, condensation unit, air handling unit, package chiller, heat pump, contactor for a group of fans or fan coil units shall mean one set of equipment. An evaporator and an outdoor condensing unit of a split unit shall also mean one set of equipment. An actuator for operating a motorized valve or damper shall also be regarded as one set of equipment. Switches and devices (e.g. pressure switch, thermostat, humidistat, level switch, sail switch and the like) that provide contacts for control functions shall not be measured as equipment.

Furthermore, the local control panel which is an integral part of the equipment shall be regarded as a complete monitoring and controlling unit including all necessary relays, contactors, circuit protection devices, indicating lamps, push button package and switches and the like for the efficient operation of the equipment and thus shall not be measured separately. Rather, the costs of which shall be deemed to have been included in the rates of the concerned equipment. Only those switches and devices (sensors/ controllers) for additional functions shall be measured separately and the rates thereof shall include for all necessary control wiring to the local control panel.

Rates for boilers

SC36.15 The rates for boilers shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling, lifting and bolting down facilities, together with the provision of shims and packing pieces, strainers, instrumentation and the like.

(b) Supporting frames.

(c) Provision of associated components.

(d) All necessary operational and control accessories (e.g. heat exchanger, air nozzle, valves, thermostat, control panels, gauges, pumps, switches and the like), connection and termination.

SPECIAL CONDITIONS

Rates for boilers (Cont'd)

SC36.15 (Cont'd)

(e) Thermal insulation.

(f) Storage tank with copper lining internally and thermal insulation and decoration as specified externally.

(g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply and/or gas supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(h) Earth/ equipotential bonding.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC36.16

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing pipework, ductwork, equipment, boiler and the like shall further include for where applicable : -

(a) All in-line pipework fittings and in-line pipework equipment including brackets, supports, hangers and the like.

(b) Cutting into existing pipework, ductwork and the like in position.

(c) Preparing remaining ends to receive joints with new work if required.

(d) Plugging off remaining ends with plugs or caps as required.

(e) In the case of equipment, boiler and the like, taking down all associated plumbing works and/ or building services work.

(f) Making good all works disturbed.

Rates for insulation to rectangular ductwork

SC36.17

The rates for insulation to ductwork rectangular in section shall further include for : -

(a) All fixings, adhesive, sealing tapes, vapour barriers and the like.

(b) Forming laps, welts, cut outs, recesses and the like.

(c) Pointing, sealing, trowelling smooth, chamfered and sealed edges and the like.

(d) Working around supports, small drains, vents or similar obstructions.

(e) Working around ducting fittings, stiffeners, joints, access doors, ancillaries and the like.

(f) Forming of angles and all other labour.

(g) Finishing with aluminium foils as required.

SPECIAL CONDITIONS

Rates for insulation to pipework **SC36.18** The rates for insulation to pipework shall further include for : -

(a) Cutting into existing insulation to pipework in position.

(b) Taking down existing insulation either in whole or in part as required.

(c) All preparation work including preparing remaining ends to receive new insulation if required.

(d) All fixings, adhesive, sealing tapes, vapour barriers and the like.

(e) Forming laps, welts, cut outs, recesses and the like.

(f) Pointing, sealing, trowelling smooth, chamfered and sealed edges and the like.

(g) Working around supports, small drains, vents or similar obstructions.

(h) Working around in-line fittings, joints and the like.

(i) Forming of angles and all other labour.

(j) Finishing with aluminium foils as required.

(k) Making good all works disturbed.

Cooling capacity criteria **SC36.19** Cooling capacity shall be based on the following criteria except otherwise specified : -

(i)	Condenser	Condensing air temperature (for air-cooled chiller only)	35℃
		Condensing water entering temperature (for water-cooled chiller only)	32℃
		Condensing water leaving temperature (for water-cooled chiller only)	37℃
(ii)	Chiller	Chilled water return temperature	12.5℃
		Chilled water leaving temperature	7℃
(iii)	Air handling equipment	Entering air on evaporator	27℃ DB 21℃ WB
		Supply air	13℃ DB (Saturated)
(iv)	PAU	Entering air	33℃ DB 28℃ WB

SPECIAL CONDITIONS

Rates for pressure vessels

SC36.20 The rates for pressure vessels shall further include for : -

(a) Supply and installation in accordance with the manufacturer's instructions.

(b) Providing and fixing all accessories, fittings and the like as recommended by the manufacturer.

(c) Any colour and shape.

(d) Providing and fixing with anchor bolts.

(e) Cutting mortice, sinking or drilling in concrete, brick, stone or other surfaces as required.

(f) Grouting into new or existing mortice or holes.

(g) Making good disturbed surfaces.

(h) Masking, protecting and cleaning.

(i) Submission of catalogues, technical literature, operation manuals and manufacturer's guarantee for the approval of the Maintenance Surveyor.

(j) Testing and providing test certificates.

(k) Providing Statutory Inspection Certificate.

SPECIAL CONDITIONS

Rates for Buildings Energy Efficiency Ordinance

SC36.21

(a) In order to fulfill the energy efficiency requirements by the Buildings Energy Efficiency Ordinance, the Contractor is required to appoint a Registered Energy Assessors (REA) at his own cost for the completion and submission of the Form of Compliance - Form EE4 to the EMSD for approval including but not limited to compilation and certification of the required forms and worksheets for the electrical installations, lighting installations and air-conditioning installations, where applicable, including any necessary endorsement fees.

(b) The rates as separately scheduled for the Buildings Energy Efficiency Ordinance submission shall generally include for the preparation of the installation summaries, worksheets, relevant drawings, drawing lists and other supportive documents by the Contractor. The Contractor shall further coordinate with the REA and provide the required information at no extra cost for his submission of the Form of Compliance to the EMSD as required to fulfill the latest requirements of the Buildings Energy Efficiency Ordinance.

Rates for interfacing control for monitoring and /or controlling of existing equipment

SC36.22

The interfacing control shall be measured on the basis of connections between a set of existing equipment/panel and network for controlling and/or monitoring equipment, such as central control and monitoring system or automatic fire alarm system, etc. permitting information exchange. Rates for interfacing control shall further include for all necessary control modules, relays, cables and cable containments, and the like for the efficient operation of the whole series of equipment.

For the avoidance of doubt, every set of pump (i.e. one duty pump and one standby pump), condenser, condensation unit, air handling unit, package chiller, heat pump, contactor for a group of fans or fan coil units shall mean one set of equipment. An evaporator and an outdoor condensing unit of a split unit shall also mean one set of equipment. Equipment/panel connecting to other network/ panel shall also be regarded as one set of equipment. Switches and devices (e.g. pressure switch, thermostat, humidistat, level switch, sail switch and the like) that provide contacts for control functions shall not be measured as equipment.

Particular Specification

SC36.23

The Particular Specification for air-conditioning, heating and ventilation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	REFRIGERANT CIRCUIT					
	Copper refrigerant pipes without insulation of pipe diameter : -					
	Per linear metre	A $	B $	C $	D $	
36001	9 mm	115.58	4.13	4.41	65.27	36001
36002	15 mm	141.20	4.32	4.59	74.36	36002
36003	18 mm	154.67	4.59	4.79	79.23	36003
36004	22 mm	177.15	5.28	5.47	84.17	36004
36005	28 mm	213.59	5.56	5.95	94.55	36005
36006	35 mm	261.61	6.29	6.63	101.37	36006
	Copper refrigerant pipes c/w polystyrene insulation, cement plaster, painting and finish of pipe diameter : -					
	Per linear metre					
36007	9 mm	220.47	7.06	7.67	109.24	36007
36008	15 mm	265.65	7.45	8.06	124.99	36008
36009	18 mm	291.25	7.67	8.25	132.05	36009
36010	22 mm	325.36	8.80	9.57	140.33	36010
36011	28 mm	385.17	9.77	10.18	155.63	36011
36012	35 mm	449.99	10.60	11.20	168.60	36012
	Copper refrigerant pipes c/w phenolic foam insulation of pipe diameter : -					
	Per linear metre					
36013	9 mm	190.15	5.08	5.33	75.83	36013
36014	15 mm	235.23	5.33	5.62	87.78	36014
36015	18 mm	266.48	5.33	5.80	93.20	36015
36016	22 mm	294.08	6.29	6.59	99.80	36016
36017	28 mm	346.18	6.71	7.00	110.71	36017
36018	35 mm	410.16	7.42	7.68	121.23	36018

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	REFRIGERANT CIRCUIT (CONT'D)					
	Copper refrigerant pipes c/w phenolic foam insulation, cement plaster, painting and finish of pipe diameter : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
36019	9 mm	253.36	7.06	7.67	110.52	36019
36020	15 mm	308.48	7.45	8.06	126.42	36020
36021	18 mm	340.80	7.67	8.25	134.21	36021
36022	22 mm	387.36	8.80	9.57	142.38	36022
36023	28 mm	463.10	9.77	10.18	158.87	36023
36024	35 mm	569.25	10.60	11.20	171.86	36024
	Copper refrigerant pipes c/w flexible closed cell elastomeric insulation of pipe diameter : -					
	Per linear metre					
36025	9 mm	168.89	5.08	5.33	74.88	36025
36026	15 mm	204.82	5.33	5.62	87.11	36026
36027	18 mm	221.86	5.33	5.80	93.20	36027
36028	22 mm	246.96	6.29	6.59	100.11	36028
36029	28 mm	292.95	6.71	7.00	111.03	36029
36030	35 mm	357.03	7.42	7.68	120.07	36030
	Refrigerant circuit accessories					
	Refrigerant stop valves for copper refrigerant pipe diameter : -					
	Each					
36031	9 mm	127.96	21.20	27.65	34.90	36031
36032	15 mm	214.29	23.89	31.19	42.44	36032
36033	18 mm	285.54	24.01	32.03	44.47	36033
36034	22 mm	372.20	24.48	32.61	50.39	36034
36035	28 mm	410.65	24.83	33.19	55.33	36035
36036	35 mm	588.46	25.26	34.16	61.33	36036

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	REFRIGERANT CIRCUIT (CONT'D)					
	Refrigerant solenoid valves for copper refrigerant pipe diameter : -					
	Each	A $	B $	C $	D $	
36037	9 mm	499.38	21.83	27.82	32.98	36037
36038	15 mm	592.81	25.76	31.49	38.55	36038
36039	18 mm	870.11	25.95	32.19	41.24	36039
36040	22 mm	1,231.39	26.70	32.75	44.53	36040
36041	28 mm	1,616.50	27.25	33.35	52.68	36041
36042	35 mm	2,362.14	27.98	34.34	57.37	36042
	Cartridge refrigerant filter/dryer for copper refrigerant pipe diameter : -					
	Each					
36043	9 mm	115.99	23.24	29.64	35.19	36043
36044	15 mm	158.54	27.46	33.52	41.14	36044
36045	18 mm	295.33	27.65	34.32	44.02	36045
36046	22 mm	420.78	28.45	34.90	47.52	36046
36047	28 mm	947.03	29.04	35.55	56.20	36047
36048	35 mm	1,144.66	29.80	36.57	61.20	36048
	Refrigerant oil separator for copper refrigerant pipe diameter : -					
	Each					
36049	9 mm	468.64	23.24	29.64	37.92	36049
36050	15 mm	739.23	27.46	33.52	44.67	36050
36051	18 mm	865.12	27.65	34.32	47.58	36051
36052	22 mm	1,001.20	28.45	34.90	51.36	36052
36053	28 mm	1,055.82	29.04	35.55	59.27	36053
36054	35 mm	1,171.31	29.80	36.57	64.14	36054

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	REFRIGERANT CIRCUIT (CONT'D)					
	Refrigerant sight glass of copper refrigerant pipe diameter : -					
	Each	A $	B $	C $	D $	
36055	9 mm	163.22	21.83	27.82	35.56	36055
36056	15 mm	190.05	25.76	31.49	41.88	36056
36057	18 mm	210.36	25.95	32.19	44.62	36057
36058	22 mm	235.93	26.70	32.75	48.14	36058
36059	28 mm	266.84	27.25	33.35	55.59	36059
36060	35 mm	636.57	27.98	34.34	59.14	36060
	Liquid receiver c/w liquid level gauge, purge valve, pressure relief valve and accessories : -					
	Each					
36061	0.02 - 0.03 m³	2,601.07	22.49	24.64	46.23	36061
36062	0.03 - 0.14 m³	3,139.77	29.48	31.69	61.09	36062
36063	0.14 - 0.2 m³	3,901.43	32.83	34.98	67.13	36063
36064	0.2 - 0.3 m³	4,635.26	36.40	38.50	70.31	36064
36065	0.3 - 0.52 m³	6,906.07	39.82	41.97	79.43	36065
	Gauges c/w stop valve : -					
	Each					
36066	Refrigerant high pressure gauge	290.34	27.12	32.42	44.27	36066
36067	Refrigerant low pressure gauge	290.34	27.12	32.42	44.27	36067
	Refrigerant : -					
	Per kg					
36068	Refrigerant (R134a) c/w charging	68.91	-	-	16.21	36068
36069	Refrigerant (R407C) c/w charging	212.63	-	-	16.21	36069
36070	Refrigerant (R410a) c/w charging	277.08	-	-	16.21	36070
36071	Lubricating oil c/w charging	219.88	-	-	16.28	36071

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	REFRIGERANT CIRCUIT (CONT'D)					
	Hi /Lo pressure cut-out : -					
	Each	A $	B $	C $	D $	
36072	Hi /Lo pressure cut-out c/w manual reset	430.35	22.67	27.40	37.20	36072
	Aluminium metal cladding not less than 0.8mm for insulated refrigerant pipe work of diameter : -					
	Per linear metre					
36073	9 mm	112.65	0.58	0.72	9.43	36073
36074	15 mm	121.35	0.66	0.78	10.19	36074
36075	18 mm	126.79	0.72	0.90	11.15	36075
36076	22 mm	129.76	0.84	1.00	11.89	36076
36077	28 mm	135.07	1.00	1.18	12.71	36077
36078	35 mm	145.42	1.18	1.38	13.54	36078

VALVE, PIPE WORKS AND ACCESSORIES

Chilled water pipes

Chilled water pipework (bare pipe) of pipe diameter: -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
36079	25 mm	165.61	3.99	4.42	55.83	36079
36080	32 mm	177.31	4.42	4.97	59.36	36080
36081	40 mm	199.22	4.86	5.40	63.74	36081
36082	50 mm	255.87	5.28	5.74	73.84	36082
36083	65 mm	302.83	6.26	6.77	84.38	36083
36084	80 mm	359.41	7.29	7.83	95.14	36084
36085	100 mm	451.88	8.19	8.80	108.69	36085
36086	125 mm	574.38	12.15	13.16	126.85	36086
36087	150 mm	675.33	13.56	14.70	144.47	36087
36088	200 mm	897.92	15.89	17.57	176.40	36088
36089	250 mm	946.62	17.98	19.54	210.08	36089
36090	300 mm	1,056.78	20.51	23.53	250.79	36090

Chilled water pipework c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : -

Per linear metre

36091	20 mm or below	215.80	6.13	7.06	89.91	36091
36092	25 mm	241.93	6.94	7.70	97.64	36092
36093	32 mm	262.87	7.70	8.67	103.99	36093
36094	40 mm	287.72	8.46	9.43	111.68	36094
36095	50 mm	341.40	9.25	10.06	129.37	36095
36096	65 mm	398.80	10.91	11.81	147.95	36096
36097	80 mm	463.19	12.75	13.68	166.76	36097
36098	100 mm	567.86	14.34	15.41	191.05	36098
36099	125 mm	671.74	18.04	19.54	218.08	36099
36100	150 mm	816.35	23.27	25.39	253.14	36100

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water pipes (Cont'd)					
	Chilled water pipework c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
36101	200 mm	954.40	25.18	26.34	298.06	36101
36102	250 mm	1,138.51	28.29	30.03	365.94	36102
36103	300 mm	1,283.82	32.43	35.92	436.94	36103
	Chilled water pipework c/w 50 mm phenolic foam insulation, cement plaster, painting & finish of pipe diameter : -					
	Per linear metre					
36104	20 mm or below	357.96	6.13	7.06	89.91	36104
36105	25 mm	414.36	6.94	7.70	97.64	36105
36106	32 mm	463.06	7.70	8.67	103.99	36106
36107	40 mm	503.28	8.46	9.43	111.68	36107
36108	50 mm	601.39	9.25	10.06	129.37	36108
36109	65 mm	712.98	10.91	11.81	147.95	36109
36110	80 mm	810.50	12.75	13.68	166.76	36110
36111	100 mm	988.25	14.34	15.41	191.05	36111
36112	125 mm	1,363.79	18.04	19.54	218.08	36112
36113	150 mm	1,419.52	23.27	25.39	253.14	36113
36114	200 mm	1,934.04	25.18	26.34	298.06	36114
36115	250 mm	2,336.25	28.29	30.03	365.94	36115
36116	300 mm	3,002.93	32.43	35.92	436.94	36116

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water pipes (Cont'd)					
	Chilled water pipework c/w 50 mm phenolic foam insulation of pipe diameter : -					
	Per linear metre	A $	B $	C $	D $	
36117	20 mm or below	271.40	3.81	4.45	58.45	36117
36118	25 mm	310.05	4.32	5.01	63.39	36118
36119	32 mm	346.35	4.88	5.56	67.46	36119
36120	40 mm	378.97	5.44	6.13	72.54	36120
36121	50 mm	444.51	5.99	6.68	83.60	36121
36122	65 mm	528.52	6.94	7.62	95.90	36122
36123	80 mm	615.67	8.09	8.72	108.10	36123
36124	100 mm	763.90	9.16	9.96	137.45	36124
36125	125 mm	913.56	13.05	14.23	159.82	36125
36126	150 mm	1,130.14	15.06	16.16	182.72	36126
36127	200 mm	1,272.09	15.67	17.13	209.12	36127
36128	250 mm	1,550.51	18.55	20.09	260.80	36128
36129	300 mm	1,805.05	20.85	22.68	315.16	36129
	Chilled water pipework c/w 25 mm flexible closed cell elastomeric insulation, cement plaster, painting & finish of pipe diameter : -					
	Per linear metre					
36130	20 mm or below	184.97	6.13	7.06	89.91	36130
36131	25 mm	210.30	6.94	7.70	97.64	36131
36132	32 mm	233.76	7.70	8.67	103.99	36132
36133	40 mm	256.43	8.46	9.43	111.68	36133
36134	50 mm	312.84	9.25	10.06	129.37	36134
36135	65 mm	371.16	10.91	11.81	147.95	36135
36136	80 mm	433.66	12.75	13.68	166.76	36136
36137	100 mm	535.50	14.34	15.41	191.05	36137
36138	150 mm	796.47	23.69	25.71	253.82	36138

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water pipes (Cont'd)					
	Chilled water pipe c/w 20 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	Per linear metre	A $	B $	C $	D $	
36139	25 mm or below	170.90	6.63	7.35	76.15	36139
36140	32 mm	191.58	7.13	7.96	81.12	36140
36141	40 mm	209.02	7.96	8.74	86.68	36141
36142	50 mm	241.80	9.25	10.06	99.83	36142
36143	65 mm	285.90	10.91	11.81	114.42	36143
36144	80 mm	339.63	12.75	13.68	127.51	36144
36145	100 mm	421.42	14.34	15.41	147.10	36145
36146	125 mm	520.92	18.53	18.79	168.27	36146
36147	150 mm	630.59	23.69	25.71	195.03	36147
36148	200 mm	825.11	33.36	34.02	229.61	36148
36149	250 mm	997.90	45.03	48.74	286.56	36149
36150	300 mm	1,165.40	57.62	63.62	386.59	36150

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water pipes (Cont'd)					
	Chilled water pipe c/w 25 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	Per linear metre	A $	B $	C $	D $	
36151	20 mm or below	154.54	4.28	4.79	65.36	36151
36152	25 mm	174.49	4.83	5.37	71.96	36152
36153	32 mm	202.43	5.47	5.99	75.97	36153
36154	40 mm	236.08	6.04	6.77	80.83	36154
36155	50 mm	276.22	6.70	7.52	94.83	36155
	Chilled water pipe c/w 50 mm flexible closed cell elastomeric insulation & finish of pipe diameter : -					
	Per linear metre					
36156	65 mm	381.53	6.44	8.74	87.51	36156
36157	80 mm	444.09	7.63	10.15	95.14	36157
36158	100 mm	537.19	9.90	11.52	117.46	36158
36159	150 mm	695.21	15.33	20.38	158.68	36159
	Chilled water pipe c/w 50 mm flexible closed cell elastomeric insulation, cement plaster, painting & finish of pipe diameter : -					
	Per linear metre					
36160	20 mm or below	209.41	5.26	5.82	78.77	36160
36161	25 mm	242.72	5.74	6.47	85.46	36161
36162	32 mm	267.47	6.59	7.27	91.25	36162
36163	40 mm	290.76	7.20	7.94	98.20	36163
36164	50 mm	352.76	7.87	8.55	113.01	36164
36165	65 mm	412.85	9.33	10.00	127.09	36165
36166	80 mm	493.04	10.87	11.52	141.23	36166
36167	100 mm	601.34	11.89	13.07	163.15	36167
36168	150 mm	895.17	19.70	21.60	223.66	36168

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water pipes (Cont'd)					
	Pre-insulated chilled water pipe c/w galvanized iron metal jacket for outdoor conditions : -					
	Per linear metre	A $	B $	C $	D $	
36169	25 mm diameter chilled water pipe c/w 50 mm thick insulation	333.67	4.63	5.32	68.60	36169
36170	32 mm diameter chilled water pipe c/w 50 mm thick insulation	371.86	5.14	5.78	74.55	36170
36171	40 mm diameter chilled water pipe c/w 50 mm thick insulation	398.42	5.78	6.46	79.69	36171
36172	50 mm diameter chilled water pipe c/w 65 mm thick insulation	592.58	6.29	7.06	85.33	36172
36173	65 mm diameter chilled water pipe c/w 65 mm thick insulation	654.06	6.92	7.62	98.73	36173
36174	80 mm diameter chilled water pipe c/w 65 mm thick insulation	744.17	8.01	8.80	112.85	36174
36175	100 mm diameter chilled water pipe c/w 65 mm thick insulation	879.03	9.44	10.26	126.52	36175
36176	125 mm diameter chilled water pipe c/w 65 mm thick insulation	1,039.94	10.77	11.51	145.90	36176
36177	150 mm diameter chilled water pipe c/w 75 mm thick insulation	1,482.90	17.70	19.14	193.56	36177
36178	200 mm diameter chilled water pipe c/w 75 mm thick insulation	1,864.08	26.58	28.59	250.69	36178
36179	250 mm diameter chilled water pipe c/w 75 mm thick insulation	2,299.67	35.35	39.33	315.73	36179
36180	300 mm diameter chilled water pipe c/w 75 mm thick insulation	2,632.93	44.15	49.87	380.47	36180
	Pre-insulated chilled water pipe c/w galvanized iron metal jacket for indoor conditions : -					
	Per linear metre					
36181	25 mm diameter chilled water pipe c/w 25 mm thick insulation	222.85	4.63	5.32	68.25	36181
36182	32 mm diameter chilled water pipe c/w 25 mm thick insulation	250.69	5.14	5.78	74.20	36182
36183	40 mm diameter chilled water pipe c/w 25 mm thick insulation	272.61	5.78	6.46	79.33	36183
36184	50 mm diameter chilled water pipe c/w 40 mm thick insulation	407.57	6.29	7.06	85.11	36184
36185	65 mm diameter chilled water pipe c/w 40 mm thick insulation	471.01	6.92	7.62	98.37	36185
36186	80 mm diameter chilled water pipe c/w 40 mm thick insulation	519.88	8.01	8.80	112.71	36186
36187	100 mm diameter chilled water pipe c/w 40 mm thick insulation	687.91	9.44	10.26	126.46	36187
36188	125 mm diameter chilled water pipe c/w 40 mm thick insulation	788.82	10.77	11.51	145.85	36188
36189	150 mm diameter chilled water pipe c/w 50 mm thick insulation	1,028.98	17.70	19.14	192.82	36189
36190	200 mm diameter chilled water pipe c/w 50 mm thick insulation	1,286.06	26.58	28.59	250.64	36190
36191	250 mm diameter chilled water pipe c/w 50 mm thick insulation	1,608.78	35.35	39.33	315.66	36191
36192	300 mm diameter chilled water pipe c/w 50 mm thick insulation	1,926.86	44.15	49.87	379.36	36192

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Condensate drain					
	GI drain pipe c/w 50 mm phenolic foam insulation, cement plaster, painting & finish of pipe diameter : -					
	Per linear metre	A $	B $	C $	D $	
36193	20 mm or below	369.04	6.13	7.06	89.91	36193
36194	25 mm	431.10	6.94	7.70	97.64	36194
36195	32 mm	482.91	7.70	8.67	103.99	36195
36196	40 mm	519.05	8.46	9.43	111.68	36196
36197	50 mm	629.78	9.25	10.06	129.37	36197
36198	65 mm	751.46	10.91	11.81	147.95	36198
36199	80 mm	872.21	12.75	13.68	166.76	36199
	GI drain pipe c/w 50 mm polystyrene insulation, cement plaster, painting & finish of pipe diameter : -					
	Per linear metre					
36200	20 mm or below	226.09	6.13	7.06	89.91	36200
36201	25 mm	262.91	6.94	7.70	97.64	36201
36202	32 mm	292.86	7.70	8.67	103.99	36202
36203	40 mm	314.29	8.46	9.43	111.68	36203
36204	50 mm	383.40	9.25	10.06	129.37	36204
36205	65 mm	448.16	10.91	11.81	147.95	36205
36206	80 mm	528.59	12.75	13.68	166.76	36206
	GI drain pipe c/w 20 mm flexible closed cell elastomeric insulation and finish of pipe diameter : -					
	Per linear metre					
36207	20 mm or below	192.43	6.13	7.06	89.91	36207
36208	25 mm	230.84	6.94	7.70	97.64	36208
36209	32 mm	261.87	7.70	8.67	103.99	36209
36210	40 mm	282.53	8.46	9.43	111.68	36210
36211	50 mm	351.14	9.25	10.06	129.37	36211

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Condensate drain (Cont'd)					
	PVC drain pipe c/w 20 mm flexible closed cell elastomeric insulation and finish of pipe diameter :-					
	Per linear metre	A $	B $	C $	D $	
36212	20 mm or below	168.87	6.26	7.22	92.19	36212
36213	25 mm	186.21	7.09	7.88	100.13	36213
36214	32 mm	203.39	7.88	8.85	106.71	36214
	PVC flexible drain pipe of pipe diameter : -					
	Per linear metre					
36215	20 mm or below	34.01	4.72	5.16	23.30	36215
36216	25 mm	47.95	6.26	6.83	32.67	36216
36217	32 mm	53.49	7.09	7.50	36.15	36217
	GI drain pan c/w insulation of size : -					
	Each					
36218	Up to 0.55 m²	346.67	7.11	7.50	51.58	36218
36219	0.55 - 0.73 m²	438.78	15.23	21.99	77.35	36219
36220	0.73 - 0.9 m²	554.48	32.65	39.60	102.65	36220

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Condensate drain (Cont'd)					
	GI drain pan of size : -					
		A	B	C	D	
	Each	$	$	$	$	
36221	Up to 0.55 m²	204.00	5.72	5.74	46.86	36221
36222	0.55 - 0.73 m²	247.41	11.98	17.89	66.37	36222
36223	0.73 - 0.9 m²	300.46	28.52	34.39	88.67	36223
	Stainless steel drain pan c/w insulation of size : -					
	Each					
36224	Up to 0.55 m²	420.64	7.11	7.50	51.58	36224
36225	0.55 - 0.73 m²	559.07	15.23	21.99	77.35	36225
36226	0.73 - 0.9 m²	729.28	32.65	39.60	102.65	36226
	Stainless steel drain pan of size : -					
	Each					
36227	Up to 0.55 m²	273.29	5.72	5.74	46.86	36227
36228	0.55 - 0.73 m²	356.81	11.98	17.89	66.37	36228
36229	0.73 - 0.9 m²	461.40	28.52	34.39	88.67	36229
	uPVC pipework of diameter : -					
	Per linear metre					
36230	25 mm or below	86.70	4.14	4.86	31.47	36230
36231	32 mm	102.73	4.69	5.36	33.11	36231
36232	40 mm	132.48	5.16	5.92	35.44	36232
36233	50 mm	169.73	5.74	6.41	40.76	36233

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Condensate drain (Cont'd)					
	uPVC pipework of diameter : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
36234	65 mm	227.03	6.60	7.36	46.44	36234
36235	80 mm	300.15	7.78	8.53	52.49	36235
36236	100 mm	336.21	8.78	9.73	67.38	36236
36237	150 mm	489.45	14.49	15.84	89.61	36237
	Chilled water valves					
	Chilled water gate valves : -					
	Each					
36238	20 mm or below	173.43	22.23	27.94	35.21	36238
36239	25 mm	218.91	22.66	28.56	38.31	36239
36240	32 mm	300.75	23.05	28.94	41.19	36240
36241	40 mm	382.03	23.82	29.65	44.22	36241
36242	50 mm	621.68	25.00	30.62	47.19	36242
36243	65 mm	1,238.29	26.37	32.01	50.16	36243
36244	80 mm	1,446.42	27.75	33.76	52.60	36244
36245	100 mm	1,737.52	31.97	38.22	59.21	36245
36246	150 mm	3,091.34	42.31	49.84	76.49	36246
	Chilled water check valves : -					
	Each					
36247	20 mm or below	273.84	22.23	27.94	35.21	36247
36248	25 mm	301.29	22.66	28.56	38.31	36248
36249	32 mm	353.86	23.05	28.94	41.19	36249
36250	40 mm	448.10	23.82	29.65	44.22	36250
36251	50 mm	587.88	25.00	30.62	47.19	36251

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Chilled water valves (Cont'd)					
	Chilled water check valves : - (Cont'd)					
	Each	A $	B $	C $	D $	
36252	65 mm	633.05	26.37	32.01	50.16	36252
36253	80 mm	764.41	27.75	33.76	52.60	36253
36254	100 mm	1,257.22	31.97	38.22	59.21	36254
36255	150 mm	2,092.14	42.31	49.84	76.49	36255
	Chilled water globe valves : -					
	Each					
36256	20 mm or below	363.46	22.23	27.94	35.21	36256
36257	25 mm	431.57	22.66	28.56	38.31	36257
36258	32 mm	442.75	23.05	28.94	41.19	36258
36259	40 mm	580.29	23.82	29.65	44.22	36259
36260	50 mm	840.70	25.00	30.62	47.19	36260
36261	65 mm	1,018.01	26.37	32.01	50.16	36261
36262	80 mm	1,317.60	27.75	33.76	52.60	36262
36263	100 mm	1,739.40	31.97	38.22	59.21	36263
36264	150 mm	3,132.18	42.31	49.84	76.49	36264
	Pressure reducing valve : -					
	Each					
36265	15 mm or below	549.41	17.48	21.83	25.56	36265
36266	20 mm	681.54	18.06	22.36	29.39	36266
36267	25 mm	798.23	18.56	22.95	31.42	36267
36268	32 mm	988.80	19.04	23.40	34.34	36268
36269	40 mm	1,168.88	19.39	23.93	37.20	36269

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Chilled water valves (Cont'd)					
	Balancing valve : -					
	Each	A $	B $	C $	D $	
36270	20 mm or below	416.43	16.65	21.12	29.20	36270
36271	25 mm	446.64	18.30	22.51	31.72	36271
36272	32 mm	479.96	18.76	22.95	34.99	36272
36273	40 mm	574.51	19.50	23.62	37.07	36273
36274	50 mm	1,206.30	19.91	24.49	39.53	36274
36275	65 mm	1,891.39	21.25	25.51	42.17	36275
36276	80 mm	3,371.75	22.49	27.03	44.15	36276
36277	100 mm	5,241.66	26.04	30.10	49.71	36277
36278	150 mm	7,865.14	35.50	52.18	79.96	36278
	Chilled water valves c/w 50 mm phenolic foam insulation					
	Chilled water gate valves c/w filled galvanized steel split boxes : -					
	Each					
36279	n.e. 20 mm	225.60	28.19	34.53	41.88	36279
36280	25 mm	272.04	28.66	35.35	45.84	36280
36281	32 mm	354.55	29.13	35.86	49.29	36281
36282	40 mm	437.03	29.80	36.34	53.18	36282
36283	50 mm	680.08	31.06	37.53	56.77	36283
36284	65 mm	1,305.35	32.80	38.67	60.47	36284
36285	80 mm	1,516.44	34.52	41.13	64.18	36285
36286	100 mm	1,810.84	36.44	42.97	66.55	36286
36287	150 mm	3,182.11	46.22	52.87	81.11	36287

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)					
	Chilled water check valves c/w filled galvanized steel split boxes : -					
	Each	A $	B $	C $	D $	
36288	n.e. 20 mm	329.50	28.19	34.53	41.88	36288
36289	25 mm	356.70	28.66	35.35	45.84	36289
36290	32 mm	409.29	29.13	35.86	49.29	36290
36291	40 mm	504.51	29.80	36.34	53.18	36291
36292	50 mm	645.63	31.06	37.53	56.77	36292
36293	65 mm	691.73	32.80	38.67	60.47	36293
36294	80 mm	825.06	34.52	41.13	64.18	36294
36295	100 mm	1,324.94	36.44	42.97	66.55	36295
36296	150 mm	2,170.65	46.22	52.87	81.11	36296
	Chilled water globe valves c/w filled galvanized steel split boxes : -					
	Each					
36297	n.e. 20 mm	421.69	28.19	34.53	41.88	36297
36298	25 mm	486.85	28.66	35.35	45.84	36298
36299	32 mm	498.60	29.13	35.86	49.29	36299
36300	40 mm	638.04	29.80	36.34	53.18	36300
36301	50 mm	902.36	31.06	37.53	56.77	36301
36302	65 mm	1,082.12	32.80	38.67	60.47	36302
36303	80 mm	1,386.17	34.52	41.13	64.18	36303
36304	100 mm	1,813.36	36.44	42.97	66.55	36304
36305	150 mm	3,226.29	46.22	52.87	81.11	36305

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)					
	Chilled water 3 way modulating control valve c/w electric motors couplings, unions, adapters and filled galvanized steel split box : -					
	Each	A $	B $	C $	D $	
36306	n.e. 20 mm	493.34	22.56	27.54	35.73	36306
36307	25 mm	622.80	23.20	28.36	38.76	36307
36308	32 mm	1,098.13	35.39	43.38	59.81	36308
36309	40 mm	1,794.64	36.05	44.03	64.55	36309
36310	50 mm	2,346.90	37.49	45.59	69.17	36310
36311	65 mm	5,250.38	38.33	47.10	72.30	36311
36312	80 mm	7,596.00	42.12	50.16	78.47	36312
36313	100 mm	10,713.84	44.45	52.49	81.77	36313
36314	150 mm	14,365.72	46.16	55.89	88.14	36314
	Chilled water 3 way, 2 position electric control valve c/w motor, couplings, unions, adapters and filled galvanized steel split boxes : -					
	Each					
36315	n.e. 20 mm	436.54	22.56	27.54	35.73	36315
36316	25 mm	563.68	23.20	28.36	38.76	36316
36317	32 mm	897.48	35.39	43.38	59.81	36317
36318	40 mm	1,330.46	36.05	44.03	64.55	36318
36319	50 mm	1,899.20	37.49	45.59	69.17	36319
36320	65 mm	4,227.74	38.33	47.10	72.30	36320
36321	80 mm	6,609.92	42.12	50.16	78.47	36321
36322	100 mm	9,762.73	44.45	52.49	81.77	36322
36323	150 mm	12,165.18	46.16	55.89	88.14	36323

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)					
	Chilled water 2 way electric operated solenoid valve c/w unions, adapters, filled galvanized steel split box, insulation and finish : -					
	Each	A $	B $	C $	D $	
36324	n.e. 20 mm	442.28	31.58	38.99	52.20	36324
36325	25 mm	655.07	32.14	39.51	55.92	36325
36326	32 mm	798.36	32.76	40.10	57.92	36326
36327	40 mm	1,183.51	33.48	40.79	64.55	36327
36328	50 mm	1,641.58	34.95	42.17	68.32	36328
36329	65 mm	3,594.18	35.64	43.56	70.19	36329
36330	80 mm	5,632.30	39.00	46.23	76.32	36330
36331	100 mm	8,430.75	40.88	48.31	79.41	36331
36332	150 mm	12,647.46	48.74	57.50	94.80	36332
	Chilled water double regulating valve c/w metering station, insulation and finish, filled galvanized iron split boxes : -					
	Each					
36333	40 mm	1,030.28	33.48	40.79	64.55	36333
36334	50 mm	1,362.37	34.95	42.17	68.32	36334
36335	65 mm	2,856.29	35.64	43.56	70.19	36335
36336	80 mm	4,398.36	39.00	46.23	76.32	36336
36337	100 mm	4,630.66	40.88	48.31	79.41	36337
36338	150 mm	5,460.91	46.72	52.87	85.28	36338
	Pressure reducing valve : -					
	Each					
36339	15 mm or below	663.63	18.61	22.99	28.12	36339
36340	20 mm	824.59	19.02	23.47	32.67	36340
36341	25 mm	960.62	19.41	23.86	34.45	36341
36342	32 mm	1,199.62	19.91	24.55	38.13	36342
36343	40 mm	1,419.85	20.38	24.95	40.88	36343

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Chilled water valves c/w 50 mm phenolic foam insulation (Cont'd)					
	Balancing valve : -					
	Each	A $	B $	C $	D $	
36344	n.e. 20 mm	428.50	18.42	22.42	30.79	36344
36345	25 mm	460.51	19.01	23.31	33.21	36345
36346	32 mm	586.82	23.24	28.56	42.53	36346
36347	40 mm	649.85	23.77	29.04	45.70	36347
36348	50 mm	771.96	24.80	30.00	48.78	36348
36349	65 mm	1,557.80	25.29	30.94	50.86	36349
36350	80 mm	2,485.74	27.73	32.92	55.13	36350
36351	100 mm	4,528.31	29.15	34.41	57.27	36351
36352	150 mm	6,961.38	37.09	42.48	70.80	36352
	Chilled water pipe work accessories : -					
	Each					
36353	Water flow switch	762.70	4.88	7.03	12.89	36353
36354	Direct reading type electromagnetic/ultrasonic water flow meter c/w flow sensor, an integral signal converter/transmitter and a digital display unit	7,622.19	36.72	37.74	68.40	36354
36355	Pressure gauge & cock	199.00	4.88	7.03	12.89	36355
36356	Thermometer & stainless steel thermometer well	2,584.94	17.47	21.12	45.94	36356
36357	Low temperature cutout thermostat with manual reset	310.43	4.88	7.03	12.89	36357
	Gate valve for sea water application 316 stainless steel : -					
	Each					
36358	25 mm	909.60	22.68	27.90	38.81	36358
36359	32 mm	967.30	23.24	28.56	42.53	36359
36360	40 mm	1,062.76	23.77	29.04	45.70	36360
36361	50 mm	1,163.15	24.80	30.00	48.78	36361
36362	65 mm	1,290.46	25.29	30.94	50.86	36362

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Gate valve for sea water application 316 stainless steel : - (Cont'd)					
	Each	A $	B $	C $	D $	
36363	80 mm	1,500.02	27.73	32.92	55.13	36363
36364	100 mm	2,078.61	29.15	34.41	57.27	36364
36365	125 mm	2,716.84	32.67	36.93	62.99	36365
36366	150 mm	3,353.77	37.09	42.48	70.80	36366
36367	200 mm	5,866.88	44.45	49.88	81.65	36367
	Globe valve for sea water application 316 stainless steel : -					
	Each					
36368	25 mm	669.44	22.68	27.90	38.81	36368
36369	32 mm	807.77	23.24	28.56	42.53	36369
36370	40 mm	1,003.26	23.77	29.04	45.70	36370
36371	50 mm	1,210.90	24.80	30.00	48.78	36371
36372	65 mm	1,525.65	25.29	30.94	50.86	36372
36373	80 mm	1,818.72	27.73	32.92	55.13	36373
36374	100 mm	2,422.42	29.15	34.41	57.27	36374
36375	125 mm	3,199.47	32.67	36.93	62.99	36375
36376	150 mm	4,897.50	37.09	42.48	70.80	36376
36377	200 mm	8,750.95	44.45	49.88	81.65	36377
	Swing check valve for sea water application 316 stainless steel : -					
	Each					
36378	25 mm	478.25	22.68	27.90	38.81	36378
36379	32 mm	534.64	23.24	28.56	42.53	36379
36380	40 mm	671.30	23.77	29.04	45.70	36380
36381	50 mm	832.88	24.80	30.00	48.78	36381
36382	65 mm	1,094.78	25.29	30.94	50.86	36382

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Swing check valve for sea water application 316 stainless steel : - (Cont'd)					
	Each	A $	B $	C $	D $	
36383	80 mm	1,284.44	27.73	32.92	55.13	36383
36384	100 mm	1,831.13	29.15	34.41	57.27	36384
36385	150 mm	3,192.17	37.09	42.48	70.80	36385
36386	200 mm	5,596.60	44.45	49.88	81.65	36386
	Drain cock : -					
	Each					
36387	25 mm diameter or below	224.02	22.68	27.90	38.81	36387
36388	50 mm diameter	273.82	24.80	30.00	48.78	36388
	Strainer : -					
	Each					
36389	32 mm diameter or below	252.06	20.63	25.35	37.49	36389
36390	50 mm diameter	295.01	22.01	26.62	43.00	36390
36391	80 mm diameter	352.27	24.59	29.21	48.62	36391
36392	100 mm diameter	384.23	25.87	30.55	50.54	36392
36393	125 mm diameter	401.40	27.81	32.29	53.81	36393
36394	150 mm diameter	434.97	32.92	37.70	62.39	36394
	Pipework vibration isolation					
	Pipe flexible rubber connector : -					
	Each					
36395	50 mm	471.57	22.01	26.62	43.00	36395
36396	65 mm	620.54	22.42	27.46	44.86	36396
36397	80 mm	707.28	24.59	29.21	48.62	36397
36398	100 mm	774.83	25.87	30.55	50.54	36398
36399	125 mm	1,187.55	29.39	32.29	56.31	36399
36400	150 mm	2,189.14	32.92	37.70	62.39	36400

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Pipework vibration isolation (Cont'd)					
	Pipe flexible metallic hose : -					
	Per linear metre	A $	B $	C $	D $	
36401	50 mm	586.28	1.09	1.21	14.04	36401
36402	65 mm	721.74	1.25	1.47	15.96	36402
36403	80 mm	807.98	1.47	1.57	18.35	36403
36404	100 mm	882.37	1.57	1.67	23.37	36404
36405	125 mm	1,324.17	2.01	2.23	27.04	36405
36406	150 mm	2,272.89	2.48	2.71	30.81	36406
	Sundries : -					
	Each					
36407	Chiller sequence controller including transmitter, etc	720.15	11.80	13.63	24.01	36407
36408	Water flow sensor c/w all necessary mounting accessories	578.18	9.53	10.86	19.20	36408
36409	Temperature sensor	247.75	9.53	10.86	20.69	36409
36410	Sail switch	269.83	8.59	10.33	18.01	36410
36411	Electromagnetic flow meter c/w digital display unit	4,186.62	81.88	117.80	254.59	36411
36412	Chemical storage tank	6,610.14	71.46	109.35	189.38	36412
36413	Chemical feed pump	4,582.21	61.60	87.15	171.56	36413
36414	Manual air vent	104.68	15.44	17.51	31.97	36414
36415	Automatic air vent	169.22	16.80	18.68	33.71	36415
36416	Temperature gauge with pocket	767.30	14.93	16.86	32.28	36416
36417	Testing point	344.51	11.80	12.99	22.67	36417

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Butterfly valve : -					
	Each	A $	B $	C $	D $	
36418	25 mm or below	360.22	20.94	25.74	35.68	36418
36419	32 mm	454.25	21.45	26.37	39.07	36419
36420	40 mm	566.21	21.95	26.81	42.00	36420
36421	50 mm	682.71	22.90	27.70	44.84	36421
36422	65 mm	1,412.31	23.33	28.56	46.76	36422
36423	80 mm	1,488.92	25.58	30.38	50.69	36423
36424	100 mm	1,603.12	26.90	31.76	52.68	36424
36425	125 mm	1,722.31	29.44	34.56	59.41	36425
36426	150 mm	1,963.87	34.25	39.21	65.03	36426
	Protection coating paint : -					
	Per linear metre					
36427	Protection coating paint for thermal insulation (flexible closed cell elastomeric) of same manufacturer as the thermal insulation for refrigerant pipework (25mm diameter or below) at outdoor area	108.99	-	-	-	36427

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Insulation to pipework					
	Polystyrene insulation c/w cement plaster, finish and painting for chilled water pipework of diameter : -					
	Per linear metre	A $	B $	C $	D $	
36428	25 mm or below	103.70	4.88	5.45	31.13	36428
36429	32 mm	111.12	5.08	5.78	32.99	36429
36430	40 mm	118.44	5.41	6.04	34.90	36430
36431	50 mm	134.02	6.63	7.26	40.52	36431
36432	65 mm	151.62	7.15	7.79	46.43	36432
36433	80 mm	168.16	7.69	8.37	53.59	36433
36434	100 mm	198.89	10.12	10.84	62.90	36434
36435	125 mm	231.05	11.89	12.57	70.38	36435
36436	150 mm	261.89	13.63	14.26	82.34	36436
36437	200 mm	318.16	16.38	17.24	99.27	36437
36438	250 mm	403.83	21.18	22.04	127.94	36438
36439	300 mm	614.36	32.58	35.55	192.62	36439
	Flexible closed cell elastomeric insulation c/w cement plaster, painting and finish for chilled water pipework of diameter : -					
	Per linear metre					
36440	25 mm or below	77.82	4.88	5.45	31.13	36440
36441	32 mm	85.80	5.08	5.78	32.99	36441
36442	40 mm	91.70	5.41	6.04	34.90	36442
36443	50 mm	107.20	6.63	7.26	40.52	36443
36444	65 mm	123.31	7.15	7.79	46.43	36444
36445	80 mm	141.13	7.69	8.37	53.59	36445
36446	100 mm	164.48	10.12	10.84	62.90	36446
36447	150 mm	230.59	13.63	14.26	82.34	36447

Item	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Insulation to pipework (Cont'd)					
	Aluminium metal cladding for insulated chilled water pipes of diameter : -					
	Per linear metre	A $	B $	C $	D $	
36448	25 mm or below	108.79	0.74	0.90	10.40	36448
36449	32 mm	115.73	0.90	1.00	11.17	36449
36450	40 mm	122.68	1.00	1.09	11.93	36450
36451	50 mm	134.00	1.09	1.21	13.74	36451
36452	65 mm	150.86	1.27	1.38	15.98	36452
36453	80 mm	167.74	1.38	1.48	18.44	36453
36454	100 mm	187.67	1.48	1.58	23.58	36454
36455	125 mm	209.57	2.07	2.29	26.54	36455
36456	150 mm	237.24	2.48	2.71	29.39	36456
36457	200 mm	274.62	2.82	3.01	33.78	36457
36458	250 mm	334.39	3.42	3.71	41.88	36458
36459	300 mm	402.63	4.22	4.62	51.60	36459
	Phenolic foam insulation c/w cement plaster, painting and finish for chilled water pipework of diameter : -					
	Per linear metre					
36460	25 mm or below	239.55	4.88	5.45	31.13	36460
36461	32 mm	269.26	5.08	5.78	32.99	36461
36462	40 mm	290.62	5.41	6.04	34.90	36462
36463	50 mm	340.94	6.63	7.26	40.52	36463
36464	65 mm	399.33	7.15	7.79	46.43	36464
36465	80 mm	449.56	7.69	8.37	53.59	36465
36466	100 mm	531.25	10.12	10.84	62.90	36466
36467	150 mm	763.88	13.63	14.26	82.34	36467

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVE, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Insulation to pipework (Cont'd)					
	Phenolic foam insulation for chilled water pipework of diameter : -					
	Per linear metre	A $	B $	C $	D $	
36468	25 mm or below	162.88	0.74	0.90	10.40	36468
36469	32 mm	181.06	0.90	1.00	11.17	36469
36470	40 mm	195.09	1.00	1.09	11.93	36470
36471	50 mm	225.08	1.09	1.21	13.74	36471
36472	65 mm	268.06	1.21	1.38	15.98	36472
36473	80 mm	300.78	1.38	1.48	18.44	36473
36474	100 mm	362.61	1.48	1.58	23.58	36474
36475	150 mm	520.52	2.48	2.71	29.39	36475
	Flue pipe : -					
	Per linear metre					
36476	200 mm stainless steel flue pipe c/w fittings, 50 mm thick fiberglass insulation and 0.8 mm galvanized iron sheet cladding rain cap and steel wire	2,884.87	12.03	20.67	36.26	36476

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM					
	Black mild steel steam return pipeworks c/w preformed rigid glass fiber insulation system, hammered aluminium sheeting of pipe diameter : -					
	Heavy quality					
	Per linear metre	A $	B $	C $	D $	
36477	15 mm	167.71	5.54	6.29	70.47	36477
36478	20 mm	196.26	5.86	6.65	86.40	36478
36479	25 mm	229.37	6.64	7.38	93.84	36479
36480	32 mm	263.96	7.38	8.08	100.28	36480
36481	40 mm	289.86	8.16	8.96	107.74	36481
36482	50 mm	369.06	9.13	9.68	124.85	36482
36483	65 mm	450.92	10.51	11.44	142.98	36483
36484	80 mm	546.92	12.34	13.05	161.11	36484
36485	100 mm	762.93	13.88	14.83	185.67	36485
36486	150 mm	1,016.41	23.27	24.58	246.50	36486
	Copper pipe for cold water system of pipe diameter : -					
	Per linear metre					
36487	below 12 mm	77.13	3.48	3.74	52.03	36487
36488	12 mm	90.21	3.57	3.87	55.87	36488
36489	15 mm	107.11	3.64	3.98	60.43	36489
36490	18 mm	123.57	3.87	4.14	63.06	36490
36491	22 mm	145.61	4.73	4.91	67.93	36491
36492	28 mm	176.72	4.91	5.10	75.93	36492
36493	35 mm	239.76	5.60	5.82	80.43	36493
36494	42 mm	276.59	5.96	6.20	87.73	36494
36495	54 mm	338.94	6.64	6.83	100.85	36495
36496	67 mm	461.05	6.77	7.01	111.26	36496

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Copper pipe for cold water system of pipe diameter : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
36497	76 mm	615.18	8.08	8.52	120.80	36497
36498	108 mm	802.55	9.34	9.67	155.11	36498
36499	133 mm	934.42	11.11	11.39	180.18	36499
36500	159 mm	1,080.70	12.56	12.90	207.47	36500
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation.					
	Y-type strainers c/w filled aluminium split boxes : -					
	Each					
36501	32 mm or below	440.39	28.38	35.23	56.07	36501
36502	40 mm	465.61	29.15	35.93	60.30	36502
36503	50 mm	507.66	30.55	37.01	63.46	36503
36504	65 mm	563.87	31.29	38.76	67.32	36504
36505	80 mm	574.05	34.69	40.92	72.82	36505
36506	100 mm	684.55	36.52	43.42	75.93	36506
36507	150 mm	765.68	45.83	52.43	94.39	36507
	Globe valve c/w filled aluminium split boxes : -					
	Each					
36508	15 mm	120.42	27.91	34.69	44.74	36508
36509	20 mm	153.87	28.66	35.26	49.01	36509
36510	25 mm	195.39	29.22	35.92	53.85	36510
36511	32 mm	265.34	29.80	36.54	58.28	36511
36512	40 mm	345.72	30.61	36.91	62.21	36512
36513	50 mm	520.84	31.80	38.05	66.55	36513

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)					
	Parallel slide valve c/w filled aluminium split boxes : -					
	Each	A $	B $	C $	D $	
36514	65 mm	2,371.27	30.63	37.64	66.50	36514
36515	80 mm	4,122.45	33.81	40.01	72.41	36515
36516	100 mm	6,245.65	36.14	42.33	74.89	36516
36517	150 mm	11,725.46	45.11	52.23	92.67	36517
	Safety and relief valve c/w filled aluminium split boxes : -					
	Each					
36518	32 mm or below	1,391.95	30.85	37.74	60.06	36518
36519	40 mm	2,055.40	31.47	38.26	64.75	36519
36520	50 mm	2,485.27	32.96	39.72	69.61	36520
36521	65 mm	4,986.58	33.56	41.07	72.57	36521
36522	80 mm	7,434.93	36.68	43.69	78.49	36522
36523	100 mm	10,765.08	38.89	45.69	81.69	36523
36524	150 mm	13,803.71	49.21	56.21	100.68	36524
	Pressure reducing valve c/w filled aluminium split boxes : -					
	Each					
36525	32 mm or below	2,214.64	30.85	37.74	60.06	36525
36526	40 mm	2,749.27	31.47	38.26	64.75	36526
36527	50 mm	3,401.22	32.96	39.72	69.61	36527
36528	65 mm	4,378.64	33.56	41.07	72.57	36528
36529	80 mm	6,483.69	36.68	43.69	78.49	36529
36530	100 mm	7,298.44	38.89	45.69	81.69	36530
36531	150 mm	9,143.71	49.21	56.21	100.68	36531

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)					
	Temperature and pressure gauge : -					
	Each	A $	B $	C $	D $	
36532	Temperature gauge c/w filled aluminium split boxes	1,097.49	17.98	20.87	42.44	36532
36533	Pressure gauge c/w filled aluminium split boxes	297.10	17.98	20.87	42.44	36533
	Steam separator c/w filled aluminium split boxes : -					
	Each					
36534	32 mm or below	3,289.38	30.85	37.74	60.06	36534
36535	40 mm	4,107.57	31.47	38.26	64.75	36535
36536	50 mm	5,128.22	32.96	39.72	69.61	36536
36537	65 mm	6,634.99	33.56	41.07	72.57	36537
36538	80 mm	8,056.36	36.68	43.69	78.49	36538
36539	100 mm	10,017.31	38.89	45.69	81.69	36539
36540	150 mm	14,584.01	49.21	56.21	100.68	36540
	Steam trap set comprising of globe valve, strainer, float operated steam trap, sight glass, check valve, gate valve and all union c/w filled aluminium split boxes; connect to pipe diameter of : -					
	Per set					
36541	32 mm or below	7,347.43	133.62	161.59	595.38	36541
36542	40 mm	9,661.05	156.88	180.90	630.87	36542
36543	50 mm	10,948.57	175.30	201.50	657.98	36543
36544	65 mm	13,066.88	197.67	217.83	702.83	36544
36545	80 mm	14,887.44	218.36	240.56	740.10	36545
36546	100 mm	17,724.20	234.90	261.23	792.51	36546
36547	150 mm	23,980.50	255.51	283.19	825.38	36547

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Steam, condensate return, compressed air and hot water valves c/w preformed rigid glass fiber insulation. (Cont'd)					
	Check valve c/w filled aluminium split boxes : -					
	Each	A $	B $	C $	D $	
36548	65 mm	671.43	30.84	37.90	67.01	36548
36549	80 mm	809.58	33.81	39.42	72.15	36549
36550	100 mm	1,288.60	35.19	41.70	73.21	36550
36551	150 mm	2,117.77	43.94	51.04	89.14	36551
	Drain valve c/w hose union ends and loose key and filled aluminium split box : -					
	Each					
36552	50 mm	712.85	30.34	36.62	64.03	36552
36553	65 mm	934.52	31.10	38.25	65.05	36553
36554	80 mm	1,175.00	34.09	41.70	72.46	36554
36555	100 mm	1,503.82	35.72	43.70	73.91	36555
36556	150 mm	2,317.68	45.86	51.97	90.79	36556
	Gate valve c/w filled aluminium split boxes : -					
	Each					
36557	50 mm	954.96	30.34	36.62	64.03	36557
36558	65 mm	1,074.17	31.10	38.25	65.05	36558
36559	80 mm	1,261.07	34.09	41.70	72.46	36559
36560	100 mm	1,604.92	35.72	43.70	73.91	36560
36561	150 mm	3,013.89	45.86	51.97	90.79	36561

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Insulation of pipeworks					
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for black mild steel condensate pipe of diameter : -					
	Per linear metre	A $	B $	C $	D $	
36562	15 mm	66.30	4.81	4.99	24.81	36562
36563	20 mm	77.76	5.47	5.62	30.78	36563
36564	25 mm	88.31	5.60	5.72	34.60	36564
36565	32 mm	95.39	5.74	6.20	36.32	36565
36566	40 mm	104.68	6.26	7.13	38.76	36566
36567	50 mm	121.89	7.29	8.28	44.20	36567
36568	65 mm	141.94	8.28	8.96	51.16	36568
36569	80 mm	163.59	9.05	9.87	58.39	36569
36570	100 mm	191.30	11.55	12.33	66.45	36570
36571	150 mm	311.99	15.94	16.80	88.17	36571
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for black mild steel steam pipe of diameter : -					
	Per linear metre					
36572	15 mm	91.18	4.81	4.99	24.81	36572
36573	20 mm	104.23	5.47	5.62	30.78	36573
36574	25 mm	114.30	5.60	5.72	34.60	36574
36575	32 mm	125.42	5.74	6.20	36.32	36575
36576	40 mm	135.37	6.26	7.13	38.76	36576
36577	50 mm	180.46	7.29	8.28	44.20	36577
36578	65 mm	207.00	8.28	8.96	51.16	36578
36579	80 mm	264.88	9.05	9.87	58.39	36579
36580	100 mm	406.10	11.55	12.33	66.45	36580
36581	150 mm	503.23	15.94	16.80	88.17	36581

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	STEAM AND HOT WATER SYSTEM (CONT'D)					
	Insulation of pipeworks (Cont'd)					
	Preformed rigid glass fiber insulation c/w hammered aluminium cladding for copper pipe of hot water system of diameter : -					
	Per linear metre	A $	B $	C $	D $	
36582	n.e. 12 mm	80.85	4.65	5.38	36.32	36582
36583	12 mm	87.34	5.16	5.82	40.41	36583
36584	15 mm	91.08	5.63	6.20	42.89	36584
36585	18 mm	96.65	6.06	6.73	45.78	36585
36586	22 mm	127.44	6.55	7.25	48.02	36586
36587	28 mm	142.43	6.96	7.63	53.63	36587
36588	35 mm	157.24	7.55	8.14	56.98	36588
36589	42 mm	168.45	8.08	8.87	62.91	36589
36590	54 mm	191.57	8.79	9.36	71.14	36590
36591	67 mm	219.03	9.43	10.10	80.41	36591
36592	76 mm	237.93	10.91	12.43	88.58	36592
36593	108 mm	343.66	13.57	14.76	109.72	36593
36594	133 mm	442.35	16.05	18.27	129.34	36594
36595	159 mm	503.47	19.23	20.09	147.79	36595
	Plugged branch : -					
	Each					
36596	25 mm plugged branch	42.82	5.47	6.89	16.56	36596

Section 37

HEATING, VENTILATION AND AIR-CONDITIONING - DUCTWORK

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES					
	Sheet metal ducts (rates for taking down of ductwork shall include for taking down of ALL duct accessories including dampers, registers, diffuser, heater, batteries, etc.)					
	GI sheet metal ductwork/ air plenum; un-insulated : -					
	Per square metre	A $	B $	C $	D $	
37001	0.6 mm thick	418.12	9.85	12.71	23.92	37001
37002	0.8 mm thick	475.52	11.31	13.24	27.14	37002
37003	1.0 mm thick	502.77	11.90	13.97	28.20	37003
37004	1.2 mm thick	565.35	12.52	14.61	29.24	37004
37005	1.5 mm thick	668.60	13.25	15.37	30.31	37005
	Glass fibre duct (rectangular/round/oval shape) : -					
	Per square metre					
37006	48 kg/ m³	654.98	11.20	13.13	26.89	37006
37007	64 kg/ m³	679.56	11.80	13.85	27.98	37007
	Factory made GI round/oval spiral duct c/w insulation equivalent round diameter for equal capacity and friction loss : -					
	Per linear metre					
37008	Up to 165 mm diameter	964.88	46.39	50.11	374.82	37008
37009	165 - 255 mm diameter	1,012.27	52.96	56.80	406.90	37009
37010	255 - 355 mm diameter	1,147.68	56.11	60.12	437.70	37010
37011	355 - 470 mm diameter	1,291.34	59.46	63.43	469.30	37011
37012	470 - 546 mm diameter	1,424.58	62.82	66.79	500.98	37012
37013	546 - 622 mm diameter	1,544.86	66.11	73.41	543.79	37013
37014	622 - 800 mm diameter	1,787.24	69.24	76.51	574.87	37014
	Ductboard air duct : -					
	Per square metre					
37015	Ductboard air duct/ air plenum (phenolic foam or PU)	519.43	11.68	13.68	28.03	37015

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	0.8 mm thick grade 316 stainless steel round duct with hairline finish c/w stainless steel frame support and all necessary accessories : -					
	Per linear metre	A $	B $	C $	D $	
37016	150 mm diameter.....	904.52	3.62	6.29	11.17	37016
37017	200 mm diameter.....	1,599.96	4.81	8.39	14.89	37017
37018	250 mm diameter.....	2,517.68	6.02	10.50	18.61	37018
37019	600 mm diameter.....	8,205.03	14.43	25.18	44.67	37019
37020	700 mm diameter.....	9,806.97	16.85	29.37	52.12	37020
37021	800 mm diameter.....	10,231.92	19.25	33.57	59.56	37021
	Stainless steel grade 304 sheet metal air duct/ air plenum : -					
	Per square metre					
37022	0.6 mm thick.....	807.64	9.85	12.71	23.92	37022
37023	0.8 mm thick.....	1,025.05	11.31	13.24	27.14	37023
37024	1.0 mm thick.....	1,240.15	11.90	13.97	28.20	37024
37025	1.2 mm thick.....	1,338.74	12.52	14.61	29.24	37025
37026	1.5 mm thick.....	1,752.83	13.25	15.37	30.31	37026
	Stainless steel grade 304 sheet metal air duct/ air plenum with colour powder coating on one surface : -					
	Per square metre					
37027	0.6 mm thick.....	936.09	9.85	12.71	23.92	37027
37028	0.8 mm thick.....	1,140.78	11.31	13.24	27.14	37028
37029	1.0 mm thick.....	1,346.05	11.90	13.97	28.20	37029
	Stainless steel 316 sheet metal air duct/ air plenum : -					
	Per square metre					
37030	0.6 mm thick.....	1,004.79	9.85	12.71	23.92	37030
37031	0.8 mm thick.....	1,208.73	11.31	13.24	27.14	37031
37032	1.0 mm thick.....	1,436.51	11.90	13.97	28.20	37032
37033	1.2 mm thick.....	1,636.71	12.52	14.61	29.24	37033
37034	1.5 mm thick.....	2,046.15	13.25	15.37	30.31	37034

Item	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Factory made aluminium flexible duct bare without insulation : -					
	Per linear metre	A $	B $	C $	D $	
37035	Up to 153 mm diameter.....	298.59	10.86	12.72	26.04	37035
37036	153 - 204 mm diameter.....	330.12	11.43	13.42	27.08	37036
37037	204 - 254 mm diameter.....	381.22	12.05	14.04	28.08	37037
37038	254 - 305 mm diameter.....	532.94	12.73	14.75	29.11	37038
	Factory made aluminium flexible duct with 25 mm thick fiberglass insulation : -					
	Per linear metre					
37039	Up to 153 mm diameter.....	421.25	16.33	21.28	43.45	37039
37040	153 - 204 mm diameter.....	494.44	16.88	22.00	44.35	37040
37041	204 - 254 mm diameter.....	590.38	17.47	22.58	45.33	37041
37042	254 - 305 mm diameter.....	773.90	18.13	23.13	46.39	37042
	UPVC seamless circular duct : -					
	Per linear metre					
37043	150 mm diameter.....	208.42	10.86	12.71	26.21	37043
37044	200 mm diameter.....	267.54	12.06	14.04	28.20	37044
37045	250 mm diameter.....	327.21	13.39	15.39	30.22	37045

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Slim duct in associated with air-conditioning installation					
	Slim duct system, suitable in use at corrosive environment (Rates shall include all associated mounting bracket, support and fittings including all straight runs, joints, flanges, tees and elbows etc.), U.V. resistant and fireproof to BS 476 Part 7 Class I : -					
	Per linear metre	A $	B $	C $	D $	
37046	Slim duct; n.e. 300 mm girth.....	219.71	1.64	10.06	13.11	37046
37047	Slim duct; 300 - 400 mm girth.....	330.59	1.64	10.06	13.11	37047
37048	Slim duct; 400 - 500 mm girth.....	392.70	1.64	11.17	16.19	37048
	Insulation for air duct/ air plenum					
	Polystyrene insulation c/w cement plaster, galvanized wire netting, painting and finish : -					
	Per square metre					
37049	25 mm thick.....	423.21	11.91	16.88	36.62	37049
37050	50 mm thick.....	488.66	12.56	17.51	37.81	37050
37051	75 mm thick.....	600.00	13.21	18.14	39.00	37051
	Fiberglass insulation : -					
	Per square metre					
37052	25 mm thick; density 32 kg/ m³.....	116.55	5.29	8.61	18.14	37052
37053	50 mm thick; density 32 kg/ m³.....	163.91	5.92	9.19	19.23	37053
37054	75 mm thick; density 32 kg/ m³.....	400.00	6.55	9.77	20.32	37054
37055	25 mm thick; density 48 kg/ m³.....	195.46	5.92	9.19	19.23	37055
37056	50 mm thick; density 48 kg /m³.....	261.64	6.51	9.92	20.32	37056
37057	75 mm thick; density 48 kg /m³.....	550.00	7.10	10.65	21.41	37057
37058	25 mm thick; density 64 kg/ m³.....	294.58	6.51	9.92	20.32	37058
37059	50 mm thick; density 64 kg/ m³.....	365.75	7.22	10.52	21.28	37059
37060	75 mm thick; density 64 kg/ m³.....	750.00	7.93	11.12	22.24	37060

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Insulation for air duct/ air plenum (Cont'd)					
	Phenolic foam insulation : -					
	Per square metre	A $	B $	C $	D $	
37061	25 mm thick.....	309.41	5.08	6.38	17.15	37061
37062	50 mm thick.....	458.41	5.65	7.67	19.23	37062
37063	75 mm thick.....	850.00	6.22	8.96	21.31	37063
	Insulation for air duct/ air plenum (Cont'd)					
	Phenolic foam insulation c/w cement plaster, galvanized wire netting, painting and finish : -					
	Per square metre					
37064	25 mm thick.....	488.61	11.16	15.81	34.35	37064
37065	50 mm thick.....	645.59	11.80	19.12	36.80	37065
37066	75 mm thick.....	1,000.00	12.44	22.43	39.25	37066
	Flexible closed cell elastomeric insulation c/w cement plaster, galvanized wire netting, painting and finish : -					
	Per square metre					
37067	25 mm thick.....	527.11	11.16	15.81	34.35	37067
37068	50 mm thick.....	691.35	11.80	19.12	36.80	37068
37069	75 mm thick.....	1,100.00	12.44	22.43	39.25	37069
	Flexible closed cell elastomeric insulation : -					
	Per square metre					
37070	19 mm thick.....	361.37	5.08	6.38	17.15	37070
37071	25 mm thick.....	433.32	5.65	6.96	18.14	37071
37072	50 mm thick.....	506.58	5.65	7.67	19.23	37072
37073	75 mm thick.....	950.00	5.65	8.38	20.32	37073

Item	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D) Insulation for air duct/ air plenum (Cont'd) Flexible closed cell elastomeric internal lining to air duct/ air plenum : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per square metre	A $	B $	C $	D $	
37074	19 mm thick.....	394.45	5.08	6.38	17.15	37074
37075	25 mm thick.....	470.31	5.65	6.96	18.14	37075
37076	50 mm thick.....	700.00	8.03	9.38	22.27	37076
37077	75 mm thick.....	1,000.00	10.41	11.80	26.40	37077
37078	Vapour barrier of double faced aluminium foil	39.35	4.97	6.23	16.62	37078
37079	Aluminium cladding for air ductwork; hammer finish.....	410.10	4.97	6.23	16.62	37079

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Proprietary fire protection ductwork of non-combustible calcium silicate board reinforced with selected fibres and fillers. The board has smooth surface on one face and a lightly textured sanded surface on the other, without insulation : -					
	Per square metre	A $	B $	C $	D $	
37080	9 mm thick	1,013.85	10.84	14.21	40.36	37080
37081	12 mm thick	1,375.64	11.27	15.41	46.65	37081
37082	25 mm thick	1,760.70	13.18	17.13	49.34	37082
	Proprietary fire protection ductwork of non-combustible composite panel of fibre reinforced cement, mechanically bonded to punched steel sheet on both surfaces, without insulation : -					
	Per square metre					
37083	9 mm thick	1,429.38	15.07	18.10	44.12	37083
37084	12 mm thick	2,027.71	15.90	19.19	50.49	37084
37085	25mm thick	2,461.45	18.21	21.13	53.26	37085
	Air diffusers / grilles					
	Air diffusers / grilles of all shape (aluminium type) c/w volume control damper of size : -					
	Each					
37086	Up to 0.1 m²	312.55	4.96	6.20	14.36	37086
37087	0.1 - 0.3 m²	615.96	6.07	7.44	16.65	37087
37088	0.3 - 0.5 m²	1,350.45	7.33	8.58	18.68	37088
37089	0.5 - 0.8 m²	2,136.04	8.58	9.82	20.59	37089
	Air diffusers / grilles of all shape (aluminium type) of size : -					
	Each					
37090	Up to 0.1 m²	248.86	4.96	6.20	14.36	37090
37091	0.1 - 0.3 m²	609.20	6.07	7.44	16.65	37091
37092	0.3 - 0.5 m²	890.25	7.33	8.58	18.68	37092
37093	0.5 - 0.8 m²	1,742.59	8.58	9.82	20.59	37093

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Air diffusers / grilles (Cont'd)					
	Air diffusers / grilles of all shape (metal type c/w painting) c/w volume control damper of size : -					
	Each	A $	B $	C $	D $	
37094	Up to 0.1 m²	241.57	4.96	6.20	14.36	37094
37095	0.1 - 0.3 m²	466.10	6.07	7.44	16.65	37095
37096	0.3 - 0.5 m²	909.84	7.33	8.58	18.68	37096
37097	0.5 - 0.8 m²	1,799.21	8.58	9.82	20.59	37097
	Air diffusers / grilles of all shape (metal type c/w painting) of size : -					
	Each					
37098	Up to 0.1 m²	129.98	4.96	6.20	14.36	37098
37099	0.1 - 0.3 m²	250.80	6.07	7.44	16.65	37099
37100	0.3 - 0.5 m²	489.60	7.33	8.58	18.68	37100
37101	0.5 - 0.8 m²	968.11	8.58	9.82	20.59	37101
	Linear diffusers					
	Aluminium linear slot diffuser c/w adjustable damper and accessories : -					
	Per linear metre					
37102	1 slot	417.56	6.11	8.01	15.58	37102
37103	2 slots	500.74	6.11	8.01	15.58	37103
37104	3 slots	586.30	6.11	8.01	15.58	37104
37105	4 slots	667.71	6.11	8.01	15.58	37105
	Linear air grille					
	Aluminium linear bar grille c/w blank-off plate where applicable : -					
	Per linear metre					
37106	Up to 100 mm width	378.02	7.62	11.43	22.22	37106
37107	100 mm - 200 mm width	453.63	7.62	11.43	22.22	37107
37108	200 mm - 300 mm width	529.22	7.62	11.43	22.22	37108

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Linear air grille (Cont'd)					
	Aluminium linear bar grille with volume control damper c/w blank-off plate where applicable : -					
	Per linear metre	A $	B $	C $	D $	
37109	Up to 100 mm width.....	491.41	9.15	13.71	26.66	37109
37110	100 mm -200 mm width.....	567.02	9.15	13.71	26.66	37110
37111	200 mm - 300 mm width.....	642.63	9.15	13.71	26.66	37111
	Aluminium linear bar grille with detachable core and volume control damper c/w blank-off plate where applicable : -					
	Per linear metre					
37112	Up to 100 mm width.....	567.02	11.43	15.24	29.63	37112
37113	100 mm - 200 mm width.....	642.63	11.43	15.24	29.63	37113
37114	200 mm - 300 mm width.....	718.24	11.43	15.24	29.63	37114
	Transfer air grille					
	Transfer air grille (metal type c/w painting) : -					
	Each					
37115	Up to 0.1 m²....	259.96	4.96	6.20	14.36	37115
37116	0.1 to 0.3 m²....	532.92	6.07	7.44	16.65	37116
37117	0.3 to 0.5 m²....	836.68	7.33	8.58	18.68	37117
37118	0.5 to 0.8 m²....	1,121.15	8.58	9.82	20.59	37118
	Transfer air grille (aluminium type) : -					
	Each					
37119	Up to 0.1 m²....	378.84	4.96	6.20	14.36	37119
37120	0.1 to 0.3 m²....	1,022.87	6.07	7.44	16.65	37120
37121	0.3 to 0.5 m²....	1,391.10	7.33	8.58	18.68	37121
37122	0.5 to 0.8 m²....	1,669.32	8.58	9.82	20.59	37122

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Return air grille					
	Return air grille (metal type c/w painting) c/w air filter (including hinged type) : -					
	Each	A $	B $	C $	D $	
37123	Up to 0.1 m²	376.79	4.96	6.76	14.36	37123
37124	0.1 - 0.3 m²	772.36	6.07	8.60	15.33	37124
37125	0.3 - 0.5 m²	1,213.57	7.33	9.28	16.22	37125
37126	0.5 - 0.8 m²	1,622.09	7.94	9.86	17.28	37126
37127	0.8 - 1.1 m²	2,030.59	7.94	9.86	17.28	37127
	Return air grille (aluminium type) c/w air filter : -					
	Each					
37128	Up to 0.1 m²	450.96	6.11	8.01	14.36	37128
37129	0.1 - 0.3 m²	1,216.15	6.78	9.26	16.65	37129
37130	0.3 - 0.5 m²	1,649.85	7.35	9.82	18.67	37130
37131	0.5 - 0.8 m²	1,985.84	8.58	11.58	20.59	37131
37132	0.8 - 1.1 m²	2,321.84	8.58	11.58	20.59	37132
	Exhaust air grille c/w volume control damper					
	Aluminium type : -					
	Each					
37133	Up to 0.2 m²	426.10	6.11	8.01	15.33	37133
37134	0.2 - 0.4 m²	669.74	6.78	8.60	16.22	37134
37135	0.4 - 0.6 m²	991.76	7.35	9.28	17.28	37135
	Metal type with painting : -					
	Each	A $	B $	C $	D $	
37136	Up to 0.2 m²	321.42	6.11	8.01	15.33	37136
37137	0.2 - 0.4 m²	455.28	6.78	8.60	16.22	37137
37138	0.4 - 0.6 m²	779.38	7.35	9.28	17.28	37138

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Exhaust air grille c/w volume control damper (Cont'd)					
	Metal type with painting : -					
	Per square metre	A $	B $	C $	D $	
37139	Stainless steel 316 exhaust air grille	2,469.65	13.79	17.26	30.36	37139
	Duct work accessories : -					
	Each					
37140	Flexible Joints, a heavy glass fabric, double-coated	293.61	5.61	7.04	13.25	37140
37141	Flexible Joints, a heavy glass fabric, double-coated c/w insulation	443.49	5.61	7.62	14.26	37141
	Dampers					
	Fire damper (all type c/w holding frame, enclosure, access panel, electro-thermal link etc.) of F.S.D. approved type : -					
	Each					
37142	Up to 0.1 m²	810.19	9.66	14.47	32.85	37142
37143	0.1 - 0.3 m²	1,229.07	10.78	15.61	35.28	37143
37144	0.3 - 0.5 m²	1,594.87	11.90	16.73	36.75	37144
37145	0.5 - 0.8 m²	2,175.60	13.23	18.05	38.76	37145
	Fire damper (all type c/w stainless steel blades, galvanised steel holding frame, enclosure, access panel, electro thermal link etc.) of F.S.D. approved type : -					
	Each					
37146	Up to 0.1 m²	1,108.96	9.66	14.47	32.85	37146
37147	0.1 - 0.3 m²	1,682.29	10.78	15.61	35.28	37147
37148	0.3 - 0.5 m²	2,183.00	11.90	16.73	36.75	37148
37149	0.5 - 0.8 m²	2,977.89	13.23	18.05	38.76	37149

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Dampers (Cont'd)					
	Fire damper (all type c/w holding frame, enclosure, access panel, fusible link etc.) of F.S.D. approved type : -					
	Each	A $	B $	C $	D $	
37150	Up to 0.1 m²	745.37	5.28	8.03	18.60	37150
37151	0.1 - 0.3 m²	1,130.73	5.92	8.67	19.78	37151
37152	0.3 - 0.5 m²	1,467.28	6.52	9.27	20.63	37152
37153	0.5 - 0.8 m²	2,001.57	7.25	10.00	21.63	37153
	Fire damper (all type c/w stainless steel blades, galvanised steel holding frame, enclosure, access panel, fusible link etc.) of F.S.D. approved type : -					
	Each					
37154	Up to 0.1 m²	1,020.23	5.28	8.03	18.60	37154
37155	0.1 - 0.3 m²	1,547.70	5.92	8.67	19.78	37155
37156	0.3 - 0.5 m²	2,008.36	6.52	9.27	20.63	37156
37157	0.5 - 0.8 m²	2,739.67	7.25	10.00	21.63	37157
	Combined smoke and fire damper c/w holding frame, enclosure, access panel, fusible link or electromagnet release of F.S.D. approved type : -					
	Each					
37158	Up to 0.1 m²	3,310.96	5.61	8.52	19.87	37158
37159	0.1 - 0.3 m²	4,482.95	6.26	9.16	21.10	37159
37160	0.3 - 0.5 m²	6,077.57	6.90	9.82	22.03	37160
37161	0.5 - 0.8 m²	7,841.11	7.69	10.60	23.15	37161
	Dampers (Cont'd)					
	Combined smoke and fire damper c/w actuator and electrical connection : -					
	Each					
37162	Up to 0.1 m²	2,692.33	5.01	7.62	17.53	37162
37163	0.1 - 0.3 m²	3,794.98	5.43	8.01	18.70	37163
37164	0.3 - 0.5 m²	4,944.89	5.89	8.50	20.38	37164
37165	0.5 - 0.8 m²	5,748.89	6.70	9.17	22.86	37165

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Dampers (Cont'd)					
	Fire damper to louver door c/w all necessary accessories of F.S.D. approved type : -					
	Each	A $	B $	C $	D $	
37166	Up to 0.1 m²	1,005.44	106.65	113.46	289.69	37166
37167	0.1 - 0.3 m²	1,235.19	120.45	126.56	338.03	37167
37168	0.3 - 0.5 m²	1,445.62	130.80	138.08	385.68	37168
37169	0.5 - 0.8 m²	1,764.75	143.91	150.49	482.15	37169
	Motorized damper c/w actuator, coupling, electrical connection, connected to an electricity supply point : -					
	Each					
37170	Up to 0.1 m²	1,388.09	20.66	33.56	132.35	37170
37171	0.1 - 0.3 m²	2,756.97	29.84	41.88	154.30	37171
37172	0.3 - 0.5 m²	3,671.40	33.20	51.85	171.26	37172
37173	0.5 - 0.8 m²	4,532.54	38.23	58.36	185.84	37173
	Stainless Steel 304 Volume Control Damper (Motorized type) : -					
	Each					
37174	150 x 150 x 150 mm	3,294.19	15.28	22.56	35.00	37174
37175	400 x 300 x 200 mm	4,582.47	15.28	22.56	35.00	37175
37176	500 x 300 x 200 mm	5,888.93	15.28	22.56	35.00	37176
	Stainless Steel 316 Volume Control Damper (Motorized type) : -					
	Each					
37177	150 x 150 x 150 mm	4,222.98	15.28	22.56	35.00	37177
37178	400 x 300 x 200 mm	5,466.06	15.28	22.56	35.00	37178
37179	500 x 300 x 200 mm	6,868.99	15.28	22.56	35.00	37179
37180	Damper actuator that shall be of the linear or rotary type for either modulating or two-positioning control	1,510.43	16.40	26.49	111.17	37180

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Dampers (Cont'd)					
	Self-closing (non-return) damper c/w device for position and locking the damper blades, access panel and label etc. : -					
	Each	A $	B $	C $	D $	
37181	Up to 0.1 m²	181.84	4.61	6.98	17.30	37181
37182	0.1 - 0.3 m²	353.43	5.10	7.50	18.21	37182
37183	0.3 - 0.5 m²	684.06	5.65	8.01	19.37	37183
37184	0.5 - 0.8 m²	1,362.10	6.26	8.61	20.92	37184
	Air filter c/w enclosure, holding frame and air gasket : -					
	Per square metre of surface area facing air stream					
37185	Filter for FCU/fresh air filter/pre-filter	1,706.14	9.10	12.27	20.00	37185
37186	Main filter cartridge type	2,131.77	9.10	12.27	20.00	37186
37187	HEPA filter	4,261.33	9.10	12.27	20.00	37187
37188	Bag filter of high efficiency with extended area, deep pleated type mounted to modular sections and equipped with holding frames & c/w at least four heavy duty spring type positive sealing latches (Air velocity flow rate of 1.0 to 3.5 m³/s)	1,440.43	9.16	13.06	21.25	37188
	Perforated diffuser c/w volume control damper and HEPA filter : -					
	Per set					
37189	1200 mm x 600 mm	11,931.26	21.19	28.48	46.94	37189
37190	600 mm x 600 mm	6,355.54	16.89	22.70	37.74	37190

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Electro-static filter and accessories					
	Nominal airflow rate : -					
	Per set	A $	B $	C $	D $	
37191	Up to 0.5 m³/s	5,947.21	14.57	17.60	55.45	37191
37192	0.5 - 1 m³/s	11,819.31	17.51	20.54	60.97	37192
37193	1 - 2 m³/s	23,769.74	20.28	23.42	66.54	37193
37194	2 - 3 m³/s	25,412.13	23.15	26.28	72.14	37194
37195	3 - 4 m³/s	27,886.59	26.08	29.21	82.98	37195
37196	4 - 5 m³/s	31,892.51	28.85	32.28	88.46	37196
37197	5 - 6 m³/s	36,753.96	31.74	34.98	98.84	37197
	Active carbon filter c/w high-grade activated carbon filters and pre-filter and housed in a frame structure					
	Nominal airflow rate : -					
	Per set					
37198	Up to 0.5 m³/s	5,328.64	9.46	12.76	30.11	37198
37199	0.5 - 1 m³/s	7,961.37	12.61	15.80	36.16	37199
37200	1 - 2 m³/s	12,438.77	15.77	19.03	42.21	37200
37201	2 - 3 m³/s	17,805.72	18.93	22.20	48.24	37201
37202	3 - 4 m³/s	21,246.37	21.92	25.29	54.12	37202
37203	4 - 5 m³/s	28,157.15	24.95	28.32	60.17	37203
37204	5 - 6 m³/s	33,526.18	28.11	31.49	66.11	37204
	Electric duct heater of black sheathed element type c/w enclosure, access panel, safety cut-off, thermostat, sail switch and accessories : -					
	Each					
37205	Up to 3 kW	2,106.60	8.82	10.58	25.00	37205
37206	3 - 6 kW	2,639.28	9.37	11.22	26.11	37206
37207	6 - 9 kW	3,149.59	10.04	11.80	27.19	37207
37208	9 - 12 kW	3,504.97	10.58	12.41	28.29	37208

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Duct silencers : -					
	Pet set	A $	B $	C $	D $	
37209	Up to 0.5 m³/s	2,774.10	18.01	30.09	97.86	37209
37210	0.5 - 0.75 m³/s	2,929.64	22.02	34.12	106.76	37210
37211	0.75 - 1.0 m³/s	4,023.55	26.98	39.22	115.39	37211
37212	Add to last item for each additional 0.25 m³/s or part thereof	1,108.86	4.16	4.81	9.18	37212
	Ductwork acoustic insulation : -					
	Per square metre					
37213	Ductwork acoustic insulation, 50mm thick including metal perforated sheet	1,017.94	10.31	15.07	34.92	37213
	Duct access panel : -					
	Each					
37214	Up to 0.1 m²	301.00	7.79	9.12	17.15	37214
37215	0.1 - 0.25 m²	448.19	9.13	10.48	19.23	37215
37216	0.25 - 0.5 m²	789.94	11.08	12.41	22.29	37216
	Regulation damper : -					
	Each					
37217	Regulation damper c/w operating handle, access panel, device for position and locking the damper blades, label etc.	282.93	15.25	20.30	39.00	37217
	Galvanized iron wire mesh : -					
	Per square metre					
37218	Galvanized iron wire mesh (straight lattice mesh/diamond mesh)	156.60	10.50	12.56	24.15	37218
	Galvanized iron air duct c/w volume control damper, painted with anti-corrosive paint : -					
	Per square metre					
37219	1.0 mm thick	582.24	11.84	17.40	36.91	37219
37220	1.2 mm thick	656.60	13.13	18.84	39.14	37220

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR DUCTS, THERMAL INSULATION & ACCESSORIES (CONT'D)					
	Anti-acidic/anti-corrosive PVC duct for exhaust fans of diameter : -					
	Per linear metre	A $	B $	C $	D $	
37221	150 mm	1,043.65	5.92	10.31	18.25	37221
37222	250 mm	1,092.20	7.27	11.84	22.76	37222
37223	300 mm	1,267.51	8.80	13.35	27.28	37223
	Air duct cleaning : -					
	Each					
37224	Air duct cleaning point c/w metal flange and air tight screw plug fixing on air duct with no work on ceiling or demountable ceiling	55.00	-	-	-	37224
37225	Air duct cleaning point c/w metal flange, extended collar, air tight screw plug fixing on air duct with fixed ceiling	66.08	-	-	-	37225
	Per linear metre					
37226	Air duct cleaning and disinfection process with proprietary type compressed air lance, disinfection application lance, sampling probe and necessary accessories, video recording, video inspection and reporting	103.26	-	-	-	37226
	Per point					
37227	Inspection and photograph taking using borescope, c/w particulate and micro-biological monitoring report	466.20	-	-	-	37227
	Protection coating paint : -					
	Per square metre					
37228	Protection coating paint for thermal insulation (flexible closed cell elastomeric) of same manufacturer as the thermal insulation for ductwork at outdoor area	1,362.25	-	-	-	37228

Section 38

HEATING, VENTILATION AND AIR-CONDITIONING - EQUIPMENT

UNITARY AIR CONDITIONERS

Air to air packaged air conditioner (refrigerant R22) c/w motors, compressors, filter, filter chamber, noise control equipment, copper tube with pre-corrosion resisting treated aluminium fins cooling coils, condensers, blowers, starters, refrigerant, drain pan, emergency stop button, probe type smoke detector, local control panel.

External or internally mounted, of cooling capacity : -

Item	***Each***	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38001	Up to 15 kW	-	205.76	227.41	788.35	38001
38002	15 - 21 kW	-	223.15	236.10	807.85	38002
38003	21 - 30 kW	-	228.68	257.80	823.45	38003
38004	30 - 50 kW	-	234.24	270.58	850.10	38004

Air to air packaged air conditioner (refrigerant zero ODP) c/w motors, compressors, filter, filter chamber, noise control equipment, copper tube with pre-corrosion resisting treated aluminium fins cooling coils, condensers, blowers, starters, refrigerant, drain pan, emergency stop button, probe type smoke detector, local control panel.

External or internally mounted, of cooling capacity : -

Item	***Each***					Item
38005	Up to 15 kW	24,736.56	205.76	227.41	788.35	38005
38006	15 - 21 kW	31,863.16	223.15	236.10	807.85	38006
38007	21 - 30 kW	46,401.38	228.68	257.80	823.45	38007
38008	30 - 50 kW	58,587.35	234.24	270.58	850.10	38008
38009	50 - 61 kW	67,357.29	241.79	280.33	877.37	38009
38010	61 - 91 kW	80,036.42	244.05	292.42	905.66	38010

UNITARY AIR CONDITIONERS (CONT'D)

Air cooled packaged heat recovery chiller (refrigerant zero ODP) c/w motor, compressor, condenser, blower, noise control equipment, copper tube with pre-corrosion resisting treated copper fins evaporators, filter drier, water strainer, crank case heater, switch, muffler, refrigerant, oil separator, safety cutout, control metering device, temperature thermometers, starter, receiver, seamless copper tubing, weather-proof cabinet, emergency stop button.

Cooling capacity : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
38011	300 - 400 kW..... (The actual rate should be : $1,120,423.00 for Item 38011A)	11,204.23	4,392.66	5,910.59	16,247.02	38011
38012	400 - 500 kW..... (The actual rate should be : $1,246,462.00 for Item 38012A)	12,464.62	4,852.87	6,519.53	18,032.56	38012
38013	500 - 600 kW..... (The actual rate should be : $1,461,731.00 for Item 38013A)	14,617.31	5,727.90	7,150.17	20,600.12	38013
38014	600 - 700 kW..... (The actual rate should be : $1,749,998.00 for Item 38014A)	17,499.98	6,279.37	8,115.46	22,385.06	38014
38015	700 - 800 kW..... (The actual rate should be : $1,955,467.00 for Item 38015A)	19,554.67	6,576.50	8,230.47	23,648.76	38015
38016	800 - 900 kW..... (The actual rate should be : $2,136,301.00 for Item 38016A)	21,363.01	6,747.38	8,460.79	24,553.97	38016

Acoustic enclosure for above chillers : -

	Each					
38017	300 - 400 kW..... (The actual rate should be : $117,629.40 for Item 38017A)	11,762.94	782.17	1,194.12	2,753.49	38017
38018	400 - 500 kW..... (The actual rate should be : $132,066.50 for Item 38018A)	13,206.65	898.26	1,280.54	3,248.81	38018
38019	500 - 600 kW..... (The actual rate should be : $163,688.40 for Item 38019A)	16,368.84	1,150.30	1,673.50	4,386.19	38019
38020	600 - 700 kW..... (The actual rate should be : $206,252.60 for Item 38020A)	20,625.26	1,345.28	1,875.70	5,135.42	38020
38021	700 - 800 kW..... (The actual rate should be : $229,138.90 for Item 38021A)	22,913.89	1,523.50	2,280.33	5,749.46	38021
38022	800 - 900 kW..... (The actual rate should be : $247,380.40 for Item 38022A)	24,738.04	1,681.08	2,523.12	6,342.96	38022

UNITARY AIR CONDITIONERS (CONT'D)

Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, compressors, condensers, blowers, noise control equipment, copper tube with pre-corrosion resisting treated copper fins, evaporators, filter drier, water strainer, capacity controller, liquid receivers, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel.

Cooling capacity : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
38023	Up to 44 kW..... (The actual rate should be : $103,455.30 for Item 38023A)	10,345.53	1,208.85	1,460.98	4,602.16	38023
38024	44 - 68 kW..... (The actual rate should be : $138,527.00 for Item 38024A)	13,852.70	1,491.30	2,188.08	6,123.17	38024
38025	68 - 100 kW..... (The actual rate should be : $208,670.40 for Item 38025A)	20,867.04	1,990.36	2,952.47	7,951.34	38025
38026	100 - 150kW..... (The actual rate should be : $291,859.20 for Item 38026A)	29,185.92	2,455.59	3,647.42	8,452.58	38026
38027	150 - 200 kW..... (The actual rate should be : $363,145.50 for Item 38027A)	36,314.55	3,069.69	4,402.15	10,234.20	38027
38028	200 - 300 kW..... (The actual rate should be : $419,497.20 for Item 38028A)	41,949.72	3,246.66	4,736.22	11,340.60	38028
38029	300 - 350 kW..... (The actual rate should be : $671,454.20 for Item 38029A)	67,145.42	3,922.60	5,217.57	12,021.09	38029
38030	350 - 450 kW..... (The actual rate should be : $767,835.90 for Item 38030A)	76,783.59	4,619.21	6,318.87	13,578.32	38030

Acoustic enclosure for above chillers : -

	Each					
38031	Up to 100 kW.....	41,149.71	347.82	572.10	1,867.74	38031
38032	100 - 150 kW.....	57,452.23	416.90	703.29	2,023.75	38032
38033	150 - 200 kW.....	71,675.03	492.24	958.03	2,446.07	38033
38034	200 - 300 kW.....	83,280.25	592.64	1,101.30	2,576.58	38034
38035	300 - 350 kW..... (The actual rate should be : $133,984.30 for Item 38035A)	13,398.43	695.58	1,209.06	2,960.41	38035
38036	350 - 450 kW..... (The actual rate should be : $163,371.00 for Item 38036A)	16,337.10	837.92	1,337.10	3,123.74	38036

UNITARY AIR CONDITIONERS (CONT'D)

Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, 'scroll' compressor, condensers, blowers, copper tube with pre-corrosion resisting treated aluminium fins, evaporator, filter drier, water strainer, capacity controller, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel, expansion vessel and circulating pump set.

Cooling capacity : -

Item	***Each***	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38037	Up to 25 kW	72,794.98	982.40	1,254.33	4,637.49	38037
38038	25 - 45 kW	99,985.98	1,193.06	1,400.90	5,429.57	38038
38039	45 - 100 kW (The actual rate should be : $239,243.80 for Item 38039A)	23,924.38	1,608.24	2,343.10	6,515.45	38039
38040	100 - 140 kW (The actual rate should be : $285,221.30 for Item 38040A)	28,522.13	2,343.10	3,322.76	8,099.02	38040
38041	140 - 170 kW (The actual rate should be : $321,799.10 for Item 38041A)	32,179.91	2,453.44	3,666.85	8,731.43	38041
38042	170 - 230 kW (The actual rate should be : $417,124.50 for Item 38042A)	41,712.45	3,083.83	4,195.90	9,898.82	38042
38043	230 - 300 kW (The actual rate should be : $528,337.50 for Item 38043A)	52,833.75	3,819.27	4,813.14	11,260.77	38043
38044	300 - 350 kW (The actual rate should be : $607,775.40 for Item 38044A)	60,777.54	4,344.60	5,254.01	12,233.60	38044
38045	350 - 400 kW (The actual rate should be : $687,213.10 for Item 38045A)	68,721.31	4,869.92	5,694.90	13,206.43	38045

UNITARY AIR CONDITIONERS (CONT'D)

Air cooled packaged water chiller (refrigerant zero ODP) for external mounting c/w motors, 'screw' compressor, condensers, blowers, copper tube with pre-corrosion resisting treated aluminium fins, evaporator, filter drier, water strainer, capacity controller, starters, refrigerant, weather-proof cabinet, emergency stop button, local control panel, expansion vessel and circulating pump set.

Cooling capacity : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38046	Up to 25 kW	49,461.54	887.05	1,131.22	4,194.24	38046
38047	25 - 45 kW	88,893.56	1,074.32	1,258.08	4,911.70	38047
38048	45 - 100 kW (The actual rate should be : $187,660.50 for Item 38048A)	18,766.05	1,441.20	2,094.02	5,894.02	38048
38049	100 - 140 kW (The actual rate should be : $281,106.60 for Item 38049A)	28,110.66	2,094.02	2,960.58	7,309.11	38049
38050	140 - 170 kW (The actual rate should be : $359,902.10 for Item 38050A)	35,990.21	2,194.05	3,271.49	7,863.65	38050
38051	170 - 230 kW (The actual rate should be : $433,235.70 for Item 38051A)	43,323.57	2,754.22	3,733.93	8,899.30	38051
38052	230 - 300 kW (The actual rate should be : $518,791.50 for Item 38052A)	51,879.15	3,407.75	4,273.44	10,107.57	38052
38053	300 - 350 kW (The actual rate should be : $579,902.60 for Item 38053A)	57,990.26	3,874.55	4,658.81	10,970.60	38053
38054	350 - 400 kW (The actual rate should be : $641,014.00 for Item 38054A)	64,101.40	4,341.36	5,044.17	11,833.66	38054

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Water-cooled packaged chiller (refrigerant zero ODP) c/w motor, semi-hermetic screw type compressor, shell and tube evaporator / condenser, refrigeration components, control panel : -					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38055	400 - 500 kW.....	72,738.29	3,933.42	5,314.56	12,030.76	38055
	(The actual rate should be : $727,382.90 for Item 38055A)					
38056	500 - 600 kW.....	84,523.55	4,721.61	6,380.93	14,394.26	38056
	(The actual rate should be : $845,235.50 for Item 38056A)					
38057	600 - 700 kW.....	10,089.23	5,438.59	7,362.54	17,221.59	38057
	(The actual rate should be : $1,008,923.00 for Item 38057A)					
38058	700 - 800 kW.....	11,881.42	6,385.31	8,641.94	20,263.75	38058
	(The actual rate should be : $1,188,142.00 for Item 38058A)					
38059	800 - 900 kW.....	14,977.94	8,692.98	11,227.33	25,799.50	38059
	(The actual rate should be : $1,497,794.00 for Item 38059A)					
38060	900 - 1000 kW.....	17,330.55	11,189.20	14,605.55	30,742.85	38060
	(The actual rate should be : $1,733,055.00 for Item 38060A)					
	Automatic tube cleaning system for above chiller : -					
	Each					
38061	400 - 500 kW.....	17,762.64	55.93	58.43	367.87	38061
38062	500 - 600 kW.....	19,927.31	61.49	64.14	404.46	38062
38063	600 - 700 kW.....	21,367.75	66.11	68.99	432.85	38063
38064	700 - 800 kW.....	22,396.88	69.69	72.75	464.93	38064
38065	800 - 900 kW.....	23,774.26	73.37	76.54	483.76	38065
38066	900 - 1000 kW.....	24,815.66	74.80	78.78	518.87	38066

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type air conditioners (refrigerant zero ODP) of cooling capacity as specified (direct expansion)					
	Condensing units c/w motors, compressors, condenser, copper tubes and pre-painted anti-corrosion resin coated aluminium fins, blowers, filter drier, refrigerant, refrigerant pipework to the internally mounted AHU/ FCU, starters, weather-proof cabinet, emergency stop button, liquid receivers.					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38067	Up to 14 kW.....	19,557.52	524.84	734.14	2,047.93	38067
38068	14 - 20 kW.....	25,285.85	628.72	788.46	2,405.73	38068
38069	20 - 30 kW.....	34,864.87	650.91	825.54	2,663.91	38069
38070	30 - 44 kW.....	45,463.40	716.45	881.16	2,902.12	38070
38071	44 - 58 kW.....	68,749.52	773.91	943.38	3,135.09	38071
38072	58 - 86 kW.....	90,034.39	857.72	1,030.96	3,341.15	38072
	Condensing units c/w motors, compressors, condenser, copper tubes and pre-painted anti-corrosion resin coated aluminium fins, blowers, filter drier, refrigerant, refrigerant pipework to the internally mounted PAU, starters, weather-proof cabinet, emergency stop button, liquid receivers.					
	Cooling capacity : -					
	Each					
38073	Up to 14 kW.....	20,742.51	543.33	786.70	2,809.67	38073
38074	14 - 20 kW.....	26,165.43	604.44	884.10	2,809.67	38074
38075	20 - 30 kW.....	37,398.92	679.73	898.14	2,809.67	38075
38076	30 - 44 kW.....	51,418.99	700.51	1,053.23	3,060.92	38076
38077	44 - 58 kW.....	82,935.95	782.65	1,146.46	3,246.76	38077
38078	58 - 86 kW..... (The actual rate should be : $103,834.80 for Item 38078A)	10,383.48	880.63	1,247.95	3,488.35	38078

UNITARY AIR CONDITIONERS (CONT'D)

Air to air split type air conditioners (refrigerant zero ODP) of cooling capacity as specified (direct expansion) (Cont'd)

Internal mounted DX AHU/ FCU of copper tube and pre-treated anti-corrosion aluminium fin cooling coil, c/w filter chamber, flexible connector, air filters, filter clog indicator, starters, emergency stop button, local control panel.

Cooling capacity : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
38079	Up to 14 kW	9,757.87	165.67	268.16	834.33	38079
38080	14 - 20 kW	11,827.90	185.65	286.14	882.61	38080
38081	20 - 30 kW	15,017.67	194.61	293.42	930.60	38081
38082	30 - 44 kW	23,318.10	205.16	298.56	979.60	38082
38083	44 - 58 kW	30,615.67	225.53	314.25	1,028.48	38083
38084	58 - 86 kW	36,865.87	232.16	326.54	1,057.71	38084

Internal mounted DX PAU of copper tube and pre-treated anti-corrosion aluminium fin cooling coil, c/w filter chamber, flexible connector, air filters, filter clog indicator, starters, emergency stop button, local control panel.

Cooling capacity : -

	Each					
38085	Up to 14 kW	9,748.25	170.48	270.01	883.85	38085
38086	14 - 20 kW	11,809.97	190.33	286.78	967.21	38086
38087	20 - 30 kW	14,996.28	199.77	293.96	1,026.57	38087
38088	30 - 44 kW	24,842.07	210.93	298.68	1,090.71	38088
38089	44 - 58 kW	32,450.59	225.59	316.30	1,159.47	38089
38090	58 - 86 kW	38,137.77	232.51	330.67	1,210.17	38090

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipework c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel.					
	Complete set with indoor unit of wall mounted type, cooling only					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38091	Up to 3.5 kW	11,219.44	391.65	473.06	1,514.61	38091
38092	3.5 - 5.2 kW	15,376.88	424.91	508.33	1,626.95	38092
38093	5.2 - 6.5 kW	19,742.24	457.20	540.86	1,831.97	38093
38094	6.5 - 7.5 kW	23,606.82	489.41	574.39	1,933.06	38094
38095	7.5 - 9.5 kW	27,986.39	521.47	607.57	2,019.21	38095
38096	9.5 - 12 kW	34,644.38	553.48	635.85	2,125.38	38096
	Complete set with indoor unit of ceiling suspended type, cooling only					
	Cooling capacity : -					
	Each					
38097	Up to 6.5 kW	18,864.29	507.46	598.90	1,898.94	38097
38098	6.5 - 7.5 kW	21,311.61	541.71	637.21	1,977.22	38098
38099	7.5 - 9 kW	26,493.08	575.21	672.56	2,033.79	38099
38100	9 - 11 kW	31,607.15	608.37	707.22	2,140.91	38100
38101	11 - 13 kW	37,874.53	675.77	780.03	2,246.36	38101
38102	13 - 17 kW	46,337.33	738.37	842.93	2,363.68	38102
	Complete set with indoor unit of ceiling cassette type, cooling only					
	Cooling capacity : -					
	Each					
38103	Up to 5 kW	16,420.93	481.30	544.39	1,439.79	38103
38104	5 - 6 kW	19,381.61	492.03	568.38	1,607.69	38104
38105	6 - 8 kW	25,303.02	513.49	616.39	1,943.51	38105
38106	8 -11 kW	34,268.05	587.20	670.42	2,138.19	38106
38107	11 - 13 kW	40,419.38	608.37	707.22	2,230.39	38107
38108	13 - 16.5 kW	51,633.44	681.63	783.26	2,328.83	38108

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipework c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling mounted ducted type, cooling only					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38109	Up to 5 kW	13,136.75	481.30	544.39	1,439.79	38109
38110	5 - 6 kW	15,505.30	492.03	568.38	1,607.69	38110
38111	6 - 8 kW	20,242.41	513.49	616.39	1,943.51	38111
38112	8 -11 kW	27,414.46	587.20	670.42	2,138.19	38112
38113	11 - 13 kW	32,335.50	608.37	707.22	2,230.39	38113
38114	13 - 16.5 kW	41,306.75	681.63	783.26	2,328.83	38114
	Complete set with indoor unit of wall mounted type; cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38115	Up to 6 kW (cooling) and up to 7.5 kW (heating)	19,496.88	495.30	577.92	1,833.87	38115
38116	6 - 8 kW (cooling) and 7.5 - 9 kW (heating)	24,746.29	538.12	622.82	1,975.39	38116
38117	8 - 11 kW (cooling) and 9 - 11 kW (heating)	32,620.39	602.30	690.19	2,187.66	38117

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (direct expansion type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipework c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling suspended type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each	A $	B $	C $	D $	
38118	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	21,655.15	493.28	575.88	2,027.40	38118
38119	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	27,263.76	581.66	673.48	2,143.94	38119
38120	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	35,676.71	714.22	819.87	2,318.76	38120
	Complete set with indoor unit of ceiling cassette type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38121	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	23,064.67	489.00	608.53	1,888.51	38121
38122	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	29,691.80	562.74	671.23	2,045.37	38122
38123	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	39,632.50	673.37	765.30	2,280.63	38123
	Complete set with indoor unit of ceiling mounted ducted type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38124	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	18,451.75	489.00	608.53	1,888.51	38124
38125	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	23,753.44	562.74	671.23	2,045.37	38125
38126	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	31,705.99	673.37	765.30	2,280.63	38126

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel.					
	Complete set with indoor unit of wall mounted type, cooling only					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38127	Up to 3.5 kW	12,188.44	391.65	473.06	1,514.61	38127
38128	3.5 - 5.2 kW	16,460.68	424.91	508.33	1,626.95	38128
38129	5.2 - 6.5 kW	20,544.43	457.20	540.86	1,831.97	38129
38130	6.5 - 7.5 kW	24,502.54	489.41	574.39	1,933.06	38130
38131	7.5 - 9.5 kW	28,900.42	521.47	607.57	2,019.21	38131
38132	9.5 - 12.0 kW	35,183.13	553.48	635.85	2,125.38	38132
	Complete set with indoor unit of ceiling suspended type, cooling only					
	Cooling capacity : -					
	Each					
38133	Up to 6.5 kW	22,113.96	507.46	598.90	1,898.94	38133
38134	6.5 - 7.5 kW	26,324.85	541.71	637.21	1,977.22	38134
38135	7.5 - 9 kW	30,514.31	575.21	672.56	2,033.79	38135
38136	9 - 11 kW	36,025.59	608.37	707.22	2,140.91	38136
38137	11 - 13 kW	45,668.69	675.77	780.03	2,246.36	38137
38138	13 - 17 kW	52,143.95	738.37	842.93	2,363.68	38138
	Complete set with indoor unit of ceiling cassette type, cooling only					
	Cooling capacity : -					
	Each					
38139	Up to 5 kW	17,075.85	481.30	544.39	1,439.79	38139
38140	5 - 6 kW	20,830.65	492.03	568.38	1,607.69	38140
38141	6 - 8 kW	26,382.75	513.49	616.39	1,943.51	38141
38142	8 -11 kW	35,057.69	587.20	670.42	2,138.19	38142
38143	11 - 13 kW	41,673.78	608.37	707.22	2,230.39	38143
38144	13 - 16.5 kW	52,537.21	681.63	783.26	2,328.83	38144

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling mounted ducted type, cooling only					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38145	Up to 5 kW	16,985.38	481.30	544.39	1,439.79	38145
38146	5 - 6 kW	22,760.70	492.03	568.38	1,607.69	38146
38147	6 - 8 kW	26,423.21	513.49	616.39	1,943.51	38147
38148	8 -11 kW	36,410.88	587.20	670.42	2,138.19	38148
38149	11 - 13 kW	44,418.74	608.37	707.22	2,230.39	38149
38150	13 - 16.5 kW	49,464.39	681.63	783.26	2,328.83	38150
	Complete set with indoor unit of wall mounted type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38151	Up to 6 kW (cooling) and up to 7.5 kW (heating)	22,743.20	495.30	577.92	1,833.87	38151
38152	6 - 8 kW (cooling) and 7.5 - 9 kW (heating)	31,162.64	538.12	622.82	1,975.39	38152
38153	8 - 11 kW (cooling) and 9 - 11 kW (heating)	43,791.83	602.30	690.19	2,187.66	38153
	Complete set with indoor unit of ceiling suspended type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38154	Up to 6 kW (cooling) and up to 7.5 kW (heating)	28,895.17	493.28	575.88	2,027.40	38154
38155	6 - 8 kW (cooling) and 7.5 - 9 kW (heating)	37,648.93	581.66	673.48	2,143.94	38155
38156	8 - 11 kW (cooling) and 9 - 11 kW (heating)	43,563.76	714.22	819.87	2,318.76	38156

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Air to air split type room air conditioner (Inverter type), (refrigerant zero ODP), indoor and outdoor unit (shall consist of copper tube and pre-treated anti-corrosion aluminium fins), refrigerant pipe work c/w insulation not exceeding manufacturer's maximum permitted length, refrigerant, local control panel. (Cont'd)					
	Complete set with indoor unit of ceiling cassette type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each	A $	B $	C $	D $	
38157	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	32,627.15	489.00	608.53	1,888.51	38157
38158	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	40,798.19	562.74	671.23	2,045.37	38158
38159	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	50,806.39	673.37	765.30	2,280.63	38159
	Complete set with indoor unit of ceiling mounted ducted type, cooling/ heating (heat pump)					
	Cooling and heating capacity : -					
	Each					
38160	Up to 6 kW (cooling) and up to 7.5 kW (heating).....	23,174.21	489.00	608.53	1,888.51	38160
38161	6 - 8 kW (cooling) and 7.5 - 9 kW (heating).....	30,235.33	562.74	671.23	2,045.37	38161
38162	8 - 11 kW (cooling) and 9 - 11 kW (heating).....	37,886.70	673.37	765.30	2,280.63	38162
	Window-split type air-conditioner with remote controller					
	Cooling capacity : -					
	Each					
38163	Up to 2.8 kW.....	10,734.05	425.59	513.79	1,644.22	38163
38164	2.8 - 3.7 kW.....	13,880.65	461.68	551.63	1,801.29	38164
38165	3.7 - 5.5 kW.....	18,124.99	497.67	589.36	1,998.51	38165
38166	3.7 - 5.5 kW for dual indoor units.....	21,668.35	572.63	682.29	2,374.62	38166
38167	5.5 - 7.0 kW.....	21,661.96	527.66	620.81	2,162.85	38167

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Window-split type air-conditioner with remote controller (Cont'd)					
	Cooling capacity : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
38168	7.0 - 7.9kW	23,784.13	552.66	647.02	2,299.79	38168
	Stainless steel 316 panel housing; weatherproof type : -					
	Each					
38169	Panel for housing gauges for split type A/C outdoor units (gauges measured separately)	911.49	96.81	167.25	378.03	38169
	Computer room air conditioning unit (direct expansion type with refrigerant zero ODP), indoor and outdoor unit (outdoor unit shall consist of copper pipes and pre-treated anti-corrosion aluminium fins) with electrode boiler humidifier, electric reheat, microprocessor control with local alarm and BMS interface provisions, high efficient filter, refrigerant pipework with length not exceeding manufacturer's maximum permitted length, local control panel. Operating room conditions are 22℃, 50% RH at ambient 35℃.					
	Cooling capacity : -					
	Each					
38170	Up to 13 kW	76,927.08	603.70	788.79	2,525.52	38170
38171	13 - 26 kW (The actual rate should be : $100,823.50 for Item 38171A)	10,082.35	733.65	913.79	2,962.31	38171
38172	26 - 35 kW (The actual rate should be : $118,366.50 for Item 38172A)	11,836.65	803.48	991.54	3,159.86	38172
38173	35 - 50 kW (The actual rate should be : $134,201.30 for Item 38173A)	13,420.13	872.83	1,061.02	3,355.69	38173
38174	50 - 75 kW (The actual rate should be : $175,663.10 for Item 38174A)	17,566.31	930.29	1,102.79	3,496.58	38174
38175	75 - 84 kW (The actual rate should be : $190,589.40 for Item 38175A)	19,058.94	950.97	1,117.83	3,547.31	38175

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Window-split type air-conditioner with remote controller (Cont'd)					
	Acoustic enclosure for above computer room air conditioning units c/w acoustic panels and supporting framework: -					
		A $	B $	C $	D $	
	Each					
38176	Up to 13 kW	8,416.70	173.70	308.89	1,024.96	38176
38177	13 - 26 kW	9,449.72	195.03	346.80	1,150.76	38177
38178	26 - 35 kW	11,712.36	241.72	429.84	1,426.30	38178
38179	35 - 50 kW	14,757.95	304.57	541.61	1,797.17	38179
38180	50 - 75 kW	16,395.53	338.36	601.71	1,996.61	38180
38181	75 - 84 kW	17,700.74	365.30	649.62	2,155.55	38181
	Water detection system : -					
	Each					
38182	Water detection system with control panel providing audio and visual alarm, location of leak and BMS interface provisions connected to water-sensing cable for operation	20,257.08	289.95	314.56	981.75	38182
	Per linear metre					
38183	Water sensing cable complete with branch connector, zone connector, compatible with the above water detection system c/w all necessary mountings	232.83	3.01	6.90	28.07	38183
	Each					
38184	Water leakage detection sensor; point type, complete with detection module, stainless steel probes, controller with buzzer, control panel, cables and cable containments, and all necessary accessories and BMS interface provisions	5,864.65	163.50	218.00	272.49	38184
38185	Water leakage detection sensor; point type, complete with cables and containments	504.62	15.72	20.96	26.20	38185
	Per set					
38186	Temperature and humidity recorder	7,567.95	6.23	7.89	49.26	38186
	Reheat coil air conditioners for dehumidity Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat humidistat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit.					
	Ceiling concealed type : -					
	Per set					
38187	Up to 5.8 kW	50,199.84	131.68	666.57	699.79	38187
38188	5.8 - 14.5 kW	68,812.97	131.68	935.58	1,021.88	38188

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Reheat coil air conditioners for dehumidity Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat humidistat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit. (Cont'd)					
	Ceiling suspended type : -	A $	B $	C $	D $	
	Per set					
38189	Up to 5.8 kW	44,996.46	131.68	666.57	769.42	38189
38190	5.8 - 14.5 kW	63,076.20	131.68	935.58	1,021.88	38190
	Variable refrigerant volume (VRV) system (refrigerant zero ODP)					
	Outdoor condensing units c/w insulated gate bipolar transistor type inverter or the equivalent, hermetic scroll compressor, anti-corrosion resin coated condensing fin, propeller fan, accumulator, high pressure switch, crank case heater, over current protection for inverter, short recycling timer and oil recovery system, refrigerant (zero ODP), refrigerant pipework c/w insulation (with length not exceeding manufacturer's maximum permitted length) to the indoor units, weather proof cabinet, emergency stop button, local control panel for operation.					
	Cooling and heating, capacity : -					
	Per set					
38191	Up to 8 kW	38,103.60	698.57	762.07	2,540.24	38191
38192	8 - 14 kW	76,904.89	762.07	825.58	2,667.25	38192
38193	14 - 20 kW	10,532.70	793.84	954.25	3,080.56	38193
38194	20 - 30 kW	11,093.03	916.41	1,090.77	3,314.45	38194
38195	30 - 44 kW (The actual rate should be : $152,261.60 for Item 38195A)	15,226.16	1,040.12	1,221.87	3,518.67	38195
38196	44 - 58 kW (The actual rate should be : $199,927.60 for Item 38196A)	19,992.76	1,159.10	1,328.69	3,728.59	38196
38197	58 - 86 kW (The actual rate should be : $276,177.00 for Item 38197A)	27,617.70	1,310.76	1,536.25	3,969.24	38197
38198	86 - 90 kW (The actual rate should be : $287,069.80 for Item 38198A)	28,706.98	1,332.43	1,565.90	4,003.61	38198

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Variable refrigerant volume (VRV) system (refrigerant zero ODP) (Cont'd)					
	Stainless steel 316 panel housing; weatherproof type : -					
	Each	A $	B $	C $	D $	
38199	Panel for housing gauges for VRV outdoor units (gauges measured separately).....	911.49	96.81	167.25	378.03	38199
	Variable refrigerant volume (VRV) system (refrigerant zero ODP)					
	Water cooled outdoor condensing units c/w insulated gate bipolar transistor type inverter or the equivalent, hermetic scroll compressor, over current protection for inverter, and short recycling timer, refrigerant (zero ODP), refrigerant pipework c/w insulation (with length not exceeding manufacturer's maximum permitted length) to the indoor units, weather proof cabinet, emergency stop button, local control panel for operation.					
	Cooling and heating (heat pump), capacity : -					
	Per set					
38200	up to 22.7 kW..... (The actual rate should be : $114,767.50 for Item 38200A)	11,476.75	855.63	1,016.66	3,146.15	38200
38201	22.7 - 27.0 kW..... (The actual rate should be : $138,721.50 for Item 38201A)	13,872.15	1,000.27	1,179.82	3,539.80	38201
38202	27 - 45.4 kW..... (The actual rate should be : $161,845.30 for Item 38202A)	16,184.53	1,117.66	1,331.09	3,895.53	38202
38203	45.4 - 49.7 kW..... (The actual rate should be : $205,191.60 for Item 38203A)	20,519.16	1,314.52	1,517.56	4,431.02	38203
38204	49.7- 54.0 kW..... (The actual rate should be : $257,399.80 for Item 38204A)	25,739.98	1,568.13	1,839.15	5,051.78	38204

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Internally mounted refrigerant distributing and recirculating unit c/w valves, wiring and all necessary devices for controlling refrigerant flows and distributions : -					
	Per set	A $	B $	C $	D $	
38205	Up to 6 branches..... (The actual rate should be : $126,994.70 for Item 38205A)	12,699.47	321.52	1,641.51	1,922.82	38205
38206	Up to 10 branches..... (The actual rate should be : $204,566.90 for Item 38206A)	20,456.69	383.80	1,950.72	2,304.68	38206
	VRV master controller : -					
	Per set					
38207	VRV air-conditioning unit master controller.....	18,071.39	428.68	1,286.06	2,572.13	38207
	Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit.					
	Ceiling cassette type/ concealed type; cooling only					
	Cooling capacity : -					
	Per set					
38208	Up to 3.8 kW.....	13,113.98	112.53	125.57	492.78	38208
38209	3.8 - 5.8 kW.....	14,232.28	126.35	140.20	534.71	38209
38210	5.8 - 9.4 kW.....	17,369.23	138.04	152.84	577.57	38210
38211	9.4 - 14.5 kW.....	19,862.46	150.03	165.49	620.48	38211
38212	14.5 -22.3 kW.....	25,611.37	224.67	254.69	883.99	38212
38213	22.3 - 29.1 kW.....	30,752.73	299.58	326.52	1,321.82	38213
	Ceiling suspended type; cooling only					
	Cooling capacity : -					
	Per set					
38214	Up to 3.8 kW.....	12,325.75	93.84	103.26	433.14	38214
38215	3.8 - 5.8 kW.....	13,985.11	107.02	117.01	480.12	38215
38216	5.8 - 9.4 kW.....	14,492.99	120.85	127.32	528.32	38216
38217	9.4 - 14.5 kW.....	15,509.85	126.88	146.27	575.88	38217

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit.					
	Ceiling mounted ducted type, cooling only					
	Cooling capacity : -					
	Per set	A $	B $	C $	D $	
38218	Up to 3.8 kW	11,105.39	93.84	103.26	433.14	38218
38219	3.8 - 5.8 kW	12,158.22	107.02	117.01	480.12	38219
38220	5.8 - 9.4 kW	14,815.62	120.85	127.32	528.32	38220
38221	9.4 - 14.5 kW	16,789.33	126.88	146.27	575.88	38221
	Exposed wall mounted type, cooling only					
	Cooling capacity : -					
	Per set					
38222	Up to 3.8 kW	11,827.01	79.44	87.65	364.03	38222
38223	3.8 - 5.8 kW	13,473.59	90.49	98.90	404.09	38223
38224	5.8 - 9.4 kW	13,943.01	101.95	107.26	462.33	38224
38225	9.4 - 14.5 kW	14,947.08	107.02	122.93	505.45	38225
	Ceiling cassette type/ concealed type; cooling and heating (heat pump)					
	Cooling and heating capacity : -					
	Per set					
38226	Up to 3.8 kW	13,873.80	112.53	125.57	492.78	38226
38227	3.8 - 5.8 kW	15,174.48	126.35	140.20	534.71	38227
38228	5.8 - 9.4 kW	18,525.86	138.04	152.84	577.57	38228
38229	9.4 - 14.5 kW	20,945.67	150.03	165.49	620.48	38229

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Internal mounted direct expansion fan coil unit of copper tube aluminium fins coils c/w filter and chamber, air filter, filter clog indicator, electric expansion valve, thermostat, fan speed control unit, auto-swing mechanism, starters, drain pan, connection to outdoor condensing unit. (Cont'd)					
	Ceiling suspended type; cooling and heating (heat pump)					
	Cooling and heating capacity : -					
	Per set	A $	B $	C $	D $	
38230	Up to 3.8 kW	15,229.27	93.84	103.26	433.14	38230
38231	3.8 - 5.8 kW	15,929.41	107.02	117.01	480.12	38231
38232	5.8 - 9.4 kW	16,536.14	120.85	127.32	528.32	38232
38233	9.4 - 14.5 kW	17,578.90	126.88	146.27	575.88	38233
	Ceiling mounted ducted type, cooling and heating (heat pump)					
	Cooling and heating capacity : -					
	Per set					
38234	Up to 3.8 kW	11,839.34	93.84	103.26	433.14	38234
38235	3.8 - 5.8 kW	12,960.66	107.02	117.01	480.12	38235
38236	5.8 - 9.4 kW	15,859.76	120.85	127.32	528.32	38236
38237	9.4 - 14.5 kW	17,904.99	126.88	146.27	575.88	38237
	Exposed wall mounted type, cooling and heating (heat pump)					
	Cooling and heating capacity : -					
	Per set					
38238	Up to 2.3 kW	9,155.87	316.18	384.06	1,076.83	38238
38239	2.3 - 2.9 kW	11,292.06	339.71	410.97	1,246.64	38239
38240	2.9 - 3.7 kW	15,141.97	369.71	439.11	1,406.94	38240
38241	3.7 - 4.7 kW	18,992.83	399.96	467.82	1,470.24	38241
38242	4.7 - 5.8 kW	24,387.72	427.14	496.35	1,543.02	38242
38243	5.8 - 7.3 kW	29,351.65	454.48	522.59	1,603.94	38243

UNITARY AIR CONDITIONERS (CONT'D)

Room cooler, (refrigerant R22), c/w aluminium supporting frame, stainless steel drain pan, all condensate drain pipework (size of drain pan to match with room cooler)

Cooling capacity : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38244	Up to 2.8 kW	-	67.59	85.11	344.06	38244
38245	2.8 - 3.7 kW	-	85.82	126.32	415.92	38245
38246	3.7 - 4.6 kW	-	114.45	157.79	455.73	38246
38247	4.6 - 5.5 kW	-	124.67	187.07	605.11	38247
38248	5.5 - 6.3 kW	-	176.36	248.33	663.99	38248

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Room cooler, (refrigerant zero ODP), c/w aluminium supporting frame, stainless steel drain pan, all condensate drain pipework (size of drain pan to match with room cooler)					
	Cooling capacity : -					
	Each	A $	B $	C $	D $	
38249	Up to 2.8 kW	6,097.04	69.04	86.94	351.49	38249
38250	2.8 - 3.7 kW	7,315.88	87.67	129.02	424.88	38250
38251	3.7 - 4.6 kW	8,339.60	116.92	161.20	465.55	38251
38252	4.6 - 5.5 kW	9,661.27	127.37	190.70	618.09	38252
38253	5.5 - 6.3 kW	11,763.01	179.72	253.70	678.23	38253
38254	6.3 - 7.2 kW	12,751.02	198.00	299.86	819.59	38254
	Room cooler, (R410A), c/w aluminium supporting frame, stainless steel drain pan, all condensate drain pipework (size of drain pan to match with room cooler)					
	Cooling capacity : -					
	Each					
38255	Up to 2.8 kW	3,650.00	69.04	86.94	351.49	38255
38256	2.8 - 3.7 kW	4,400.00	87.67	129.02	424.88	38256
38257	3.7 - 4.6 kW	5,400.00	116.92	161.20	465.55	38257
38258	4.6 - 5.5 kW	6,200.00	127.37	190.70	618.09	38258
38259	5.5 - 6.3 kW	7,250.00	179.72	253.70	678.23	38259
38260	6.3 - 7.2 kW	6,800.00	198.00	299.86	819.59	38260
	Internal mounted direct expansion fan coil unit for all fresh air intake with copper tube and aluminium fins, connection to VRV outdoor unit, c/w all necessary accessories. Opening outside condition are 33℃ DB / 28℃ WB for summer and 0℃ DB / -2.9℃ WB for winter					
	Cooling and heating capacity : -					
	Each					
38261	Up to 9 kW	29,811.46	1,040.67	1,308.06	1,865.51	38261
38262	9 kW - 16 kW	39,263.33	1,040.67	1,308.06	1,865.51	38262
38263	16 kW - 22 kW	53,559.07	1,441.66	1,949.32	2,778.87	38263
38264	22 kW - 28 kW	61,465.00	1,441.66	1,949.32	2,778.87	38264

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UNITARY AIR CONDITIONERS (CONT'D)					
	Cold room air conditioning unit (direct expansion type), indoor and outdoor unit c/w refrigerant (zero ODP), pipework not exceeding manufacturer's maximum permitted length, local control panel c/w 1 set point.					
	Cold room of not less than 2.5 m height at 35°C ambient and indoor condition of 0°C - 4°C : -					
		A	B	C	D	
	Each	$	$	$	$	
38265	Cold room size up to 10 m²..... (The actual rate should be : $345,553.50 for Item 38265A)	34,555.35	1,288.30	1,689.99	5,668.03	38265
38266	Cold room size 10 - 20 m²..... (The actual rate should be : $367,391.70 for Item 38266A)	36,739.17	1,473.77	1,869.82	6,161.68	38266
38267	Cold room size 20 - 30 m²..... (The actual rate should be : $425,567.50 for Item 38267A)	42,556.75	1,713.31	2,105.69	6,694.83	38267
38268	Cold room size 30 - 40 m²..... (The actual rate should be : $479,776.80 for Item 38268A)	47,977.68	1,859.50	2,317.64	7,260.78	38268
38269	Cold room size 40 - 50 m²..... (The actual rate should be : $536,127.20 for Item 38269A)	53,612.72	2,080.89	2,487.56	7,767.76	38269
38270	Cold room size 50 - 60 m²..... (The actual rate should be : $669,724.40 for Item 38270A)	66,972.44	2,212.94	2,753.05	8,262.60	38270
	Air cooled rooftop unit c/w direct-driven, hermetic, scroll type compressor, centrifugal supply air fans, outdoor fans, motors, copper tube aluminium FC fins coil selection, 25 mm throwaway filters, temperature sensors, remote human interface, refrigerant (zero ODP) fully charged, emergency stop button, local control panel. Supply and fix with standard delivery and lifting method, such as using goods lifts of the building. (Remark: extra cost for delivery in case good lifts are not available shall be quoted separately)					
	Nominal air flow rate and (cooling capacity) : -					
	Each					
38271	2.3 m³/s (44 kW) to 2.9 m³/s (50 kW)..... (The actual rate should be : $124,048.80 for Item 38271A)	12,404.88	1,083.91	2,384.61	4,356.15	38271
38272	2.9 m³/s (50 kW) to 3.8 m³/s (69 kW)..... (The actual rate should be : $144,752.50 for Item 38272A)	14,475.25	1,351.24	2,585.32	4,617.38	38272
38273	3.8 m³/s (69 kW) to 4.3 m³/s (88 kW)..... (The actual rate should be : $189,655.60 for Item 38273A)	18,965.56	1,620.88	2,796.59	4,890.86	38273
38274	4.3 m³/s (88 kW) to 5.7 m³/s (126 kW)..... (The actual rate should be : $234,977.80 for Item 38274A)	23,497.78	1,882.72	3,012.51	5,153.52	38274
38275	5.7 m³/s (126 kW) to 6.8 m³/s (149 kW)..... (The actual rate should be : $296,218.80 for Item 38275A)	29,621.88	2,151.08	3,226.55	6,486.76	38275
38276	6.8 m³/s (149 kW) to 7.3 m³/s (160 kW)..... (The actual rate should be : $324,055.60 for Item 38276A)	32,405.56	2,273.07	3,323.85	7,092.78	38276

AIR HANDLING & TREATMENT EQUIPMENT

Air handling units (chilled/ hot water) of copper tube aluminium fin cooling / heating coil, c/w double skin insulated galvanized iron casing, motor, blower, water pipe work, filter chamber, pre-filters and high efficiency filters, starters, thermostat/ humidistat, emergency stop button, probe type smoke detector, filter clog indicator, stainless steel drain pan, associated power and control wiring.

Nominal air supply rate : -

Item	***Each***	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38277	Up to 1 m³/ s	43,506.35	257.16	381.31	1,167.56	38277
38278	1 - 2 m³/ s	57,521.95	311.46	418.20	1,259.94	38278
38279	2 - 3 m³/ s	74,449.05	322.80	482.16	1,399.58	38279
38280	3 - 4 m³/ s	95,786.71	421.34	533.45	1,508.04	38280
38281	4 - 5 m³/ s	11,037.38	467.26	580.34	1,599.24	38281
38282	5 - 6 m³/ s (The actual rate should be : $125,770.40 for Item 38282A)	12,577.04	523.01	630.91	1,694.98	38282

Add 13% to either of Items 38277 to 38282 using EC fan

Air handling units (chilled/ hot water) of copper tube aluminium fin cooling / heating coil, c/w double skin insulated galvanized iron casing, dual motors, blower, water pipe work, filter chamber, pre-filters and high efficiency filters, starters, thermostat/ humidistat, emergency stop button, probe type smoke detector, filter clog indicator, stainless steel drain pan, associated power and control wiring.

Nominal air supply rate : -

Item	***Each***					Item
38283	Up to 1 m³/ s	55,026.97	257.16	381.31	1,167.56	38283
38284	1 - 2 m³/ s	68,951.45	311.46	418.20	1,259.94	38284
38285	2 - 3 m³/ s	86,101.50	322.80	482.16	1,399.58	38285
38286	3 - 4 m³/ s	10,864.12	421.34	533.45	1,508.04	38286
38287	4 - 5 m³/ s (The actual rate should be : $122,679.30 for Item 38287A)	12,267.93	467.26	580.34	1,599.24	38287
38288	5 - 6 m³/ s (The actual rate should be : $136,791.50 for Item 38288A)	13,679.15	523.01	630.91	1,694.98	38288

Add 13% to either of Items 38283 to 38288 using EC fan

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	AHU system (multi zone control) of copper tube aluminium fin cooling / heating coil for energy saving (energy saving in design and during operation) and space saving (4 different temperatures of air can be supplied in one machine), c/w PU double skin cold insulated aluminium frame casing, 2-speed motor, centrifugal fans, pre-filter, medium filter, 1-4 zones supply air motorized damper, fresh air motorized damper, return air motorized damper, motorized water valve, fresh air temp. sensor, humidity sensor, room air temp. sensor, supply air temp. sensor, pressure switch, CCMS controller, associated power and control wiring					
	Nominal air supply rate : -					
	Each	A $	B $	C $	D $	
38289	Up to 2 m³/ s.....	12,517.37	428.10	591.40	2,056.67	38289
	(The actual rate should be : $125,173.70 for Item 38289A)					
38290	2 - 4 m³/ s.....	13,137.69	516.83	717.02	2,133.98	38290
	(The actual rate should be : $131,376.90 for Item 38290A)					
38291	4 - 6 m³/ s.....	15,373.57	662.61	821.34	2,334.68	38291
	(The actual rate should be : $153,735.70 for Item 38291A)					
38292	6 - 8 m³/ s.....	18,778.74	700.13	870.52	2,489.40	38292
	(The actual rate should be : $187,787.40 for Item 38292A)					
38293	8 - 10 m³/ s.....	21,808.31	757.81	913.87	2,622.67	38293
	(The actual rate should be : $218,083.10 for Item 38293A)					
38294	10 - 14 m³/ s.....	25,761.32	787.56	964.00	2,804.78	38294
	(The actual rate should be : $257,613.20 for Item 38294A)					
	Add 13% to either of Items 38289 to 38294 using EC fan					
	Dehumidifier heat pipes of 2 rows copper tube aluminium fin coils, c/w zero ODP refrigerant, galvanised steel frame, G.I. steel casing, coating and condensate pans : -					
	Each					
38295	2.8 - 9.3 m².....	31,825.70	188.39	279.82	876.62	38295
38296	9.3 - 16.3 m².....	36,639.30	228.80	304.96	954.69	38296
38297	16.3 - 21 m².....	40,943.61	236.05	349.65	1,058.82	38297
38298	21 - 25.6 m².....	46,867.48	309.95	388.08	1,142.42	38298
38299	25.6 - 28 m².....	48,587.09	343.76	423.61	1,214.32	38299
	Dehumidifier, wall/ ceiling mounted with drainage connection of daily moisture removal capacity : -					
	Each					
38300	Up to 15 litres.....	10,615.21	377.41	404.67	1,020.09	38300
38301	15 - 30 litres.....	44,597.71	418.08	452.65	1,268.16	38301
38302	30 - 60 litres.....	60,109.91	455.34	497.34	1,421.90	38302

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Dehumidifier, ceiling cassette type with drainage connection of daily moisture removal capacity : -					
	Each	A $	B $	C $	D $	
38303	Up to 15 litres	1,753.28	377.41	404.67	1,020.09	38303
38304	15 - 30 litres	7,366.06	418.08	452.65	1,268.16	38304
38305	30 - 60 litres	9,928.16	455.34	497.34	1,421.90	38305
	Computer room air conditioning unit (chilled water type), unit shall consist of copper pipes and aluminium fins, with electrode boiler humidifier, electric reheat, microprocessor control with local alarm and BMS interface provisions, high efficient filter, local control panel. Operating cooling capacity rated at 7℃/ 12.5℃ chilled water in/ out temperature and 22℃, 50% RH.					
	Cooling capacity : -					
	Each					
38306	Up to 15 kW	65,824.27	1,086.84	1,363.49	4,671.02	38306
38307	15 - 33 kW	88,253.15	1,304.26	1,810.10	5,338.27	38307
38308	33 - 64 kW (The actual rate should be : $116,688.10 for Item 38308A)	11,668.81	1,518.57	2,268.57	5,996.45	38308
38309	64 - 100 kW (The actual rate should be : $155,629.90 for Item 38309A)	15,562.99	1,735.28	2,714.06	6,638.60	38309
38310	100 - 150 kW (The actual rate should be : $220,000.00 for Item 38310A)	22,000.00	2,036.27	3,332.80	7,530.48	38310

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Air purifier unit, corona discharge type, c/w local control panel, removable electrode tubes, painted heavy steel power generator, remote control with regulator, stainless steel casing, fuse, on/ off switch, safety door switches, auto-off-manual switch, hour run meter, ampere meter, power electrode assembles.

Nominal air supply rate : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
38311	Up to 0.5 m³/ s	13,022.38	90.09	151.34	691.87	38311
38312	0.5 - 1 m³/ s	19,285.57	96.17	157.80	726.56	38312
38313	1 - 2 m³/ s	28,808.92	101.97	163.74	787.71	38313
38314	2 -3 m³/ s	55,428.14	107.97	169.70	831.39	38314
38315	3 -4 m³/ s	74,289.16	111.22	173.02	891.30	38315
38316	4 - 5 m³/ s	92,307.54	114.40	176.14	943.06	38316
38317	5 - 6 m³/ s	10,996.90	120.39	182.26	1,027.91	38317

Ultra violet sterilizer; factory assembled and tested, capable of killing airborne microbial contaminants with 90% of removal efficiency, UV lamps with control circuit, power generator, lamp support and inspection, access door with safety switch, manual control and CCMS control, local control panel, on/ off switch, overload protective device, auto-off-manual switch, hour run meter, ampere meter.

Nominal air supply rate : -

	Per set					
38318	Up to 0.5 m³/ s	15,007.06	69.80	116.37	627.43	38318
38319	0.5 - 1 m³/ s	19,448.48	90.77	128.01	669.95	38319
38320	1 - 2 m³/ s	25,613.36	101.28	164.15	758.73	38320
38321	2 -3 m³/ s	43,264.45	118.64	195.80	804.21	38321
38322	3 -4 m³/ s	50,492.79	134.66	225.55	859.71	38322
38323	4 - 5 m³/ s	68,505.86	149.63	234.08	903.19	38323
38324	5 - 6 m³/ s	75,794.67	168.35	275.54	932.64	38324

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Air pressure stabilizer / air pressure control valves, imported proprietary manufacture, c/w high speed sealed-for-life ball bearings, adjustable centrally located balance weight mechanism.

Blade size 300 - 430 mm for number of : -

Item	*Per set*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38325	1 blade	7,499.02	122.98	127.20	473.52	38325
38326	2 blades	12,861.80	130.07	135.54	545.33	38326
38327	3 blades	19,104.16	132.55	144.23	618.82	38327
38328	4 blades	25,320.26	147.39	157.16	648.89	38328
38329	5 blades	32,678.52	155.74	171.84	690.92	38329

Blade size 430 - 610 mm for number of : -

	Per set					
38330	1 blade	14,724.39	119.65	127.44	468.83	38330
38331	2 blades	20,799.80	128.59	140.48	542.70	38331
38332	3 blades	27,612.69	131.73	144.12	654.81	38332
38333	4 blades	34,625.87	137.38	156.65	679.56	38333
38334	5 blades	41,856.84	143.01	171.75	728.09	38334

2-hour fire rated; blade size 300 - 430 mm for number of : -

	Per set					
38335	1 blade	11,867.56	122.98	127.20	473.52	38335
38336	2 blades	21,636.82	130.07	135.54	545.33	38336
38337	3 blades	31,666.98	132.55	144.23	618.82	38337
38338	4 blades	39,988.39	147.39	157.16	648.89	38338
38339	5 blades	52,403.72	155.74	171.84	690.92	38339

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Air pressure stabilizer / air pressure control valves, imported proprietary manufacture, c/w high speed sealed-for-life ball bearings, adjustable centrally located balance weight mechanism. (Cont'd)					
	2-hour fire rated; blade size 430 - 610 mm for number of : -					
	Per set	A $	B $	C $	D $	
38340	1 blade	24,140.91	119.65	127.44	468.83	38340
38341	2 blades	32,672.30	128.59	140.48	542.70	38341
38342	3 blades	43,360.27	131.73	144.12	654.81	38342
38343	4 blades	53,743.54	137.38	156.65	679.56	38343
38344	5 blades	65,449.07	143.01	171.75	728.09	38344
	Chilled water fan-coil units of 2 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)					
	Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed : -					
	Each					
38345	Up to 0.095 m^3/s	6,350.60	139.71	241.32	952.59	38345
38346	0.095 - 0.141 m^3/s	6,858.65	165.12	279.43	1,016.10	38346
38347	0.141 - 0.192 m^3/s	7,620.72	203.22	304.83	1,079.60	38347
38348	0.192 - 0.284 m^3/s	8,382.79	228.62	342.93	1,143.11	38348
38349	0.284 - 0.384 m^3/s	9,144.86	285.78	381.04	1,206.61	38349
38350	0.384 - 0.479 m^3/s	9,906.94	330.23	419.14	1,270.12	38350
38351	0.479 - 0.565 m^3/s	10,669.01	368.33	444.54	1,333.63	38351
38352	0.565 - 0.665 m^3/s	12,193.15	406.44	508.05	1,397.13	38352

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Chilled water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)

Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38353	Up to 0.095 m³/ s	6,604.62	152.41	254.02	1,016.10	38353
38354	0.095 - 0.141 m³/ s	7,112.67	190.52	304.83	1,079.60	38354
38355	0.141 - 0.192 m³/ s	8,001.76	228.62	330.23	1,143.11	38355
38356	0.192 - 0.284 m³/ s	8,763.83	266.73	355.63	1,206.61	38356
38357	0.284 - 0.384 m³/ s	9,525.90	304.83	419.14	1,270.12	38357
38358	0.384 - 0.479 m³/ s	10,287.97	342.93	444.54	1,333.63	38358
38359	0.479 - 0.565 m³/ s	10,923.03	381.04	482.65	1,397.13	38359
38360	0.565 - 0.665 m³/ s	12,574.19	444.54	520.75	1,460.64	38360

Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w stepless DC fan motor, thermostat, controller, filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)

Ceiling mounted, concealed type c/w casing with nominal supply air rate at medium speed : -

	Each					
38361	Up to 0.095 m³/ s	6,731.64	190.52	279.43	1,079.60	38361
38362	0.095 - 0.141 m³/ s	7,239.68	228.62	330.23	1,143.11	38362
38363	0.141 - 0.192 m³/ s	8,255.78	266.73	355.63	1,206.61	38363
38364	0.192 - 0.284 m³/ s	9,144.86	304.83	419.14	1,270.12	38364
38365	0.284 - 0.384 m³/ s	9,906.94	342.93	444.54	1,333.63	38365
38366	0.384 - 0.479 m³/ s	10,542.00	381.04	482.65	1,397.13	38366
38367	0.479 - 0.565 m³/ s	11,177.06	444.54	520.75	1,460.64	38367
38368	0.565 - 0.665 m³/ s	13,717.30	482.65	571.55	1,524.14	38368

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)

Ceiling mounted, surface mounted c/w casing with nominal supply air rate at medium speed : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38369	Up to 0.095 m³/ s	6,523.64	137.84	250.65	801.13	38369
38370	0.095 - 0.142 m³/ s	6,896.12	171.28	287.20	850.72	38370
38371	0.142 - 0.190 m³/ s	7,478.51	209.30	313.98	884.34	38371
38372	0.190 - 0.284 m³/ s	8,739.12	235.53	347.25	985.12	38372
38373	0.284 - 0.378 m³/ s	9,986.11	292.48	371.68	1,033.35	38373
38374	0.378 - 0.473 m³/ s	13,737.29	293.80	405.96	1,138.41	38374
38375	0.473 - 0.567 m³/ s	15,009.99	330.28	441.23	1,208.36	38375
38376	0.567 - 0.659 m³/ s	16,214.90	361.26	476.95	1,256.85	38376

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)					
	Ceiling mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed : -					
	Each	A $	B $	C $	D $	
38377	Up to 0.095 m³/ s	4,572.31	158.27	268.67	837.89	38377
38378	0.095 - 0.142 m³/ s	4,917.65	194.69	309.45	880.81	38378
38379	0.142 - 0.190 m³/ s	5,247.28	232.42	343.69	922.79	38379
38380	0.190 - 0.284 m³/ s	6,069.14	289.12	384.33	1,031.89	38380
38381	0.284 - 0.378 m³/ s	6,742.11	306.05	412.28	1,075.75	38381
38382	0.378 - 0.473 m³/ s	8,145.44	313.70	446.32	1,183.81	38382
38383	0.473 - 0.567 m³/ s	8,836.57	350.01	480.76	1,254.97	38383
38384	0.567 - 0.659 m³/ s	9,481.87	393.13	513.89	1,318.55	38384
	Vertical floor/ wall mounted fan coil unit, surface mounting c/w casing with nominal supply air rate at medium speed : -					
	Each					
38385	Up to 0.095 m³/ s	6,622.09	87.45	188.30	729.22	38385
38386	0.095 - 0.142 m³/ s	6,922.03	123.19	221.97	773.05	38386
38387	0.142 - 0.190 m³/ s	7,475.70	143.16	249.00	805.32	38387
38388	0.190 - 0.284 m³/ s	8,566.25	169.98	283.16	902.56	38388
38389	0.284 - 0.378 m³/ s	9,725.05	200.57	307.39	952.86	38389
38390	0.378 - 0.473 m³/ s	12,980.71	229.48	342.20	1,051.09	38390
38391	0.473 - 0.567 m³/ s	14,010.33	266.86	376.98	1,120.18	38391
38392	0.567 - 0.659 m³/ s	15,095.71	298.77	413.20	1,166.46	38392

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Chilled water fan-coil units of 4 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)					
	Vertical floor/ wall mounted fan coil unit, concealed type, without casing with nominal supply air rate at medium speed : -					
	Each	A $	B $	C $	D $	
38393	Up to 0.095 m³/ s	5,530.08	104.95	219.53	764.10	38393
38394	0.095 - 0.142 m³/ s	6,096.04	138.83	249.60	815.80	38394
38395	0.142 - 0.190 m³/ s	6,453.64	177.02	290.91	850.59	38395
38396	0.190 - 0.284 m³/ s	7,510.25	203.94	317.90	950.21	38396
38397	0.284 - 0.378 m³/ s	8,207.44	234.48	344.54	999.88	38397
38398	0.378 - 0.473 m³/ s	10,395.24	263.65	382.95	1,102.60	38398
38399	0.473 - 0.567 m³/ s	11,122.00	300.98	412.54	1,172.67	38399
38400	0.567 - 0.659 m³/ s	12,060.81	335.53	454.94	1,220.66	38400
	Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately)					
	Ceiling mounted, surface mounted c/w casing with nominal supply air rate at medium speed : -					
	Each					
38401	Up to 0.095 m³/ s	5,871.28	124.06	225.59	721.02	38401
38402	0.095 - 0.142 m³/ s	6,206.51	154.15	258.49	765.65	38402
38403	0.142 - 0.190 m³/ s	6,730.66	188.37	282.58	795.90	38403
38404	0.190 - 0.284 m³/ s	7,865.21	211.99	312.53	886.61	38404
38405	0.284 - 0.378 m³/ s	8,987.50	263.23	334.51	930.02	38405
38406	0.378 - 0.473 m³/ s	12,363.56	264.42	365.36	1,024.57	38406
38407	0.473 - 0.576 m³/ s	13,508.99	297.25	397.11	1,087.53	38407
38408	0.576 - 0.659 m³/ s	14,593.41	325.14	429.26	1,131.16	38408

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)					
	Ceiling mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed : -					
	Each	A $	B $	C $	D $	
38409	Up to 0.095 m³/ s	4,115.08	142.44	241.81	754.10	38409
38410	0.095 - 0.142 m³/ s	4,425.88	175.22	278.50	792.73	38410
38411	0.142 - 0.190 m³/ s	4,722.55	209.18	309.31	830.51	38411
38412	0.190 - 0.284 m³/ s	5,462.22	260.21	345.90	928.71	38412
38413	0.284 - 0.378 m³/ s	6,067.90	275.45	371.05	968.17	38413
38414	0.378 - 0.473 m³/ s	7,330.90	282.33	401.68	1,065.43	38414
38415	0.473 - 0.576 m³/ s	7,952.92	315.01	432.68	1,129.47	38415
38416	0.576 - 0.659 m³/ s	8,533.69	353.81	462.50	1,186.70	38416
	Vertical floor / wall mounted fan coil unit, surface mounting c/w casing with nominal supply air rate at medium speed : -					
	Each					
38417	Up to 0.095 m³/ s	5,959.89	78.70	169.48	656.29	38417
38418	0.095 - 0.142 m³/ s	6,229.83	110.87	199.77	695.74	38418
38419	0.142 - 0.190 m³/ s	6,728.13	128.84	224.10	724.79	38419
38420	0.190 - 0.284 m³/ s	7,709.63	152.99	254.84	812.30	38420
38421	0.284 - 0.378 m³/ s	8,752.54	180.51	276.65	857.58	38421
38422	0.378 - 0.473 m³/ s	11,682.63	206.52	307.99	945.98	38422
38423	0.473 - 0.576 m³/ s	12,609.30	240.18	339.28	1,008.16	38423
38424	0.576 - 0.659 m³/ s	13,586.15	268.89	371.89	1,049.82	38424

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Chiller water fan-coil units of 3 rows copper tube aluminium fin cooling coils, c/w filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, thermostat c/w digital temperature and speed control/ indicating heating (if required) (main chilled water distribution pipes to be measured separately) (Cont'd)

Vertical floor / wall mounted fan coil unit, concealed type without casing with nominal supply air rate at medium speed : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38425	Up to 0.095 m³/ s	4,977.07	94.45	197.58	687.69	38425
38426	0.095 - 0.142 m³/ s	5,486.44	124.94	224.63	734.22	38426
38427	0.142 - 0.190 m³/ s	5,808.27	159.32	261.82	765.53	38427
38428	0.190 - 0.284 m³/ s	6,759.23	183.55	286.11	855.18	38428
38429	0.284 - 0.378 m³/ s	7,386.69	211.03	310.09	899.89	38429
38430	0.378 - 0.473 m³/ s	9,355.72	237.28	344.65	992.33	38430
38431	0.473 - 0.567 m³/ s	10,009.80	270.88	371.29	1,055.40	38431
38432	0.567 - 0.659 m³/ s	10,854.73	301.97	409.45	1,098.60	38432

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Chilled water fan-coil unit of cassette type, ceiling concealed type, c/w condensate drain pump, overflow indication and alarm, 10 m insulated condensate drain pipes, chilled water pipes, condensate pans, coils, filters, face panel with discharge and return air grilles, ceiling mounted with nominal supply air rate at medium speed : -					
	Each	A $	B $	C $	D $	
38433	Up to 0.17 m³/s	9,739.92	167.55	282.00	861.11	38433
38434	0.17 - 0.2 m³/s	11,057.81	223.20	338.01	986.37	38434
38435	0.2 - 0.34 m³/s	11,323.69	305.74	394.74	1,068.69	38435
38436	0.34 - 0.5 m³/s	11,668.10	334.96	450.95	1,231.86	38436
	Chilled water fan-coil unit of cassette type, ceiling concealed type, c/w built-in heater, overheat protection device, condensate drain pump, overflow indication and alarm, face panel with discharge and return air grilles, coils, filters, 10 m insulated condensate drain pipes, chilled water pipes and condensate pans, ceiling mounted with nominal supply air rate at medium speed : -					
	Each					
38437	Up to 0.17 m³/s	10,184.72	172.87	282.00	802.93	38437
38438	0.17 - 0.2 m³/s	11,271.63	223.20	338.01	939.56	38438
38439	0.2 - 0.34 m³/s	11,693.41	279.07	394.74	1,068.69	38439
38440	0.34 - 0.5 m³/s	12,274.92	334.96	450.95	1,150.10	38440
	Fan coil unit controller : -					
	Each					
38441	Fan coil unit controller c/w thermostat, temperature and speed control/ indicating, and all necessary accessories	620.41	13.76	16.99	79.42	38441

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Stainless steel 316 panel housing; weatherproof type : -					
	Each	A $	B $	C $	D $	
38442	Weatherproof sheet metal box/ panel c/ w contactors, fused spur units, cable terminals, mounting din rails for fan coil units	2,329.98	90.85	157.75	354.55	38442
	Chilled water fresh air pretreating unit c/w blower, blower motor, cooling/ heating coil of copper tube resin coated aluminium fins, double skin casing, insulated drip pan, thermostats/ humidistat, filter chamber and filters, starter, emergency stop button, probe type smoke detector, filter clog indicator, chilled water pipework (main chilled water distribution pipes to be measured separately)					
	Nominal supply air rate at medium speed : -					
	Each					
38443	Up to 1 m³/ s	41,534.25	283.56	393.59	1,055.62	38443
38444	1 - 2 m³/ s	56,311.47	387.48	547.88	1,474.38	38444
38445	2 - 3 m³/ s	63,326.22	436.62	618.89	1,656.50	38445
38446	3 - 4 m³/ s	84,491.25	565.75	809.46	2,174.02	38446
38447	4 - 5 m³/ s	97,395.69	648.00	922.22	2,482.42	38447
38448	5 - 6 m³/ s	10,852.61	742.26	1,040.23	2,818.80	38448
	Variable air volume equipment					
	VAV linear diffuser with acoustic air boot : -					
	Each					
38449	Up to 0.1 m³/ s	540.99	6.64	8.14	55.95	38449
38450	0.1 - 0.2 m³/ s	628.73	7.36	8.72	57.28	38450
38451	0.2 - 0.3 m³/ s	755.41	7.88	9.26	59.64	38451
38452	0.3 - 0.4 m³/ s	860.29	8.47	10.04	62.08	38452
	VAV diffuser of all shape c/w thermo actuator, constructed of pressed mild steel sheet with powder coating finish, auto air flow adjustment from 30% to 100% for normal flow rate only of neck size : -					
	Each					
38453	Up to 0.018 m²	6,097.23	73.09	147.19	423.39	38453
38454	0.018 - 0.032 m²	6,386.46	74.64	149.12	427.99	38454
38455	0.032 - 0.051 m²	6,640.06	76.17	151.08	433.41	38455
38456	0.051 - 0.073 m²	6,909.12	77.75	153.13	437.73	38456

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Variable air volume equipment (Cont'd)					
	VAV multi-outlet air distribution box (octopus) connected to terminal box and ductwork : -					
	Each	A $	B $	C $	D $	
38457	Up to 0.3 m³/ s.....	388.87	8.21	9.73	61.95	38457
38458	0.3 - 0.4 m³/ s.....	444.72	9.73	11.11	64.34	38458
38459	0.4 - 0.5 m³/ s.....	482.20	10.98	12.56	66.80	38459
38460	0.5 - 0.6 m³/ s.....	531.79	12.35	13.90	69.27	38460
	VAV thermostatic controller : -					
	Each					
38461	VAV thermostatic controller c/w all necessary accessories.....	-	14.63	-	-	38461
	VAV/ CAV terminal box c/w insulation, acoustical baffles, damper regulating controller and damper actuator : -					
	Each					
38462	Up to 0.3 m³/ s.....	6,639.38	69.00	131.91	408.24	38462
38463	0.3 - 0.4 m³/ s.....	7,100.48	70.15	133.64	413.44	38463
38464	0.4 - 0.5 m³/ s.....	7,603.53	71.39	134.87	415.82	38464
38465	0.5 - 0.6 m³/ s.....	7,692.02	72.63	136.13	421.17	38465
	Dry steam humidifier, steam injection type using electric elements/ electrodes, automatic water level control, overflow protection and drain connection.					
	Each					
38466	Up to 15 kg/ hr.....	41,995.34	198.69	200.76	498.13	38466
38467	15 - 30 kg/ hr.....	52,898.12	248.28	250.87	563.48	38467
38468	30 - 60 kg/ hr.....	73,732.57	297.79	300.87	624.75	38468

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Window / wall mounted paper plate type fresh air pre-conditioner c/w motor and 2 fans, air supply/ exhaust pipes, remote controller, a fresh air and washable air filters in both fresh and weatherproof covers in exhaust streams, casings and mounting; hinged access openable panel and outdoor-air shutter.					
	Each	A $	B $	C $	D $	
38469	65 m³/ hr - 105 m³/ hr	5,181.84	260.48	274.84	1,075.92	38469
38470	105 m³/ hr – 200 m³/ hr	8,128.77	317.53	330.23	1,270.12	38470
	Desiccant type fresh air pre-conditioner c/w total energy wheel with desiccant coating, an exhaust fan motor, flanged collars, a fresh air and washable air filters in both fresh and exhaust streams, casings and mounting; hinged access openable panel.					
	Nominal supply air rate at medium speed : -					
	Each					
38471	Up to 0.125 m³/ s	18,391.64	260.48	274.84	882.31	38471
38472	0.125 - 0.25 m³/ s	24,748.21	330.39	343.89	909.06	38472
38473	0.25 - 0.5 m³/ s	48,542.67	347.20	367.14	949.07	38473
38474	0.5 - 0.8 m³/ s	59,709.62	356.51	386.22	969.51	38474
38475	0.8 - 1.4 m³/ s	94,455.00	365.68	395.70	993.58	38475
38476	1.4 - 2 m³/ s (The actual rate should be : $126,315.50 for Item 38476A)	12,631.55	375.30	404.92	1,017.57	38476
38477	2 - 2.9 m³/ s (The actual rate should be : $141,292.90 for Item 38477A)	14,129.29	384.50	414.64	1,041.79	38477
38478	2.9 - 3.6 m³/ s (The actual rate should be : $166,641.40 for Item 38478A)	16,664.14	394.25	424.68	1,065.82	38478

AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)

Paper plate type fresh air pre-conditioner c/w supply air fan, non-flammable heat exchange element, exhaust air fan and resin set (washable) filter, motor, flanged collars, indoor and outdoor temperature sensors, remote controller.

Ceiling mounted ducted type, nominal supply air rate at medium speed : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A $	B $	C $	D $	
	Each					
38479	Up to 0.05 m³/s	20,502.60	336.44	399.47	1,323.79	38479
38480	0.05 - 0.25 m³/s	38,340.47	394.56	466.06	1,506.99	38480
38481	0.25 - 0.5 m³/s	70,448.63	467.19	549.29	1,736.00	38481
38482	0.5 - 0.8 m³/s	85,330.66	554.37	649.17	2,010.79	38482
38483	0.8 - 1.4 m³/s	10,968.31	635.85	759.09	2,321.57	38483
38484	1.4 - 2 m³/s (The actual rate should be : $142,153.00 for Item 38484A)	14,215.30	740.23	857.13	2,631.16	38484
38485	2 - 2.9 m³/s (The actual rate should be : $182,740.40 for Item 38485A)	18,274.04	821.35	937.53	2,861.18	38485
38486	2.9 - 3.6 m³/s (The actual rate should be : $226,033.50 for Item 38486A)	22,603.35	951.88	1,053.10	3,157.06	38486

Add 13% to either of Items 38479 to 38486 using EC fan

Thermostat and humidistat : -

	Each					
38487	Space thermostat/ controller c/w wiring, conduit and necessary accessories	341.16	8.37	10.42	53.12	38487
38488	Space thermostat/ controller with digital setting and monitoring display c/w wiring, conduit and all functional accessories	735.28	8.37	10.42	53.12	38488
38489	Space humidistat c/w wiring, conduit and necessary accessories	335.90	8.37	10.42	53.12	38489

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AIR HANDLING & TREATMENT EQUIPMENT (CONT'D)					
	Electrostatic precipitator c/w galvanized sheet metal housing, auto clean electrostatic filter c/w ioniser collector section and motorized washer/ adhesive applicator section, solenoid valve, manifold drive motor, manifold limit switch, timer control with field adjustable timer and timer bypass switch, access door with indicating light, internal panel with LED lights and digital readout, at least 10 to 15 steps of output voltage adjustment, remote relays, power supply indicating lamps, circuit breaker, manual reset button, time delay safety type door interlock switches : -					
	Nominal air supply rate : -					
	Each	A $	B $	C $	D $	
38490	Up to 1.5 m³/ s.....	34,729.85	1,264.69	1,929.58	6,761.13	38490
38491	1.5 - 3 m³/ s.....	46,655.10	1,531.55	2,269.61	7,621.00	38491
38492	3 - 4.5 m³/ s.....	64,203.04	1,854.73	2,669.59	8,590.25	38492
38493	4.5 - 6 m³/ s.....	73,146.99	2,246.11	3,140.03	9,682.74	38493
38494	6 - 9 m³/ s.....	10,162.64	2,720.07	3,693.39	10,914.19	38494
38495	9 - 12 m³/ s..... (The actual rate should be : $118,520.50 for Item 38495A)	11,852.05	3,383.61	4,468.08	12,638.21	38495
38496	12 - 15 m³/ s..... (The actual rate should be : $143,364.90 for Item 38496A)	14,336.49	3,980.92	5,297.19	14,199.56	38496
	Thermo ventilator					
	Ceiling mounted thermo ventilator c/w PTC heater, fan motors shall have minimum 2-step air flow rate changeover and c/w a remote controller of on/ off, 'Hi/ Lo speed operation, adjustable air direction, timer, filters, including all supporting framework and all necessary accessories : -					
	Each					
38497	Minimum air flow rate 175 m³/ hr.....	2,046.95	68.89	86.74	350.68	38497
	Portable type air-conditioner					
	Portable type air-conditioner using refrigerant R410A, fan motors shall have 'minimum 2-stepair flow rate changeover and c/w a remote controller of on/ off, 'Hi/ Lo' speed operation, timer, filters, casters : -					
	Cooling capacity : -					
	Each					
38498	Up to 3.0 kW.....	1,328.28	27.25	34.09	99.38	38498
38499	3.0 to 4.4 kW.....	1,649.36	27.25	34.09	99.38	38499

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	WATER TANK AND ACCESSORIES					
	Water tank					
	Sheet metal water tank (feed & expansion) c/w ball valve, vent, overflow, drain and mild steel support, anti-rust painting & accessories of effective water capacity : -					
	Each	A $	B $	C $	D $	
38500	Up to 250 litres	9,021.68	124.66	218.53	885.07	38500
38501	250 litres - 350 litres	9,936.50	155.39	251.24	997.88	38501
38502	350 litres - 500 litres	13,085.66	186.42	282.34	1,103.59	38502
	Reinforced fiberglass water tank (feed & expansion) c/w ball valve, vent, overflow, drain and mild steel support, painting & accessories of effective water capacity : -					
	Each					
38503	Up to 250 litres	5,562.56	173.25	280.07	992.56	38503
38504	250 litres - 350 litres	9,702.37	215.97	321.98	1,119.07	38504
38505	350 litres - 500 litres	10,203.65	259.07	361.85	1,237.61	38505
	Water level controller : -					
	Each					
38506	Three water level controller for water tank for pump control and alarm c/w probes, contacts, wiring and electrical connection to pump control panel and accessories	1,664.99	69.17	124.43	207.20	38506
	Chilled water differential pressure by-pass valve system					
	Each					
38507	Chilled water differential pressure by-pass valve system c/w 80 dia. ball valve comprise of modulating actuator with signal output & pressure controller	13,308.78	177.23	264.60	1,088.48	38507

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUMP & ACCESSORIES					
	Centrifugal fresh water pump for non-portable application, horizontal split casing type, c/w motor, drain and vent, starters and local control panel : -					
	Each	A $	B $	C $	D $	
38508	Up to 2.5 kW	23,319.40	105.09	141.82	771.12	38508
38509	2.5 - 5 kW	25,377.00	108.59	145.42	819.04	38509
38510	5 - 10 kW	45,724.03	113.83	150.83	890.90	38510
38511	10 - 15 kW	52,750.74	120.82	158.05	986.74	38511
38512	15 - 20 kW	59,798.14	127.89	164.60	1,149.81	38512
38513	20 - 30 kW	67,228.29	135.06	172.34	1,261.72	38513
	Centrifugal salt water pump, horizontal split casing type, c/w motor, drain and vent, starters and local control panel : -					
	Each					
38514	Up to 2.5 kW	40,466.02	105.09	141.82	771.12	38514
38515	2.5 - 5 kW	41,837.75	108.59	145.42	819.04	38515
38516	5 - 10 kW	54,171.34	113.83	150.83	890.90	38516
38517	10 - 15 kW	63,513.62	120.82	158.05	986.74	38517
38518	15 - 20 kW	70,624.08	127.89	164.60	1,149.81	38518
38519	20 - 30 kW	78,083.59	135.06	172.34	1,261.72	38519
38520	30 - 50 kW	86,538.22	142.24	179.09	1,374.56	38520
	Fresh water pump for portable application, vertical multi-stage centrifugal type, c/w motor, drain and vent, starters and local control panel : -					
	Each					
38521	Up to 2.5 kW	30,491.93	105.09	141.82	771.12	38521
38522	2.5 - 5 kW	36,484.01	108.59	145.42	819.04	38522
38523	5 - 10 kW	66,276.68	113.83	150.83	890.90	38523
38524	10 - 15 kW	90,149.16	120.82	158.05	986.74	38524
38525	15 - 20 kW (The actual rate should be : $108,144.70 for Item 38525A)	10,814.47	127.89	164.60	1,149.81	38525
38526	20 - 30 kW (The actual rate should be : $167,698.20 for Item 38526A)	16,769.82	135.06	172.34	1,261.72	38526

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUMP & ACCESSORIES (CONT'D)					
	Fresh water pump for non-portable application, vertical spindle type centrifugal type, multi-stage configuration (if required), c/w motor, drain and vent, starters and local control panel : -					
	Each	A $	B $	C $	D $	
38527	Up to 2.5 kW	18,756.02	105.09	141.82	771.12	38527
38528	2.5 - 5 kW	27,643.97	108.59	145.42	819.04	38528
38529	5 - 10 kW	35,946.22	113.83	150.83	890.90	38529
38530	10 - 15 kW	43,278.61	120.82	158.05	986.74	38530
38531	15 - 20 kW	50,611.00	127.89	164.60	1,149.81	38531
38532	20 - 30 kW	65,275.77	135.06	172.34	1,261.72	38532
	Waste water pump c/w motor, drain and vent, starters and local control panel : -					
	Each					
38533	Up to 2.5 kW	28,806.32	105.09	141.82	771.12	38533
38534	2.5 - 5 kW	30,178.05	108.59	145.42	819.04	38534
38535	5 - 10 kW	54,210.51	113.83	150.83	890.90	38535
38536	10 - 15 kW	63,025.92	120.82	158.05	986.74	38536
38537	15 - 20 kW	71,481.65	127.89	164.60	1,149.81	38537

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUMP & ACCESSORIES (CONT'D)					
	Water booster pump set (1 duty and 1 standby) c/w motor as a composite unit, strainer, drain and vent, starters, local control panel, membrane pressure vessel, sensors, pressure switches, valve and all necessary accessories : -					
	Each	A $	B $	C $	D $	
38538	Up to 2.5 kW	70,117.01	378.78	552.67	1,530.53	38538
38539	2.5 - 5 kW (The actual rate should be : $104,864.10 for Item 38539A)	10,486.41	396.37	587.84	1,683.99	38539
38540	5 - 10 kW (The actual rate should be : $132,477.10 for Item 38540A)	13,247.71	422.75	640.59	1,914.17	38540
38541	10 - 15 kW (The actual rate should be : $149,729.60 for Item 38541A)	14,972.96	457.92	710.93	2,221.09	38541
38542	15 - 20 kW (The actual rate should be : $160,575.70 for Item 38542A)	16,057.57	491.50	779.65	2,528.33	38542
	Flush water pump c/w motor, drain and vent, starters and local control panel : -					
	Each					
38543	Up to 2.5 kW	28,806.32	105.09	141.82	771.12	38543
38544	2.5 - 5 kW	30,178.05	108.59	145.42	819.04	38544
38545	5 - 10 kW	54,210.51	113.83	150.83	890.90	38545
38546	10 - 15 kW	63,025.92	120.82	158.05	986.74	38546
38547	15 - 20 kW	71,481.65	127.89	164.60	1,149.81	38547
	Centrifugal hot water pump, horizontal split casing type, c/w motor, starters and local control panel : -					
	Each					
38548	Up to 2.5 kW	57,790.46	105.09	141.82	771.12	38548
38549	2.5 - 5 kW	59,060.58	108.59	145.42	819.04	38549
38550	5 - 10 kW	97,789.81	113.83	150.83	890.90	38550
38551	10 - 15 kW (The actual rate should be : $113,751.00 for Item 38551A)	11,375.10	120.82	158.05	986.74	38551
38552	15 - 20 kW (The actual rate should be : $129,292.40 for Item 38552A)	12,929.24	127.89	164.60	1,149.81	38552

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUMP & ACCESSORIES (CONT'D)					
	Submersible type sewage pump (max. 10 m discharge head) up to 5 m water depth, handling sewage containing solid particles up to 50 mm diameter, non-cocking, c/w electric motor, guide pole, starters and local control panel : -					
	Each	A $	B $	C $	D $	
38553	Up to 1 kW	14,343.30	135.21	180.69	767.07	38553
38554	1 - 2 kW	16,782.80	135.21	180.69	767.07	38554
38555	2 - 3 kW	22,321.91	135.21	180.69	767.07	38555
38556	3 - 4 kW	22,468.57	135.21	180.69	767.07	38556
38557	4 - 5 kW	36,245.14	135.21	180.69	767.07	38557
	Sewage transfer pump sets (max. 10 m discharge head); handling sewage containing solid particles up to 50 mm diameter; direct driven by motors; water seal connection; vents; drain; priming plug; associated pipeworks and associated pipeworks and anti-vibration mountings; adjacent emergency stops; all necessary components and accessories : -					
	Each					
38558	Up to 1 kW	33,280.11	135.21	180.69	767.07	38558
38559	1 - 2 kW	35,002.23	135.21	180.69	767.07	38559
38560	2 - 3 kW	44,036.47	135.21	180.69	767.07	38560
38561	3 - 4 kW	45,813.19	135.21	180.69	767.07	38561
38562	4 - 5 kW	45,963.96	135.21	180.69	767.07	38562

PUMP & ACCESSORIES (CONT'D)

Sump pump, vertical centrifugal type, c/w submersible electric motor, pump control & H/L alarm, guide bars, cable supports & lifting chains, factory built-in suspension devices and discharge elbow for wet sump installation and cast iron/ steel base for dry sump installation, starter and local control panel : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
38563	Up to 2.5 kW	34,293.24	105.09	141.82	771.12	38563
38564	2.5 - 5 kW	34,979.10	108.59	145.42	819.04	38564
38565	5 - 10 kW	44,017.39	113.83	150.83	890.90	38565
38566	10 - 15 kW	48,802.32	120.82	158.05	986.74	38566
38567	15 - 20 kW	64,882.68	127.89	164.60	1,149.81	38567
38568	20 - 30 kW	85,646.15	135.06	172.34	1,261.72	38568

End suction pump for portable application, centrifugal type, multi-stage configuration (if required), c/w anti-vibration mounting, flexible joints, drain, vent, motor, starter and local control panel and local wiring : -

	Each					
38569	Up to 2.5 kW	23,633.28	105.09	141.82	771.12	38569
38570	2.5 - 5 kW	38,922.64	108.59	145.42	819.04	38570
38571	5 - 10 kW	43,566.94	113.83	150.83	890.90	38571
38572	10 - 15 kW	46,711.06	120.82	158.05	986.74	38572
38573	15 - 20 kW	50,867.10	127.89	164.60	1,149.81	38573
38574	20 - 30 kW	59,179.20	135.06	172.34	1,261.72	38574

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PUMP & ACCESSORIES (CONT'D)					
	End suction pump for non-portable application, multi-stage configuration (if required), c/w anti-vibration mounting, flexible joints , drain, vent, motor, starter and local control panel and local wiring : -					
	Each	A $	B $	C $	D $	
38575	Up to 2.5 kW	23,497.22	105.09	141.82	771.12	38575
38576	2.5 - 5 kW	37,190.96	108.59	145.42	819.04	38576
38577	5 - 10 kW	40,569.81	113.83	150.83	890.90	38577
38578	10 - 15 kW	44,195.11	120.82	158.05	986.74	38578
38579	15 - 20 kW	47,491.85	127.89	164.60	1,149.81	38579
38580	20 - 30 kW	54,085.31	135.06	172.34	1,261.72	38580
	Cooling tower c/w induced or forced draught fans, glass reinforced plastics (GRP) casing, open distribution pans or troughs fitted with coarse mesh grids, filled sheets with film-type vacuum-formed PVC c/w louvres and drift eliminators, metal parts with stainless steel to SS316 or the better equivalent, inlet/ outlet water gate valve, drain, strainer, starter panel and local control panel, plus all related necessary accessories with nominal heat rejection capacity : -					
	Each					
38581	22 - 45 kW	11,274.44	372.80	485.60	1,138.42	38581
38582	45 - 69 kW	12,194.32	425.57	537.09	1,275.14	38582
38583	69 - 100 kW	14,365.87	477.51	589.13	1,385.81	38583
38584	100 - 150 kW	17,394.47	531.60	644.06	1,548.64	38584
38585	150 - 200 kW	21,457.53	584.44	697.30	1,679.23	38585
38586	200 - 300 kW	27,409.44	642.43	756.17	1,816.01	38586
38587	300 - 350 kW	38,412.91	696.45	811.58	1,929.89	38587
38588	350 - 450 kW	44,234.99	748.80	864.09	2,080.06	38588
	Condensate drain sump pump : -					
	Each					
38589	Condensate drain sump pump c/w electrical connection	2,485.39	73.57	92.93	386.21	38589

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM					
	Dark room cowl : -					
		A	B	C	D	
	Each	$	$	$	$	
38590	Dark room cowl for 230 mm diameter.....	1,598.98	18.29	24.32	52.55	38590
	S.S. vent washer system c/w pump, exhaust blower, exhaust air duct, inspection door : -					
	Each					
38591	2 m x 1.53 m x 0.683 m.....	82,324.57	472.55	596.51	2,032.86	38591
	Fan chamber c/w access panels for fans of diameter : -					
	Each					
38592	Up to 300 mm.....	2,249.69	15.06	20.05	39.52	38592
38593	300 - 380 mm.....	2,711.01	15.61	21.29	43.29	38593
38594	380 - 500 mm.....	3,151.21	16.30	22.54	47.02	38594
38595	500 - 610 mm.....	4,313.19	16.86	23.77	50.75	38595
38596	610 - 800 mm.....	5,648.55	17.41	27.98	54.50	38596
	Acoustic fan chamber c/w access panels for fans of diameter : -					
	Each					
38597	Up to 300 mm.....	3,590.87	21.32	26.47	58.89	38597
38598	300 - 380 mm.....	4,446.75	22.01	27.73	62.78	38598
38599	380 - 500 mm.....	5,534.22	22.58	28.95	66.54	38599
38600	500 - 610 mm.....	6,980.33	23.18	30.11	70.32	38600
38601	610 - 800 mm.....	8,681.72	23.86	34.45	74.08	38601

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Axial-flow fan, aerofoil type c/w local control panel					
	Motor speed up to 1000 r.p.m., fan diameter : -					
	Each	A $	B $	C $	D $	
38602	Up to 300 mm	4,356.89	41.36	52.28	158.36	38602
38603	300 - 380 mm	4,889.79	44.86	55.76	171.59	38603
38604	380 - 500 mm	6,496.76	48.34	59.26	184.80	38604
38605	500 - 610 mm	7,539.62	51.72	62.74	197.90	38605
38606	610 - 800 mm	10,197.14	55.20	66.23	211.12	38606
	Motor speed up to 1000 - 1500 r.p.m., fan diameter : -					
	Each					
38607	Up to 300 mm	4,545.13	41.36	52.28	158.36	38607
38608	300 - 380 mm	6,201.77	44.86	55.76	171.59	38608
38609	380 - 500 mm	6,911.09	48.34	59.26	184.80	38609
38610	500 - 610 mm	7,976.94	51.72	62.74	197.90	38610
38611	610 - 800 mm	10,549.02	55.20	66.23	211.12	38611
	Air conducting fan, c/w fan mounting plate, remote controller and all necessary accessories.					
	Nominal supply air rate at medium speed : -					
	Each					
38612	Up to 0.375 m^3/s	5,718.62	214.36	300.09	462.99	38612
38613	0.375 - 0.583 m^3/s	8,024.51	257.22	385.82	557.29	38613
	Air swing fan, c/w fan mounting plate, remote controller and all necessary accessories.					
	Nominal supply air rate at medium speed : -					
	Each					
38614	Up to 0.0583 m^3/s	6,640.99	214.36	300.09	514.42	38614
38615	0.0583 - 0.1041 m^3/s	7,471.10	257.22	385.82	617.31	38615

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Bifurcated fan : -					
		A	B	C	D	
	Each	$	$	$	$	
38616	Bifurcated fan type, minimum air volume flow rate at 820 1/ s and static pressure at 20 Pa	5,668.42	47.52	57.66	181.84	38616
	Centrifugal fan, backward/ forward bladed type c/w motor, drive belt and pulley, casing, access panel, metal enclosure, air plenum, starters and local control panel.					
	Fan diameter : -					
	Each					
38617	Up to 300 mm	5,170.68	69.64	105.81	311.06	38617
38618	300 - 380 mm	7,200.09	79.19	110.44	337.40	38618
38619	380 - 500 mm	10,745.68	84.61	122.04	355.41	38619
38620	500 - 610 mm	16,627.04	93.93	128.72	370.82	38620
38621	610 - 800 mm	27,512.45	104.66	135.54	386.21	38621
	Roof extraction fan c/w motor, centrifugal/ mixed flow blower, casing, cowl, base, back -draught damper, bird entry preventer guard, control switch and starter.					
	Motor speed up to 900 r.p.m. (50-100 Pa), flow rate : -					
	Each					
38622	Up to 0.5 m³/ s	4,101.14	76.53	113.39	324.68	38622
38623	0.5 - 1 m³/ s	4,883.54	86.56	118.24	353.16	38623
38624	1 - 1.5 m³/ s	5,318.08	92.06	129.82	371.35	38624
	Motor speed up to 1400 r.p.m. (75-125 Pa), flow rate : -					
	Each					
38625	Up to 1 m³/ s	5,304.72	86.56	118.24	353.16	38625
38626	1 - 1.5 m³/ s	6,809.18	92.06	129.82	371.35	38626
38627	1.5 - 2 m³/ s	10,482.02	102.74	137.99	390.12	38627
38628	2 - 4 m³/ s	15,744.86	117.41	153.68	422.61	38628

Item	FANS & VENTILATION SYSTEM (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	In line belt-driven fan c/w stator vanes, motors, drivers, guards, casing, starters and local control panel of fan diameter : -					
	Each	A $	B $	C $	D $	
38629	Up to 200 mm diameter (Motor speed up to 900 r.p.m.).....	4,581.01	46.50	59.93	201.32	38629
38630	200 - 300 mm diameter (Motor speed up to 900 r.p.m.).....	7,780.98	48.53	63.37	206.27	38630
38631	300 - 450 mm diameter (Motor speed up to 900 r.p.m.).....	9,373.27	50.57	66.79	212.73	38631
38632	Up to 200 mm diameter (Motor speed 900 - 1500 r.p.m.).....	4,834.25	46.50	59.93	201.32	38632
38633	200 - 300 mm diameter (Motor speed 900 - 1500 r.p.m.).....	8,317.06	48.53	63.37	206.27	38633
38634	300 - 450 mm diameter (Motor speed 900 - 1500 r.p.m.).....	10,183.02	50.57	66.79	212.73	38634
	Propeller fan c/w galvanized iron casing with acoustic lining. Air flow rate based on static pressure 50 Pa : -					
	Each					
38635	Up to 0.3 m^3/s.....	3,880.74	72.25	109.97	322.85	38635
38636	0.3 - 0.6 m^3/s.....	4,052.04	82.28	114.78	350.64	38636
38637	0.6 - 0.8 m^3/s.....	4,485.33	87.95	126.84	369.39	38637
38638	0.8 - 1.0 m^3/s.....	4,656.36	97.63	133.78	385.39	38638
38639	1.0 - 1.2 m^3/s.....	5,257.89	108.77	140.86	401.36	38639
38640	1.2 - 1.8 m^3/s.....	7,062.46	142.16	162.13	449.27	38640
38641	1.8 - 2.4 m^3/s.....	8,867.06	175.57	183.40	497.19	38641
38642	2.4 - 2.6 m^3/s.....	9,468.58	186.70	190.48	513.16	38642
38643	2.6 - 3.2 m^3/s.....	11,273.17	211.75	220.10	561.08	38643
38644	3.2 - 3.8 m^3/s.....	13,077.74	233.02	253.52	608.99	38644
38645	3.8 - 4.4 m^3/s.....	14,882.32	254.28	286.92	656.93	38645
38646	4.4 - 5.0 m^3/s.....	16,686.90	275.58	320.31	704.86	38646
38647	5.0 - 5.6 m^3/s.....	18,491.49	296.81	353.72	752.79	38647
38648	5.6 - 6.2 m^3/s.....	20,296.08	318.08	387.12	800.72	38648
38649	6.2 - 6.8 m^3/s.....	22,100.65	339.35	420.51	848.65	38649
38650	6.8 - 7.0 m^3/s.....	22,702.17	346.45	431.65	864.64	38650

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Direct-drive inline duct fan c/w acoustic casing and local control panel, fan diameter : -					
	Each	A $	B $	C $	D $	
38651	Up to 100 mm (Motor speed up to 3000 r.p.m.).....	2,336.48	153.49	190.75	436.47	38651
38652	100 - 200 mm (Motor speed up to 3000 r.p.m.).....	6,538.58	177.20	214.71	466.56	38652
38653	200 - 250 mm (Motor speed up to 3000 r.p.m.).....	9,571.56	188.92	226.55	481.59	38653
38654	250 - 280 mm (Motor speed up to 3000 r.p.m.).....	11,818.88	200.75	238.54	496.66	38654
38655	280 - 315 mm (Motor speed up to 3000 r.p.m.).....	13,241.26	212.59	250.37	526.72	38655
38656	315 - 400 mm (Motor speed up to 3000 r.p.m.).....	19,206.54	224.42	262.36	541.77	38656
	PVC direct-drive inline duct fan c/w acoustic casing and local control panel, fan diameter : -					
	Each					
38657	200 mm.....	15,357.27	177.20	214.71	466.56	38657
	Flameproof in-line fan : -					
	Each					
38658	Flameproof in-line fan, 880 r.p.m., fan diameter up to 330 mm.....	9,735.95	221.95	259.46	535.78	38658
	Exhaust fan c/w automatic motorized weather-proof louvre, propeller type, fan diameter : -					
	Each					
38659	150 mm	1,535.51	23.89	29.93	47.85	38659
38660	230 mm	2,337.08	26.31	32.37	53.78	38660
38661	300 mm	2,919.42	28.74	34.65	59.83	38661
	Aluminium acoustic box c/w propeller fan : -					
	Each					
38662	Aluminium acoustic box c/w 250 mm diameter propeller fan of duty (0.17 m^3/s, 40 Pa) and air grilles. Nominal size 450 x 450 x 700 mm.....	4,028.66	199.41	240.33	529.53	38662

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Blower fan, in-line silent centrifugal type, impeller diameter : -					
		A	B	C	D	
	Each	$	$	$	$	
38663	Up to 100 mm	1,121.31	46.50	59.93	201.32	38663
38664	100 - 200 mm	2,242.62	48.53	63.37	206.27	38664
38665	200 - 300 mm	3,363.93	50.57	66.79	212.73	38665
	Motor starter c/w push buttons, relays, circuit protective device : -					
	Each					
38666	Up to 2.2 kW rating	502.64	9.66	13.00	49.05	38666
38667	2.2 - 5.5 kW rating	533.87	10.98	16.14	55.20	38667
38668	5.5 - 11 kW rating	2,649.43	12.90	19.41	61.36	38668
38669	11 - 15 kW rating	4,127.37	16.05	22.65	71.09	38669
	Contactor : -					
	Each					
38670	30 A SP & N	213.99	8.35	11.02	33.43	38670
38671	60 A SP & N	428.17	12.96	16.03	57.41	38671
38672	100 A SP & N	703.04	18.04	22.99	64.65	38672
38673	30 A TP & N	245.50	9.46	12.34	39.60	38673
38674	60 A TP & N	781.33	15.06	19.48	62.58	38674
38675	100 A TP & N	1,016.29	19.75	25.62	80.26	38675
	Time switch c/w overriding switch : -					
	Each					
38676	24-hour dial	576.84	5.43	8.16	20.38	38676
38677	7-day clock	928.85	5.43	8.16	20.38	38677
38678	with 3-minute delay	416.44	5.43	8.16	20.38	38678

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Soft motor starter : -					
		A	B	C	D	
	Each	$	$	$	$	
38679	Up to 2.2 kW rating	10,401.13	25.78	32.35	98.53	38679
38680	2.2 - 5.5 kW rating	12,130.13	32.38	39.07	110.88	38680
38681	5.5 - 12 kW rating	13,373.80	38.59	45.29	123.21	38681
38682	12 - 22 kW rating	14,414.54	45.33	52.02	135.45	38682
38683	22 - 37 kW rating	19,466.38	51.55	58.34	147.79	38683
	Grease filter type kitchen exhaust hood					
	Exhaust hood of 316 stainless steel sheet 1.2 mm thick with hair line finish c/w minimum 38 mm stainless steel angle iron frame and supports, 50 mm thick grease filters, filter washing facilities, flushed fluorescent lighting with heat resistant wired glass diffusers and accessories with height up to and including 1.2 m, with the hood bottom perimeter to reference dimension.					
	Hood undersurface area of : -					
	Each					
38684	Up to 3 m²	23,367.17	280.46	445.04	1,486.83	38684
38685	3 - 4 m²	29,286.24	423.46	572.89	1,850.50	38685
38686	4 - 5 m²	35,577.53	519.65	682.76	2,098.70	38686
38687	5 - 6 m²	42,397.85	654.91	765.37	2,146.72	38687
	Washable grease filter : -					
	Each					
38688	500 x 500 x 50 mm thick	571.17	5.82	9.22	17.98	38688
	Cleaning tank : -					
	Each					
38689	Stainless steel cleaning tank	6,542.84	29.55	37.34	115.24	38689
	Per litre					
38690	Cleaning detergent	80.23	-	-	-	38690

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Water scrubbing type exhaust hood of 316 stainless steel sheet 1.2 mm thick with hair line finish c/w minimum 38 mm stainless steel angle iron frame and support, grease filters filter washing facilities, rotary baffles, inspection door, water recirculation system, control panel, flushed fluorescent lighting with heat resistant wired glass diffusers and accessories (with height up to and including 1.2 m, with the hood bottom perimeter as reference dimension), jet spray nozzles.					
	Hood undersurface area of : -					
	Each	A $	B $	C $	D $	
38691	Up to 4 m².	69,462.95	459.44	624.75	1,966.33	38691
38692	4 - 5 m². (The actual rate should be : $132,252.00 for Item 38692A)	13,225.20	567.86	740.59	2,229.23	38692
38693	5 - 6 m². (The actual rate should be : $143,411.80 for Item 38693A)	14,341.18	716.16	880.38	2,465.46	38693
38694	Add to last item for each additional square metre or part thereof.	11,360.01	128.36	139.80	249.57	38694
	Vehicle exhaust hose and hose reel : -					
	Per set					
38695	Vehicle exhaust hose reel c/w nozzle, hose clip, 10 m exhaust hose of 50 mm diameter c/w control panel and all necessary accessories	51,599.54	190.66	282.00	693.10	38695
38696	50 mm diameter. exhaust hose 10 m long.	6,871.66	21.60	36.50	63.74	38696
	Sundries : -					
	Each					
38697	Acoustic enclosure for housing centrifugal fan.	3,739.55	71.49	90.19	215.45	38697
38698	Silencer of 304 stainless steel construction c/w corrosion resistant flanges 300 mm (diameter) x 1200 mm (long)	6,634.61	20.82	37.78	111.55	38698
	Acoustic louver					
	Per cubic metre					
38699	Acoustic insulation silencer, stainless steel 316 c/w corrosion resistant.	1,180.95	15.61	22.99	52.30	38699
	Acoustic enclosure for heat pump : -					
	Each					
38700	50 - 100 kW.	54,996.81	298.11	492.14	1,666.14	38700
38701	100 - 150 kW.	75,644.95	357.26	606.77	1,814.37	38701
38702	150 - 200 kW.	93,558.14	423.46	829.56	2,199.65	38702
38703	200 - 300 kW.	11,040.17	510.46	953.86	2,310.94	38703

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	High pressure cleansing unit : -					
		A	B	C	D	
	Per set	$	$	$	$	
38704	Wall mounted unit flow rate 15.7 l/ min at 175 bar pressure.....	25,304.88	105.26	127.32	338.80	38704
	Full package 2 pump unit at 400 kPa working pressure : -					
	Per set					
38705	Up to 0.5 kW.....	6,355.10	58.09	82.09	271.47	38705
38706	0.5 - 2 kW.....	12,502.20	77.20	91.29	308.45	38706
38707	2 - 5 kW.....	23,091.91	83.87	96.71	320.81	38707
	Water scrubber/ multi-throat venture scrubber c/w packings, FRP centrifugal fan, mist eliminator, pipework, nozzle, sump, 3 nos. recycling pump c/w pump motor, flow sensor, flow switch, air release valve, chemical metering pump, ORP and pH analyzer transmitter, chemical tank, fully enclosed acoustic panel chamber, local control panel for design flow rate of : -					
	Per set					
38708	4.4 - 5.5 m³/ s..... (The actual rate should be : $377,621.70 for Item 38708A)	37,762.17	2,246.11	3,140.03	9,682.74	38708
38709	5.5 - 8 m³/ s..... (The actual rate should be : $588,285.80 for Item 38709A)	58,828.58	2,720.07	3,693.39	10,914.19	38709
38710	8 - 11.5 m³/ s..... (The actual rate should be : $883,215.60 for Item 38710A)	88,321.56	3,383.61	4,468.08	12,638.21	38710
38711	11.5 - 14.5 m³/ s..... (The actual rate should be : $109,610.30 for Item 38711A)	10,961.03	3,980.92	5,297.19	14,199.56	38711
	Silencer of PVC/ PP construction c/w corrosion resistant flanges : -					
	Each					
38712	Up to 0.5 m³/ s.....	6,869.91	25.07	40.03	136.77	38712
38713	0.5 - 1 m³/ s.....	11,224.35	33.96	49.84	167.30	38713
38714	1 - 1.5 m³/ s.....	12,802.53	52.86	63.61	191.19	38714
38715	1.5 - 2 m³/ s.....	16,913.21	63.61	79.98	215.21	38715
38716	Add to last item for each additional 0.5 m³/ s or part thereof.....	3,732.97	6.92	11.06	26.62	38716

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FANS & VENTILATION SYSTEM (CONT'D)					
	Sundries : -					
	Each	A $	B $	C $	D $	
38717	Chemical dosing tank c/w accessories, chemical metering pump set	2,302.29	10.52	20.82	44.12	38717
38718	ORP analyzer c/w sensor, transmitter and accessories	1,756.21	10.95	14.21	33.36	38718
38719	pH analyzer c/w sensor, transmitter and accessories	1,751.11	10.95	14.21	33.36	38719
38720	Portable chemical pump for NaOH/ NaOCl	1,961.55	17.51	28.27	66.83	38720

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	ENERGY SAVING CONTROL SYSTEM					
	Energy savings control system for mechanical ventilation integrated with natural ventilation : -					
	Each	A $	B $	C $	D $	
38721	Wind speed sensor	14,021.43	73.21	95.63	266.50	38721
38722	Wind direction sensor	16,395.18	73.54	95.80	268.74	38722
38723	Wind speed and direction controller c/w power cables, control cables, contactors metal enclosure and all necessary accessories	7,213.10	211.58	317.80	802.06	38723

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	VARIABLE SPEED MOTOR DRIVE					
	Variable speed motor drive of rating : -					
	Each	A $	B $	C $	D $	
38724	Up to 5 kW	14,003.13	15.53	20.22	59.14	38724
38725	5 - 10 kW	16,627.26	20.82	27.80	79.75	38725
38726	10 - 15 kW	19,088.39	26.11	35.36	100.37	38726
38727	15 - 20 kW	21,291.59	31.60	41.94	119.56	38727
38728	20 - 30 kW	38,972.18	34.98	47.48	137.63	38728
38729	30 - 40 kW	43,327.21	42.18	57.08	153.06	38729
38730	40 - 50 kW	49,673.82	47.77	61.31	167.22	38730
38731	50 - 60 kW	56,921.29	52.37	65.15	171.01	38731

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	METAL WORKS IN ASSOCIATED WITH AIR-CONDITIONING INSTALLATION					
		A	B	C	D	
	Per square metre	$	$	$	$	
38732	Elevated or overhauling platform for A/ C equipment c/w metal work, railing, cat ladder, painting as per Structural Engineer's recommended detail (to be measured on platform surface area).....	3,462.32	59.01	83.32	199.30	38732
	Each					
38733	Surveyor's certificate for steel service platform for maintenance of A/ C equipment.....	9,278.79	-	-	-	38733
	STEAM AND HOT WATER SYSTEM					
	Steam plant and equipment c/w steam boiler, combustion chamber, automatic burner with controls, blow-down valve, all necessary valves, tanks, thermometer, steam pressure gauge, boiler feed pump with controls, water level gauge glass, water level control, local control panel and protection, drip tray, cleaning tools, chemical dosing equipment, draught gauge, meters, quartz clock and condensate/ feed tank : -	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
		A	B	C	D	
	Each	$	$	$	$	
38734	Water heating capacity 401 - 500 kg/ hr..... (The actual rate should be : $841,421.50 for Item 38734A)	84,142.15	6,408.63	7,365.97	16,401.07	38734
	Air-water heat pump (zero ODP refrigerant) c/w motor, compressor, condenser, evaporator coil, centrifugal blower, automatic safety controls within common cabinet, refrigerant receiver, moisture indicator, sight glass, thermal expansion valve, filter drier, heat exchanger, lockout relay, fan motor, thermal overload protector, time delay, phase monitor, hour meter and control panel : -					
	Each					
38735	Water heating capacity 8 - 14 kW.....	56,124.66	431.39	517.87	2,200.45	38735
38736	Water heating capacity 14 - 28 kW.....	10,317.69	650.86	762.81	3,748.51	38736
38737	Water heating capacity 28 - 44 kW..... (The actual rate should be : $228,792.30 for Item 38737A)	22,879.23	904.06	1,007.51	5,235.99	38737
38738	Water heating capacity 44 - 68 kW..... (The actual rate should be : $282,883.60 for Item 38738A)	28,288.36	1,226.63	1,916.95	6,711.49	38738
38739	Water heating capacity 68 - 100 kW..... (The actual rate should be : $340,053.30 for Item 38739A)	34,005.33	1,566.86	2,909.83	8,234.22	38739
38740	Water heating capacity 100 - 150 kW..... (The actual rate should be : $416,885.30 for Item 38740A)	41,688.53	2,473.50	3,690.56	9,929.89	38740

STEAM AND HOT WATER SYSTEM (CONT'D)

Air-cooled packaged heat pump (zero ODP refrigerant) for external mounting c/w evaporators, condensers, fans, compressors, motors, water circulation pumps, pressure relief valves, expansion tanks, starters, refrigerant, expansion tank, buffer tank, noise equipment, copper tube with pre-corrosion resisting treated copper fins, filter driers, water strainer, capacity controller, liquid receivers, starters, weather-proof cabinet, emergency stop button, all necessary safety and operational control and accessories, local control panel connected to electricity supply point, proper mounting and support including I-beams and concrete plinth, flexible pipe connection, chilled water pipework for connection

Heat pump capacity : -

Item	***Each***	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
38741	8 - 14 kW	10,682.99	648.37	829.17	2,913.80	38741
38742	14 - 28 kW (The actual rate should be : $149,716.00 for Item 38742A)	14,971.60	799.41	1,021.79	3,134.71	38742
38743	28 - 44 kW (The actual rate should be : $212,889.90 for Item 38743A)	21,288.99	1,097.75	1,332.13	3,348.63	38743
38744	44 - 68 kW (The actual rate should be : $278,540.00 for Item 38744A)	27,854.00	1,298.68	1,932.03	5,391.57	38744
38745	68 - 100 kW (The actual rate should be : $428,291.10 for Item 38745A)	42,829.11	1,741.30	2,608.14	6,998.64	38745
38746	100 - 150 kW (The actual rate should be : $588,748.30 for Item 38746A)	58,874.83	2,159.00	3,212.11	7,434.63	38746
38747	150 - 200 kW (The actual rate should be : $718,744.40 for Item 38747A)	71,874.44	2,698.99	3,852.60	9,032.06	38747
38748	200 - 300 kW (The actual rate should be : $878,375.80 for Item 38748A)	87,837.58	2,863.37	4,188.10	10,036.63	38748

PRESSURE VESSELS

Pressure vessel complete with all necessary accessories in accordance with the manufacturer's recommendations : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per Set	A $	B $	C $	D $	
38749	Pressure vessel, vertical type, of 10 bar working pressure and Up to 60 litres capacity	3,164.45	124.47	140.22	438.72	38749
38750	Ditto but 60 to 200 litres capacity	4,962.40	175.85	205.77	608.72	38750
38751	Ditto but 200 to 300 litres capacity	7,090.99	236.47	284.60	1,033.66	38751
38752	Ditto but 300 to 500 litres capacity	9,046.96	309.44	380.71	1,096.88	38752
38753	Ditto but 500 to 750 litres capacity	19,813.87	387.80	470.33	1,316.24	38753
38754	Ditto but 750 to 1,000 litres capacity	23,871.75	466.17	559.94	1,535.60	38754

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUNDRIES					
	Solar hot water storage tank c/w insulation complying BS5500 c/w all necessary accessories : -					
	Each	A $	B $	C $	D $	
38755	Up to 100 litres	3,581.68	56.56	110.13	251.44	38755
38756	100 - 200 litres	3,906.29	60.39	113.64	263.97	38756
38757	200 - 300 litres	4,460.43	65.52	121.45	277.16	38757
38758	300 - 400 litres	8,258.51	68.70	127.43	290.86	38758
38759	400 - 500 litres	11,900.41	70.67	133.71	305.48	38759
	Pyranometer : -					
	Each					
38760	Pyranometer complying ISO 9060 c/w all functional accessories	2,549.06	56.63	107.62	217.27	38760
	Stainless steel plate type heat exchanger of heat transfer capacity : -					
	Each					
38761	Up to 25 kW	13,038.95	235.67	317.07	1,179.03	38761
38762	25 - 50 kW	38,396.01	257.96	322.82	1,296.92	38762
38763	50 - 100 kW	75,491.30	282.97	351.01	1,426.65	38763
38764	100 - 200 kW	91,559.85	315.14	386.87	1,569.42	38764
38765	200 - 300 kW (The actual rate should be : $118,063.50 for Item 38765A)	11,806.35	338.31	425.31	1,728.32	38765

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUNDRIES (CONT'D)					
	Solar collector panel complying BS EN 12975 with minimum efficiency 65% at 30K temperature difference between average fluid temperature and ambient air temperature with solar irradiation = 800W/ m2 : -					
		A	B	C	D	
	Per set	$	$	$	$	
38766	Up to 1 m²	4,375.62	153.89	223.26	609.11	38766
38767	1 m² - 2 m²	6,374.07	185.56	264.06	726.36	38767
38768	2 m² - 3 m²	10,255.70	206.34	300.15	813.29	38768
38769	3 m² - 4 m²	14,217.66	231.17	335.90	901.12	38769
38770	4 m² - 5 m²	17,963.80	256.24	378.46	1,014.48	38770
38771	5 m² - 6 m²	21,720.64	289.58	422.06	1,144.70	38771
38772	6 m² - 7 m²	25,663.21	321.27	469.19	1,280.42	38772
	Labour to disconnect all existing air-conditioning and ventilation installation for an area inside a building, take down and clearing the entire air-conditioning and ventilation installation inside the area (area shall be measured net on the gross floor area of the building covered by the air-conditioning services installation)					
	Per square metre					
38773	For area up to 100 m²	-	34.01	-	-	38773
38774	For area 100 - 500 m²	-	32.99	-	-	38774
38775	For area above 500 m²	-	30.79	-	-	38775

Item		Rate	Item
	MISCELLANEOUS		
	Buildings Energy Efficiency Ordinance (BEEO) Submission		
	All heating, ventilation and air-conditioning installations, unless otherwise specified, in a prescribed building should be assessed in accordance with the energy efficient requirements, for the premises in accordance with the requirements as specified in the latest edition of Code of Practice for Energy Efficiency of Building Services Installation (Building Energy Code or BEC in abbreviation), preparation and completion of the installation summaries and worksheets including but not limited to Form EE-AC, AC-G1, AC-G2(1), AC-G2(2), AC-G3(1), AC-G3(2), AC-G3(3), AC-D1 and AC-EQ1 as required by the BEEO and to coordinate with the Registered Energy Assessor for submission.		
	Each	A $	
38776	Water cooled/ Air cooled chillers	5,031.07	38776
38777	Ventilation fans	251.55	38777
38778	Air handling units/ Computer room air conditioning units	754.66	38778
38779	Split type air conditioning units	150.93	38779
38780	Window-split type air conditioners	251.55	38780
38781	Packaged air conditioners	301.87	38781
38782	Reheat coil air conditioners	327.01	38782
38783	Variable refrigerant volume (VRV) system	503.10	38783
38784	Fan coil units	377.35	38784
38785	Room coolers	50.31	38785
38786	Cold room air conditioning unit	50.31	38786
38787	Air cooled roof top units	503.10	38787
38788	Fresh air pre-conditioners/ Fresh air pretreating units	301.87	38788
38789	Air purifier units/ sterilizers	50.31	38789
38790	Air pressure stabilizers	50.31	38790
38791	Variable air volume equipment (VAV/ CAV)	50.31	38791
38792	Dehumidifiers/ humidifiers	50.31	38792
38793	Electro-static precipitators	251.55	38793
38794	Thermo ventilators	125.79	38794
38795	Water pumps	125.79	38795
38796	Cooling towers	377.35	38796
38797	Grease filter type kitchen exhaust hood/ Water scrubbing type exhaust hood	503.10	38797

Section 39

HEATING, VENTILATION AND AIR-CONDITIONING - ELECTRICAL POWER SUPPLY, CONTROL AND MONITORING SYSTEM

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CONTROL PANELS					
	Lead-lag control/ control panel for pumps : -					
	Each	A $	B $	C $	D $	
39001	Lead-lag pump control c/w all necessary lead-lags relays, selectors, indicating lamps, wirings, including panel or in addition to the local control panels of the pumps (for control of 1 to 2 items).....	2,514.53	92.75	161.29	368.83	39001
	Interlocking control/ control panel for air handling and treatment equipment : -					
	Each					
39002	Interlocking control between two equipment / groups of equipment, e.g. an AHU/ a group of up to 4 nos. of fans/ damper actuator (ON/ OFF function is treated as one item) c/w relay, timer, indicating lamps, wirings and all necessary accessories including panel or in addition to the control panels	2,444.42	90.19	156.63	356.17	39002
	Supervisory/control panel for Air-Conditioning system : -					
	Each					
39003	Supervisory panel of sheet metal box and stainless steel metal front plate c/w push buttons, indicating lamps, relays (or electrical control), selectors, electrical wiring and all necessary functional and operational component for the complete unit monitoring and controlling of 1 set of equipment.....	3,861.54	162.90	283.05	640.56	39003
39004	Every additional set of equipment incorporating with supervisory panel as described in item 39003.....	3,216.65	17.77	18.43	131.29	39004
39005	Repeater/ Indicating panel of sheet metal box and stainless steel metal front plate c/w indicating lamps, relays, buzzer, mute button, lamp test button, electrical wiring and all necessary functional and operational component for the complete unit monitoring of a set of equipment/ a set of fan (up to 4 nos.)/ water detection system/ high or low temperature alarm system.....	3,015.70	162.90	283.05	640.56	39005
39006	Every additional set of equipment/ set of fan/ water detection system/ high or low temperature alarm system incorporating with repeater/ indicating panel as described in item 39005.....	1,256.55	17.77	18.43	131.29	39006
	Interface control for monitoring and/or controlling of existing equipment					
	Each					
39007	Interface control c/w control module, relay, cabling and all necessary accessories for monitoring and/or controlling of 1 set of existing equipment.....	1,953.66	16.96	18.18	89.64	39007
	Control panel for solar collector control system : -					
	Each					
39008	Solar collector control panel with solar hot water system controller, including the control of circulation pump, solar hot water storage tank, level switch, safety device & all necessary accessories.....	2,241.40	115.21	214.02	386.26	39008

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SENSORS & METERS					
	Meters : -					
	Each	A $	B $	C $	D $	
39009	Hour run meter (all rating)	779.61	6.04	10.26	24.47	39009
39010	Energy meter for chilled water	6,456.99	38.98	41.36	78.16	39010
39011	Sea water flow counter	3,988.63	25.07	28.08	63.45	39011
39012	Sea water direct reading flow meter (all size)	11,164.30	38.98	41.36	78.16	39012
39013	Thermometers for chilled water	383.88	9.78	15.33	37.38	39013
39014	Digital temperature indicator	386.60	11.28	16.85	44.03	39014
39015	Digital temperature meter c/w interfacing unit suitable for computer download in Excel or CSV format	8,637.09	11.85	13.75	27.82	39015
	Sensors & Detectors : -					
	Each					
39016	Movement detector, combined infrared and ultrasonic detection type c/w necessary accessories and connection to the alarm panel	735.64	38.33	39.81	92.22	39016
39017	High temperature detector c/w control panel, indicating lights, alarm / buzzer and served with automatic "duty / standby" changeover switch	9,734.11	11.85	13.75	27.82	39017
39018	Duct type carbon dioxide (CO_2) sensor c/w associated DDC controller, control wiring and associated accessories	5,386.08	13.43	15.07	31.33	39018
39019	Duct type carbon monoxide (CO) sensor c/w associated DDC controller, control wiring and associated accessories	5,386.08	13.43	15.07	31.33	39019
39020	Room type carbon dioxide (CO_2) sensor c/w DDC controller, LCD display, control wiring and associated accessories	5,386.08	13.43	15.07	31.33	39020
39021	Room type carbon monoxide (CO) sensor c/w DDC controller, LCD display, control wiring and associated accessories	5,386.08	13.43	15.07	31.33	39021
39022	Temperature sensors	659.42	8.53	10.61	57.36	39022
39023	Humidity sensors	1,920.84	8.53	10.61	57.36	39023
39024	Absolute humidity (dew point) sensors	1,966.19	8.53	10.61	57.36	39024
39025	Combined type humidity and temperature sensors	2,001.67	8.53	10.61	57.36	39025
39026	Differential pressure sensors	1,987.26	8.53	10.61	57.36	39026

SENSORS & METERS (CONT'D)

Sensors & Detectors : - (Cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
39027	Probe type duct mounted smoke detector & indicator (tripping power supply is connected to F.S. panel), access panel, including modification of existing duct work and air-conditioner's control panel	1,700.76	73.03	76.49	269.76	39027
39028	Air velocity sensors	2,439.11	8.53	10.61	57.36	39028
39029	Contamination sensors	2,435.78	8.53	10.61	57.36	39029
39030	Flow sensors	603.94	8.53	10.61	57.36	39030
39031	Occupancy sensor	764.72	8.53	10.61	57.36	39031
39032	Carbon monoxide monitor/alarm sensors	491.88	8.39	10.57	53.39	39032
39033	Nitrogen dioxide sensors	1,460.54	8.39	10.57	53.39	39033
39034	Carbon dioxide (CO_2) sensor of non dispersive technology with sensing range of 0 to 2000 ppm, accuracy within 5%. Duct / wall mounted	2,060.30	8.39	10.57	53.39	39034

Item	CENTRAL CONTROL AND MONITORING SYSTEM (CCMS)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
39035	CCMS central control workstation c/w mouse and keyboard, TFT LCD monitor of viewable size 530mm (21" diagonally), A3 ink/laser printer capable of handling continuous paper, UPS capable of backup for 1 hour of operation for the PC, monitor and printer and 16-bit/full duplex audio system c/w speakers.....	22,476.07	31.60	42.53	133.44	39035
39036	Uninterrupted power supply capable for 1 hour operation for the PC.....	11,220.41	15.87	21.33	67.11	39036
39037	Portable operator terminal hardware c/w weight of less than 2 kg, run on rechargeable battery, capable of retrieving and storing information to and from CCMS server and DDC controllers and Input method can be keyboard, touch screen, track point and/or mouse.....	16,570.79	5.26	8.62	13.48	39037
39038	DDC hardware c/w RAM and the clock shall be provided with power backup of 72 hours instant recharged capacitor or 12-hour trickle recharged batteries, universal inputs and universal outputs.....	4,385.38	31.60	42.53	133.44	39038
39039	Unitary controller hardware with processor speed at least 10 MHz and minimum of 512 Kbytes RAM.....	5,513.07	10.69	16.05	26.99	39039
39040	Gateway/interfacing hardware c/w processor speed at least 16.7 MHz and minimum of 2 Mbytes RAM. The gateway, which also acts as a general purpose controller, shall have the same analog/digital input and output points.....	6,248.93	10.69	16.05	27.34	39040
39041	CCMS central database repository shall reside in the CCMS server. The database server shall use client/server technology and comply with Microsoft Open Database Connectivity (ODBC) latest version and support ISO/IEC 9075-9:2003.....	1,098.01	-	-	26.99	39041
39042	ACMV sub-system unitary controllers for temperature/humidity/pressure controllers with plug-in proportional type with integrated circuits controllers shall be available with either 0 to 20V DC / 4 to 20 mA proportional output, two-position output, or any combination.....	9,975.40	15.87	21.33	67.11	39042
39043	Programmable DDC for VAV Box.....	1,123.64	6.28	7.72	51.58	39043

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SUNDRIES					
	IAQ testing/assessment and report as described in Part D of A/C G.S. : -					
	Per point	A $	B $	C $	D $	
39044	Carbon dioxide	313.45	-	-	-	39044
39045	Carbon monoxide	311.22	-	-	-	39045
39046	Respirable suspended particulate	462.42	-	-	-	39046
39047	Nitrogen dioxide	309.60	-	-	-	39047
39048	Ozone	1,571.90	-	-	-	39048
39049	Formaldehyde	311.42	-	-	-	39049
39050	Total volatile organic compound	468.49	-	-	-	39050
39051	Radon	306.44	-	-	-	39051
39052	Airborne bacteria	460.61	-	-	-	39052
39053	Room temperature	154.88	-	-	-	39053
39054	Relative humidity	154.47	-	-	-	39054
39055	Air movement	157.33	-	-	-	39055
39056	Mould	460.61	-	-	-	39056
	Cables : -					
	Per linear metre					
39057	Low capacitance cable	16.49	2.97	3.62	9.79	39057
39058	Shield twist pair cable	20.55	2.97	3.62	9.79	39058
39059	Multi-mode 62.5/125 fiber optic cable	62.84	2.97	3.62	9.79	39059

Section 40

FIRE SERVICES

SECTION 40

FIRE SERVICES

SPECIAL CONDITIONS

Measurement of power supply **SC40.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

For the avoidance of doubt, all items for pump sets in this section shall only apply to the works executed for the Fire Services Installation by the Approved Suppliers of Materials and Specialist Contractors for Public Works : Fire Service Installation.

Measurement of excavations, ducts, chases, holes and other subsidiary work **SC40.02**

All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct, Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.

Measurement of pipework **SC40.03**

Unless otherwise stated, pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.

Branch pipes of 32 mm diameter from tee-off for and including sprinkler points and dry pendant sprinkler points shall be grouped together and measured in numbers of sprinkler points. The rates for which shall include the associated pipework and sprinkler points and dry pendant sprinkler points.

Measurement of fire alarm indicating/ control panel **SC40.04**

The interconnecting cables and the cable containment for the fire alarm indicating/ control panel shall be measured separately.

Measurement of heat resistant cables and low smoke zero halogen cables **SC40.05**

Cables for the equipment, control/ indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.

Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.

SPECIAL CONDITIONS (CONT'D)

Measurement of temporary supply **SC40.06**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC40.07**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

SPECIAL CONDITIONS (CONT'D)

Rates generally (Cont'd) **SC40.07 (Cont'd)**

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(m) Submitting all relevant documentation to Fire Services Department and obtaining necessary approval.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

Rates for pipework **SC40.08**

The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

SPECIAL CONDITIONS (CONT'D)

Rates for in-line pipework equipment **SC40.09**

The rates for in-line pipework equipment (e.g. valves, mechanical flow meters, gauges, strainers and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for fire alarm call points, fire alarm bell points, visual fire alarm, smoke detector points, heat detector points, interface control points and interface monitor points **SC40.10**

The rates for fire alarm call points, fire alarm bell points, visual fire alarm points, smoke detector points, heat detector points, interface control point and interface monitor point shall further include for fire alarm push buttons, fire alarm bells, visual fire alarm, smoke detectors, heat detectors, re-programming work (including modification of user interface) of existing addressable fire control/ indication panel and all necessary accessories for connection to the fire alarm control/ indication panel or the fire alarm system. The cables and cable containment shall be measured separately and paid for at appropriate rates under this Section and Sections 28 to 30.

Rates for sprinkler points and dry pendant sprinkler points **SC40.11**

The rates for sprinkler points and dry pendant sprinkler points shall further include for sprinkler heads, arm pipes and all necessary accessories. The range pipes, distribution pipe, draining/ re-fill the sprinkler system and tee-off from existing sprinkler system shall be measured separately and paid for at appropriate rates under this Section.

Rates for control/ indicating panels **SC40.12**

Control/ indicating panel shall be measured on the basis of complete unit monitoring and controlling the number of zones/ points as specified. The rates for control/ indicating panels shall further include for all necessary relays, indicating lamps, push button package and selector switches. The cables and cable containment to external equipment or existing panel shall be measured separately and paid for at appropriate rates under Sections 27 to 30.

Rates for equipment **SC40.13**

The rates for equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Supporting frames.

(c) Connections including flexible joints between pipework and equipment.

(d) Flexible connections and anti-vibration connections between pipework and equipment.

(e) All necessary operational and control accessories (e.g. valves, gauges, mechanical flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

SPECIAL CONDITIONS (CONT'D)

Rates for equipment (Cont'd)

SC40.13 (Cont'd)

(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(g) Anti-vibration mountings for machinery, equipment and apparatus of all kinds and the like to be supplied and installed by the Contractor.

(h) Anti-vibration materials and sound insulating materials in equipment, apparatus of all kinds and machinery bases.

(i) Motor starters (if motors in the equipment require motor starters).

(j) Earth/ equipotential bonding as specified.

Rates for heat resistant cables and low smoke zero halogen cables

SC40.14

The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.

(e) All necessary fixings complete with accessories and fittings as required.

(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC40.15

The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with fire services installation shall further include for : -

(a) All in-line fittings including brackets, supports, hangers and the like.

(b) Cutting into existing pipework and the like in position.

(c) Plugging off remaining ends with plugs or caps as required.

(d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(e) In the case of equipment and the like, taking down all associated pipework and/ or building services works.

(f) Making good all works disturbed.

SPECIAL CONDITIONS (CONT'D)

Particular Specification	**SC40.16**	The Particular Specification for fire services installation can be found in the Contract.

AUTOMATIC/ MANUAL FIRE ALARM SYSTEM

Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
40001	Fire alarm call point with break glass type alarm push c/w metal hammer and chains	410.14	16.96	18.18	89.64	40001
40002	Weatherproof type fire alarm call point with break glass type alarm push c/w metal hammer and chains	553.70	16.96	18.18	89.64	40002
40003	Fire alarm call point with break glass type alarm push c/w metal hammer and chains, addressable type	851.05	27.25	49.29	124.79	40003
40004	Weatherproof type fire alarm call point with break glass type alarm push c/w metal hammer and chains, addressable type	930.84	27.25	49.29	124.79	40004
40005	Fire alarm bell point; 150 - 250 mm diameter	638.74	16.96	18.18	89.64	40005
40006	Weatherproof type fire alarm bell point; 150 - 250 mm diameter	860.28	16.96	18.18	89.64	40006
40007	Fire alarm call point with break glass type alarm push c/w protective cover, addressable type	3,069.08	27.25	49.29	124.79	40007
40008	Intrinsically safe alarm siren, all voltage, completed with necessary accessories	2,504.08	56.95	66.63	238.66	40008
40009	Smoke detector point, ionization type	580.62	24.23	26.65	89.64	40009
40010	Smoke detector point c/w remote indicator, ionization type	924.58	60.58	65.42	262.89	40010
40011	Smoke detector point; addressable type, ionization type	1,210.41	33.93	35.14	124.79	40011
40012	Smoke detector point, optical type	580.62	16.96	18.18	89.64	40012
40013	Smoke detector point c/w remote indicator, optical type	924.58	60.58	65.42	262.89	40013
40014	Smoke detector point; addressable type, optical type	1,231.91	27.25	49.29	124.79	40014
40015	Heat detector point; fixed temperature type, Class A2	546.78	16.96	18.18	89.64	40015
40016	Heat detector point; fixed temperature type, Class BR or CR	546.78	16.96	18.18	89.64	40016
40017	Heat detector point; fixed temperature type, Class CS, DS, ES, FS or GS	546.78	16.96	18.18	89.64	40017
40018	Heat detector point; fixed temperature type; addressable type, Class A2	1,201.71	27.25	49.29	124.79	40018
40019	Heat detector point: fixed temperature type, addressable type, Class BR or CR	1,201.71	27.25	49.29	124.79	40019
40020	Heat detector point; fixed temperature type; addressable type, Class CS, DS, ES, FS or GS	1,201.71	27.25	49.29	124.79	40020
40021	Heat detector point c/w remote indicator, Class A2	883.19	60.58	65.42	262.89	40021
40022	Heat detector point c/w remote indicator, Class BR or CR	883.19	60.58	65.42	262.89	40022
40023	Heat detector point c/w remote indicator, Class CS, DS, ES, FS or GS	883.19	60.58	65.42	262.89	40023
40024	Heat detector point; rate of rise temperature type, Class A2	587.96	16.96	18.18	89.64	40024
40025	Heat detector point; rate of rise temperature type, Class BR or CR	587.96	16.96	18.18	89.64	40025
40026	Heat detector point; rate of rise temperature type, CS, DS, ES, FS or GS	587.96	16.96	18.18	89.64	40026

AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)

Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel (cont'd)

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
40027	Heat detector point; rate of rise temperature type; addressable type, Class A2	1,201.71	27.25	49.29	124.79	40027
40028	Heat detector point; rate of rise temperature type; addressable type, Class BR or CR	1,201.71	27.25	49.29	124.79	40028
40029	Heat detector point; rate of rise temperature type; addressable type, CS, DS, ES, FS or GS	1,201.71	27.25	49.29	124.79	40029
40030	Heat detector point; combined rate of rise and fixed temperature type, Class A2	778.51	16.96	18.18	89.64	40030
40031	Heat detector point; combined rate of rise and fixed temperature type, Class BR or CR	778.51	16.96	18.18	89.64	40031
40032	Heat detector point; combined rate of rise and fixed temperature type, CS, DS, ES, FS or GS	778.51	16.96	18.18	89.64	40032
40033	Heat detector point; combined rate of rise and temp. type; addressable type, Class A2	1,305.15	27.25	49.29	124.79	40033
40034	Heat detector point; combined rate of rise and temp. type; addressable type, Class BR or CR	1,305.15	27.25	49.29	124.79	40034
40035	Heat detector point; combined rate of rise and temp. type; addressable type, Class CS, DS, ES, FS, or GS	1,305.15	27.25	49.29	124.79	40035
40036	Intrinsically safe heat detector point, Class A2	1,529.18	24.23	26.65	133.27	40036
40037	Intrinsically safe heat detector point, Class BR or CR	1,596.81	24.23	26.65	133.27	40037
40038	Intrinsically safe heat detector point, Class CS, DS, ES, FS, or GS	1,596.81	24.23	26.65	133.27	40038
40039	Intrinsically safe smoke detector point	1,874.50	24.23	26.65	133.27	40039
40040	Multi-sensor detector with 2 sensing elements (i.e. optical + heat)	2,695.54	16.96	18.18	89.64	40040
40041	Multi-sensor detector with 2 sensing elements (i.e. optical + CO)	3,358.36	16.96	18.18	89.64	40041
40042	Multi-sensor detector with 3 sensing elements (optical + heat + CO)	3,586.62	16.96	18.18	89.64	40042
40043	Multi-sensor detector with 4 sensing elements (dual optical + heat + CO)	4,038.62	16.96	18.18	89.64	40043
40044	Probe unit	2,449.32	16.96	18.18	89.64	40044
40045	Interface control point c/w control module, relay and all necessary accessories	984.54	16.96	18.18	89.64	40045
40046	Remote indicator for smoke/ heat detector c/w interconnecting wiring and conduits	286.26	41.18	47.25	168.40	40046
40047	Weatherproof remote indicator for smoke/ heat detector c/w interconnecting wiring and conduits	508.23	41.18	47.25	168.40	40047
40048	End of line tester	199.15	21.79	24.23	99.35	40048
40049	Visual fire alarm point	880.00	56.95	66.63	238.66	40049
40050	Weatherproof type visual fire alarm point	1,063.82	56.95	66.63	238.66	40050
40051	Additional contactor/ relay/ electronic components in the fire alarm panel for shut down air-conditioning/ ventilation equipment	419.98	23.02	25.44	99.35	40051

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)					
	Automatic/ manual fire alarm points c/w re-programming work of existing addressable fire control panel, if necessary, and all necessary mounting accessories and connected to the fire alarm control panel (cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
40052	Intrinsically safe LED Beacon, all voltage, completed with necessary accessories.....	2,793.36	56.95	66.63	238.66	40052
40053	Safety barrier (limiting current supply to explosion proof smoke/heat detector).....	4,949.40	41.18	47.25	168.40	40053
40054	Interface monitor point c/w addressable monitor module, relay and all necessary accessories.....	3,107.50	16.96	18.18	89.64	40054
	Per lot					
40055	Provide direct link to the Fire Control Centre of Fire Services Department including all terminating equipment at each end of the link and the first year rental charge.....	8,304.68	-	-	-	40055
	Nickel-metal hydride battery c/w charger and metal box housing of the following capacity : -					
	Each					
40056	n.e. 10 ampere hour.....	1,132.44	20.60	23.02	136.91	40056
40057	10 - 20 ampere hour.....	1,509.95	20.60	23.02	136.91	40057
40058	20 - 30 ampere hour.....	1,887.43	20.60	23.02	136.91	40058
40059	30 - 40 ampere hour.....	3,019.88	21.79	24.23	146.60	40059
40060	40 - 50 ampere hour.....	4,529.83	21.79	24.23	146.60	40060
40061	50 - 60 ampere hour.....	5,284.78	21.79	24.23	146.60	40061
40062	60 - 70 ampere hour.....	6,039.73	21.79	24.23	146.60	40062
40063	70 - 80 ampere hour.....	6,794.68	21.79	24.23	146.60	40063
40064	80 - 90 ampere hour.....	7,549.63	21.79	24.23	146.60	40064
40065	90 - 100 ampere hour.....	8,304.58	21.79	24.23	146.60	40065

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)					
	Nickel-metal hydride battery of the following capacity : -					
		A	B	C	D	
	Each	$	$	$	$	
40066	n.e. 10 ampere hour	375.69	20.60	23.02	136.91	40066
40067	10 - 20 ampere hour	614.48	20.60	23.02	136.91	40067
40068	20 - 30 ampere hour	853.26	20.60	23.02	136.91	40068
40069	30 - 40 ampere hour	1,101.74	21.79	24.23	146.60	40069
40070	40 - 50 ampere hour	1,340.52	21.79	24.23	146.60	40070
40071	50 - 60 ampere hour	1,579.31	21.79	24.23	146.60	40071
40072	60 - 70 ampere hour	1,818.09	21.79	24.23	146.60	40072
40073	70 - 80 ampere hour	2,056.88	21.79	24.23	146.60	40073
40074	80 - 90 ampere hour	2,295.66	21.79	24.23	146.60	40074
40075	90 - 100 ampere hour	2,534.44	21.79	24.23	146.60	40075
	Fire alarm control/ indicating panel c/w contacts/ auxiliary contacts for shut down of A/ C & ventilation equipment, connection of fire link/ lift homing and all necessary accessories (including design for the fire alarm control system, training & providing all passwords) : -					
	Each					
40076	Panel of 4 zones or less	5,662.28	56.95	60.58	324.69	40076
40077	Ditto 5 - 8 zones	7,549.71	60.58	64.20	341.65	40077
40078	Ditto 9 - 12 zones	10,139.24	64.20	67.84	363.46	40078
40079	Ditto 13 - 18 zones	18,874.25	67.84	71.48	379.22	40079
40080	Add to last item for each additional 4 zones or part thereof	2,250.63	3.86	6.89	16.96	40080

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AUTOMATIC/ MANUAL FIRE ALARM SYSTEM (CONT'D)					
	Intelligent addressable type fire alarm control/ indicating panel c/w contacts/ auxiliary contacts for shut down of A/ C & ventilation equipment, connection of fire link/ lift homing and all necessary accessories (including design for the fire alarm control system, training & providing all passwords) : -					
	Each	A $	B $	C $	D $	
40081	Panel of 50 points or less	18,874.25	54.51	58.17	319.85	40081
40082	Ditto 51 - 100 points	22,649.11	65.42	73.91	377.99	40082
40083	Ditto 101 - 150 points	26,423.95	87.23	95.71	480.97	40083
40084	Ditto 151 - 200 points	30,198.81	98.14	107.83	541.54	40084
40085	Add to last item for each additional 50 points or part thereof	8,230.34	7.27	8.47	37.55	40085
40086	System printer	2,276.40	6.06	7.27	54.51	40086
	Equipment/ components c/w all necessary accessories : -					
	Per set					
40087	Workstation of the intelligent addressable type automatic / manual fire alarm system designed for multi-user, multi-tasking point monitoring and control c/w CPU and mother board, disk drives/ streamer/ DVD writer drive, interface connection parts, keyboard, I/O card, mouse, cables, standard application software, software programmes for fire alarm system installation with unlimited usage licences. (The actual rate should be : $113,000.00 for Item 40087A)	11,300.00	3,390.00	3,390.00	12,995.00	40087
	Each					
40088	LCD video display unit for the workstation of the intelligent addressable type automatic / manual fire alarm system, active screen size 350mm diagonally measured, colour display, minimum of 1024 x 768 pixels resolutions with tilt/ swivel base	1,884.25	10.89	12.85	29.67	40088
40089	Ditto active screen size 380 mm	1,970.91	10.89	12.85	29.67	40089
40090	Ditto active screen size 430 mm	2,341.74	10.89	12.85	29.67	40090
40091	Ditto active screen size 480 mm	2,640.00	10.89	12.85	29.67	40091

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SPRINKLER SYSTEM					
	Sprinkler Point : -					
		A	B	C	D	
	Each	$	$	$	$	
40092	Sprinkler head (quartzoid bulb type), 68℃ / 93℃ c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	218.10	29.07	32.73	95.71	40092
40093	Sprinkler head (quartzoid bulb type), 68℃ / 93℃ for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	377.62	29.07	32.73	96.92	40093
40094	Sprinkler head (fast response type) c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	253.00	29.07	32.73	95.71	40094
40095	Sprinkler head (fast response type) for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	419.65	29.07	32.73	96.92	40095
40096	Sprinkler head, dry pendent type (quartzoid bulb type) c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	760.98	27.86	30.28	89.64	40096
40097	Sprinkler head (quartzoid bulb type), quick response and vandal type suitable for cell of prison, c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe (where applicable) and all necessary accessories (the fusible element assembly consistently breaks away when connected to 18.15 kg weight dropped 0.153 m)	422.14	27.86	30.28	100.55	40097
40098	Institutional style quick response flush pendent sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	883.46	27.86	30.28	100.55	40098
40099	Institutional style quick response flush sidewall sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	980.87	27.86	30.28	100.55	40099
40100	Cabinet for spare sprinkler	1,135.73	7.27	8.47	13.32	40100
40101	Sprinkler head guard	227.15	8.47	9.70	14.54	40101
40102	Sprinkler cover plate	20.64	8.47	9.70	14.54	40102
	Draining and refilling the sprinkler system : -					
	Each sprinkler system					
40103	Drain and refill the sprinkler system with all necessary accessories for AA&I works controlled by the main control valve set. The formal process in suspension of the FS system shall be included	3,028.64	-	-	-	40103
40104	Drain and refill the sprinkler system with all necessary accessories for AA&I works controlled by the subsidiary control valve set. The formal process in suspension of the FS system shall be included	3,028.64	-	-	-	40104

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SPRINKLER SYSTEM (CONT'D)					
	Sprinkler Point c/w 32 mm diameter sprinkler pipe connected from branch tee to sprinkler head : -					
		A	B	C	D	
	Each	$	$	$	$	
40105	Sprinkler head (quartzoid bulb type), 68℃ / 93℃ c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	691.33	41.85	45.25	233.53	40105
40106	Sprinkler head (quartzoid bulb type), 68℃ / 93℃ for false ceiling, flush pattern, pendant type/ concealed pendant type, c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	850.85	41.85	45.25	234.85	40106
40107	Sprinkler head (fast response type) c/w cover plate/ protective guard (where applicable), arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	726.23	41.85	45.25	233.53	40107
40108	Sprinkler head (fast response type) for false ceiling, flush pattern, pendant type/ concealed pendant type c/w adjustable chromium plated metal ceiling masking plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	892.87	41.85	45.25	234.85	40108
40109	Sprinkler head, dry pendent type (quartzoid bulb type) c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories	1,234.22	39.35	43.48	226.54	40109
40110	Sprinkler head (quartzoid bulb type), quick response and vandal type suitable for cell of prison, c/w cover plate, arm pipe, modification and connection to the existing distribution pipe/ range pipe (where applicable) and all necessary accessories (the fusible element assembly consistently breaks away when connected to 18.15 kg weight dropped 0.153 m)	895.37	40.86	43.76	237.40	40110
40111	Institutional style quick response flush pendent sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	1,356.70	40.86	43.76	237.40	40111
40112	Institutional style quick response flush sidewall sprinkler c/w escutcheon plate and lock ring, arm pipe, modification and connection to the existing distribution pipe/ range pipe if necessary and all necessary accessories.....	1,454.10	40.86	43.76	237.40	40112

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SPRINKLER SYSTEM (CONT'D)					
	Sprinkler control valve set or subsidiary valve set c/w control wiring, all necessary accessories including valves, alarm valves, pressure gauges, pressure switch, water motor alarm gong retardation chamber, flow switch, security devices with warning labels and serial number, tamper-proof electric switch to indicate valve operational mode including remote indication valve operational on F.S. control panel, etc. : -					
	Per set	A $	B $	C $	D $	
40113	100 mm diameter.....	11,357.39	272.60	308.93	911.05	40113
40114	150 mm diameter.....	15,143.19	291.98	329.53	1,034.62	40114
40115	Subsidiary stop valve.....	3,785.80	38.78	44.84	73.91	40115
	Pre-action valve package c/w control wiring, swing check valve, gate valve, proper size drain top, flow control valve, pressure gauges, alarm gong, detection control panel with 72 hrs standby period, and all necessary accessories including remote indication on F.S. control panel : -					
	T1 type					
	Each					
40116	Valve package for pipe of 80 mm diameter.....	19,476.11	284.70	319.85	1,102.37	40116
40117	Ditto 100 mm diameter.....	22,052.79	305.30	340.43	1,265.23	40117
40118	Ditto 150 mm diameter.....	27,417.47	324.69	358.60	1,431.63	40118
	T2 type					
	Each					
40119	Valve package for pipe of 80 mm diameter.....	19,115.43	284.70	319.85	1,102.37	40119
40120	Ditto 100 mm diameter.....	22,348.49	305.30	340.43	1,265.23	40120
40121	Ditto 150 mm diameter.....	27,168.42	324.69	358.60	1,431.63	40121
	Detection control for pre-action system : -					
	Each					
40122	Detection control panel for pre-action system c/w timer, valve trim box, solenoid valve, pressure switches, charger and nickel cadmium battery, alarm bell and all necessary accessories	6,057.27	61.79	66.63	377.99	40122
40123	Manual emergency push button station c/w cables, conduits (surface or concealed type) and all necessary accessories including connection to the detection control panel.....	629.32	61.79	66.63	377.99	40123

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SPRINKLER SYSTEM (CONT'D)					
	Re-cycling pre-action valve package c/w control wiring, swing check valve, gate valve, proper size drain top flow control valve, pressure gauges, alarm gong and all necessary accessories including remote indication on F.S. control panel : -					
	Each	A $	B $	C $	D $	
40124	Valve package for pipe of 80 mm diameter.....	27,682.38	334.37	376.79	1,184.85	40124
40125	Ditto 100 mm diameter.....	32,224.64	359.81	401.00	1,320.54	40125
	Detection control for re-cycling pre-action system : -					
	Each					
40126	Detection control panel for re-cycling pre-action c/w timer, valve trim box, solenoid valve, pressure switches, charger and nickel cadmium battery for 72 hrs standby period, alarm bell and all necessary accessories	14,778.52	78.75	83.59	451.90	40126
40127	Heat detector for re-cycling pre-action system c/w low smoke fire resisting cables and all necessary accessories and connected to re-cycling pre-action detection panel.....	5,935.18	89.64	104.18	347.70	40127
40128	Manual emergency push button station c/w cables, conduits (surface or concealed type) and all necessary accessories including connection to the detection control panel.....	736.15	75.12	89.64	281.07	40128
	Dry pipe system c/w air compressor unit, air maintenance device, air supply copper pipes, pressure relief valve for air supply pipework, dryer or freezer for air supply system, restrictor for air supply system, alarm valve, shut off valves, clush valve mounting brackets, vibration eliminator to maintain system air pressure of 3.5 bar in 3 minutes, and testing facilities including quick-acting test valve : -					
	Each					
40129	System for protected area n.e. 50 m².....	10,307.45	188.99	199.63	717.21	40129
40130	System for protected area 50 m² - 100 m².....	16,624.21	192.62	203.55	723.26	40130
	Sprinkler inlet : -					
	Each					
40131	Fire services sprinkler inlet.....	1,892.89	61.79	65.42	136.91	40131
	Warning sign : -					
	Each					
40132	Warning sign for subsidary stop valve (FS circular 4/2010).....	523.03	8.47	9.70	14.54	40132

Item	HYDRANT/ HOSE REEL SYSTEM	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
40133	30 m long hose reel c/w all necessary pipework and fittings including connection to the existing hose reel system (pipe within 3 m from existing pipe and up to 32 mm diameter shall be included, extra length measured separately)	1,892.89	79.96	86.03	443.42	40133
40134	Metal box for hose reel nozzle c/w glass front panel	302.86	9.44	10.07	16.96	40134
40135	Drain and refill the hydrant/ hose reel system for execution of work for wet system	3,028.31	-	-	-	40135
40136	Hydrant outlet (single) c/w all necessary fitting including connection to the existing hydrant system (pipe work measured separately)	1,514.32	61.79	64.20	224.13	40136
40137	Pedestal type cast iron. round head external street hydrant outlet c/w all necessary fitting including connection to the existing hydrant system (pipe work measured separately)	378.53	128.42	159.92	503.99	40137
40138	Fire Services inlet twin type	1,892.69	61.79	64.20	135.70	40138
40139	Parity valve (all sizes)	2,271.23	42.40	49.67	78.75	40139
40140	Street hydrant outlet (single) c/w all necessary fitting including connection to existing hydrant system (pipework measured separately)	1,432.48	77.53	83.59	354.98	40140
40141	Ditto (twin outlet)	1,612.67	83.59	89.64	428.86	40141
40142	Metal identification plate for F.S. inlet leather & lock for F.S. inlet	84.44	8.47	9.70	16.96	40142
40143	Direct reading flowmeter	10,353.15	47.25	48.47	93.28	40143
40144	Pressure reducing valve set	1,311.65	42.40	49.67	78.75	40144
40145	Carry out test on water pressure and flow at pedestal street hydrant installed by others using calibrated equipment.	3,437.47	-	-	-	40145

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS					
	Galvanized steel pipes c/w all necessary accessories for fire services system : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
40146	25 mm diameter.....	151.42	3.34	3.95	43.61	40146
40147	32 mm diameter.....	189.28	3.89	4.29	46.06	40147
40148	40 mm diameter.....	211.98	4.08	4.72	49.67	40148
40149	50 mm diameter.....	264.97	4.65	5.18	58.17	40149
40150	65 mm diameter.....	302.83	5.22	5.95	65.42	40150
40151	80 mm diameter.....	416.39	6.06	7.27	73.91	40151
40152	100 mm diameter.....	492.10	7.17	7.55	95.71	40152
40153	150 mm diameter.....	681.38	10.90	12.11	126.00	40153
40154	200 mm diameter.....	1,135.60	13.32	15.75	153.88	40154
	Ductile steel pipe c/w all necessary accessories for fire services system : -					
	Per linear metre					
40155	150 mm diameter.....	961.96	8.14	8.87	99.35	40155
40156	200 mm diameter.....	1,818.57	9.70	10.90	124.79	40156
40157	250 mm diameter.....	2,675.17	12.11	13.32	132.05	40157
	Underground ductile steel pipe c/w all necessary accessories for fire services system : -					
	Per linear metre					
40158	150 mm diameter.....	1,308.14	6.23	6.63	79.96	40158
40159	200 mm diameter.....	1,750.83	7.60	8.01	98.14	40159
40160	250 mm diameter.....	2,193.51	9.10	9.68	117.51	40160

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS (CONT'D)					
	Tee off from Existing pipework : -					
		A	B	C	D	
	Each	$	$	$	$	
40161	32 mm diameter.....	203.14	-	-	119.95	40161
40162	40 mm diameter.....	224.02	-	-	134.49	40162
40163	50 mm diameter.....	271.73	-	-	146.60	40163
40164	65 mm diameter.....	338.60	-	-	195.07	40164
40165	80 mm diameter.....	391.86	-	-	235.04	40165
40166	100 mm diameter.....	538.54	-	-	330.74	40166
40167	150 mm diameter.....	863.73	-	-	433.72	40167
40168	200 mm diameter.....	1,335.33	-	-	757.22	40168
40169	250 mm diameter.....	1,956.80	-	-	936.49	40169
	Gate valve c/w padlock (where applicable) and all necessary accessories : -					
	Each					
40170	25 mm diameter.....	170.40	25.42	30.58	41.18	40170
40171	32 mm diameter.....	214.58	25.92	31.10	46.06	40171
40172	40 mm diameter.....	258.77	26.59	31.63	49.67	40172
40173	50 mm diameter.....	313.88	27.86	32.73	53.30	40173
40174	65 mm diameter.....	981.22	29.07	33.93	55.74	40174
40175	80 mm diameter.....	1,129.48	31.51	36.34	59.36	40175
40176	100 mm diameter.....	1,533.14	33.93	38.78	65.42	40176
40177	150 mm diameter.....	2,389.63	44.84	56.95	88.44	40177
40178	200 mm diameter.....	4,111.28	55.74	64.20	111.47	40178
40179	250 mm diameter.....	6,195.84	65.42	71.48	129.63	40179
40180	150 mm underground G.I. flange gate valve for street hydrant: -	4,520.00	44.84	56.95	88.44	40180

Item	PIPE WORK AND PUMPS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Gate valve for sprinkler system c/w tamper-proof electric switch to indicate valve operational mode including remote indication on F.S. control panel : -					
	Each	A $	B $	C $	D $	
40181	32 mm diameter.....	844.35	42.34	48.42	138.12	40181
40182	40 mm diameter.....	898.21	42.97	48.92	140.54	40182
40183	50 mm diameter.....	980.90	44.02	50.00	145.38	40183
40184	65 mm diameter.....	1,872.57	46.06	52.10	149.02	40184
40185	80 mm diameter.....	2,170.49	47.25	53.30	151.44	40185
40186	100 mm diameter.....	2,547.64	49.67	55.74	156.28	40186
40187	150 mm diameter.....	3,915.95	60.58	67.84	180.51	40187
40188	200 mm diameter.....	5,479.01	71.48	79.96	202.32	40188
	Globe valve : -					
	Each					
40189	25 mm diameter.....	176.57	24.23	29.07	41.18	40189
40190	32 mm diameter.....	238.18	29.08	34.72	46.06	40190
40191	40 mm diameter.....	333.04	29.73	35.23	49.67	40191
40192	50 mm diameter.....	473.97	30.83	36.42	53.30	40192
40193	65 mm diameter.....	1,149.26	31.51	37.16	58.17	40193
40194	80 mm diameter.....	1,463.23	32.18	37.87	61.79	40194
40195	100 mm diameter.....	1,787.05	37.40	42.95	77.53	40195
40196	150 mm diameter.....	3,725.38	48.40	55.45	101.76	40196
40197	200 mm diameter.....	6,298.29	59.67	68.29	126.00	40197
40198	250 mm diameter.....	8,634.18	68.44	75.44	146.60	40198

Item	PIPE WORK AND PUMPS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Globe valve for sprinkler system c/w tamper-proof electric switch to indicate valve operational mode including remote indication on F.S. control panel : -					
	Each	A $	B $	C $	D $	
40199	32 mm diameter.....	838.08	42.34	48.42	138.12	40199
40200	40 mm diameter.....	902.01	42.97	48.93	140.54	40200
40201	50 mm diameter.....	1,040.52	44.02	50.00	145.38	40201
40202	65 mm diameter.....	2,023.63	46.06	52.10	149.02	40202
40203	80 mm diameter.....	2,274.46	47.25	53.30	151.44	40203
40204	100 mm diameter.....	2,801.12	49.67	55.74	156.28	40204
40205	150 mm diameter.....	4,591.92	60.58	67.84	180.51	40205
40206	200 mm diameter.....	7,030.34	71.48	79.96	202.32	40206
40207	250 mm diameter.....	9,378.47	76.32	88.44	222.91	40207
	Non return valve : -					
	Each					
40208	32 mm diameter.....	263.37	25.92	31.10	46.06	40208
40209	40 mm diameter.....	325.90	26.59	31.62	49.67	40209
40210	50 mm diameter.....	456.07	27.86	32.73	53.30	40210
40211	65 mm diameter.....	813.23	29.07	33.93	55.74	40211
40212	80 mm diameter.....	1,307.70	31.51	36.34	59.36	40212
40213	100 mm diameter.....	1,533.14	33.93	38.78	65.42	40213
40214	150 mm diameter.....	2,632.56	44.84	50.88	88.44	40214
40215	200 mm diameter.....	4,449.35	56.95	64.20	111.47	40215
40216	250 mm diameter.....	6,725.92	65.42	71.48	129.63	40216

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS (CONT'D)					
	Y-type strainer : -					
		A	B	C	D	
	Each	$	$	$	$	
40217	32 mm diameter.....	348.03	26.25	31.79	46.06	40217
40218	40 mm diameter.....	432.35	26.77	32.19	49.67	40218
40219	50 mm diameter.....	651.41	27.86	33.93	53.30	40219
40220	65 mm diameter.....	704.20	29.07	35.14	55.74	40220
40221	80 mm diameter.....	898.89	31.51	37.55	59.36	40221
40222	100 mm diameter.....	1,225.78	33.93	39.97	65.42	40222
40223	150 mm diameter.....	2,554.00	44.84	53.30	88.44	40223
40224	200 mm diameter.....	3,882.24	56.95	66.63	111.47	40224
40225	250 mm diameter.....	6,543.56	65.42	75.12	129.63	40225
	Sluice valve, wedge type c/w spindle cap : -					
	7.00					
	Each					
40226	150 mm diameter.....	2,686.21	46.06	53.30	90.85	40226
40227	200 mm diameter.....	4,223.86	56.95	66.63	113.88	40227
40228	250 mm diameter.....	6,533.66	66.63	75.12	130.84	40228
	Puddle flange tank connector : -					
	Each					
40229	100 mm diameter.....	857.12	37.55	43.61	70.27	40229
40230	150 mm diameter.....	984.66	49.67	56.95	95.71	40230
40231	200 mm diameter.....	1,290.96	61.79	71.48	121.16	40231
40232	250 mm diameter.....	1,736.91	71.48	79.96	140.54	40232

Item	PIPE WORK AND PUMPS (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Sundries : -					
		A	B	C	D	
	Each	$	$	$	$	
40233	Vortex inhibitor (all sizes).....	5,342.65	37.55	43.61	70.27	40233
40234	Non-ferrous filter (all sizes).....	2,211.13	35.14	41.18	61.79	40234
40235	Air relief valve (all sizes).....	159.85	26.65	32.73	41.18	40235
40236	Anti-pollution valve (all sizes).....	896.70	31.51	37.55	54.51	40236
40237	Pressure gauge (all sizes).....	297.74	26.65	32.73	41.18	40237
40238	Oil dumped gauge for sprinkler system.....	502.21	27.86	33.93	44.84	40238
40239	Electric alarm pressure switch c/w conduits (surface or concealed type), trunkings, cables for connection to the fire alarm control/ indication panel and control equipment and all accessories	1,721.01	94.51	102.98	301.67	40239
40240	Water alarm flow switch c/w conduits (surface or concealed type), trunkings, cables for connection to the fire alarm control/ indication panel and control equipment and all accessories	862.99	100.55	111.47	340.43	40240
40241	Subsidiary monitor stop valve set per zone c/w limit switch, conduits (surface or concealed type), trunkings, cables for connection to the fire control indication panel and all accessories	2,882.03	107.83	116.31	329.53	40241
	Centrifugal pump, horizontal split case type c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including control panel in the same room and installed on a concrete plinth : -					
	Each					
40242	Up to 5 kW.....	67,947.33	162.34	186.57	894.11	40242
40243	5 - 10 kW.....	98,146.15	170.83	195.07	930.44	40243
40244	10 - 15 kW.....	98,146.15	179.31	203.55	963.13	40244
40245	15 - 20 kW..... (The actual rate should be : $135,894.70 for Item 40245A)	13,589.47	186.57	210.81	989.81	40245
40246	20 - 25 kW..... (The actual rate should be : $150,994.20 for Item 40246A)	15,099.42	195.07	219.28	1,027.37	40246
40247	25 - 30 kW..... (The actual rate should be : $188,742.50 for Item 40247A)	18,874.25	203.55	227.77	1,049.16	40247
40248	Add to last item for each additional 5 kW or part thereof.....	37,748.52	8.08	8.45	31.51	40248

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS (CONT'D)					
	Centrifugal pump, end-suction type c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including control panel in the same room and installed on a concrete plinth : -					
	Each	A $	B $	C $	D $	
40249	Up to 5 kW	60,397.63	162.34	186.57	894.11	40249
40250	5 - 10 kW	83,046.75	170.83	195.07	930.44	40250
40251	10 - 15 kW	90,596.45	179.31	203.55	963.13	40251
40252	15 - 20 kW (The actual rate should be : $113,245.50 for Item 40252A)	11,324.55	186.57	210.81	989.81	40252
40253	20 - 25 kW (The actual rate should be : $135,894.70 for Item 40253A)	13,589.47	195.07	219.28	1,027.37	40253
40254	25 - 30 kW (The actual rate should be : $150,994.20 for Item 40254A)	15,099.42	203.55	227.77	1,049.16	40254
40255	Add to last item for each additional 5 kW or part thereof	30,198.81	8.08	8.45	31.51	40255
	Centrifugal Jockey Pump, c/w drain and vent, orifice plates, electrical wirings, connected to a power supply switch, control wirings & associated conduit/ trunking, connected to and including control panel in the same room and installed on a concrete plinth : -					
	Each					
40256	Up to 5 kW	67,947.33	162.34	186.57	894.11	40256
40257	5 - 10 kW	83,046.75	170.83	195.07	930.44	40257
40258	Add to last item for each additional 5 kW or part thereof	37,748.52	8.08	8.45	31.51	40258
	Sundries : -					
	Each					
40259	Remote supervisory/ start stop control panel for pump c/w all necessary accessories	15,141.55	56.95	60.58	346.50	40259
40260	High/ low level switch c/w conduits (surface or concealed type), trunking, sensing device, interconnection wiring and cables from water tank to indication and control panel for indication and control functions and all necessary for proper functioning of fire services system	4,542.46	65.42	75.12	282.28	40260
40261	Sprinkler proving pipe and all necessary accessories	6,435.15	35.14	38.78	65.42	40261
40262	Strap for valves, hydrants & FS / Sprinkler inlets	158.20	8.47	9.70	14.54	40262
40263	Pad lock	118.65	8.47	9.70	14.54	40263
40264	Electro thermal link	474.60	8.47	9.70	14.54	40264

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS (CONT'D)					
	Expansion joint c/w all necessary accessories for fire services system : -					
	Each	A $	B $	C $	D $	
40265	32 mm diameter.....	1,097.20	29.64	36.43	50.88	40265
40266	40 mm diameter.....	1,305.24	30.31	37.06	54.51	40266
40267	50 mm diameter.....	1,740.66	31.51	38.78	59.36	40267
40268	65 mm diameter.....	1,942.56	32.73	39.97	61.79	40268
40269	80 mm diameter.....	2,144.42	35.14	42.40	66.63	40269
40270	100 mm diameter.....	2,860.36	37.55	43.61	70.27	40270
40271	150 mm diameter.....	4,673.36	47.25	54.51	86.03	40271
40272	200 mm diameter.....	6,486.37	56.95	64.20	98.14	40272
	Foot valve, globe type : -					
	Each					
40273	50 mm diameter.....	1,523.97	50.80	228.62	152.41	40273
40274	65 mm diameter.....	2,539.96	63.51	381.04	254.02	40274
40275	80 mm diameter.....	3,047.95	76.21	381.04	254.02	40275
40276	100 mm diameter.....	3,573.39	88.91	508.05	355.63	40276
40277	125 mm diameter.....	4,854.66	101.61	571.55	406.44	40277
40278	150 mm diameter.....	6,135.92	127.01	635.06	508.05	40278
40279	200 mm diameter.....	10,370.45	177.82	762.07	635.06	40279
40280	250 mm diameter.....	15,676.64	254.02	889.08	762.07	40280
40281	300 mm diameter.....	20,982.81	381.04	1,016.10	889.08	40281

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PIPE WORK AND PUMPS (CONT'D)					
	Pump control and indication panel of FS System completed with motor starter for fire service / street hydrant / sprinkler pump motor completed with push buttons, relays, circuit protective and metering device, electrical wiring connected to supply point, etc for total : -					
	Each	A $	B $	C $	D $	
40282	up to 5kW	7,910.00	54.51	58.17	319.85	40282
40283	5 - 10kW	11,865.00	54.51	58.17	319.85	40283
40284	10 - 15kW	15,820.00	54.51	58.17	319.85	40284
40285	15 - 20kW	19,775.00	54.51	58.17	319.85	40285
40286	20 - 25kW	23,730.00	54.51	58.17	319.85	40286
40287	25 - 30kW	31,640.00	54.51	58.17	319.85	40287

FIRE RESISTANT CABLES

(Note : The following Items 40288 to 40305 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)

BS 6387 Category B heat resistant cables c/w all necessary accessories : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per linear metre	A $	B $	C $	D $	
40288	1.5 mm² 1-core	21.74	1.25	1.63	4.83	40288
40289	2.5 mm² 1-core	24.79	1.25	1.63	4.83	40289
40290	1.5 mm² 7-core	144.13	6.06	7.27	23.02	40290
40291	2.5 mm² 7-core	169.23	7.27	8.47	26.65	40291
40292	1.5 mm² 12-core	192.30	6.06	7.27	23.02	40292
40293	2.5 mm² 12-core	223.37	7.27	8.47	26.65	40293
40294	1.5 mm² 19-core	262.49	6.94	7.20	25.44	40294
40295	2.5 mm² 19-core	350.36	7.27	8.47	29.07	40295
40296	1.5 mm² 27-core	360.99	7.27	8.47	29.07	40296
40297	2.5 mm² 27-core	426.26	8.47	9.70	31.51	40297
40298	1.5 mm² 7-core PVC/ SWA/ PVC	525.86	6.06	7.27	23.02	40298
40299	2.5 mm² 7-core PVC/ SWA/ PVC	598.97	7.27	8.47	26.65	40299
40300	1.5 mm² 12-core PVC/ SWA/ PVC	706.95	6.06	7.27	23.02	40300
40301	2.5 mm² 12-core PVC/ SWA/ PVC	735.27	7.27	8.47	27.86	40301
40302	1.5 mm² 19-core PVC/ SWA/ PVC	884.02	6.06	7.27	25.44	40302
40303	2.5 mm² 19-core PVC/ SWA/ PVC	973.08	7.27	8.47	29.07	40303
40304	1.5 mm² 27-core PVC/ SWA/ PVC	1,001.73	7.27	8.47	29.07	40304
40305	2.5 mm² 27-core PVC/ SWA/ PVC	1,088.56	8.47	9.70	31.51	40305

FIRE RESISTANT CABLES (CONT'D)

(Note : The following Items 40306 to 40321 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)

BS 6387 Category CWZ heat resistant cables c/w all necessary accessories : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Per linear metre	$	$	$	$	
40306	10 mm² 1-core	68.77	1.91	2.29	6.06	40306
40307	16 mm² 1-core	90.87	1.91	2.29	6.06	40307
40308	25 mm² 1-core	113.58	2.42	2.92	8.47	40308
40309	35 mm² 1-core	262.77	2.42	2.92	9.70	40309
40310	50 mm² 1-core	304.38	2.94	3.57	10.90	40310
40311	70 mm² 1-core	364.26	3.21	3.83	10.90	40311
40312	95 mm² 1-core	434.81	3.63	4.83	14.54	40312
40313	120 mm² 1-core	513.65	4.83	6.06	16.96	40313
40314	10 mm² 4-core PVC/ SWA/ PVC	275.01	12.11	14.54	44.84	40314
40315	16 mm² 4-core PVC/ SWA/ PVC	307.38	12.11	14.54	46.06	40315
40316	25 mm² 4-core PVC/ SWA/ PVC	449.69	13.32	15.75	47.25	40316
40317	35 mm² 4-core PVC/ SWA/ PVC	504.68	13.32	15.75	48.47	40317
40318	50 mm² 4-core PVC/ SWA/ PVC	614.84	14.54	16.96	49.67	40318
40319	70 mm² 4-core PVC/ SWA/ PVC	779.70	14.54	16.96	53.30	40319
40320	95 mm² 4-core PVC/ SWA/ PVC	906.37	15.75	19.39	59.36	40320
40321	120 mm² 4-core PVC/ SWA/ PVC	1,071.77	16.96	20.60	66.63	40321

FIRE RESISTANT CABLES (CONT'D)

(Note : The following Items 40322 to 40337 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing)

Low smoke zero halogen type fire resistant cable complying with BS6387 CWZ, BS EN 50200, BE EN 61034-1, BE EN 50267-2 and BS 7629-1/ BS 7846 c/w all necessary accessories : -

Item	*Per linear metre*	A Supply and fix $	B Take down and clear away $	C Take down and set aside for re-use $	D Fix only $	Item
40322	10 mm² 1-core	69.40	1.91	2.29	6.06	40322
40323	16 mm² 1-core	91.24	1.91	2.29	6.06	40323
40324	25 mm² 1-core	114.32	2.42	2.92	8.47	40324
40325	35 mm² 1-core	264.86	2.42	2.92	9.70	40325
40326	50 mm² 1-core	305.95	2.94	3.57	10.90	40326
40327	70 mm² 1-core	366.03	3.21	3.83	10.90	40327
40328	95 mm² 1-core	437.65	3.63	4.83	14.54	40328
40329	120 mm² 1-core	517.45	4.83	6.06	16.96	40329
40330	10 mm² 4-core	277.93	12.11	14.54	44.84	40330
40331	16 mm² 4-core	310.81	12.11	14.54	46.06	40331
40332	25 mm² 4-core	455.60	13.32	15.75	47.25	40332
40333	35 mm² 4-core	510.00	13.32	15.75	48.47	40333
40334	50 mm² 4-core	619.83	14.54	16.96	49.67	40334
40335	70 mm² 4-core	788.28	14.54	16.96	53.30	40335
40336	95 mm² 4-core	916.58	15.75	19.39	59.36	40336
40337	120 mm² 4-core	1,083.56	16.96	20.60	66.63	40337

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	GAS TOTAL FLOODING SYSTEM					
	FM-200 gas cylinder c/w discharge valve with safety device, check valve, manifolds, pressure gauge, low pressure switch, dip tubes, liquid level indicator, mounting brackets, nameplate, signal wiring and all necessary accessories (including design and calculation for the gas total flooding system) : -					
	Each	A $	B $	C $	D $	
40338	Up to 27 kg	22,600.00	113.14	127.71	802.61	40338
40339	27 - 40 kg	27,067.06	132.05	146.60	952.24	40339
40340	40 - 50 kg	31,901.02	146.60	161.13	1,067.34	40340
40341	50 - 70 kg	42,029.38	161.13	175.67	1,188.50	40341
40342	70 - 100 kg	56,288.57	175.67	190.21	1,304.80	40342
40343	100 - 140 kg	74,745.08	190.21	204.74	1,430.80	40343
40344	140 - 180 kg	94,216.02	204.74	219.28	1,548.31	40344
40345	Each additional 10 kg or part thereof 140-180kg	5,234.22	11.37	12.18	86.02	40345
40346	Discharge nozzle	485.50	15.16	15.92	35.14	40346
	FM-200 system control and indicating panel c/w control wiring, signal wiring with main fire alarm control panel, coincidence unit, electronic components, battery/ charger and all necessary accessories (including design and calculation for the gas total flooding system) : -					
	Each					
40347	Panel of 2 zones	7,743.71	53.30	55.74	317.42	40347
40348	Panel of 4 zones	12,973.74	54.51	56.95	328.32	40348
40349	Panel of 8 zones	17,544.07	56.95	60.58	344.06	40349
40350	System odoriser	1,687.68	24.23	30.28	101.76	40350
	Heavy galvanized steel pipework to BS EN 10255 but welded and fittings to BS EN 10241 c/w all necessary accessories (including design and calculation for the gas total flooding system) : -					
	Per linear metre					
40351	20 mm diameter	106.98	4.32	4.62	71.48	40351
40352	25 mm diameter	129.28	4.96	5.10	77.53	40352
40353	32 mm diameter	152.65	5.69	5.84	82.40	40353
40354	40 mm diameter	166.74	6.23	6.29	89.64	40354

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	GAS TOTAL FLOODING SYSTEM (CONT'D)					
	Mild steel pipework to BS EN 10216-1 and BS EN 10217-1 and fittings to BE EN 10241 c/w all necessary accessories (including design and calculation for the gas total flooding system) : -					
	Per linear metre	A $	B $	C $	D $	
40355	50 mm diameter	305.82	8.19	8.90	122.37	40355
40356	65 mm diameter	370.72	9.70	10.90	141.75	40356
40357	80 mm diameter	451.01	10.90	12.11	156.28	40357
40358	100 mm diameter	581.87	12.11	13.32	198.69	40358
	Mild steel pipework to BS EN 10216-1 and BS EN 10217-1 and fittings to BS EN 1759-1 c/w all necessary accessories (including design and calculation for the gas total flooding system) : -					
	Per linear metre					
40359	150 mm diameter	826.24	21.79	23.02	264.12	40359
	Equipment/ components for FM-200 system c/w all necessary accessories and connected to control/ indication panel : -					
	Each					
40360	Gas release actuator	1,862.85	87.23	105.41	364.66	40360
40361	Lock off/ indication panel	2,805.74	52.10	55.74	207.18	40361
40362	Gas discharge flashing light	440.07	42.40	47.25	173.25	40362
40363	Manual release pull unit	592.17	56.95	66.63	245.93	40363
40364	Yodalarm	1,000.62	56.95	66.63	245.93	40364
40365	Abort unit	847.82	56.95	66.63	245.93	40365
40366	Compartment protected by FM-200 system warning notice	185.86	3.46	4.10	21.79	40366
40367	Smoke detector point compatible with panel	725.60	56.95	66.63	245.93	40367
40368	Auto/ manual key switch unit with housing	1,105.33	56.95	66.63	255.62	40368
40369	Warning light for evacuation and gas discharge	621.08	56.95	66.63	245.93	40369
40370	Agent release module for parallel wiring of agent initiators c/w all necessary accessories	605.52	56.95	66.63	245.93	40370
	Sundries : -					
	Per kg					
40371	Charge/ recharge/ refilling gas into cylinder including all necessary works and delivery	526.14	-	-	-	40371

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	ASPIRATING SMOKE DETECTION SYSTEM					
	Aspirating smoke detection system c/w sensor, air filter, sampling, fan(s), controls, wiring, control panel and all necessary accessories for a fully functional aspirating smoke detection system : -	A $	B $	C $	D $	
	Each					
40372	For up to 50m sampling pipework	34,529.41	633.11	668.75	2,402.62	40372
40373	For 50m - 100m sampling pipework	44,830.49	821.98	868.26	3,119.38	40373
40374	For 100m - 200m sampling pipework	67,440.66	1,236.54	1,306.16	4,692.64	40374
	Each					
40375	Remote display c/w wall mounting enclosure	11,709.06	10.89	12.85	29.67	40375

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	PORTABLE EQUIPMENT					
	Portable equipment c/w mounting framework, bracket and all necessary accessories : -					
		A	B	C	D	
	Each	$	$	$	$	
40376	2 kg or below dry powder fire extinguisher.....	412.16	13.32	14.54	78.75	40376
40377	2 - 4 kg dry powder fire extinguisher.....	481.62	13.32	14.54	78.75	40377
40378	4 - 5 kg dry powder fire extinguisher.....	603.16	13.32	14.54	78.75	40378
40379	5 - 9 kg dry powder fire extinguisher.....	689.98	13.32	14.54	82.40	40379
40380	4.5 litres water type fire extinguisher.....	339.43	13.32	14.54	78.75	40380
40381	9 litres water type fire extinguisher.....	378.53	13.32	14.54	82.40	40381
40382	2 kg or below CO_2 type fire extinguisher……	242.13	13.32	14.54	78.75	40382
40383	2 - 4 kg CO_2 type fire extinguisher……..	363.78	13.32	14.54	78.75	40383
40384	4 - 5 kg CO_2 type fire extinguisher……..	546.29	13.32	14.54	78.75	40384
40385	5 - 9 kg CO_2 type fire extinguisher……..	1,093.75	13.32	14.54	82.40	40385
40386	4.5 litres foam type fire extinguisher.....	368.31	13.32	14.54	78.75	40386
40387	9 litres foam type fire extinguisher.....	376.40	13.32	14.54	82.40	40387
40388	9 litres CO_2 type water fire extinguisher……...……..	699.38	13.32	14.54	82.40	40388
	Refilling of portable fire extinguisher : -					
	Per kg					
40389	CO_2 refill…….	51.72	-	-	-	40389
	Per litres					
40390	Water refill.....	37.06	-	-	-	40390
40391	Foam refill.....	37.06	-	-	-	40391
	Sundries : -					
	Each					
40392	Sand bucket.....	218.24	3.34	3.41	4.83	40392
40393	Fire blanket, heavy type.....	344.51	6.06	7.27	15.75	40393

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AUTOMATIC FIXED SPRAYER UNITS					
	HCFC-124 automatic type fixed sprayer unit and all necessary accessories : -					
	Each	A $	B $	C $	D $	
40394	Up to 5.7 kg	-	104.18	116.31	460.37	40394
40395	5.7 - 7.2 kg	-	107.83	118.72	478.54	40395
40396	7.2 - 10.7 kg	-	111.47	122.37	501.57	40396
40397	10.7 - 13.8 kg	-	113.88	126.00	520.94	40397
40398	13.8 - 15.3 kg	-	117.51	128.42	542.77	40398
40399	15.3 - 19.5 kg	-	121.16	132.05	562.13	40399
	NAFS-III automatic type fixed sprayer unit and all necessary accessories : -					
	Each					
40400	Up to 4 kg	-	105.41	119.95	470.07	40400
40401	4 - 9 kg	-	112.68	127.20	524.58	40401
40402	9 - 16 kg	-	159.92	182.93	728.12	40402
	FM-200 automatic/ manual discharge fire extinguisher, wall/ ceiling mounted type c/w FM-200 warning plate and all necessary accessories : -					
	Each					
40403	Up to 3 kg	10,669.01	279.43	311.95	508.05	40403
40404	3 - 6 kg	12,447.18	304.83	335.62	571.55	40404
40405	6 - 9 kg	16,003.51	330.23	362.53	609.66	40405
40406	9 - 12 kg	19,559.85	355.63	393.47	660.46	40406
40407	12 - 15 kg	23,116.18	381.04	416.39	711.27	40407
40408	15 - 18 kg	26,672.52	406.44	442.98	762.07	40408
40409	18 - 21 kg	30,228.86	431.84	469.57	812.88	40409
40410	21 - 24 kg	33,785.19	457.24	496.17	863.68	40410
40411	24 - 27 kg	37,341.53	482.65	522.76	914.49	40411
40412	27 - 30 kg	40,897.86	508.05	549.36	965.29	40412

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	AUDIO/ VISUAL ADVISORY SYSTEM					
	Design, supply and install audio/ visual fire alarm equipment; electrical and control points c/w cables, conduit (surface or concealed in partitions and ceiling) and all necessary accessories and connected to the audio/ visual fire alarm control panel : -					
	Each	A $	B $	C $	D $	
40413	Loudspeakers; surface/ concealed mounted c/w metal enclosure.....	853.57	61.79	72.70	265.32	40413
40414	Flashing light directional sign boxes; single side; overall size up to 500 mm x 150 mm x 200 mm (H); comprising metal sign box, perspex backing and front sheeting, flashing unit, battery and charger, electrical gear and all necessary accessories; ceiling mounted.....	1,439.57	61.79	72.70	265.32	40414
40415	Ditto but double side.....	1,704.97	61.79	72.70	265.32	40415
	Audio-visual fire alarm control/ indicating panel c/w pre-amplifier and amplifier, automatic long play recorder, cassette tape, repeater, random access message module, master controller, multiplex alarm system, system/ auxiliary power supply, connection of fire link and all necessary accessories : -					
	Each					
40416	Panel of 4 zones or less.....	33,168.11	54.51	58.17	422.82	40416
40417	Ditto 5 - 8 zones.....	45,088.23	61.79	67.84	460.37	40417
40418	Ditto 9 - 12 zones.....	53,974.96	67.84	73.91	496.72	40418
40419	Ditto 13 - 18 zones.....	61,074.48	73.91	81.18	525.77	40419
40420	Add to last item for each additional 4 zones or part thereof.....	4,207.96	6.06	6.06	31.51	40420

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	DISCONNECTION OF EXISTING FIRE SERVICES INSTALLATION					
	Supply labour to disconnect all existing fire services installation for an area, take down and clear away entire fire services installation inside the area (area shall be measured net on the gross floor area of the building covered by the fire services installation) : -					
		A	B	C	D	
	Per square metre	$	$	$	$	
40421	Area with sprinkler (up to 100 m²).....	-	19.39	-	-	40421
40422	Area with sprinkler (100 - 500 m²).....	-	18.18	-	-	40422
40423	Area with sprinkler (above 500 m²).....	-	16.96	-	-	40423
40424	Area without sprinkler (up to 100 m²).....	-	8.47	-	-	40424
40425	Area without sprinkler (100 - 500 m²).....	-	7.27	-	-	40425
40426	Area without sprinkler (above 500 m²).....	-	6.79	-	-	40426
	Supply labour to disconnect the existing fire services installation, take down and clear away entire fire services installation					
	Each					
40427	9 kg NAFS III type fire extinguisher.....	-	13.32	-	-	40427

Section 41

LIQUEFIED PETROLEUM GAS

SECTION 41

LIQUEFIED PETROLEUM GAS

SPECIAL CONDITIONS

Measurement of excavations, chases, holes and other subsidiary work

SC41.01

All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.

Measurement of pipework

SC41.02

Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.

Measurement of pressure test of existing pipework

SC41.03

Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for pressure test of existing pipework where specifically ordered by the Maintenance Surveyor in writing.

Measurement of temporary supply

SC41.04

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC41.05** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except pressure test of existing pipework. (Note : - Pressure test of existing pipework shall be measured separately if ordered by the Maintenance Surveyor in writing)

(l) Provision of all necessary testing instrument of approved type for testing and commissioning.

(m) Provision of mock-up work as specified.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

SPECIAL CONDITIONS

Rates for pipework **SC41.06** The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Wall, floor and ceiling plates.

(g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.

Rates for in-line pipework equipment **SC41.07** The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

SPECIAL CONDITIONS

Rates for equipment

SC41.08 The rates for equipment shall further included for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, strainers, instrumentation and the like.

(b) Provision of all associated components.

(c) All necessary operational and control accessories forming part of the equipment.

(d) Final connection and terminations to electrical supply, control, monitoring, interfacing and water supply and/or gas supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(e) Earth/equipotential bonding.

Rates for pressure test of existing pipework

SC41.09 The rates for pressure test of existing pipework (including associated in-line pipework fittings and in-line pipework equipment and the like) shall include for : -

(a) De-gasing and cleaning of pipeline by any means necessary before carrying out any test.

(b) All preparation work including temporary sealing ends of pipes and connections.

(c) Provision of all necessary testing instrument of approved type for pressure test.

(d) Provision of test record.

(e) Submission of Surveyor Certificate as specified.

(f) Making good all works disturbed.

(g) Purging into service.

SPECIAL CONDITIONS

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC41.10 The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with liquefied petroleum gas installation shall further include for : -

(a) Taking down all associated pipework and building services works (if any).

(b) All in-line fittings including brackets, supports, hangers and the like.

(c) Cutting into existing pipework in position.

(d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.

(e) Plugging off remaining ends with plugs or caps as required.

(f) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(g) Making good all works disturbed.

Particular Specification

SC41.11 The Particular Specification for liquefied petroleum gas installation can be found in the Contract.

LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION

Cylinder storage system including the initial supply of 50 kg LPG cylinder of LP gas, changeover valve c/w indicator, flexible hose c/w adaptor, pigtails, pressure gauge, manifold valve with or without check valve, safety devices and necessary pipeworks inside LP gas store : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per set	A $	B $	C $	D $	
41001	1 - 4 cylinders	13,628.87	89.22	99.38	1,274.03	41001
41002	5 - 8 cylinders	15,086.40	101.65	114.08	1,422.00	41002
41003	9 - 12 cylinders	16,044.20	116.33	128.76	1,546.24	41003
41004	13 - 16 cylinders	20,821.88	129.89	144.56	1,675.00	41004
41005	17 - 20 cylinders	33,125.72	142.31	156.99	1,802.62	41005

Above ground bulk LPG storage vessel c/w saddle, pressure relief valve, shut off valve, emergency valve, liquid level device, contents and pressure gauges, manhole, vent pipes, filling and drain connections, and other associated accessories, for water capacity : -

	Each					
41006	Up to 2000 litres	44,540.85	5,748.97	6,222.21	18,275.83	41006
41007	2000 - 4000 litres (The actual rate should be : $156,547.50 for Item 41007A)	15,654.75	6,035.84	6,567.82	37,539.96	41007
41008	4000 - 5000 litres (The actual rate should be : $259,847.60 for Item 41008A)	25,984.76	6,132.98	6,725.95	38,527.11	41008
41009	5000 - 7000 litres (The actual rate should be : $372,299.90 for Item 41009A)	37,229.99	6,252.71	6,902.14	40,503.67	41009
41010	7000 - 9000 litres (The actual rate should be : $653,390.60 for Item 41010A)	65,339.06	6,698.83	7,407.01	41,490.82	41010

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	Underground bulk LPG storage vessel c/w saddle, pressure relief valve, shut off valve, emergency valve, liquid level device, contents and pressure gauges, manhole, vent pipes, securing facilities against flotation, fittings made accessible above ground level, coating, cathodic protection if necessary, filling and drain connections, and other associated accessories, for water capacity : -					
	Each	A $	B $	C $	D $	
41011	Up to 2000 litres	42,590.21	5,945.50	6,419.87	18,769.41	41011
41012	2000 - 4000 litres (The actual rate should be : $141,967.40 for Item 41012A)	14,196.74	6,233.51	6,765.48	38,527.11	41012
41013	4000 - 5000 litres (The actual rate should be : $236,612.20 for Item 41013A)	23,661.22	6,330.64	6,922.46	39,515.39	41013
41014	5000 - 7000 litres (The actual rate should be : $331,257.20 for Item 41014A)	33,125.72	6,450.35	7,099.79	41,490.82	41014
41015	7000 - 9000 litres (The actual rate should be : $567,869.40 for Item 41015A)	56,786.94	6,896.49	7,604.66	42,479.10	41015
	Excess flow valve					
	Per set					
41016	Excess flow valve for cylinder liquid take-off line	946.45	22.59	23.72	197.65	41016
	Vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity : -					
	Each					
41017	25 kg/ hr	42,590.21	128.76	135.53	5,927.43	41017
41018	50 kg/ hr	53,001.15	128.76	135.53	5,927.43	41018

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	Vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
41019	Changeover device for liquid withdrawal LPG	17,577.53	14.53	14.84	988.29	41019
41020	Changeover device for vapour withdrawal LPG	8,788.77	14.53	14.84	493.58	41020
41021	Medium/ low pressure regulator, fail shut off type (all size) c/w necessary accessories, valves, pressure gauge, etc	13,183.16	14.53	14.84	1,185.95	41021
41022	High/ medium pressure regulator c/w active & monitor regulator (all size) and necessary accessories, valves, pressure gauge, etc	13,183.16	14.53	14.84	1,185.95	41022
	Galvanized mild steel gas pipe to BS EN 10255:2004 or ISO 65:1981, c/w all necessary accessories : -					
	Per linear metre					
41023	15 mm diameter	418.38	6.71	8.00	92.63	41023
41024	20 mm diameter	460.20	7.39	8.70	109.55	41024
41025	25 mm diameter	502.04	7.59	8.79	120.85	41025
41026	32 mm diameter	543.89	9.27	10.07	143.45	41026
41027	40 mm diameter	581.08	10.67	11.55	167.17	41027
41028	50 mm diameter	627.58	12.34	13.21	196.53	41028
41029	65 mm diameter	745.27	14.57	15.89	232.67	41029
41030	80 mm diameter	912.63	18.10	19.05	283.49	41030
41031	100 mm diameter	1,113.34	21.61	22.60	351.26	41031
41032	150 mm diameter	1,734.31	39.78	42.63	555.70	41032

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	Underground galvanized mild steel gas pipe to BS EN 10216-1:2002, BS EN 10217-1:2002 or ANSI/ API Spec 5L:2007 or ASTM A53/ A53M-10:2010, c/w all necessary accessories : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
41033	20 mm diameter	490.89	8.00	8.49	132.14	41033
41034	25 mm diameter	535.52	8.19	8.79	146.82	41034
41035	32 mm diameter	580.15	9.27	10.38	168.28	41035
41036	40 mm diameter	619.82	10.86	12.03	197.65	41036
41037	50 mm diameter	669.41	12.34	13.53	241.70	41037
41038	65 mm diameter	794.94	15.29	16.49	282.38	41038
41039	80 mm diameter	973.47	18.45	19.63	316.25	41039
41040	100 mm diameter	1,187.57	20.72	22.70	417.91	41040
41041	150 mm diameter	1,849.95	34.26	36.92	586.19	41041
	Third stage governor regulator : -					
	Each					
41042	15 mm diameter	439.43	28.72	34.74	98.26	41042
41043	20 mm diameter	571.27	29.31	35.44	147.96	41043
41044	25 mm diameter	747.04	30.00	36.13	197.65	41044
	Copper gas pipe c/w all necessary accessories : -					
	Per linear metre					
41045	12 mm diameter	438.12	1.92	2.15	137.79	41045
	LPG meter c/w all necessary accessories : -					
	Each					
41046	Up to 2.5 m^3/hr	2,839.35	25.44	31.18	147.96	41046
41047	2.5 - 6.5 m^3/hr	6,625.15	31.74	37.39	147.96	41047
41048	6.5 - 10.5 m^3/hr	18,928.98	38.04	43.71	592.97	41048

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	LPG isolating valve, globe type or ball type or gate type, including adaptors and flange as required : -					
		A	B	C	D	
	Each	$	$	$	$	
41049	15 mm diameter.....	245.44	28.72	34.74	98.26	41049
41050	20 mm diameter.....	297.95	29.31	35.44	147.96	41050
41051	25 mm diameter.....	350.44	30.00	36.13	197.65	41051
41052	32 mm diameter.....	423.93	30.69	36.71	247.35	41052
41053	40 mm diameter.....	507.95	31.39	37.40	276.71	41053
41054	50 mm diameter.....	612.96	32.66	38.79	295.92	41054
41055	80 mm diameter.....	927.99	36.71	40.62	592.97	41055
	LPG cast steel isolating valve, globe type or ball type or gate type, stainless steel stem including adaptors and flange as required : -					
	Each					
41056	65 mm diameter.....	1,332.54	34.48	40.62	493.58	41056
41057	80 mm diameter.....	1,823.50	36.63	42.52	592.97	41057
41058	100 mm diameter.....	3,513.63	39.28	44.99	691.23	41058
41059	150 mm diameter.....	8,963.80	52.32	59.71	790.62	41059

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	LPG cast steel quick-action shut-off valve, fail safe, lever operated globe type or ball type, stainless stem including adaptors and flange as required : -					
		A	B	C	D	
	Each	$	$	$	$	
41060	15 mm diameter	748.27	29.81	36.25	98.26	41060
41061	20 mm diameter	855.07	30.39	36.98	147.96	41061
41062	25 mm diameter	962.00	31.10	37.69	197.65	41062
41063	32 mm diameter	1,336.16	31.83	38.28	247.35	41063
41064	40 mm diameter	1,581.99	32.54	38.99	276.71	41064
41065	50 mm diameter	1,923.99	33.84	40.41	295.92	41065
41066	65 mm diameter	4,061.90	35.78	42.38	493.58	41066
41067	80 mm diameter	4,833.82	37.95	44.34	592.97	41067
41068	100 mm diameter	7,049.18	40.67	46.99	691.23	41068
41069	150 mm diameter	14,904.14	54.15	62.39	790.62	41069
	LPG solenoid valve c/w all necessary accessories : -					
	Each					
41070	Up to 12 mm diameter	3,515.51	24.91	30.35	790.62	41070
41071	12 - 20 mm diameter	7,031.01	25.39	31.11	1,185.95	41071
	LPG equipment, with GU mark, c/w all necessary accessories : -					
	Each					
41072	LPG water heater with or without wall case 5 - 10 litres/ min	5,273.26	78.08	90.17	481.17	41072
41073	Build-in stove/ ring burner 1 ring	7,031.01	17.00	18.41	185.23	41073
41074	Build-in stove/ ring burner 2 rings	21,971.91	17.27	18.70	201.05	41074
41075	LPG rice cooker 5 - 10 litres	35,155.08	17.92	19.44	228.16	41075

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	Gas cooker c/w open ring burners, oven, hot plates, a grill, standard baking tray, a roasting tin and a ring type wok adaptor suitable for 300 mm diameter nominal size Chinese wok.					
	Cooking range power : -					
	Each	A $	B $	C $	D $	
41076	Up to 11.5 kW.....	23,661.22	372.72	391.93	733.02	41076
41077	11.5 - 16.7 kW.....	42,590.21	492.44	518.43	782.73	41077
	LPG Chinese cooking steamer c/w burners, air blowers, gas cock, 3 steam trays per steamer unit, rice pans, operational and safety controls, water faucet, flame failure device, automatic gas controller with solenoid valves, flue pipe, dim sum plates, dim sum tray stand, steamer funnel and all necessary accessories : -					
	Each					
41078	Single unit.....	47,322.46	234.94	324.15	1,916.71	41078
41079	Double unit.....	75,715.93	281.23	370.47	2,027.37	41079
	LPG Chinese cooking range c/w burners, air blowers, gas cock, operational and safety controls, splash plate, water faucet, water pot, flame failure device, automatic gas controller with solenoid valves, refractory brick lined combustion chamber, removable stainless steel plate for spice pots, flue pipes, tail pots and all necessary accessories : -					
	Each					
41080	1 x 300 to 600 mm diameter wok.....	75,715.93	243.98	327.55	1,791.33	41080
41081	2 x 300 to 600 mm diameter wok..... (The actual rate should be : $170,360.90 for Item 41081A)	17,036.09	273.32	455.19	2,937.72	41081
41082	1 x 800 mm diameter build-in wok..... (The actual rate should be : $113,573.90 for Item 41082A)	11,357.39	274.47	341.09	1,808.27	41082
41083	2 x 800 mm diameter build-in wok..... (The actual rate should be : $265,005.70 for Item 41083A)	26,500.57	316.25	506.01	3,091.33	41083

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	LIQUEFIED PETROLEUM GAS (LPG) INSTALLATION (CONT'D)					
	Pressure test of existing LPG pipework : - (Note : The following four items will only be paid for if ordered by the Maintenance Surveyor in writing)					
		A	B	C	D	
	Per pipeline	$	$	$	$	
41084	15 - 25 mm.....	3,660.77	-	-	-	41084
41085	25 - 50 mm.....	3,963.41	-	-	-	41085
41086	50 - 80 mm.....	4,597.91	-	-	-	41086
41087	80 - 200 mm.....	5,523.81	-	-	-	41087
	Sundries : -					
	Each					
41088	Stainless steel box 1.5 mm thick, glass-fronted; size 230 mm x 250 mm x 250 mm.....	946.45	11.65	12.03	48.57	41088
41089	LPG vaporizer, indirect heated type, flameproof/ explosion proof c/w necessary accessories, valves, rubber hose, etc. for vaporizing capacity 100 kg/ hr.....	56,786.94	192.00	196.53	7,902.85	41089
	LPG water heater c/w internal water tank, operational controls, safety features, control panel, flame failure device and all necessary accessories : -					
	Capacity : -					
	Each					
41090	200 to 300 Litres..... (The actual rate should be : $331,257.20 for Item 41090A)	33,125.72	218.00	254.15	4,197.09	41090
41091	300 to 450 Litres..... (The actual rate should be : $425,902.10 for Item 41091A)	42,590.21	218.00	254.15	6,031.33	41091

Section 42

TOWN GAS

SECTION 42

TOWN GAS

SPECIAL CONDITIONS

Measurement of excavations, chases, holes and other subsidiary work **SC42.01**

All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.

Measurement of pipework **SC42.02**

Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.

Measurement of pressure test of existing pipework **SC42.03**

Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for pressure test of existing pipework where specifically ordered by the Maintenance Surveyor in writing.

Measurement of temporary supply **SC42.04**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC42.05** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except pressure test of existing pipework. (Note : - Pressure test of existing pipework shall be measured separately if ordered by the Maintenance Surveyor in writing)

(l) Provision of all necessary testing instrument of approved type for testing and commissioning.

(m) Provision of mock-up work as specified.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

SPECIAL CONDITIONS

Rates for pipework

SC42.06 The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Wall, floor and ceiling plates.

(g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.

Rates for in-line pipework equipment

SC42.07 The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

SPECIAL CONDITIONS

Rates for pressure test of existing pipework

SC42.08

The rates for pressure test of existing pipework (including associated in-line fittings and in-line pipework equipment and the like) shall include for : -

(a) De-gasing and cleaning of pipeline by any means necessary before carrying out any test.

(b) All preparation work including temporary sealing ends of pipes and connections.

(c) Provision of all necessary testing instrument of approved type for pressure test.

(d) Provision of test record.

(e) Submission of Surveyor Certificate as specified.

(f) Making good all works disturbed.

(g) Purging into service.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC42.09

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with town gas installation shall further include for : -

(a) Taking down all associated pipeworks and building services works (if any).

(b) All in-line fittings including brackets, supports, hangers and the like.

(c) Cutting into existing pipework in position.

(d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.

(c) Plugging off remaining ends with plugs or caps as required.

(f) Preparing remaining ends of pipeworks and building services works (if any) to receive connections with new work if required.

(g) Making good all works disturbed.

Particular Specification

SC42.10

The Particular Specification for town gas installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TOWN GAS INSTALLATION					
	Galvanized mild steel gas pipe to BS EN 10255:2004 or ISO 65:1981, c/w all necessary accessories : -					
	Per linear metre	A $	B $	C $	D $	
42001	15 mm diameter	418.38	6.71	8.00	92.63	42001
42002	20 mm diameter	460.20	7.40	8.70	109.55	42002
42003	25 mm diameter	502.04	7.59	8.79	120.85	42003
42004	32 mm diameter	543.89	9.27	10.07	143.45	42004
42005	40 mm diameter	581.08	10.67	11.55	167.17	42005
42006	50 mm diameter	627.58	12.34	13.21	196.53	42006
42007	65 mm diameter	745.27	14.53	15.89	232.67	42007
42008	80 mm diameter	912.63	18.08	19.05	283.49	42008
42009	100 mm diameter	1,113.34	21.61	22.60	351.26	42009
42010	150 mm diameter	1,734.35	39.78	42.63	555.70	42010
	Underground galvanized mild steel gas pipe to BS EN 10216-1:2002, BS EN 10217-1:2002 or ANSI/ API Spec 5L:2007 or ASTM A53/ A53M-10:2010, c/w all necessary accessories : -					
	Per linear metre					
42011	20 mm diameter	490.89	8.00	8.49	132.14	42011
42012	25 mm diameter	535.52	8.19	8.79	146.82	42012
42013	32 mm diameter	580.15	9.27	10.38	168.28	42013
42014	40 mm diameter	619.82	10.86	12.03	197.65	42014
42015	50 mm diameter	669.41	12.34	13.53	241.70	42015
42016	65 mm diameter	794.94	15.29	16.49	282.38	42016
42017	80 mm diameter	973.47	18.45	19.63	316.25	42017
42018	100 mm diameter	1,187.57	20.72	22.70	417.91	42018
42019	150 mm diameter	1,849.95	34.26	36.92	586.19	42019

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TOWN GAS INSTALLATION (CONT'D)					
	Bronze isolating valve, globe type or gate type or ball type, including adaptors and flanges as required : -					
	Each	A $	B $	C $	D $	
42020	15 mm diameter	244.70	28.72	34.74	98.26	42020
42021	20 mm diameter	297.05	29.31	35.44	147.96	42021
42022	25 mm diameter	349.38	30.00	36.13	197.65	42022
42023	32 mm diameter	422.68	30.69	36.71	247.35	42023
42024	40 mm diameter	506.43	31.39	37.40	276.71	42024
42025	50 mm diameter	611.12	32.66	38.79	295.92	42025
42026	80 mm diameter	925.21	36.71	42.35	592.97	42026
	Cast steel isolating valve, globe type or gate type or ball type, stainless steel stem including adaptors and flanges as required : -					
	Each					
42027	65 mm diameter	2,842.76	34.48	40.62	493.58	42027
42028	80 mm diameter	3,459.45	36.63	42.52	592.97	42028
42029	100 mm diameter	4,735.04	39.28	44.99	691.23	42029
42030	150 mm diameter	11,098.05	52.32	59.71	790.62	42030
	Bronze quick action shut-off valves, lever-operated ball type or globe type, including adaptors and flanges as required : -					
	Each					
42031	20 mm diameter	246.37	29.31	35.44	147.96	42031
42032	25 mm diameter	349.38	30.00	36.13	197.65	42032
42033	32 mm diameter	437.85	30.69	36.71	247.35	42033
42034	40 mm diameter	556.06	31.39	37.40	276.71	42034
42035	50 mm diameter	746.72	32.66	38.79	295.92	42035

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TOWN GAS INSTALLATION (CONT'D)					
	Cast steel quick action shut-off valves, lever-operated ball type or globe type, stainless steel stem including adaptors and flanges as required : -					
		A	B	C	D	
	Each	$	$	$	$	
42036	65 mm diameter	3,650.35	34.48	40.62	493.58	42036
42037	80 mm diameter	3,961.78	36.63	42.52	592.97	42037
42038	100 mm diameter	5,559.92	39.28	44.99	691.23	42038
42039	150 mm diameter	13,595.54	52.32	59.71	790.62	42039
	Town gas outlet point c/w cocks, including adaptors and flanges as required : -					
	Each					
42040	20 mm diameter	378.99	30.31	38.69	47.44	42040
42041	25 mm diameter	387.35	30.98	39.39	49.69	42041
	Gas cock : -					
	Each					
42042	2-way flexible tube cock	626.51	38.59	47.28	59.86	42042
42043	2-way bench cock, laboratory type 15 mm diameter	652.22	38.59	47.28	59.86	42043
	Sundries : -					
	Each					
42044	Stainless steel box 1.5 mm thick, glass-fronted; size 230 mm x 250 mm x 250 mm	642.26	11.65	12.03	48.57	42044
	Pressure test of existing town gas pipeworks : - (Note : The following four items will only be paid for if ordered by the Maintenance Surveyor in writing)					
	Per pipeline					
42045	15 - 25 mm	3,660.77	-	-	-	42045
42046	25 - 50 mm	3,963.41	-	-	-	42046
42047	50 - 80 mm	4,597.91	-	-	-	42047
42048	80 - 200 mm	5,523.81	-	-	-	42048

Section 43

MEDICAL GASES

SECTION 43

MEDICAL GASES

SPECIAL CONDITIONS

Measurement of excavations, chases, holes and other subsidiary work	**SC43.01**	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All chases in, and holes through existing walls, ceilings, etc. for tubing and pipes, (but not mortices or holes for brackets) shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork or other applicable Work Sections of this Schedule.
Measurement of power supply	**SC43.02**	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting Systems and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
Measurement of pipework	**SC43.03**	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
Measurement of indicating/ control panel	**SC43.04**	The indicating/control panel shall be assumed to be located on the same floor as the medical gas pipeline installation. When this panel is located on other floor, the interconnecting cables and the conduit facilities shall be measured separately from the control panel to the junction box on that floor for which the gas points of that floor are grouped for connection to the control panel. In such case, the junction box shall be assumed to be located as near as possible to the control panel.
Measurement of tests on existing medical gases system	**SC43.05**	Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests have been allowed in the rates under this Section. No measurement will be made for testing and commissioning except for tests on existing medical gases system where specifically ordered by the Maintenance Surveyor in writing.

SPECIAL CONDITIONS

Measurement of temporary supply **SC43.06**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC43.07**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, brackets, hangers, supports and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC43.07 (Cont'd)**

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests, except tests on existing medical gases system. (Note : - Tests on existing medical gases system shall be measured separately if ordered by the Maintenance Surveyor in writing)

(l) Provision of all necessary power, labour and testing instrument of approved type for testing and commissioning.

(m) Provision of mock-up work as specified.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

Rates for pipework **SC43.08**

The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Wall, floor and ceiling plates.

(g) All jointing including provision of flexible connections and/or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

SPECIAL CONDITIONS

Rates for pipework (Cont'd)

SC43.08 (Cont'd)

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tape where required.

Rates for in-line pipework equipment

SC43.09

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for indicating/ control panels

SC43.10

Indicating/control panel shall be measured on the basis of complete unit monitoring and controlling the number of zones as specified. Rates for indicating/control panels shall further include for all necessary control wiring, electronic components, relays, contacts, indicating lamp, push button package, selector switches, interconnecting cable and associated conduit/trunking between the equipment and the indicating/control panel and/or for connecting to existing indicating/control panel as required.

Rates for equipment

SC43.11

The rate for equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, strainers, instrumentation and the like.

(b) Provision of all associated components.

(c) Final connection and terminations to gas supply including all necessary pipework, valves, gauges and necessary accessories required for energizing the equipment to properly operate at specified duties.

(d) Earth/equipotential bonding.

SPECIAL CONDITIONS

Rates for tests on existing medical gases system

SC43.12 The rates for tests on existing medical gases system shall include for : -

(a) Cleaning of pipeline by any means necessary before carrying out any tests.

(b) All preparation work including temporary sealing ends of pipes and connections.

(c) Provision of all necessary testing instrument and material of approved type for the tests.

(d) Provision of test record.

(e) Making good all works disturbed.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC43.13 The rates for "Take down and clear away" or "Take down and set aside for re-use" existing items in connection with medical gases installation shall further include for : -

(a) Taking down all associated pipework and building services works (if any).

(b) All in-line fittings including brackets, supports, hangers and the like.

(c) Cutting into existing pipework in position.

(d) De-gasing of existing pipework (including associated in-line fittings and the like) as required.

(e) Plugging off remaining ends with plugs or caps as required.

(f) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(g) Making good all works disturbed.

SPECIAL CONDITIONS

Rates for rental charges for gas regulators, cylinders and other accessories

SC43.14 The rates for rental charges for gas regulators, cylinders and other accessories shall include for : -

(a) Mobilization and demobilization of gas regulators, cylinders and other accessories.

(b) Maintenance and repair.

(c) Installation in position including all necessary connection to the system.

(d) Contractor's profit, establishment and overheads.

(e) Licence fees, patent rights and royalties where applicable.

Rates for charges for gas filling

SC43.15 The rates for charges for gas filling shall include for : -

(a) Filling up empty cylinders with gas by any means necessary.

(b) Disconnecting before filling of gas and reconnecting to the system after completion of gas filling.

Particular Specification

SC43.16 The Particular Specification for medical gases installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION					
	Medical gas pipework c/w all necessary accessories					
	Degreased pipework of solid drawn, seamless, phosphorous de-oxidized, non-arsenical copper to BS EN 1412:1996, Grade CW024A in metric and BS EN 13348:2001 to suit HTM 02-01's requirement : -					
	Per linear metre	A $	B $	C $	D $	
43001	12 mm diameter.....	300.44	10.42	11.39	189.77	43001
43002	15 mm diameter.....	327.26	11.39	12.67	198.81	43002
43003	22 mm diameter.....	370.23	13.50	14.36	214.27	43003
43004	28 mm diameter.....	421.57	14.80	16.06	230.76	43004
43005	35 mm diameter.....	523.51	16.06	17.29	242.93	43005
43006	42 mm diameter.....	637.58	17.58	18.85	281.39	43006
43007	54 mm diameter.....	751.34	18.85	20.37	318.92	43007
43008	76 mm diameter.....	1,109.23	23.92	25.46	376.05	43008
43009	108 mm diameter.....	1,458.04	29.00	31.81	470.33	43009
43010	159 mm diameter.....	2,209.87	38.96	41.74	620.28	43010
	Underground medical gas pipework c/w galvanized iron pipe of suitable size enclosing the underground medical gas pipe and all necessary accessories					
	Degreased pipework of solid drawn, seamless, phosphorous de-oxidized, non-arsenical copper to BS EN 1412:1996, Grade CW024A in metric and BS EN 13348:2001 to suit HTM 02-01's requirement : -					
	Per linear metre					
43011	12 mm diameter.....	436.36	20.54	22.07	238.28	43011
43012	15 mm diameter.....	452.64	21.81	23.37	250.53	43012
43013	22 mm diameter.....	546.42	25.18	26.46	317.52	43013
43014	28 mm diameter.....	616.34	27.59	29.39	356.10	43014

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	Underground medical gas pipework c/w galvanized iron pipe of suitable size enclosing the underground medical gas pipe and all necessary accessories (Cont'd)					
	Degreased pipework of solid drawn, seamless, phosphorous de-oxidized, non-arsenical copper to BS EN 1412:1996, Grade CW024A in metric and BS EN 13348:2001 to suit HTM 02-01's requirement : - (Cont'd)					
	Per linear metre	A $	B $	C $	D $	
43015	35 mm diameter.....	775.27	30.41	31.81	390.26	43015
43016	42 mm diameter.....	877.84	33.19	35.30	410.16	43016
43017	54 mm diameter.....	1,014.85	36.85	38.96	472.02	43017
43018	76 mm diameter.....	1,537.66	47.88	50.68	578.71	43018
43019	108 mm diameter.....	1,956.31	68.82	72.09	725.18	43019
43020	159 mm diameter.....	2,711.80	87.30	91.77	972.42	43020
	Lever operated ball type full way double seat valves c/w chained labels : -					
	Each					
43021	12 mm diameter.....	498.90	65.25	78.29	89.79	43021
43022	15 mm diameter.....	649.56	66.21	79.44	95.15	43022
43023	22 mm diameter.....	930.00	67.25	81.29	109.18	43023
43024	28 mm diameter.....	1,207.34	68.48	83.15	119.40	43024
43025	35 mm diameter.....	1,571.50	69.55	85.07	125.19	43025
43026	42 mm diameter.....	1,943.06	71.38	88.21	133.85	43026
43027	54 mm diameter.....	3,248.55	75.10	89.07	144.56	43027
43028	76 mm diameter.....	5,237.65	81.01	95.33	156.35	43028
43029	108 mm diameter.....	7,146.01	88.23	102.77	179.38	43029
43030	159 mm diameter.....	10,368.95	117.27	136.01	260.41	43030

Item	MEDICAL GASES INSTALLATION (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Test point : -					
		A	B	C	D	
	Each	$	$	$	$	
43031	Test point	507.13	65.02	76.69	92.57	43031
	Oxygen terminal unit to HTM 02-01 and BS EN ISO 9170-1:2008 accepting probes to BS 5682 : -					
	Each					
43032	Wall mounted type	1,888.18	43.12	44.80	305.72	43032
43033	Bedhead rail type	1,925.80	43.12	44.80	305.72	43033
43034	Bench top type	1,888.18	43.12	44.80	305.72	43034
	Nitrous oxide terminal unit to HTM 02-01 and BS EN ISO 9170-1:2008 accepting probes to BS 5682 : -					
	Each					
43035	Wall mounted type	1,891.80	43.12	44.80	305.72	43035
43036	Bedhead rail type	1,929.52	43.12	44.80	305.72	43036
43037	Bench top type	1,891.80	43.12	44.80	305.72	43037
	Medical vacuum terminal unit to HTM 02-01 and BS EN ISO 9170-1:2008 accepting probes to BS 5682 : -					
	Each					
43038	Wall mounted type	1,895.64	43.12	44.80	305.72	43038
43039	Bedhead rail type	1,933.46	43.12	44.80	305.72	43039
43040	Bench top type	1,895.64	43.12	44.80	305.72	43040
43041	V-shape mounting bracket for medical vacuum pot	366.69	26.19	30.71	48.59	43041

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	Medical air terminal unit to HTM 02-01 and BS EN ISO 9170-1:2008 accepting probes to BS 5682 : -					
		A	B	C	D	
	Each	$	$	$	$	
43042	Wall mounted type.....	1,898.64	43.12	44.80	305.72	43042
43043	Bedhead rail type.....	1,935.79	43.12	44.80	305.72	43043
43044	Bench top type.....	1,898.64	43.12	44.80	305.72	43044
	Surgical air terminal unit to HTM 02-01 and BS EN ISO 9170-1:2008 accepting probes to BS 5682 : -					
	Each					
43045	Wall mounted type.....	1,898.64	43.12	44.80	305.72	43045
43046	Bedhead rail type.....	1,933.46	43.12	44.80	305.72	43046
43047	Bench top type.....	1,898.64	43.12	44.80	305.72	43047
	Emergency valve cabinet : -					
	Each					
43048	Wall mounted type.....	18,145.75	293.11	447.48	1,905.55	43048
43049	Bedhead rail type.....	45,638.50	447.48	569.58	2,311.95	43049
43050	Bench top type.....	18,688.78	293.11	447.48	1,945.52	43050
	Medical gas plug-off unit for oxygen : -					
	Each					
43051	Restrictor valve type.....	3,274.56	69.45	70.98	316.94	43051
43052	Air flow switch type.....	2,988.47	69.45	70.98	136.04	43052
43053	Solenoid valve type.....	2,640.66	69.45	70.98	268.93	43053

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	Medical gas plug-off unit for medical vacuum : -					
		A	B	C	D	
	Each	$	$	$	$	
43054	Restrictor valve type	3,297.41	69.45	70.98	316.94	43054
43055	Air flow switch type	3,006.99	69.45	70.98	136.04	43055
43056	Solenoid valve type	2,393.65	69.45	70.98	268.93	43056
	Medical gas plug-off unit for nitrous oxide : -					
	Each					
43057	Restrictor valve type	3,297.41	69.45	70.98	316.94	43057
43058	Air flow switch type	3,006.99	69.45	70.98	136.04	43058
43059	Solenoid valve type	2,393.65	69.45	70.98	268.93	43059
	Medical gas plug-off unit for medical air : -					
	Each					
43060	Restrictor valve type	3,297.41	69.45	70.98	316.94	43060
43061	Air flow switch type	3,006.99	69.45	70.98	136.04	43061
43062	Solenoid valve type	2,393.65	69.45	70.98	268.93	43062
	Medical gas plug-off unit for surgical air : -					
	Each					
43063	Restrictor valve type	3,297.41	69.45	70.98	316.94	43063
43064	Air flow switch type	3,006.99	69.45	70.98	136.04	43064
43065	Solenoid valve type	2,393.65	69.45	70.98	268.93	43065

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	Complete manifold control system comprising monitoring panel, pressure control assembly and relief valve assembly, indicator panel, high pressure and discharge pressure gauges, warning, control wirings and alarm pressure switches, signs and notices, automatic changeover control to provide a continuous supply of gas from two banks of cylinders : -					
	Each	A $	B $	C $	D $	
43066	Oxygen..... (The actual rate should be : $139,842.00 for Item 43066A)	13,984.20	786.86	961.64	6,973.00	43066
43067	Nitrous oxide..... (The actual rate should be : $139,842.00 for Item 43067A)	13,984.20	786.86	961.64	6,973.00	43067
43068	Medical air..... (The actual rate should be : $139,842.00 for Item 43068A)	13,984.20	786.86	961.64	6,973.00	43068
43069	Surgical air..... (The actual rate should be : $139,842.00 for Item 43069A)	13,984.20	786.86	961.64	6,973.00	43069
	Pipework header with copper pig tails for connections to cylinders at manifold : -					
	Each					
43070	Medical oxygen.....	17,522.65	197.02	209.80	1,058.49	43070
43071	Medical nitrous oxide.....	17,522.65	197.02	209.80	1,058.49	43071
43072	Medical compressed air.....	17,522.65	197.02	209.80	1,058.49	43072
43073	Surgical air.....	17,522.65	197.02	209.80	1,058.49	43073
	Sundries : -					
	Each					
43074	Mild steel contoured brackets for cylinders with retaining brass chains	5,333.08	43.12	48.26	309.96	43074
43075	Area alarm panel constantly monitoring local gas pressure for medical oxygen, nitrous oxide, medical vacuum, medical air, surgical air, c/w all necessary accessories.....	20,167.30	166.72	187.39	1,405.63	43075
43076	Central alarm panel constantly monitoring the complete medical gas services installed via fully integrated multiplexed system and capable to be linked with repeated panels, c/w all necessary accessories.....	67,865.27	348.18	432.13	2,451.72	43076
43077	Repeated panel linked to central alarm panel, c/w all necessary accessories.....	57,940.13	268.75	347.83	1,884.91	43077
43078	Glass panel for emergency valve cabinet.....	686.83	34.02	37.12	209.92	43078

Item	MEDICAL GASES INSTALLATION (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Pressure relief valve c/w chained labels : -					
	Each	A $	B $	C $	D $	
43079	12 mm diameter	1,471.53	64.88	77.42	89.79	43079
43080	15 mm diameter	2,095.54	65.85	78.65	109.49	43080
43081	22 mm diameter	2,503.65	66.93	80.73	116.64	43081
43082	28 mm diameter	3,104.06	68.15	82.61	125.12	43082
43083	35 mm diameter	3,472.52	69.07	84.76	125.84	43083
43084	42 mm diameter	4,867.72	71.12	88.04	133.78	43084
43085	54 mm diameter	6,958.19	74.83	91.00	144.15	43085
43086	76 mm diameter	11,221.31	80.78	95.33	156.49	43086
	Three way valves c/w chained labels : -					
	Each					
43087	12 mm diameter	832.64	64.88	77.42	89.79	43087
43088	15 mm diameter	1,123.48	65.85	78.65	109.49	43088
43089	22 mm diameter	1,488.19	66.93	80.73	116.64	43089
43090	28 mm diameter	1,894.96	68.15	82.61	125.12	43090
43091	35 mm diameter	2,348.58	69.07	84.76	125.84	43091
43092	42 mm diameter	3,443.49	71.12	88.04	133.78	43092
43093	54 mm diameter	5,506.25	74.83	91.00	144.15	43093
43094	76 mm diameter	7,703.33	80.78	95.33	156.49	43094

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	~~Bacterial filter c/w differential pressure gauge with penetration n.e. 0.05% to BS3928~~ Bacterial filter c/w differential pressure gaugecapable of removing 99.9% of particles of 5 micron size and over when tested by sodium flame to BS 3928:1969 Connecting pipe diameter : -					
	Each	A $	B $	C $	D $	
43095	28 mm diameter.....	22,399.06	45.98	47.75	110.23	43095
43096	35 mm diameter.....	25,312.55	53.06	54.62	119.69	43096
43097	42 mm diameter.....	28,127.00	56.53	58.39	128.75	43097
43098	54 mm diameter.....	31,171.33	63.71	65.74	148.97	43098
43099	76 mm diameter.....	37,514.89	79.76	82.03	182.11	43099
43100	108 mm diameter.....	43,984.66	105.55	107.42	232.67	43100
43101	159 mm diameter.....	53,918.02	146.06	147.89	310.23	43101
	Non-return valve c/w chained labels : -					
	Each					
43102	12 mm diameter.....	581.96	64.88	78.08	87.80	43102
43103	15 mm diameter.....	639.09	65.85	80.38	105.27	43103
43104	22 mm diameter.....	888.30	66.93	84.69	112.83	43104
43105	28 mm diameter.....	1,168.08	68.15	89.50	121.43	43105
43106	35 mm diameter.....	1,347.97	69.07	93.60	123.60	43106
43107	42 mm diameter.....	1,624.68	71.12	96.87	131.85	43107
43108	54 mm diameter.....	2,565.43	74.83	103.14	144.63	43108
43109	76 mm diameter.....	2,868.23	80.78	137.67	164.13	43109
43110	108 mm diameter.....	4,325.08	88.16	163.97	190.42	43110
43111	159 mm diameter.....	5,409.46	117.17	198.52	254.88	43111

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL GASES INSTALLATION (CONT'D)					
	Valve, terminal unit, pressure gauge and vacuum gauge : -					
		A	B	C	D	
	Each	$	$	$	$	
43112	Tee-piece and isolation valve for pressure switch c/w chained labels	971.33	66.06	99.28	128.33	43112
43113	Pendent type terminal unit	2,844.35	35.52	38.70	237.79	43113
43114	Pressure gauge c/w isolating ball valve & pipe fittings	1,392.34	55.63	69.37	266.19	43114
43115	Vacuum gauge c/w isolating ball valve & pipe fittings	1,414.32	55.63	69.37	266.19	43115
	Flexible hose : -					
	Per linear metre					
43116	Flexible hose for O.T. pendent terminal unit	2,640.18	34.58	46.26	184.02	43116
	Pressure transducer : -					
	Each					
43117	Pressure transducer c/w pressure switch	3,314.47	63.00	63.85	150.30	43117
	Earthing system : -					
	Per item					
43118	Earthing system for medical gases pipeline	5,202.55	-	-	-	43118
	Pressure regulating valve (O_2) c/w chained labels : -					
	Each					
43119	15 mm diameter	5,027.56	64.29	65.40	124.83	43119
43120	22 mm diameter	6,425.23	73.38	79.55	138.11	43120
43121	28 mm diameter	7,613.36	80.60	89.85	150.80	43121
43122	35 mm diameter	9,240.21	100.51	101.60	177.81	43122
43123	42 mm diameter	10,473.44	107.53	110.54	194.53	43123

Item	MEDICAL GASES INSTALLATION (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Pressure regulating valve (N_2O) c/w chained labels : -					
		A	B	C	D	
	Each	$	$	$	$	
43124	15 mm diameter.....	5,019.30	64.29	65.40	124.83	43124
43125	22 mm diameter.....	6,424.58	73.38	79.55	138.11	43125
43126	28 mm diameter.....	7,618.46	80.60	89.85	150.80	43126
43127	35 mm diameter.....	9,249.08	100.51	103.86	177.81	43127
	Pressure regulating valve (medical air, surgical air) c/w chained labels : -					
	Each					
43128	15 mm diameter.....	5,027.56	64.29	65.40	124.83	43128
43129	22 mm diameter.....	6,425.23	73.38	79.55	138.11	43129
43130	28 mm diameter.....	7,613.36	80.60	89.85	150.80	43130
43131	35 mm diameter.....	9,240.21	100.51	103.86	177.81	43131
43132	42 mm diameter.....	10,473.44	107.53	110.54	194.53	43132
	Pressure reducing valve					
	Each					
43133	Duplex medical gas pressure reducing valve set.....	23,562.86	199.52	206.45	370.22	43133
	Oxygen concentration monitoring system					
	Per item					
43134	Oxygen concentration monitoring system c/w monitoring alarm panel, built-in integral pump with minimum oxygen flow rate at 0.05 l/ min., facilities for DDC/ CCMS and continuous digital reading of oxygen concentration (0.1% - 99%) to unit HTM 02-01 ..... (The actual rate should be : $181,574.70 for Item 43134A)	18,157.47	350.49	438.20	2,148.21	43134

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL VACUUM SYSTEM					
	Packaged duplex medical vacuum set, F.A. aspired at 500 mm Hg c/w air-cooled rotary sliding/ low speed reciprocating vacuum pump and vibration isolators, plant capacity : -					
	Each	A $	B $	C $	D $	
43135	Up to 150 litres/ min..... (The actual rate should be : $127,189.30 for Item 43135A)	12,718.93	345.33	428.61	1,834.35	43135
43136	150 - 300 litres/ min..... (The actual rate should be : $181,447.00 for Item 43136A)	18,144.70	355.72	442.24	1,875.33	43136
43137	300 - 500 litres/ min..... (The actual rate should be : $235,651.10 for Item 43137A)	23,565.11	364.23	451.11	1,968.90	43137
43138	500 - 750 litres/ min..... (The actual rate should be : $345,103.90 for Item 43138A)	34,510.39	381.60	466.41	2,118.63	43138
43139	750 - 1000 litres/ min..... (The actual rate should be : $435,258.50 for Item 43139A)	43,525.85	400.48	486.96	2,269.11	43139
43140	1000 - 1250 litres/ min..... (The actual rate should be : $496,276.90 for Item 43140A)	49,627.69	417.86	504.70	2,421.64	43140
43141	1250 - 1500 litres/ min..... (The actual rate should be : $567,475.70 for Item 43141A)	56,747.57	435.40	520.16	2,571.53	43141
43142	1500 - 1750 litres/ min..... (The actual rate should be : $631,675.90 for Item 43142A)	63,167.59	452.86	539.73	2,722.99	43142
43143	1750 - 2000 litres/ min..... (The actual rate should be : $701,937.80 for Item 43143A)	70,193.78	470.02	557.32	2,875.62	43143
	Vacuum discharge system : -					
	Each					
43144	Vacuum discharge system with exhaust pipe and silencer assembly for each pump, design to meet noise criteria better than 76 NC.....	10,837.64	159.54	177.31	695.02	43144
	Sanitary trap : -					
	Each					
43145	Sanitary trap assembly with transparent bowl fitted with sight level tube for each pump.....	5,983.26	51.71	60.32	211.48	43145

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MEDICAL VACUUM SYSTEM (CONT'D)					
	Horizontal vacuum reservoir to BS EN 286-1:1998 + A2:2005 c/w vacuum gauge with petcock, drainage trap, inlet isolating and non-return valve, water capacity : -					
	Each	A $	B $	C $	D $	
43146	Up to 1500 litres	72,962.57	685.58	774.56	3,462.58	43146
43147	1500 - 2000 litres	94,360.50	774.56	857.82	3,710.38	43147
43148	2000 - 2500 litres (The actual rate should be : $115,069.60 for Item 43148A)	11,506.96	857.82	1,024.30	4,045.66	43148
43149	2500 - 3000 litres (The actual rate should be : $135,470.50 for Item 43149A)	13,547.05	946.62	1,115.42	4,322.87	43149
43150	3000 - 3500 litres (The actual rate should be : $153,697.70 for Item 43150A)	15,369.77	1,024.30	1,195.01	4,621.08	43150
43151	3500 - 4000 litres (The actual rate should be : $171,685.10 for Item 43151A)	17,168.51	1,115.42	1,286.23	4,899.96	43151
43152	4000 - 4500 litres (The actual rate should be : $191,280.60 for Item 43152A)	19,128.06	1,195.01	1,366.15	5,179.83	43152
43153	4500 - 5000 litres (The actual rate should be : $209,248.80 for Item 43153A)	20,924.88	1,286.23	1,462.15	5,458.41	43153
43154	5000 - 5500 litres (The actual rate should be : $227,522.20 for Item 43154A)	22,752.22	1,366.15	1,537.86	5,737.48	43154
43155	5500 - 6000 litres (The actual rate should be : $247,192.40 for Item 43155A)	24,719.24	1,462.15	1,635.12	6,020.15	43155
	Duplex medical vacuum set c/w the following : -					
	Each					
43156	Vacuum drain tanks; including all associated accessories	5,769.89	206.84	222.73	955.96	43156
43157	Pipeline vacuum gauges including isolating valves	1,656.93	63.63	76.06	134.58	43157
43158	Vacuum pressure switches including isolating valves	1,924.45	63.63	76.06	134.58	43158
43159	Medical vacuum plant control panel; c/w all associated accessories and power cables and conduits connections to adjacent isolating switch	56,562.39	437.21	577.00	4,335.14	43159

MEDICAL AIR SYSTEM

Triplex medical compressed air plant c/w the following : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
43160	Air intake filters (3 sets).....	22,294.56	162.00	175.49	410.70	43160
43161	Air intake silencers (3 sets).....	19,184.88	162.00	175.49	431.15	43161
43162	Air compressors; up to 250 litres/ min. (3 sets)..... (The actual rate should be : $103,753.50 for Item 43162A)	10,375.35	865.02	1,136.62	4,108.74	43162
43163	Ditto; 250 - 500 litres/ min. (3 sets)..... (The actual rate should be : $134,035.60 for Item 43163A)	13,403.56	960.59	1,191.10	4,498.12	43163
43164	Ditto; 500 - 750 litres/ min. (3 sets)..... (The actual rate should be : $171,218.50 for Item 43164A)	17,121.85	1,004.64	1,236.05	4,867.38	43164
43165	Ditto; 750 - 1000 litres/ min. (3 sets)..... (The actual rate should be : $204,152.80 for Item 43165A)	20,415.28	1,048.50	1,290.10	5,199.64	43165
43166	Ditto; 1000 - 1250 litres/ min. (3 sets)..... (The actual rate should be : $241,286.50 for Item 43166A)	24,128.65	1,088.80	1,339.47	5,589.44	43166
43167	Ditto; 1250 - 1500 litres/ min. (3 sets)..... (The actual rate should be : $283,852.70 for Item 43167A)	28,385.27	1,132.54	1,383.35	5,895.45	43167
43168	Air-cooled after coolers (3 sets).....	44,269.57	865.02	1,136.62	4,237.71	43168
43169	Air receiver; c/w all associated accessories; up to 250 litres/ min. (2 sets).....	76,374.37	570.79	708.07	2,480.55	43169
43170	Ditto; 250 - 500 litres/ min. (2 sets).....	98,205.46	602.14	744.66	2,805.72	43170
43171	Ditto; 500 - 750 litres/ min. (2 sets)..... (The actual rate should be : $118,538.60 for Item 43171A)	11,853.86	630.33	778.04	3,062.20	43171
43172	Ditto; 750 - 1000 litres/ min. (2 sets)..... (The actual rate should be : $140,084.40 for Item 43172A)	14,008.44	657.77	809.46	3,318.39	43172
43173	Ditto; 1000 - 1250 litres/ min. (2 sets)..... (The actual rate should be : $164,980.90 for Item 43173A)	16,498.09	682.70	839.49	3,680.51	43173
43174	Ditto; 1250 - 1500 litres/ min. (2 sets)..... (The actual rate should be : $191,452.40 for Item 43174A)	19,145.24	712.06	868.26	4,042.69	43174
43175	Water separators (2 sets).....	11,302.21	111.32	118.74	245.75	43175
43176	Oil filter (2 sets).....	18,654.13	111.32	118.74	245.75	43176
43177	Twin column desiccant air dryers; heatless reactivated including all associated accessories (2 Sets)..... (The actual rate should be : $236,468.20 for Item 43177A)	23,646.82	570.79	708.07	2,637.92	43177

MEDICAL AIR SYSTEM (CONT'D)

Triplex medical compressed air plant c/w the following : - (Cont'd)

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
43178	Dust filter (2 sets)	22,802.68	111.32	118.74	238.58	43178
43179	Header c/w dew point alarm probe	27,547.46	262.00	304.92	969.74	43179
43180	Duplex regulating stations	9,442.34	278.79	302.39	845.12	43180
43181	Active carbon filter (2 sets)	18,993.02	111.32	118.74	245.75	43181
43182	Bacteria filter c/w sterilizable glass trap and stop valves (2 sets)	53,151.60	141.23	154.58	285.00	43182
43183	Pressure switch	453.86	43.48	44.26	75.88	43183
43184	Emergency compressed air manifold; including all associated accessories	22,238.90	213.82	264.37	2,328.99	43184
43185	Medical compressed air plant control panel; c/w all associated accessories, and power cables and conduits connections to adjacent isolating switch (isolating switch measured separately)	79,155.78	433.54	571.98	4,160.26	43185

SURGICAL AIR SYSTEM

Duplex surgical compressed air plant c/w the following : -

Item	*Each*	Supply and fix A $	Take down and clear away B $	Take down and set aside for re-use C $	Fix only D $	Item
43186	Air intake filters (2 sets)	14,817.29	111.32	118.74	245.75	43186
43187	Air intake silencers (2 sets)	12,908.44	111.32	118.74	287.80	43187
43188	Air compressors; up to 250 litres/ min. (2 sets)	69,548.25	570.79	708.07	2,695.08	43188
43189	Ditto; 250 - 500 litres/ min. (2 sets)	89,907.64	602.14	744.66	2,946.79	43189
43190	Ditto; 500 - 750 litres/ min. (2 sets) (The actual rate should be : $113,333.20 for Item 43190A)	11,333.32	630.33	778.04	3,174.90	43190
43191	Ditto; 750 - 1000 litres/ min. (2 sets) (The actual rate should be : $136,083.80 for Item 43191A)	13,608.38	657.77	809.46	3,318.39	43191
43192	Ditto; 1000 - 1250 litres/ min. (2 sets) (The actual rate should be : $160,553.50 for Item 43192A)	16,055.35	682.70	839.49	3,630.28	43192
43193	Ditto; 1250 - 1500 litres/ min. (2 sets) (The actual rate should be : $192,148.70 for Item 43193A)	19,214.87	712.06	868.26	3,858.13	43193

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SURGICAL AIR SYSTEM (CONT'D)					
	Duplex surgical compressed air plant c/w the following : - (Cont'd)					
	Each	A $	B $	C $	D $	
43194	Air-cooled after coolers	14,686.42	290.70	360.87	1,337.22	43194
43195	Air receiver; c/w all associated accessories; up to 250 litres/ min. (2 sets)	76,374.37	570.79	708.07	2,480.55	43195
43196	Ditto; 250 - 500 litres/ min. (2 sets)	98,205.46	602.14	744.66	2,804.84	43196
43197	Ditto; 500 - 750 litres/ min. (2 sets) (The actual rate should be : $118,538.60 for Item 43197A)	11,853.86	630.33	778.04	3,062.20	43197
43198	Ditto; 750 - 1000 litres/ min. (2 sets) (The actual rate should be : $140,084.40 for Item 43198A)	14,008.44	657.77	809.46	3,318.39	43198
43199	Ditto; 1000 - 1250 litres/ min. (2 sets) (The actual rate should be : $164,980.90 for Item 43199A)	16,498.09	682.70	839.49	3,680.51	43199
43200	Ditto; 1250 - 1500 litres/ min. (2 sets) (The actual rate should be : $191,452.40 for Item 43200A)	19,145.24	712.06	868.26	4,042.69	43200
43201	Water separators	6,823.27	53.58	59.00	136.68	43201
43202	Oil filter	10,889.69	53.58	59.00	136.68	43202
43203	Twin column desiccant air dryers; heatless reactivated including all associated accessories (2 Sets) (The actual rate should be : $212,269.80 for Item 43203A)	21,226.98	570.79	708.07	2,637.01	43203
43204	Dust filter	11,505.34	53.58	59.00	136.68	43204
43205	Header c/w dew point alarm probe	27,414.39	262.00	304.92	969.74	43205
43206	Duplex regulating stations	10,151.60	244.07	269.46	845.12	43206
43207	Active carbon filter	11,885.97	53.58	59.00	136.68	43207
43208	Bacteria filter c/w sterilizable glass trap and stop valves	26,302.13	70.05	74.55	143.04	43208
43209	Pressure switch	482.77	37.88	42.57	75.88	43209
43210	Emergency surgical air manifold; including all associated accessories	22,132.63	213.82	264.37	2,328.99	43210
43211	Surgical air plant control panel; c/w all associated accessories, and power cables and conduits connections to adjacent isolating switch (isolating switch measured separately)	75,903.26	438.41	572.71	4,084.98	43211

ACTIVE ANAESTHETIC GAS SCAVENGING SYSTEM

Degreased pipework of solid drawn, seamless, phosphorous de-oxidized, non-arsenical copper to BS EN 1412:1996, Grade CW024A in metric and BS EN 13348:2001 to suit HTM 02-01's requirement and fitting to BS EN ISO 7396-2:2005, BS EN ISO 9170-2:2008, CEN/TC prEN 737 and HTM 02-01:-

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Per linear metre	$	$	$	$	
43212	28 mm diameter (SP)	444.85	14.81	15.93	256.43	43212
43213	32 mm diameter (SP)	504.26	15.93	17.19	274.85	43213

Supply and installation of the following Active Anaesthetic Gas Scavenging System, c/w all associated accessories to form on operable systems to BS EN ISO 7396-2:2005, BS EN ISO 9170-2:2008, BS EN 60601-2-13, BS EN ISO 8835-2, 4 and 5CEN/TC prEN 737 and HTM 02-01 : -

Approved Active Anaesthetic Gas Scavenging System complete with the following : -

	Each					
43214	AGSS terminal outlets	2,988.77	44.12	46.14	312.56	43214
43215	Duplex exhauster units (power device) (1350 litres/ min.)	97,100.08	712.06	868.26	3,573.66	43215
43216	Plant isolator and control panel	31,688.30	433.61	572.20	3,946.54	43216
43217	Remote on-off flow failure starter unit	15,996.56	228.09	236.24	969.21	43217
43218	Flow failure switching unit	10,741.70	166.45	175.24	782.23	43218
43219	Excess vacuum relief regulating valve assembly	7,882.32	104.75	111.76	394.68	43219
43220	Receiver with air break device and connecting hoses	24,626.00	602.58	674.56	1,303.56	43220

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TESTS ON EXISTING MEDICAL GASES SYSTEM (Note : The following Items 43221 to 43249 inclusive will only be paid for if ordered by the Maintenance Surveyor in writing) Test on existing Active Anaesthetic Gas Scavenging System : -					
	Each	A $	B $	C $	D $	
43221	Power device and warning system test.....	2,483.38	-	-	-	43221
43222	Receiving system test.....	2,483.38	-	-	-	43222
43223	Performance test.....	4,881.72	-	-	-	43223
	On-site functional test of existing terminal units and nist connector : -					
	Each					
43224	Oxygen gas terminal unit.....	4,440.34	-	-	-	43224
43225	Medical air terminal unit.....	4,440.34	-	-	-	43225
43226	Nitrous oxide terminal unit.....	4,440.34	-	-	-	43226
43227	Surgical air terminal unit.....	4,440.34	-	-	-	43227
	On-site identification tests on existing piped medical gas samples : -					
	Each					
43228	Oxygen gas sample.....	4,737.51	-	-	-	43228
43229	Medical air gas sample.....	4,737.51	-	-	-	43229
43230	Nitrous oxide gas sample.....	4,737.51	-	-	-	43230
43231	Surgical air gas sample.....	4,737.51	-	-	-	43231

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TESTS ON EXISTING MEDICAL GASES SYSTEM (CONT'D)					
	On-site purity/ quality tests on existing piped medical gas samples : -					
		A	B	C	D	
	Each	$	$	$	$	
43232	Oxygen gas sample : Dragger tube tests on contents of O_2, H_2O (moisture), CO, CO_2, oil……..	5,064.11	-	-	-	43232
43233	Medical air gas sample : Dragger tube tests on contents of O_2, H_2O (moisture), CO, CO_2, oil……..	5,064.11	-	-	-	43233
43234	Nitrous oxide gas sample : Dragger tube tests on contents of O_2, H_2O (moisture), CO, CO_2, oil, N_2O……	5,064.11	-	-	-	43234
43235	Surgical air gas sample : Dragger tube tests on contents of O_2, H_2O (moisture), CO, CO_2, oil……..	5,064.11	-	-	-	43235
	On-site particulate tests on existing piped medical gas samples : -					
	Each					
43236	Oxygen gas sample.....	5,024.60	-	-	-	43236
43237	Medical air gas sample.....	5,024.60	-	-	-	43237
43238	Nitrous oxide gas sample.....	5,024.60	-	-	-	43238
43239	Surgical air gas sample.....	5,024.60	-	-	-	43239
	On-site cross connection tests on existing piped medical gas pipeline systems : -					
	Per lot					
43240	Oxygen gas system.....	4,545.43	-	-	-	43240
43241	Medical air system.....	4,545.43	-	-	-	43241
43242	Nitrous oxide system.....	4,545.43	-	-	-	43242
43243	Surgical air system.....	4,545.43	-	-	-	43243
43244	Vacuum system.....	4,545.43	-	-	-	43244

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	TESTS ON EXISTING MEDICAL GASES SYSTEM (CONT'D)					
	On-site performance tests on existing piped medical gas pipeline systems : -					
	Per lot	A $	B $	C $	D $	
43245	Oxygen gas system.....	5,204.57	-	-	-	43245
43246	Medical air system.....	5,204.57	-	-	-	43246
43247	Nitrous oxide system.....	5,204.57	-	-	-	43247
43248	Surgical air system.....	5,204.57	-	-	-	43248
43249	Vacuum system.....	5,204.57	-	-	-	43249

		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	
	MISCELLANEOUS					
	Provision of medical gas regulators, medical cylinders and other accessories in anticipation of Medical Gas Interruption					
	Rental charges for gas regulators, cylinders and other accessories for : -					
	Per month	A $	B $	C $	D $	
43250	Oxygen.....	3,201.98	-	-	-	43250
43251	Nitrous oxide.....	3,201.98	-	-	-	43251
43252	Medical air.....	3,201.98	-	-	-	43252
43253	Surgical air.....	3,201.98	-	-	-	43253

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	MISCELLANEOUS (CONT'D)					
	Charges for gas filling for R-size cylinder supply in : -					
		A	B	C	D	
	Each	$	$	$	$	
43254	Oxygen	1,309.68	-	-	-	43254
43255	Nitrous oxide	10,820.67	-	-	-	43255
43256	Medical compressed air	1,038.67	-	-	-	43256
43257	Surgical air	10,820.67	-	-	-	43257
	Sundries : -					
	Each					
43258	Portable suction unit and accessories for backing up type piped medical vacuum	47,598.18	-	-	-	43258
43259	Baseplate for mounting terminal unit on bedhead trunking	233.10	27.99	33.22	49.70	43259

Section 44

CATERING EQUIPMENT

SECTION 44

CATERING EQUIPMENT

SPECIAL CONDITIONS

Measurement of power supply **SC44.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting Systems and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

For the avoidance of doubt, all items for kitchen furniture in this Section shall only apply to the works executed by the Approved Suppliers of materials and Specialist Contractors for Public Works : Catering Equipment Installation.

Measurement of water supply, waste disposal and gas supply **SC44.02**

All works of water supply, waste disposal and gas supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under applicable Work Sections of this Schedule.

Measurement of temporary supply **SC44.03**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as pipework, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC44.04** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including drilling of the background and provision of all fixings, nails, bolts, nuts, washers, holes, screws, plugs, shotfired pins and the like.

(g) Assembling and jointing together with the component parts of composite units and providing any necessary jointing materials.

(h) All brackets and methods of supports.

(i) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(j) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(k) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(l) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(m) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC44.04 (Cont'd)**

(n) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(o) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(p) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(q) Provision of manufacturer's guarantee.

Rates for kitchen equipment **SC44.05**

The rates for kitchen equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Provision of all associated components.

(c) All necessary operational and control accessories forming part of the equipment.

(d) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply, gas supply and waste disposal including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(e) Motor starters (if motors in the equipment require motor starters).

(f) Earth/equipotential bonding.

SPECIAL CONDITIONS

Rates for kitchen furniture **SC44.06**

The rates for kitchen furniture shall further include for : -

(a) All framing and components to ensure the rigidity and stability of the finished work.

(b) All accessories necessary for the work.

(c) Forming holes for pipes, water taps, building services installations, sink and the like if required.

(d) All necessary ironmongery including door hinges, pull handles and the like.

Rates for "Take down and clear away" or "Take down and set aside for re-use" **SC44.07**

The rates for "Take down and clear away" or "Take down and set aside for re-use" existing kitchen equipment shall further include for : -

(a) Taking down all associated plumbing works and building services works.

(b) Plugging off remaining ends with plugs or caps as required.

(c) Preparing remaining ends of plumbing works and building services works to receive connections with new work if required.

(d) Making good all works disturbed.

Particular Specification **SC44.08**

The Particular Specification for catering equipment can be found in the Contract.

CATERING EQUIPMENT

Kitchen equipment

Chinese cooking range suitable for 300 to 600 mm Chinese wok c/w burners, air blowers, gas cock, operational and safety controls, splash plate, water faucet, water pot, flame failure device, automatic gas controller with solenoid valves, refractory brick lined combustion chamber, removable stainless steel plate for spice pots, flue pipes, tail pots and all necessary accessories : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Each	A $	B $	C $	D $	
44001	Single stove	21,394.79	243.98	327.55	1,791.33	44001
44002	Double stove	35,128.72	273.32	455.19	2,937.72	44002

Induction type Chinese cooking range suitable for 300 to 600 mm Chinese wok c/w induction device, operational and safety control, splash plate, water faucet, water pot, removable stainless steel plate for spice pots, tail pots and all necessary accessories : -

	Each					
44003	Single stove	52,619.63	199.21	267.44	1,462.62	44003
44004	Double stove (The actual rate should be : $101,910.90 for Item 44004A)	10,191.09	223.16	371.66	2,398.68	44004

Chinese cooking steamer c/w burners, air blowers, gas cock, 3 steam trays per steamer unit, rice pans, operational and safety controls, water faucet, flame failure device, automatic gas controller with solenoid valves, flue pipe, dim sum plates, dim sum tray stand, steamer funnel and all necessary accessories : -

	Each					
44005	Single unit	22,774.05	234.94	324.15	1,916.71	44005
44006	Double unit	36,993.69	281.23	370.47	2,027.37	44006

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Gas fire range c/w oven fitted with cooking shelves, hangers and base plate, rings, griddle top, burners, flame failure device, control taps, splash back, thermostat, thermal insulation, adjustable legs and all necessary accessories : -					
	Each	A $	B $	C $	D $	
44007	Heavy duty type.....	33,559.49	205.56	243.98	800.79	44007
	Gas burners c/w griddle top, burners, flame failure device and all necessary accessories : -					
	Each					
44008	Single burner town gas hot plate.....	11,337.52	21.46	31.63	85.85	44008
44009	Double burner town gas hot plate.....	15,116.69	27.10	37.27	98.26	44009
	Gas stock pot stoves c/w burners, gas cock, flame failure device, automatic gas controller with solenoid valves, gratings, drip tray, oil pan and all necessary accessories : -					
	Each					
44010	Single burner.....	6,348.71	109.55	132.14	430.33	44010
44011	Double burner.....	9,102.52	129.89	162.65	578.29	44011
	Induction type stock pot stoves c/w induction device, gratings, drip tray, oil pan and all necessary accessories : -					
	Each					
44012	Single stove.....	24,447.30	89.46	107.89	351.36	44012
44013	Double stove.....	70,204.55	106.06	132.81	472.16	44013

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Town gas rice cooker c/w extra rice cooker bowl and cover, rubber hose connection and automatic flame keeping : -					
	Capacity : -					
	Each	A $	B $	C $	D $	
44014	2 - 5 litres	2,900.29	21.46	32.75	89.22	44014
44015	5 - 9 litres	3,251.83	32.75	38.39	119.72	44015
	Upright refrigerator with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories : -					
	Each					
44016	Up to 550 litres	15,124.37	84.84	108.82	169.69	44016
44017	550 - 1200 litres	20,583.30	138.32	159.53	185.37	44017
	Upright freezer with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories : -					
	Each					
44018	Up to 550 litres	16,750.31	85.77	108.82	170.62	44018
44019	550 - 1200 litres	22,386.10	135.55	159.53	184.44	44019
	Upright refrigerator/ freezer with doors, control panel, compressors cabinet, condensing unit, door hardware and latches, thermal insulation, thermometer, internal lighting and all necessary accessories : -					
	Each					
44020	Up to 550 litres	20,624.32	83.93	106.06	169.69	44020
44021	550 - 1200 litres	21,093.04	136.49	155.84	184.44	44021

CATERING EQUIPMENT (CONT'D)

Kitchen equipment (Cont'd)

Dish washer c/w door, adjustable legs, built-in rinse booster, automatic fill, safety cut-out switch, liquid detergent dispenser, rinse line injector, booster pumps, signal lamps, instrument panel, drain pump, dish racks, cup racks and associated side tables : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Each	$	$	$	$	
44022	Dish washer, capacity up to 28 litres	27,245.18	174.29	206.58	592.06	44022
	Sterilizing sink for milk bottles free standing, with sink cover and internal basket complete with all accessories : -					
	Each					
44023	Sterilizing sink, up to 8 litres heating capacity	6,815.70	52.59	57.17	108.82	44023
	Electric water boiler, continuous supply type c/w internal water tank, heater, thermostat, water level indicator, ball valve, access to maintenance door, indicating light, switch and faucet : -					
	Each					
44024	Up to 32 litres, 3 kW	5,748.45	130.04	152.17	395.64	44024
44025	32 - 65 litres, 9 kW	9,305.55	165.09	187.22	427.90	44025
	Electric insect killer; wall mounted type : -					
	Each					
44026	100W	2,153.24	41.49	47.04	114.34	44026
44027	200W	2,416.91	47.04	52.59	160.46	44027
	Fan-assisted balance flue, instantaneous gas water heater c/w temperature selector and flames failure device; with capacity of : -					
	Each					
44028	8.8 litres/ min. at 25°C temperature rise	22,587.13	134.39	155.88	541.02	44028
44029	32 litres/ min. at 25°C temperature rise	45,174.28	173.93	203.31	700.26	44029
44030	32 litres/ min. at 25°C temperature rise (Condensing Type)	94,127.71	201.05	234.94	808.70	44030

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Open flue, instantaneous gas water heater c/w temperature selector and flames failure devices; with capacity of : -					
		A	B	C	D	
	Each	$	$	$	$	
44031	10 litres/ min. at 25℃ temperature rise	22,587.13	134.39	156.99	496.97	44031
44032	16 litres/ min. at 25℃ temperature rise	45,174.28	134.39	156.99	533.11	44032
44033	32 litres/ min. at 25℃ temperature rise	67,761.40	173.93	203.31	596.35	44033
44034	32 litres/ min. at 25℃ temperature rise (Condensing Type)	94,127.71	201.05	234.94	685.57	44034
	Steam cabinet c/w burner, gas cock, steaming cabinet with removable wire shelves, flame failure device, automatic gas controller with solenoid valves, flue pipe, valves, lighting touch, inspection door, drain trough, flue pipe, sight glass and all necessary accessories : -					
	Each					
44035	Gas steaming, three decks oven, approximate size 1200 mm x 1000 mm x 1500 mm high	43,680.18	211.21	243.98	910.34	44035
44036	Single door type steam cabinet, approximate size 850 mm (H) x 1100 mm (W) x 1870 mm (D)	27,801.81	194.28	222.50	838.05	44036
44037	3-door type steam cabinet, approximate size 1900 mm (H) x 950 mm (W) x 1100 mm (D)	36,151.13	211.21	243.98	910.34	44037
	Electrical steam cabinet c/w heater, steaming cabinet with removable wire shelves, valves, lighting touch, inspection door, drain trough, sight glass and all necessary accessories : -					
	Each					
44038	Electrical steaming, three decks oven, approximate size 1200 mm x 1000mm x 1500 mm high	36,649.15	172.46	199.21	743.30	44038
44039	Single door type steam cabinet, approximate size 850 mm (H) x 1100 mm (W) x 1870 mm (D)	25,986.56	158.62	181.67	684.27	44039
44040	3-door type steam cabinet, approximate size 1900 mm (H) x 950 mm (W) x 1100 mm (D)	30,332.05	172.46	199.21	743.30	44040

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Gas kettle c/w burner : -					
	Each	A $	B $	C $	D $	
44041	Gas single steaming kettle range, 60 kW burner rating, approximate size 1000 x 1200 x 800 mm (H), c/w burner, gas cock, 3 trays with pans and covers, water faucet, flame failure devices, automatic gas controller with solenoid valves, flue pipe and all necessary accessories.....	27,772.52	187.50	214.60	807.57	44041
44042	Gas titling kettle, 150 litres, c/w burner, gas cock, operational controls, safety features, control panel, flame failure device and all necessary accessories ..... (The actual rate should be : $190,584.40 for Item 44042A)	19,058.44	227.03	234.94	982.65	44042
	Bain Marie with hot cabinet c/w drainage tap to well, thermostat, push handle, rubber corner bumpers, castors, protective panel with temperature control, switch and power light, flexible coiled cable and all necessary accessories : -					
	Each					
44043	Approximate size 1200 x 650 x 900 mm high, 1.6 kW.....	12,172.44	197.65	225.88	771.43	44043
	Gas salamander broiler; range mounted, c/w broiling grid with grates, grid lock, valve controls and automatic lighting : -					
	Each					
44044	12 kW, 1200 x 500 x 950 mm approximate.....	19,027.69	153.61	179.57	668.64	44044

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Electric beverage bottle cooler; c/w cabinet, lids with hardware and locking device, thermal insulation, refrigeration system, evaporator coils, condenser, controls and all necessary accessories : -					
	Each	A $	B $	C $	D $	
44045	120 bottles of 200 ml size in vertical storage	17,050.21	93.16	109.75	196.42	44045
	Electric sterilizer c/w heating element fitted with safety device, water container with covered handle, dipping trays, grab-handle with hooks and stands : -					
	Each					
44046	2 kW approximate; up to 22.5 litres	7,827.27	65.47	76.56	220.41	44046
	Sundries : -					
	Each					
44047	Cooker and oven with grille top	27,201.25	128.76	144.56	430.33	44047
44048	Deep fat fryer, 20 kW	22,806.87	127.27	146.63	422.36	44048
44049	Deep fat fryer c/w cooker (The actual rate should be : $100,455.60 for Item 44049A)	10,045.56	130.04	148.48	433.43	44049
44050	Grill, 7.5 kW/ hr	27,772.52	157.69	177.99	652.01	44050
44051	Pastry oven, 10 kW	23,553.90	167.84	184.44	830.00	44051
44052	Commercial mincer, 430 x 210 x 380 mm high approximate	7,364.12	58.97	64.70	176.11	44052
44053	Flour mixer, 20 litres	10,243.31	117.15	136.78	355.48	44053
44054	Flour bin trolley	4,104.07	23.75	29.48	62.26	44054
44055	Potato peeler, 300 kg/ hr	17,841.21	98.29	121.23	244.07	44055
44056	Slicer, 615 x 480 x 450 mm high approximate	10,859.40	66.35	72.90	185.13	44056
44057	Automatic coffee machine c/w 2 litres removable water tank	5,976.36	4.51	5.65	16.95	44057
44058	Ice maker, 800 x 600 x 530 mm high approximate, 1.1 kW	34,056.49	87.61	108.82	284.05	44058
44059	Micro-wave oven, 1000W	2,030.20	4.10	6.54	18.02	44059
44060	Tea boiler, 45 litres	5,361.15	111.59	130.04	290.50	44060

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen equipment (Cont'd)					
	Sundries : - (Cont'd)					
		A	B	C	D	
	Each	$	$	$	$	
44061	Mobile rice warmer, 650 x 650 x 850 mm high approximate	6,418.72	26.20	32.75	69.64	44061
44062	Mobile soup warmer, 650 x 650 x 850 mm high approximate	6,418.72	26.20	32.75	69.64	44062
44063	Mobile table, 1400 x 760 x 860 mm high approximate with two undershelves	5,057.57	23.75	29.48	62.26	44063
44064	Service counter c/w under-counter boiler, 1850 x 850 x 700 mm high approximate	14,501.46	137.41	157.69	481.40	44064
44065	Rubbish bin with lid, 30 to 40 litres	646.00	12.28	13.91	23.75	44065
44066	Wooden top table 1900 x 750 x 850 mm high	6,415.80	92.56	113.85	301.44	44066
	Kitchen furniture					
	Stainless steel worktop tables, 850 mm high : -					
	Each					
44067	1500 x 750 mm	3,495.58	72.07	89.28	262.93	44067
44068	2000 x 750 mm	3,867.06	95.84	118.76	333.37	44068
44069	1500 x 900 mm	3,846.55	74.53	99.12	276.86	44069
	Stainless steel worktop with undershelf : -					
	Per linear metre					
44070	600 mm (W) x 850 mm (H) with 1-tier undershelf	3,559.90	58.97	82.73	230.99	44070
44071	600 mm (W) x 850 mm (H) with 2-tier undershelf	4,186.24	72.07	96.65	264.57	44071
44072	750 mm (W) x 850 mm (H) with 1-tier undershelf	3,750.62	58.97	82.73	225.25	44072
44073	750 mm (W) x 850 mm (H) with 2-tier undershelf	4,453.86	69.64	92.56	276.04	44073
	Stainless steel worktop with sink, 850 mm high : -					
	Each					
44074	1800 x 750 mm with single sink 500 x 500 x 400 mm deep	8,041.74	124.49	131.88	498.01	44074
44075	1800 x 750 mm with double sinks each 500 x 500 x 400 mm deep	10,678.35	136.78	144.97	538.96	44075

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen furniture (Cont'd)					
	Stainless steel chopping tables with undershelf : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
44076	600 mm (W) x 850 mm (H) with 1-tier undershelf.....	4,041.98	64.70	89.28	235.07	44076
44077	600 mm (W) x 850 mm (H) with 2-tier undershelf.....	5,224.92	77.82	101.58	267.84	44077
44078	750 mm (W) x 850 mm (H) with 1-tier undershelf.....	4,269.58	64.70	89.28	242.44	44078
44079	750 mm (W) x 850 mm (H) with 2-tier undershelf.....	5,529.45	82.73	101.58	276.86	44079
	Open shelves : -					
	Per linear metre					
44080	Open shelves, 3-tiers, 500 mm (D) x 1800 mm (H).....	4,738.49	61.43	86.02	185.93	44080
	Stainless steel worktop cabinet, 600 mm (D) x 850 mm (H) : -					
	Per linear metre					
44081	Worktop cabinet with 1-tier intermediate adjustable shelf, hinged doors.....	6,402.90	96.65	119.58	308.81	44081
44082	Worktop cabinet with 1-tier intermediate adjustable shelf, hinged doors and 1-layer drawers	7,869.63	105.67	130.23	315.35	44082
44083	Worktop cabinet with stack of 3 drawers.....	8,919.88	112.23	135.14	337.47	44083
	Stainless steel choptop cabinet, 600 mm (D) x 850 mm (H) : -					
	Per linear metre					
44084	Choptop cabinet with 1-tier intermediate adjustable shelf, hinged doors.....	6,676.67	94.20	113.03	301.44	44084
44085	Choptop cabinet with 1-tier intermediate adjustable shelf, hinged doors and 1-layer drawers	7,848.10	101.58	118.76	321.08	44085

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CATERING EQUIPMENT (CONT'D)					
	Kitchen furniture (Cont'd)					
	Stainless steel sink cabinet c/w hinged doors, sinks and grease traps : -					
	Each	A $	B $	C $	D $	
44086	Single sink cabinet, 600 mm (D) x 850 mm (H) x 1300 mm (L) approximate	6,086.23	108.45	135.53	440.49	44086
44087	Twin sink cabinet, 600 mm (D) x 850 mm (H) x 2000 mm (L) approximate	8,151.61	168.28	210.09	606.53	44087
	Stainless steel grease trap : -					
	Each					
44088	Stainless steel grade 316 grease trap 300 x 300 x 500 mm (L), with moveable baffles to facilitate cleaning	1,230.42	11.29	12.42	45.19	44088
	Hanging cabinet : -					
	Per linear metre					
44089	Hanging cabinet with 1-tier intermediate adjustable shelf, 400 mm (D) x 700 mm (H) with hinged doors	5,167.80	99.12	122.88	261.29	44089
	Cooking bench with 1-tier undershelf, 600 mm (D) x 600 mm (H) : -					
	Per linear metre					
44090	Cooking bench with splash back 400 mm high	2,224.44	61.43	86.02	205.59	44090
44091	Cooking bench with splash back 660 mm high	2,291.80	66.35	90.94	213.81	44091
	Stainless steel wall-mounted rack shelves : -					
	Each					
44092	2000 x 350 x 1200 mm high	2,421.32	97.49	120.41	357.13	44092
44093	Ordinary sink	3,036.52	90.09	111.40	303.08	44093
44094	Hand basin	2,157.64	90.09	111.40	221.16	44094
	Per linear metre					
44095	Enclosed base 800 x 600 mm high	3,295.78	90.09	111.40	244.07	44095

Section 45

SWIMMING POOL WATER TREATMENT INSTALLATION

SECTION 45

SWIMMING POOL WATER TREATMENT INSTALLATION

SPECIAL CONDITIONS

Measurement of power supply	**SC45.01**	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution System and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
Measurement of water supply	**SC45.02**	All works of water supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under the applicable Work Sections of this Schedule.
Measurement of excavations, ducts, chases, holes and other subsidiary work	**SC45.03**	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.
Measurement of pipework	**SC45.04**	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
Measurement of insulation to pipework	**SC45.05**	Insulation to pipework shall be measured in linear metres for the diameter of the pipes to be insulated.
Measurement of heat resistant cables and low smoke zero halogen cables	**SC45.06**	Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing. Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.

SPECIAL CONDITIONS

Measurement of temporary supply **SC45.07**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials, such as cables, fittings and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC45.08**

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC45.08 (Cont'd)**

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(m) Submitting all relevant documentation to Fire Services Department and Environmental Protection Department for obtaining necessary approval.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

(q) Attending fault and complaint during the Maintenance Period.

(r) Meeting statutory requirements for disposal of waste materials.

Rates for pipework **SC45.09**

The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

SPECIAL CONDITIONS

Rates for pipework (Cont'd)

SC45.09 (Cont'd)

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

Rates for in-line pipework equipment

SC45.10

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for equipment

SC45.11

The rates for equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Supporting frames.

(c) Connections including flexible joints between pipework and equipment.

(d) Flexible connections and anti-vibration connections between pipework and equipment.

(e) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(g) Anti-vibration mountings for plant, machinery and the like.

(h) Anti-vibration materials and sound insulating materials in plant and machinery bases.

(i) Motor starters (if motors in the equipment require motor starters).

(j) Earth/ equipotential bonding as specified.

SPECIAL CONDITIONS

Rates for heat resistant cables and low smoke zero halogen cables

SC45.12 The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.

(e) All necessary fixings complete with accessories and fittings as required.

(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC45.13 The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with swimming pool water treatment installation shall further include for : -

(a) All in-line fittings including brackets, supports, hangers and the like.

(b) Cutting into existing pipework and the like in position.

(c) Plugging off remaining ends with plugs or caps as required.

(d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(e) In the case of equipment and the like, taking down all associated pipework and/or building services works.

(f) Making good all works disturbed.

Particular Specification

SC45.14 The Particular Specification for swimming pool water treatment installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES					
	Gate valves for sea water application 316 stainless steel : -					
	Each	A $	B $	C $	D $	
45001	25 mm	653.04	37.09	21.69	26.66	45001
45002	32 mm	694.39	40.66	22.21	27.31	45002
45003	40 mm	763.01	43.70	22.73	27.76	45003
45004	50 mm	834.96	46.62	23.71	28.67	45004
45005	65 mm	926.34	48.62	24.16	29.58	45005
45006	80 mm	1,076.83	52.70	26.50	31.46	45006
45007	100 mm	1,492.27	54.75	27.87	32.88	45007
45008	150 mm	2,407.59	67.67	35.46	40.61	45008
45009	200 mm	4,211.71	78.06	42.49	47.69	45009
	Gate valves for sea water application PVC : -					
	Each					
45010	25 mm	323.45	37.09	21.69	26.66	45010
45011	32 mm	425.27	40.66	22.21	27.31	45011
45012	40 mm	655.10	43.70	22.73	27.76	45012
45013	50 mm	1,125.92	46.62	23.71	28.67	45013
45014	65 mm	2,236.77	48.62	24.16	29.58	45014
45015	80 mm	2,416.43	52.70	26.50	31.46	45015
45016	100 mm	3,559.90	54.75	27.87	32.88	45016
45017	150 mm	6,974.54	67.67	35.46	40.61	45017
45018	200 mm	9,826.65	78.06	42.49	47.69	45018

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Globe valves for sea water application 316 stainless steel : -					
	Each	A $	B $	C $	D $	
45019	25 mm	480.55	37.09	21.69	26.66	45019
45020	32 mm	579.92	40.66	22.21	27.31	45020
45021	40 mm	720.18	43.70	22.73	27.76	45021
45022	50 mm	869.29	46.62	23.71	28.67	45022
45023	65 mm	1,095.22	48.62	24.16	29.58	45023
45024	80 mm	1,305.64	52.70	26.50	31.47	45024
45025	100 mm	1,738.95	54.75	27.87	32.88	45025
45026	150 mm	3,515.77	67.67	35.46	40.61	45026
45027	200 mm	6,282.13	78.06	42.49	47.69	45027
	Motorized valves for sea water application 316 stainless steel : -					
	Each					
45028	40 mm	4,022.73	61.71	31.99	39.00	45028
45029	65 mm	4,456.84	67.10	34.07	41.64	45029
45030	80 mm	4,662.57	72.97	37.29	44.20	45030
45031	100 mm	6,019.90	75.90	39.09	46.18	45031
45032	150 mm	7,409.66	90.61	46.58	54.97	45032
45033	200 mm	11,018.01	95.05	49.16	56.54	45033

Item	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Butterfly valves : ductile iron body ; 316 stainless steel disc & shaft : -					
		A	B	C	D	
	Each	$	$	$	$	
45034	25 mm	493.15	34.11	20.03	24.61	45034
45035	32 mm	652.72	37.36	20.51	25.20	45035
45036	40 mm	856.13	40.16	20.98	25.62	45036
45037	50 mm	1,122.18	42.85	21.88	26.47	45037
45038	65 mm	1,646.05	44.70	22.30	27.31	45038
45039	80 mm	1,741.04	48.44	24.46	29.05	45039
45040	100 mm	2,588.99	50.34	25.72	30.36	45040
45041	150 mm	3,165.87	62.18	32.74	37.48	45041
45042	200 mm	5,250.43	65.02	40.57	45.66	45042
	Check valves for sea water application 316 stainless steel : -					
	Each					
45043	25 mm	343.29	37.09	21.69	26.66	45043
45044	32 mm	383.82	40.66	22.21	27.31	45044
45045	40 mm	481.86	43.70	22.73	27.76	45045
45046	50 mm	597.83	46.62	23.71	28.67	45046
45047	65 mm	785.92	48.62	24.16	29.58	45047
45048	80 mm	922.15	52.70	26.50	31.47	45048
45049	100 mm	1,314.56	54.75	27.87	32.88	45049
45050	150 mm	2,291.59	67.67	35.46	40.61	45050
45051	200 mm	4,017.64	78.06	42.49	47.69	45051

Item	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)	Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	UPVC pipes and fittings : BS EN 1452 ; solvent or flanged joints, and c/w all accessories Pipework and fittings : -					
	Per linear metre	A $	B $	C $	D $	
45052	25 mm diameter	76.77	50.12	23.09	26.61	45052
45053	32 mm diameter	76.77	53.35	27.09	29.51	45053
45054	40 mm diameter	122.29	57.20	29.43	31.96	45054
45055	50 mm diameter	131.38	64.49	33.19	38.47	45055
45056	65 mm diameter	149.57	80.76	39.09	40.31	45056
45057	80 mm diameter	180.87	82.51	41.37	44.94	45057
45058	100 mm diameter	294.07	92.30	45.00	53.15	45058
45059	150 mm diameter	484.04	123.32	63.04	68.01	45059
45060	200 mm diameter	723.48	149.98	72.99	78.83	45060
45061	250 mm diameter	1,921.91	174.17	86.32	92.29	45061
45062	300 mm diameter	3,015.08	195.21	95.51	100.11	45062
	Bucket-type strainer c/w all accessories : -					
	Each					
45063	40 mm, bronze	1,842.13	40.17	20.64	25.02	45063
45064	50 mm, bronze	2,263.08	41.11	21.03	25.44	45064
45065	65 mm, cast iron	3,052.68	43.40	21.98	26.34	45065
45066	80 mm, cast iron	4,536.47	46.48	23.52	27.93	45066
45067	100 mm, cast iron	5,943.71	48.31	24.73	29.20	45067
45068	150 mm, cast iron	9,370.64	59.64	31.47	36.04	45068
45069	200 mm, cast iron	12,654.38	70.79	39.90	44.12	45069

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Sundries : -					
		A	B	C	D	
	Each	$	$	$	$	
45070	Pressure gauge with cock, c/w all accessories.....	143.97	12.32	4.65	6.71	45070
45071	Direct reading water flow meters c/w all accessories.....	8,135.75	74.75	37.25	39.54	45071
	PUMPS					
	Centrifugal end suction type pumps					
	Pumps sets ; bronze/ cast iron casings and bronze impellers ; direct driven by motors ; water seal connection ; vents ; drain ; priming plug ; associated pipeworks and anti-vibration mountings ; adjacent emergency stops ; all necessary components and accessories : -					
	Per set					
45072	Up to 5 kW.....	12,493.13	106.16	142.32	604.28	45072
45073	5 - 10 kW.....	15,143.19	114.10	150.22	888.90	45073
45074	10 - 15 kW.....	18,928.98	120.85	158.13	984.91	45074
45075	15 - 20 kW.....	21,200.46	127.66	163.78	1,147.56	45075
45076	20 - 30 kW.....	25,743.41	134.40	171.70	1,258.24	45076
45077	30 - 50 kW.....	31,800.69	142.32	179.57	1,371.20	45077

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	SAND FILTER TANKS					
	Sand filters : mild steel electrically welded shell with epoxy coating ; c/w supported nozzles, balance tanks ; nozzle plates and filtering media supports ; internal distribution and draw-off trough ; flanged inlets and outlets ; wash-in ; drain and air connections ; manholes ; necessary filtering media ; filter supporting feet ; backwash facilities and all necessary accessories : -					
	Equipment flow rate, capacity : -					
	Each	A $	B $	C $	D $	
45078	Up to 30 m³/ hr.....	11,357.39	585.42	733.91	1,411.80	45078
45079	30 - 60 m³/ hr.....	30,286.37	1,463.53	1,834.74	3,529.48	45079
45080	60 - 90 m³/ hr.....	49,215.35	2,341.64	2,935.56	5,647.16	45080
45081	90 - 120 m³/ hr.....	83,287.52	2,909.20	3,896.99	7,058.96	45081
45082	120 - 150 m³/ hr..... (The actual rate should be : $113,573.90 for Item 45082A)	11,357.39	4,363.77	5,845.44	10,588.44	45082
45083	150 - 180 m³/ hr..... (The actual rate should be : $151,431.90 for Item 45083A)	15,143.19	8,145.75	10,911.51	19,765.09	45083
	Per cubic metre per hour					
45084	Extra over Item 45083 for each additional flow rate in m³/ hr of sand filter.....	2,510.38	19.23	25.98	79.07	45084

CARBON FILTER TANKS

Carbon filter tanks : mild steel electrically welded with epoxy coating c/w supported nozzles, nozzle plates : and filtering media supports ; internal distribution and draw-off trough ; flanged inlets and outlets ; wash-in ; drain and air connections ; manholes ; necessary filtering media ; maintenance platform; supports and all necessary accessories : -

Equipment volume : -

Item	*Each*	A Supply and fix $	B Take down and clear away $	C Take down and set aside for re-use $	D Fix only $	Item
45085	Up to 2 m³	45,429.56	1,562.08	1,773.29	4,787.89	45085
45086	2 - 5 m³	75,715.93	2,287.20	3,091.36	9,444.73	45086
45087	5 - 10 m³ (The actual rate should be : $151,431.90 for Item 45087A)	15,143.19	3,627.89	4,406.11	15,321.42	45087
45088	10 - 15 m³ (The actual rate should be : $265,005.70 for Item 45088A)	26,500.57	4,507.77	5,727.60	20,015.55	45088
45089	15 - 20 m³ (The actual rate should be : $393,722.80 for Item 45089A)	39,372.28	5,734.39	6,966.65	22,768.11	45089
45090	20 - 25 m³ (The actual rate should be : $530,011.50 for Item 45090A)	53,001.15	6,122.95	7,293.08	25,547.76	45090

OZONATORS

Ozonator : Vacuum operated type: full vacuum unit ; Duty and standby air dryers ;
Ozone generator ; High tension transformers ; Cartridge filters ; Softeners ;
Water trap pots ; Control panels (control panels measured separately); associated pipings;
wirings and control ; maintenance platform ; supports ; compact construction cabinet;
lockable doors and all necessary accessories : -

Capacity : -

Item	***Per set***	A Supply and fix $	B Take down and clear away $	C Take down and set aside for re-use $	D Fix only $	Item
45091	Up to 50 g/ hr..... (The actual rate should be : $189,289.80 for Item 45091A)	18,928.98	2,136.98	2,830.48	8,116.45	45091
45092	50 - 100 g/ hr..... (The actual rate should be : $287,720.50 for Item 45092A)	28,772.05	2,888.09	3,334.21	11,016.98	45092
45093	100 - 150 g/ hr..... (The actual rate should be : $302,863.70 for Item 45093A)	30,286.37	3,110.58	3,853.82	11,823.43	45093
45094	150 - 200 g/ hr..... (The actual rate should be : $363,436.40 for Item 45094A)	36,343.64	3,379.41	4,270.56	13,940.06	45094
45095	200 - 250 g/ hr..... (The actual rate should be : $397,508.70 for Item 45095A)	39,750.87	4,103.40	5,007.00	16,558.22	45095
45096	250 - 300 g/ hr..... (The actual rate should be : $514,868.30 for Item 45096A)	51,486.83	4,705.42	5,605.61	17,556.66	45096

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	OZONATED WATER REACTION TANKS					
	Ozonated water reaction tank : mild steel electrically welded shell with epoxy coating ; c/w automatic air vents ; drains ; valves ; flow meters ; maintenance platform ; supports ; accessories and connections : -					
	Equipment volume : -					
	Per cubic metre	A $	B $	C $	D $	
45097	Up to 2 m³	37,857.96	1,346.34	1,934.81	5,611.26	45097
45098	2 - 5 m³	64,358.54	2,321.08	2,985.23	9,458.31	45098
45099	5 - 10 m³ (The actual rate should be : $128,717.10 for Item 45099A)	12,871.71	3,491.25	4,315.74	14,249.57	45099
45100	10 - 15 m³ (The actual rate should be : $227,147.80 for Item 45100A)	22,714.78	4,485.17	5,587.51	18,933.52	45100
45101	15 - 20 m³ (The actual rate should be : $367,222.30 for Item 45101A)	36,722.23	5,660.97	6,810.78	23,188.28	45101
45102	20 - 25 m³ (The actual rate should be : $492,153.50 for Item 45102A)	49,215.35	6,137.61	7,361.95	25,411.12	45102

COMPRESSED AIR SUPPLY FOR BACKWASH SYSTEM

Compressed air supply for backwash system : air compressors ; ancillary control accessories ; acoustic enclosure ; pipeworks and fittings ; all type of valves ; switches ; pressure gauges ; connections ; controls and interlocks ; control panel (control panel measured separately) ; supports ; all necessary accessories : -

Displacement rate : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	Per system	A $	B $	C $	D $	
45103	Up to 50 m³/ hr	35,155.33	471.00	561.35	1,886.24	45103
45104	50 - 100 m³/ hr	38,670.86	560.22	673.17	2,331.24	45104
45105	100 - 150 m³/ hr	52,732.98	605.41	727.40	2,623.81	45105
45106	150 - 200 m³/ hr	56,248.52	674.29	808.71	2,761.63	45106
45107	200 - 250 m³/ hr	56,951.63	686.75	833.58	2,893.74	45107
45108	250 - 300 m³/ hr	63,279.57	710.44	859.55	2,982.93	45108
45109	300 - 350 m³/ hr	64,685.80	786.11	951.02	3,202.08	45109
45110	350 - 400 m³/ hr	66,795.11	815.49	987.16	3,320.71	45110

Section 46

CRANE AND HOIST INSTALLATION

SECTION 46

CRANE AND HOIST INSTALLATION

SPECIAL CONDITIONS

Measurement of power supply **SC46.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

Measurement of temporary supply **SC46.02**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC46.03**

The rates for all items shall generally include for : -

(a) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(b) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(c) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(d) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(e) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC46.03 (Cont'd)**

(f) Submitting all relevant documentation to Electrical and Mechanical Services Department and Labour Department for obtaining necessary approval.

(g) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(h) Provision of manufacturer's guarantee.

(i) Attending fault and complaint during the Maintenance Period.

Rates for equipment **SC46.04**

The rates for equipment shall further include for : -

(a) All necessary assembly, erection, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, instrumentation and the like.

(b) Supporting frames.

(c) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(d) All necessary operational and control accessories (e.g. gearboxes, brakes, safety facilities, indicating lamps, pendant control units and the like) forming part of the equipment, connection and termination.

(e) Testing and examination of the equipment and associated lifting facilities by an approved independent surveyor.

(f) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(g) Anti-vibration materials and sound insulating materials in plant and machinery bases.

(h) Motor starters (if motors in the equipment require motor starters).

(i) Earth/ equipotential bonding as specified.

(j) All necessary statutory submission to all relevant Authorities including employing competent examiners for testing and inspection of the equipment to satisfy the requirements of Labour Department.

(k) Structural design and associated drawings for approval prior to manufacturing. The design shall be attested by a professional structural engineer licensed to practices in Hong Kong.

Particular Specification **SC46.05**

The Particular Specification for crane and hoist can be found in the Contract.

CRANE AND HOIST INSTALLATION

Jib crane

Free standing, electrically rotated high grade steel jib crane, minimum rotating speed of 0.5 rpm, up to 4m in height, 270 deg maximum slewing ark, and pre-lubricated, c/w round base plate reinforced with six knee braces, and c/w motor, gearbox, 2 limit switches, electric connection with crane; c/w electric motorized trolley, minimum moving speed of 5 m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2 m/ min, motor, gearbox, 2 limit switches, electric connection with hoist, necessary overload protective devices and alarms; and in span radius : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Per crane	$	$	$	$	
46001	Up to 3 m x 1 ton..... (The actual rate should be : $202,750.20 for Item 46001A)	20,275.02	8,839.92	9,110.60	32,188.11	46001
46002	Ditto x 1 - 2 ton..... (The actual rate should be : $213,449.40 for Item 46002A)	21,344.94	9,063.65	9,346.67	32,777.68	46002
46003	Ditto x 3 - 5 ton..... (The actual rate should be : $245,547.00 for Item 46003A)	24,554.70	9,671.76	9,988.16	34,339.99	46003
46004	4 m x 1 ton..... (The actual rate should be : $222,543.70 for Item 46004A)	22,254.37	9,894.25	10,172.34	36,249.61	46004
46005	4 m x 1 - 2 ton..... (The actual rate should be : $222,543.70 for Item 46005A)	22,254.37	9,894.25	10,172.34	36,249.61	46005
46006	4 m x 3 - 5 ton..... (The actual rate should be : $286,739.00 for Item 46006A)	28,673.90	11,151.24	11,489.92	39,512.68	46006

Free standing, manually rotated high grade steel jib crane, up to 4m in height, 270 deg maximum slewing ark, and pre-lubricated, c/w round base plate reinforced with six knee braces; c/w electric motorized trolley, minimum moving speed of 5m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2m/ min, motor, gearbox, 2 limit switches, electric connection with hoist, necessary overload protective devices and alarms; and in span radius : -

	Per crane					
46007	Up to 3 m x 1 ton..... (The actual rate should be : $172,257.40 for Item 46007A)	17,225.74	7,547.04	7,778.20	27,518.46	46007
46008	Ditto x 1 - 2 ton..... (The actual rate should be : $172,257.40 for Item 46008A)	17,225.74	7,547.04	7,778.20	27,518.46	46008
46009	Ditto x 3 - 5 ton..... (The actual rate should be : $213,449.40 for Item 46009A)	21,344.94	9,063.65	9,356.58	32,770.25	46009

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CRANE AND HOIST INSTALLATION (CONT'D)					
	Wall-mounted, manually rotated high grade steel jib crane, up to 6m in height, 180 deg maximum slewing ark, c/w steel top and bottom brackets, two bronze bushings, bronze thrust washers, and pre-lubricated; c/w electric motorized trolley, minimum moving speed of 5 m/ min, motor, gearbox, 2 limit switches, electric connection with trolley; c/w electrically operated hoist, minimum lifting speed of 2 m/ min, motor, gearbox, 2 limit switches, electric connection with hoist, necessary overload protective devices and alarms; and in span radius : -					
	Per crane	A $	B $	C $	D $	
46010	Up to 3 m x 1 ton..... (The actual rate should be : $188,841.20 for Item 46010A)	18,884.12	9,554.33	9,791.66	36,415.24	46010
46011	Ditto x 2 ton..... (The actual rate should be : $194,190.80 for Item 46011A)	19,419.08	9,707.60	9,951.09	36,858.97	46011
46012	4 m x 1 ton..... (The actual rate should be : $210,239.60 for Item 46012A)	21,023.96	10,146.38	10,407.18	38,109.80	46012
46013	Ditto x 2 ton..... (The actual rate should be : $220,938.80 for Item 46013A)	22,093.88	10,422.02	10,695.17	38,882.32	46013
	Fixed chain hoist					
	Electrically operated hoist with electric motorized trolley, minimum lifting speed of 2 m/ min, up to 6m in height; c/w motor, gearbox, 2 limit switches, electric connection with hoist, necessary overload protective devices and alarms; and in lifting capacity : -					
	Per hoist					
46014	Up to 1 ton	43,813.30	2,460.89	2,526.41	8,885.65	46014
46015	1 - 2 ton	43,813.30	2,460.89	2,526.41	8,885.65	46015
46016	2 - 3 ton	53,549.57	3,018.33	3,094.96	10,863.27	46016
46017	3 - 4 ton	53,549.57	3,018.33	3,094.96	10,863.27	46017
46018	4 - 5 ton	63,285.88	3,552.28	3,632.62	12,818.64	46018
	Manually operated hoist with manual trolley, up to 6 m in height; c/w gearbox, and in lifting capacity : -					
	Per hoist					
46019	Up to 1 ton	5,468.02	233.60	241.04	781.16	46019
46020	1 - 2 ton	7,041.57	280.58	289.25	939.38	46020
46021	2 - 3 ton	9,184.72	373.28	385.62	1,263.20	46021
46022	3 - 4 ton	12,136.61	469.68	485.75	1,580.86	46022

CRANE AND HOIST INSTALLATION (CONT'D)

Fixed winch

Electrically operated wire winch, minimum lifting speed of 10 m/ min, up to 6m in height, in lifting capacity : -

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
		A	B	C	D	
	Per winch	$	$	$	$	
46023	Up to 300 kg	10,960.18	2,460.89	2,527.65	8,878.24	46023
46024	300 - 500 kg	18,637.00	2,460.89	2,527.65	8,878.24	46024
46025	500 kg - 1 ton	26,066.18	2,460.89	2,527.65	8,878.24	46025

Section 47

FUEL SUPPLY SYSTEM

SECTION 47

FUEL SUPPLY SYSTEM

SPECIAL CONDITIONS

Measurement of power supply	**SC47.01**	All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.
Measurement of fuel supply	**SC47.02**	All works of fuel supply up to the respective termination points for the equipment shall be measured separately and paid for at the appropriate rates under the applicable Work Sections of this Schedule.
Measurement of excavations, ducts, chases, holes and other subsidiary work	**SC47.03**	All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.
Measurement of pipework	**SC47.04**	Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.
Measurement of heat resistant cables and low smoke zero halogen cables	**SC47.05**	Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing. Heat resistant cables and low smoke zero halogen cables shall be measured the net length as fixed in linear metres.
Measurement of temporary supply	**SC47.06**	Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made. For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

SPECIAL CONDITIONS

Measurement of temporary supply (Cont'd)

SC47.06 (Cont'd)

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally

SC47.07

The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC47.07 (Cont'd)**

(m) Submitting all relevant documentation to Electrical and Mechanical Services Department and Fire Services Department for obtaining necessary approval.

(n) Obtaining necessary approval from Environment Protection Department including submission of all relevant documentation.

(o) Approved type test certificate issued by Fire Services Department for all equipment.

(p) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(q) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(r) Provision of manufacturer's guarantee.

(s) Attending fault and complaint during the Maintenance Period.

(t) Meeting statutory requirements for disposal of waste materials.

(u) All necessary statutory submissions to all relevant Authorities in respect of the complete fuel supply system.

Rates for pipework **SC47.08** The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(g) All jointing including provision of flexible connections and/ or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

SPECIAL CONDITIONS

Rates for pipework (Cont'd)

SC47.08 (Cont'd)

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

Rates for in-line pipework equipment

SC47.09

The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for equipment

SC47.10

The rates for equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Daily services fuel tank complete with socket connections for filling, overflow, outlet, drain, return and vent including all necessary fittings, union couplings, strainers, valves and the like, content gauge units, oil drip trays and all necessary accessories.

(c) Supporting frames.

(d) Connections including flexible joints between pipework and equipment.

(e) Flexible connections and anti-vibration connections between pipework and equipment.

(f) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

(g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing, water supply and/or fuel supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(h) Anti-vibration mountings for plant, machinery and the like.

(i) Anti-vibration materials and sound insulating materials in plant and machinery bases.

(j) Pump starters.

(k) Earth/equipotential bonding as specified.

SPECIAL CONDITIONS

Rates for heat resistant cables and low smoke zero halogen cables

SC47.11 The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.

(e) All necessary fixings complete with accessories and fittings as required.

(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for fuel supply system

SC47.12 The rates of fuel supply system to plant and appliances shall consist of fuel storage facilities, fuel transfer facilities, associated pipework, electrical power, controls and accessories. The rates shall further include the bulk fuel storage tanks, fuel transfer pumps, fuel dispensers and vapour recovery system, if required.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC47.13 The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with fuel supply system shall further include for : -

(a) All in-line fittings including brackets, supports, hangers and the like.

(b) Cutting into existing pipework and the like in position.

(c) Plugging off remaining ends with plugs or caps as required.

(d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(e) In the case of equipment and the like, taking down all associated pipework and/ or building services works.

(f) Making good all works disturbed.

Particular Specification

SC47.14 The Particular Specification for fuel supply system can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FUEL SUPPLY SYSTEM EQUIPMENT					
	Daily services fuel tank in mild steel welded construction c/w stiffeners and support frames, with tapped socket connections on tank (c/w all necessary fittings and union couplings or plugged with brass screw cap if not in size) for filling pipe, overflow pipe, delivery pipe (with a quick closing valve), drain pipe (with a 20 mm gate valve), return pipe, vent pipe, and with a content gauge unit. oil drip tray, all accessories and for fuel capacity : -					
	Per tank	A $	B $	C $	D $	
47001	Up to 250 litres	40,552.23	1,921.21	2,209.22	3,180.57	47001
47002	250 - 450 litres	42,579.85	1,921.21	2,209.22	3,180.57	47002
47003	450 - 500 litres	42,579.85	1,921.21	2,209.22	3,180.57	47003
47004	500 - 1000 litres	44,607.46	1,921.21	2,209.22	3,180.57	47004
47005	1000 - 2000 litres	50,690.30	1,921.21	2,209.22	3,180.57	47005
	Level switch capable of controlling on/ off operation of remote system to IEC 60079-0 Group II A, Temperature Class T1, suitable for Zone 1 hazardous area and installed inside fuel tank c/w a level sensor and a switch unit, controller, casing and all necessary electrical components and control wirings to BASEEFA certification : -					
	Per switch					
47006	Level switch	46,930.24	1,331.65	1,584.64	2,243.12	47006
	Fuel transfer pump, rotary and positive displacement type in high quality cast iron construction c/w high tensile steel shafts, flame proof coupling motors, valves, strainers, switches, composite pump control cubicles (measured separately), alarm, wiring works, overload protection and all necessary accessories : -					
	Per set					
47007	0.75 - 1 kW	50,690.30	1,619.65	1,816.17	2,680.22	47007
47008	1 - 2 kW	60,828.35	1,619.65	1,816.17	2,680.22	47008
47009	2 - 4 kW	70,966.42	1,619.65	1,816.17	2,680.22	47009
47010	4 - 6 kW	81,104.47	1,619.65	1,816.17	2,680.22	47010
47011	6 - 10 kW	91,242.53	1,619.65	1,816.17	2,680.22	47011
47012	Hand pump, semi-rotary double acting type c/w 25 mm diameter inlet and outlet pipes and 25 mm diameter flexible oil resistant pipe	1,520.70	231.55	267.69	389.66	47012

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)					
	Pipeworks					
	Carbon steel pipes and fittings in heavy quality to ISO 65 c/w all necessary accessories : -					
		A	B	C	D	
	Per linear metre	$	$	$	$	
47013	20 mm diameter.....	576.36	8.52	9.20	102.80	47013
47014	25 mm diameter.....	672.42	9.36	10.10	111.81	47014
47015	32 mm diameter.....	768.49	10.10	11.36	120.85	47015
47016	40 mm diameter.....	864.54	11.02	12.07	135.53	47016
47017	50 mm diameter.....	960.60	11.71	12.62	159.26	47017
	Bronze gate valve, full way type c/w all necessary accessories : -					
	Per valve					
47018	20 mm diameter.....	184.35	29.31	35.44	147.96	47018
47019	25 mm diameter.....	283.12	30.00	36.13	197.65	47019
47020	32 mm diameter.....	354.98	30.69	36.71	247.35	47020
47021	40 mm diameter.....	447.49	31.39	37.40	276.71	47021
47022	50 mm diameter.....	551.12	32.66	38.79	295.92	47022
	Bronze globe valve, full way type c/w all necessary accessories : -					
	Per valve					
47023	20 mm diameter.....	184.35	29.31	35.44	147.96	47023
47024	25 mm diameter.....	283.12	30.00	36.13	197.65	47024
47025	32 mm diameter.....	354.98	30.69	36.71	247.35	47025
47026	40 mm diameter.....	447.49	31.39	37.40	276.71	47026
47027	50 mm diameter.....	551.12	32.66	38.79	295.92	47027

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)					
	Pipeworks (Cont'd)					
	Bronze T-port valve, full way type c/w handles and all necessary accessories : -					
	Per valve	A $	B $	C $	D $	
47028	20 mm diameter.....	489.60	29.31	35.44	147.96	47028
47029	25 mm diameter.....	832.31	30.00	36.13	197.65	47029
47030	32 mm diameter.....	1,116.27	30.69	36.71	247.35	47030
47031	40 mm diameter.....	1,645.04	31.39	37.40	276.71	47031
47032	50 mm diameter.....	2,457.78	32.66	38.79	295.92	47032
	Bronze ball valve, full way type c/w all necessary accessories : -					
	Per valve					
47033	20 mm diameter.....	184.35	29.31	35.44	147.96	47033
47034	25 mm diameter.....	283.12	30.00	36.13	197.65	47034
47035	32 mm diameter.....	354.98	30.69	36.71	247.35	47035
47036	40 mm diameter.....	447.49	31.39	37.40	276.71	47036
47037	50 mm diameter.....	551.12	32.66	38.79	295.92	47037
	Bronze non-return drain valve, full way type c/w all necessary accessories : -					
	Per valve					
47038	20 mm diameter.....	248.23	29.31	35.44	147.96	47038
47039	25 mm diameter.....	343.21	30.00	36.13	197.65	47039
47040	32 mm diameter.....	450.43	30.69	36.71	247.35	47040
47041	40 mm diameter.....	533.67	31.39	37.40	276.71	47041
47042	50 mm diameter.....	670.76	32.66	38.79	295.92	47042

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	FUEL SUPPLY SYSTEM EQUIPMENT (CONT'D)					
	Pipeworks (Cont'd)					
	Bronze strainer, double type c/w all necessary accessories : -					
	Per strainer	A $	B $	C $	D $	
47043	20 mm diameter.....	241.28	29.31	35.44	147.96	47043
47044	25 mm diameter.....	329.20	30.00	36.13	197.65	47044
47045	32 mm diameter.....	441.23	30.69	36.71	247.35	47045
47046	40 mm diameter.....	525.04	31.39	37.40	276.71	47046
47047	50 mm diameter.....	717.55	32.66	38.79	295.92	47047
	Control : -					
	Per set					
47048	Fuel supply control system c/w flameproof fuel transfer pump control panel and flameproof level monitoring control panel with certificate issued by BASEEFA, with EIMCSP and IP 65 enclosure to IEC 60529, protection type EEx d flameproof..... (The actual rate should be : $131,404.80 for Item 47048A)	13,140.48	562.49	644.92	1,224.34	47048
47049	Flameproof control panel for high level visible and audible alarm.....	28,158.15	562.49	644.92	1,224.34	47049
47050	Remote on/ off control panel for fuel transfer pump c/w all necessary accessories.....	18,772.09	562.49	644.92	1,224.34	47050

Section 48

CHIMNEY

SECTION 48

CHIMNEY

SPECIAL CONDITIONS

Measurement of flue pipe/ aluminium cladding **SC48.01** Flue pipe/ aluminium cladding shall be measured in linear metres.

Measurement of insulation to flue pipe **SC48.02** Insulation to flue pipe/ aluminium cladding shall be measured the diameter of the pipe in linear metres.

Measurement of temporary supply **SC48.03** Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

Rates generally **SC48.04** The rate for all items shall generally include for : -

(a) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(b) All mild steel supports in outdoor environment.

(c) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

SPECIAL CONDITIONS

Rates generally (Cont'd) **SC48.04 (Cont'd)**

(d) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components, expansion bellows, compensators and the like.

(e) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(f) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(g) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(h) Attending fault and complaint during the Maintenance Period.

(i) Meeting statutory requirements for disposal of waste materials.

Rates for equipment **SC48.05** The rates for equipment shall further include for : -

(a) Submission of wind load and structural design calculations.

(b) Submission of calculations, shop drawings and other relevant information to Environmental Protection Department for approval in accordance with the Air Pollution Control Regulations.

(c) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(d) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(e) All necessary statutory submission to all relevant Authorities including employing competent examiners for testing and inspection of the equipment to satisfy the requirements of Labour Department.

(f) Structural design and associated drawings for approval prior to manufacturing. The design shall be attested by a professional structural engineer licensed to practices in Hong Kong.

(g) Welds examined by means of non-destructive tests (NDT).

(h) Meeting the design life of the chimney stack and supporting structures for at least 20 years.

(i) Lightning protection facilities.

(j) All welding carried out only by experienced welders with recognised certificates of proficiency.

(k) Checking of verticality by optical tooling method using the alignment telescope or jig alignment telescope, jig transit and precise level.

SPECIAL CONDITIONS

Particular Specification	**SC48.06**	The Particular Specification for chimney installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CHIMNEY EQUIPMENT					
	Mild steel vertical flue pipe c/w mounting brackets; c/w 25 mm thick mineral wool insulation and 1.6 mm thick aluminium cladding to maintain flue gas at 150°C minimum; c/w protector against lightning to BS EN/IEC 62305:2011; painted with two layers of dry films each of 2 mm thick pure silicon resin and heat resistant aluminium coating on the interior and exterior surfaces of chimney to EN 1993-3-2:2006 : -					
	Up to 3m in height, and chimney size at : -					
	Per chimney	A $	B $	C $	D $	
48001	50 mm diameter.....	677.99	252.09	-	-	48001
48002	80 mm diameter.....	878.88	336.14	-	-	48002
48003	100 mm diameter.....	962.57	336.14	-	-	48003
48004	125 mm diameter.....	1,088.12	336.14	-	-	48004
48005	150 mm diameter.....	1,339.24	336.14	-	-	48005
48006	200 mm diameter.....	2,092.56	420.17	-	-	48006
48007	250 mm diameter.....	2,343.68	420.17	-	-	48007
48008	300 mm diameter.....	2,594.77	672.26	-	-	48008
48009	350 mm diameter.....	3,348.11	672.26	-	-	48009
48010	400 mm diameter.....	5,022.16	882.36	-	-	48010
48011	450 mm diameter.....	5,440.68	882.36	-	-	48011
	Add height of above items (with 25 mm thick mineral wool insulation) for each additional linear metre or part thereof : -					
	Per linear metre					
48012	50 mm diameter.....	225.99	84.03	-	-	48012
48013	80 mm diameter.....	292.96	112.05	-	-	48013
48014	100 mm diameter.....	321.42	112.05	-	-	48014
48015	125 mm diameter.....	362.72	112.05	-	-	48015
48016	150 mm diameter.....	446.42	112.05	-	-	48016

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CHIMNEY EQUIPMENT (CONT'D)					
	Add height of above items (with 25 mm thick mineral wool insulation) for each additional linear metre or part thereof : - (Cont'd)					
		A	B	C	D	
	Per linear metre	$	$	$	$	
48017	200 mm diameter.....	697.52	140.32	-	-	48017
48018	250 mm diameter.....	781.23	140.32	-	-	48018
48019	300 mm diameter.....	864.92	224.09	-	-	48019
48020	350 mm diameter.....	1,116.03	224.09	-	-	48020
48021	400 mm diameter.....	1,674.05	294.12	-	-	48021
48022	450 mm diameter.....	1,774.50	294.12	-	-	48022
	Mild steel vertical flue pipe c/w mounting brackets; c/w 50 mm thick mineral wool insulation and 1.6 mm thick aluminium cladding to maintain flue gas at 150°C minimum; c/w protector against lightning to BS EN/IEC 62305:2011; painted with two layers of dry films each of 2 mm thick pure silicon resin and heat resistant aluminium coating on the interior and exterior surfaces of chimney to EN 1993-3-2:2006 : -					
	Up to 3m in height, and chimney size at : -					
	Per chimney					
48023	50 mm diameter.....	711.47	252.09	-	-	48023
48024	80 mm diameter.....	1,004.43	336.14	-	-	48024
48025	100 mm diameter.....	1,079.76	336.14	-	-	48025
48026	125 mm diameter.....	1,180.21	336.14	-	-	48026
48027	150 mm diameter.....	1,414.58	336.14	-	-	48027
48028	200 mm diameter.....	2,259.97	420.17	-	-	48028
48029	250 mm diameter.....	2,594.77	420.17	-	-	48029
48030	300 mm diameter.....	2,762.19	672.26	-	-	48030
48031	350 mm diameter.....	3,599.21	672.26	-	-	48031
48032	400 mm diameter.....	5,273.26	882.36	-	-	48032
48033	450 mm diameter.....	5,775.48	882.36	-	-	48033

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CHIMNEY EQUIPMENT (CONT'D)					
	Add height of above items (with 50 mm thick mineral wool insulation) for each additional linear metre or part thereof : -					
	Per linear metre	A $	B $	C $	D $	
48034	50 mm diameter	238.55	84.03	-	-	48034
48035	80 mm diameter	334.82	112.05	-	-	48035
48036	100 mm diameter	359.92	112.05	-	-	48036
48037	125 mm diameter	393.41	112.05	-	-	48037
48038	150 mm diameter	471.54	112.05	-	-	48038
48039	200 mm diameter	753.33	140.32	-	-	48039
48040	250 mm diameter	864.92	140.32	-	-	48040
48041	300 mm diameter	920.72	224.09	-	-	48041
48042	350 mm diameter	1,199.73	224.09	-	-	48042
48043	400 mm diameter	1,757.76	294.12	-	-	48043
48044	450 mm diameter	1,925.16	294.12	-	-	48044
	Aluminium cladding 1.6 mm thick for chimney insulation c/w 50 mm insulation for chimney internal diameter at : -					
	Per linear metre					
48045	100 mm diameter	138.84	9.11	9.74	24.14	48045
48046	125 mm diameter	155.09	12.87	14.09	27.44	48046
48047	150 mm diameter	175.58	15.61	16.95	30.72	48047
48048	200 mm diameter	203.22	17.58	18.71	35.11	48048
48049	250 mm diameter	247.38	21.55	23.33	43.88	48049
48050	300 mm diameter	297.83	26.25	28.84	53.75	48050
48051	350 mm diameter	329.61	29.23	32.09	60.34	48051
48052	400 mm diameter	361.40	31.63	34.76	65.82	48052
48053	450 mm diameter	400.50	35.91	39.13	73.51	48053

CHIMNEY EQUIPMENT (CONT'D)

Stainless steel flue pipes and fitting c/w stainless steel of Grade 316 inner wall of minimum 0.6 mm thick and stainless steel of grade 304 outer wall of minimum 0.5 mm thick; c/w 30 mm thick mineral wool insulation between the walls; S.S. tubes and the insulation shall be factory fabricated in sections to ensure structured integrity and strength; c/w water/ gas tight flue section joints and drain points : -

Up to 3m in height, and chimney size at : -

Item	*Per chimney*	A Supply and fix $	B Take down and clear away $	C Take down and set aside for re-use $	D Fix only $	Item
48054	80 mm diameter	1,171.84	252.09	-	-	48054
48055	100 mm diameter	1,255.53	336.14	-	-	48055
48056	125 mm diameter	1,374.48	336.14	-	-	48056
48057	150 mm diameter	1,660.84	336.14	-	-	48057
48058	200 mm diameter	2,118.99	336.14	-	-	48058
48059	250 mm diameter	2,920.79	420.17	-	-	48059
48060	300 mm diameter	3,264.39	420.17	-	-	48060
48061	350 mm diameter	4,352.55	672.26	-	-	48061
48062	400 mm diameter	6,070.63	672.26	-	-	48062
48063	500 mm diameter	6,586.07	882.36	-	-	48063
48064	600 mm diameter	7,559.67	882.36	-	-	48064

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	CHIMNEY EQUIPMENT (CONT'D)					
	Add height of above items (with 30 mm thick mineral wool insulation) for each additional linear metre or part thereof : -					
	Per linear metre	A $	B $	C $	D $	
48065	80 mm diameter.....	389.22	84.03	-	-	48065
48066	100 mm diameter.....	418.52	112.05	-	-	48066
48067	125 mm diameter.....	458.16	112.05	-	-	48067
48068	150 mm diameter.....	553.61	112.05	-	-	48068
48069	200 mm diameter.....	706.33	112.05	-	-	48069
48070	250 mm diameter.....	973.60	140.32	-	-	48070
48071	300 mm diameter.....	1,088.12	140.32	-	-	48071
48072	350 mm diameter.....	1,450.85	224.37	-	-	48072
48073	400 mm diameter.....	2,023.54	224.37	-	-	48073
48074	500 mm diameter.....	2,195.35	294.12	-	-	48074
48075	600 mm diameter.....	2,519.89	294.12	-	-	48075

Section 49

SEWAGE TREATMENT INSTALLATION

SECTION 49

SEWAGE TREATMENT INSTALLATION

SPECIAL CONDITIONS

Measurement of power supply **SC49.01**

All works of electrical power supply up to power supply points (e.g. switchgear or isolator or spur unit and the like) for the equipment shall be measured separately and paid for at the appropriate rates under Section 27 - Lighting System and Fixtures, Section 28 - Small Power Distribution, Section 29 - Main Distribution Systems and Section 30 - Miscellaneous Electrical Installations or other applicable Work Sections of this Schedule.

Measurement of pumps **SC49.02**

All pumps shall be measured separately and paid for at the appropriate rates under Section 38 - HVAC - Equipment or other applicable Work Sections of this Schedule.

Measurement of excavations, ducts, chases, holes and other subsidiary work **SC49.03**

All trench excavation shall be measured separately and paid for at the appropriate rates under Section 03 - Excavation of this Schedule. All pipe ducts, concrete thrust blocks and anchor blocks, chases in, and holes through existing walls, ceilings and similar for pipes, etc., (but not mortices or holes for brackets) except specifically stated, shall be measured and paid for at the appropriate rates under Section 04 - Concrete Work, Section 05 - Brickwork and Blockwork, Section 12 - Roadwork and Cable Duct and Section 13 - Plumbing and Drainage or other applicable Work Sections of this Schedule.

Measurement of pipework **SC49.04**

Pipework shall be measured in linear metres over all in-line fittings, short running lengths and branches.

Measurement of heat resistant cables and low smoke zero halogen cables **SC49.05**

Cables for the equipment, control/indicating panels, fire alarm points, etc. have been allowed in the rates under this Section. No measurement shall be made for cables except for heat resistant cables where specifically ordered by the Maintenance Surveyor in writing.

Heat resistant cables and low smoke zero halogen cables shall be measured the net lengthas fixed in linear metres.

Measurement of temporary supply **SC49.06**

Where a temporary supply is ordered by the Maintenance Surveyor, the provision of all articles, labour and accessory materials (nails, screws, rawplugs and similar) necessary for fixing shall be of temporary nature. For "use and waste" of all materials and accessories, etc., for a period of not exceeding four weeks from the date of certified completion, 50 per cent of the value of the appropriate "supply and fix" items after the adjustment of contract percentages will be paid. For a period exceeding four weeks and not exceeding eight weeks, 55 per cent will be paid and for each subsequent month a further addition of 5 per cent will be made.

For a period of more than six months, the full rates, as for permanent works will be paid, and the materials will become the property of the Employer.

No extra payment will be made for the removal of materials in connection with the temporary supply, but the cost of which shall have been included in the payment as aforementioned in the first paragraph hereof. The date of certified completion of a temporary supply shall be the date when the installation is first brought into service. The date when it ceases to be used shall be the date from which the Maintenance Surveyor instructs the dismantlement of the installation, or the date when the installation is no longer in use, whichever is earlier.

SPECIAL CONDITIONS

Rates generally **SC49.07** The rates for all items shall generally include for : -

(a) Colour band and colour identification work.

(b) Lettering and engraving for identification, signs, labels in both English and Chinese.

(c) Identification plates, signs, notice plates, discs and labels in both English and Chinese.

(d) Priming or painting off site and proprietary finishes or surface treatment applied as part of the production process whether applied before or after fabrication and assembly.

(e) All protective and finishing painting work, apart from additional painting work specifically ordered by the Maintenance Surveyor in writing which shall be measured separately and paid for at the appropriate rates under Section 15 - Painting of this Schedule.

(f) Any kind of fixing method including provision of screws, nuts, bolts, shims, washers, clips, hangers, supports, brackets, spring compensated and seismic restraints and isolating components and the like.

(g) Provision of expansion joints in service runs wherever they coincide with structural expansion joints.

(h) Submission of catalogues, technical literature, data, calculations, test certificates and approval documentation covering the equipment and materials being supplied.

(i) Preparing and submitting detail working drawings as required and all shop drawings for the fabrication and installation.

(j) Attendance, as required, of the manufacturers' representative to assist in the installation and subsequent testing and commissioning.

(k) Testing and commissioning including submission of Testing and Commissioning Certificates and Records of Tests.

(l) Provision of all necessary power, fuel, labour and testing instrument of approved type for testing and commissioning.

(m) Submitting all relevant documentation to Electrical and Mechanical Services Department and Environmental Protection Department for obtaining necessary approval.

(n) Preparing and submitting operation and maintenance manuals and as-fitted drawings for items of works as required.

(o) Provision of framed schematic diagrams c/w clear plastic front sheet and wooden back plate including fixing to wall.

(p) Provision of manufacturer's guarantee.

(q) Attending fault and complaint during the Maintenance Period.

(r) Meeting statutory requirements for disposal of waste materials.

SPECIAL CONDITIONS

Rates for pipework **SC49.08** The rates for pipework shall further include for : -

(a) All short lengths, cutting and waste, and joints in the running length.

(b) All pipework brackets, supports, hangers, guides, anchors and the like and alternative method of jointing and fixing as specified (if any).

(c) All pipework fittings (e.g. bends, elbows, branches, reducers, tees, caps and the like) including connections, cutting and jointing pipes to fittings.

(d) Screwed sockets, tappings, bosses and welding-necks welded to pipes or flanges including perforating the pipework or flanges.

(e) Connections between pipework of different materials and differing grades of same material.

(f) Provision of wall plates, ceiling plates, floor plates, high tensile holding down bolts, tapered washers and the like for casting into the reinforced concrete corbels.

(g) All jointing including provision of flexible connections and / or necessary adaptors and connectors, welding consumable, jointing tapes, flanges, unions, gasket, bolts and nuts and the like where required.

(h) Expansion loops and compensators including connections, cutting and jointing to pipes and fittings.

(i) Provision of all sleeves for casting in or building in where pipes pass through slabs, walls or beams and caulking between pipe and sleeve where required.

(j) Fixing in any position to floors, walls and ceilings including laying in trenches and fixing in chases, ducts, false ceilings and similar positions, and wrapping with protective tapes where required.

Rates for in-line pipework equipment **SC49.09** The rates for in-line pipework equipment (e.g. valves, flow meters, gauges, strainers and the like) shall further include for : -

(a) Cutting and jointing to pipes and fittings.

(b) Stripping down repacking glands and preparing spindles, as appropriate, prior to installation.

Rates for equipment **SC49.10** The rates for equipment shall further include for : -

(a) All necessary assembly, orientation, alignment, levelling and bolting down, together with the provision of shims and packing pieces, the clocking of couplings between drivers and rotating equipment, strainers, instrumentation and the like.

(b) Conduction of all tests, adjustments and commissioning of the installed equipment.

(c) Supporting frames.

(d) Connections including flexible joints between pipework and equipment.

(e) Flexible connections and anti-vibration connections between pipework and equipment.

(f) All necessary operational and control accessories (e.g. valves, gauges, flow meters, indicating lamps and the like) forming part of the equipment, connection and termination.

SPECIAL CONDITIONS

Rates for equipment (Cont'd)

SC49.10 (Cont'd)

(g) Final connection and terminations to electrical supply, fire alarm, control, monitoring, interfacing and water supply including cables, wirings, conduits, trunkings, cable trays, fuses, control boxes, short lengths of pipework and necessary accessories required for energizing the equipment to properly operate at specified duties.

(h) Anti-vibration mountings for plant, machinery and the like.

(i) Anti-vibration materials and sound insulating materials in plant and machinery bases.

(j) Motor starters (if motors in the equipment require motor starters).

(k) Earth/ equipotential bonding as specified.

(l) Acoustic enclosure.

(m) Training to the employer's staff and maintenance parties.

Rates for package type membrane bio-reactor system

SC49.11

The rates for package type membrane bio-reactor system shall further include for : -

(a) The design, supply and installation of a package sewage treatment system with applying the membrane bio-reactor (MBR) technology.

(b) Seeded process start-up for the establishment of the sewage treatment process.

(c) Demonstrating that the standard of effluent complies with the requirements as specified in the discharge license. Sample analysis shall be carried out by a HOKLAS laboratory.

(d) Field-test kit for the sewerage treatment package including portable pH meter, TDS meter, corrosion inhibitor ppm test kit and the like recommended by the specialist.

(e) Collecting samples to carry out analysis of stabilization monitoring for 21 days.

(f) Cat ladder, working and inspection platforms.

(g) Submission of system design principle.

(h) Tanking away service for waste sludge generated from the system during the Maintenance Period.

(i) Odour control equipment.

(j) All necessary sensing devices for on-line control/ monitoring to satisfy the requirement set out for obtaining the discharge licence and all necessary chemicals and consumables during the Maintenance Period.

(k) Operation and maintenance service including sample tests, laboratory reports of influent and effluent water on monthly basis during the Maintenance Period.

(l) All submission to relevant Authorities, including all payments for obtaining of relevant certificates/ licences.

(m) Carrying out factory acceptance tests in the facilities of the specialist contractor prior to delivery of all equipment to site. The rate shall further include the transportation cost of the Employer's representative for witnessing the tests.

SPECIAL CONDITIONS

Rates for heat resistant cables and low smoke zero halogen cables

SC49.12 The rates for heat resistant cables and low smoke zero halogen cables shall further include for : -

(a) Laying or fixing in different locations, such as drawing into underground pipe ducts, laying or drawing into trunkings, drawing into conduits, suspending from insulators or catenaries, wrapping around equipment.

(b) In case of cables drawn into existing conduits, existing ducts or existing trunkings, removing and putting back existing covers, existing inspection lids and the like.

(c) Making cable-joints.

(d) Determining circuits, lacing into circuit groups and provision of draw wires, draw cables and the like as required.

(e) All necessary fixings complete with accessories and fittings as required.

(f) Provision of all sleeves for casting in or building in where cables pass through slabs, walls or beams and caulking between cable and sleeve where required.

Rates for "Take down and clear away" or "Take down and set aside for re-use"

SC49.13 The rates for "Take down and clear away" or " Take down and set aside for re-use" existing items in connection with sewage treatment installation shall further include for : -

(a) All in-line fittings including brackets, supports, hangers and the like.

(b) Cutting into existing pipework and the like in position.

(c) Plugging off remaining ends with plugs or caps as required.

(d) Preparing remaining ends of pipework and building services works (if any) to receive connections with new work if required.

(e) In the case of equipment and the like, taking down all associated pipework and/ or building services works.

(f) Making good all works disturbed.

Particular Specification

SC49.14 The Particular Specification for sewage treatment installation can be found in the Contract.

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES					
	Ultra violet sterilizer, close type c/w stainless steel 304 cabinet, chamber assembly, metallic wetted components, hour meter, all necessary controls/ monitoring systems and ultraviolet lamps rated at 7500 hours.					
	Ultra-violet dosage >60,000 uW second, flow rate : -					
	Each	A $	B $	C $	D $	
49001	Up to 3.6 m³/ hr.....	9,979.73	99.18	132.46	5,844.89	49001
49002	3.6 - 7.2 m³/ hr.....	19,959.42	99.18	132.46	5,844.89	49002
49003	7.2 - 10.8 m³/ hr.....	29,939.15	99.18	132.46	5,844.89	49003
	Air Blower : -					
	Max. 10m discharge head, airflow rate : -					
	Each					
49004	Up to 20 m³/ hr.....	59,878.28	100.60	106.86	11,689.78	49004
49005	20 - 40 m³/ hr.....	79,837.72	100.60	106.86	11,689.78	49005
49006	40 - 60 m³/ hr.....	99,797.16	114.08	120.50	17,534.65	49006
	Package type membrane module for membrane bio-reactor sewage treatment system : -					
	Per square metre					
49007	Membrane module.....	8,098.94	43.22	59.63	4,675.67	49007

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Motorized control valve : -					
	Each	A $	B $	C $	D $	
49008	Motorized wafer type control valve c/w protective coating, stainless steel disc and shaft EPDM seat, electric actuator	7,033.02	49.52	57.98	91.93	49008
	Cast iron gate valve c/w full bore clearway pattern to EN 1171:2015, solid wedge gates with minimum normal pressure rating of PN10; c/w stainless steel stem of Grade 316 : -					
	Each					
49009	50 mm diameter	1,048.93	29.57	36.21	55.94	49009
49010	65 mm diameter	1,198.60	31.15	37.86	58.58	49010
49011	80 mm diameter	1,414.00	32.84	39.97	62.61	49011
49012	100 mm diameter	1,928.28	37.80	45.21	69.27	49012
49013	150 mm diameter	3,469.59	50.05	58.96	90.55	49013
	Cast iron non-return valve to EN 12334:2001, in single door swing check pattern, c/w cast iron housing and gunmetal seat; c/w stainless steel stem of Grade 316 : -					
	Each					
49014	50 mm diameter	1,084.35	29.57	36.21	55.94	49014
49015	65 mm diameter	1,326.77	31.15	37.86	58.58	49015
49016	80 mm diameter	1,495.85	32.84	39.97	62.61	49016
49017	100 mm diameter	2,092.64	37.80	45.21	69.27	49017
49018	150 mm diameter	3,770.22	50.05	58.96	90.55	49018

Item		Supply and fix	Take down and clear away	Take down and set aside for re-use	Fix only	Item
	VALVES, PIPE WORKS AND ACCESSORIES (CONT'D)					
	Ductile iron pipe, Class I to BS EN 598:2007+A1:2009 c/w ductile iron fittings to BS EN 598:2007+A1:2009 with all necessary accessories : -					
	Per linear metre	A $	B $	C $	D $	
49019	100 mm diameter.....	298.92	55.70	65.79	114.54	49019
49020	150 mm diameter.....	394.51	77.99	84.16	151.80	49020
49021	200 mm diameter.....	516.96	90.31	97.54	185.13	49021
	UPVC pipes and fittings : BS EN ISO 1452 ; solvent or flanged joints, and c/w all accessories : -					
	Per linear metre					
49022	80 mm diameter.....	178.64	51.19	55.61	102.54	49022
49023	100 mm diameter.....	215.16	55.69	65.78	114.54	49023
49024	150 mm diameter.....	356.45	77.99	84.16	151.80	49024
49025	200 mm diameter.....	559.89	90.31	97.54	185.13	49025

ANNEX 'A' -
DRAWINGS FOR BUILDING SERVICES WORKS

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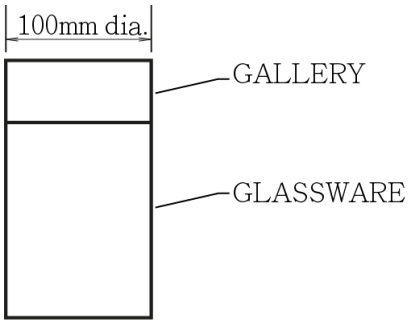
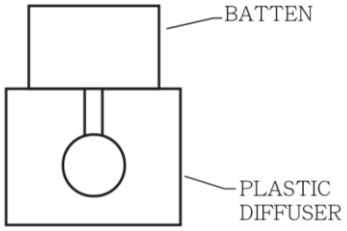
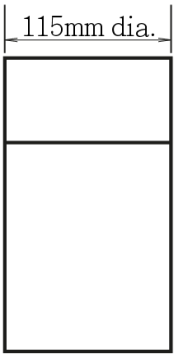
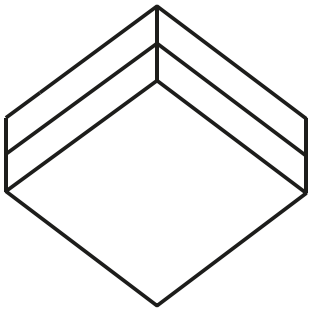
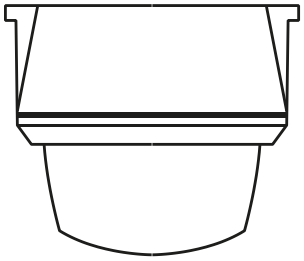
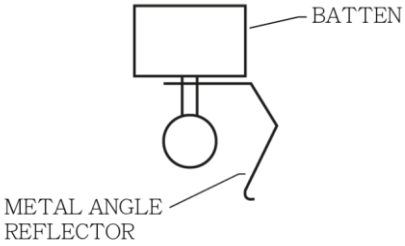
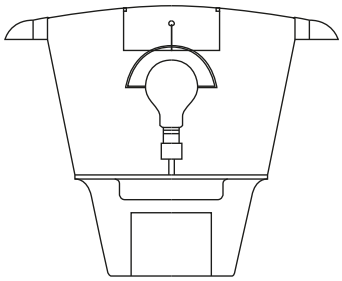
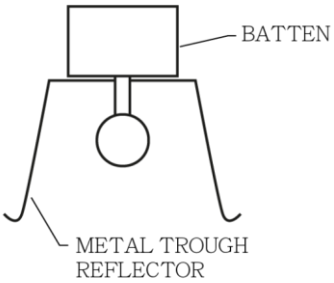
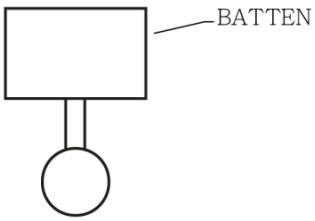
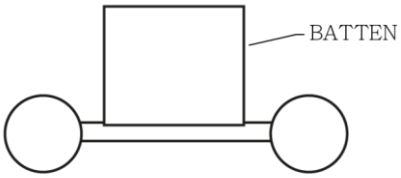
6		51	
7		52	
35		56	
46		58	
50		69	

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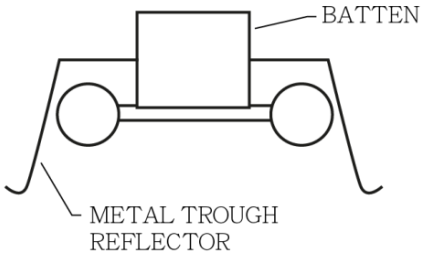
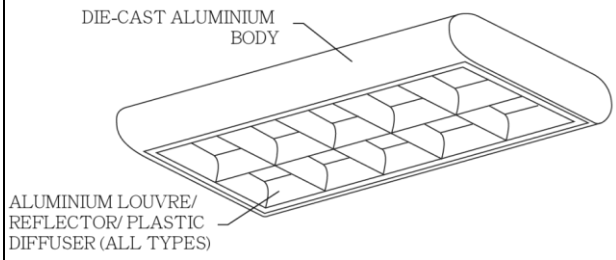
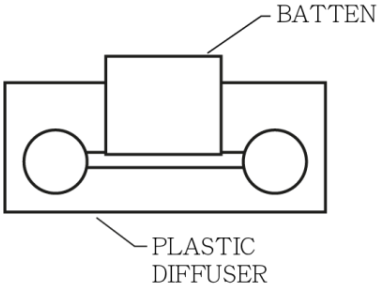
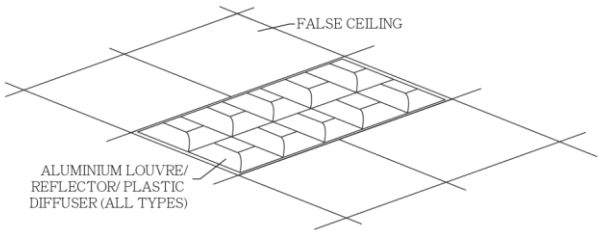
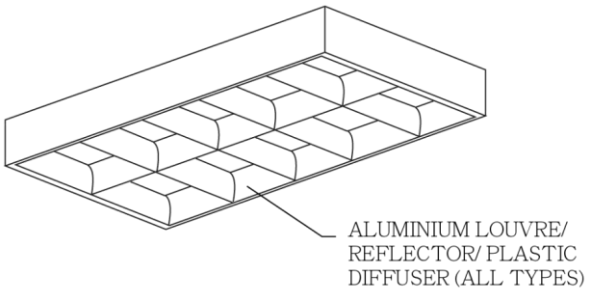
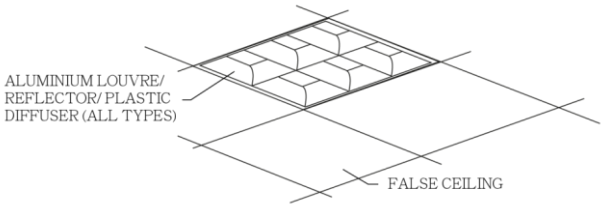
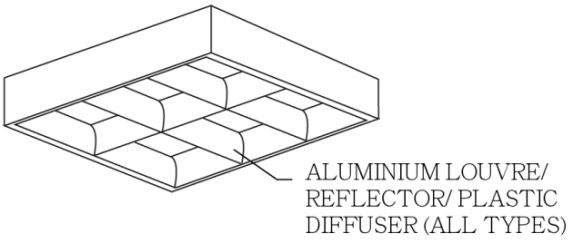
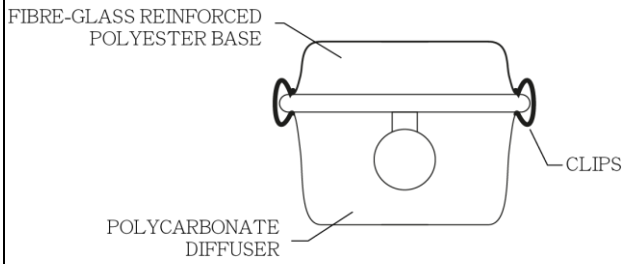
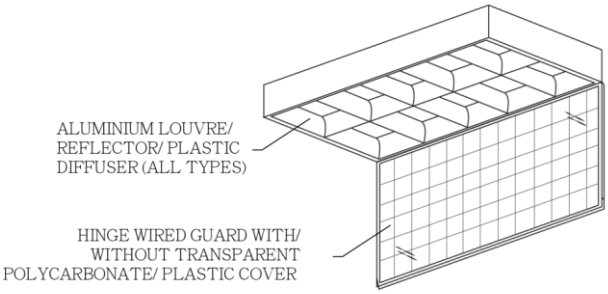
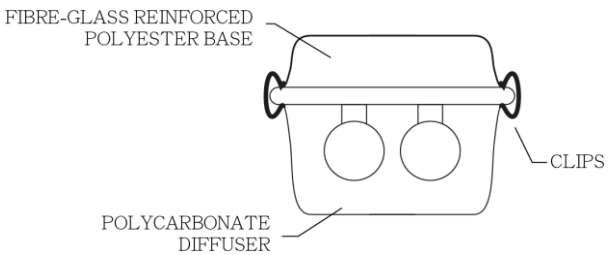
72		113	
74		114	
110		115	
111		116	
112		117	

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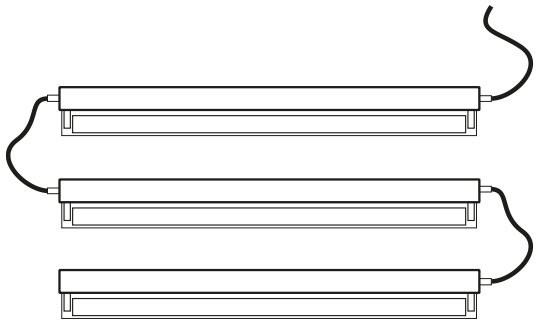
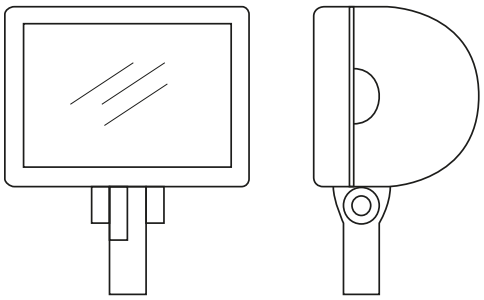
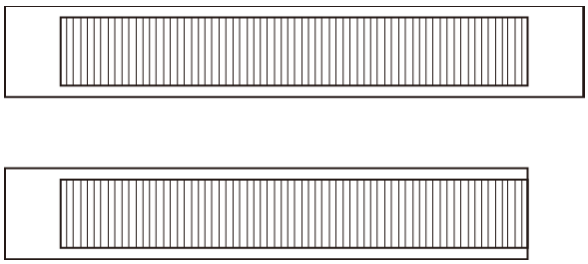
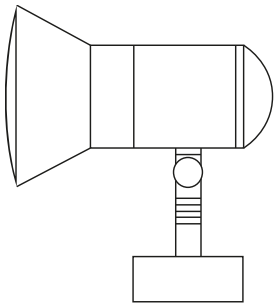
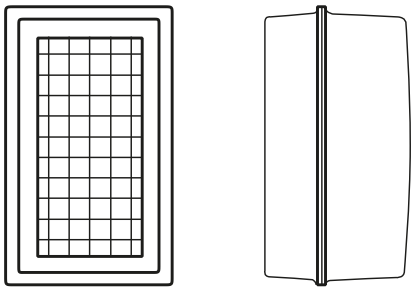
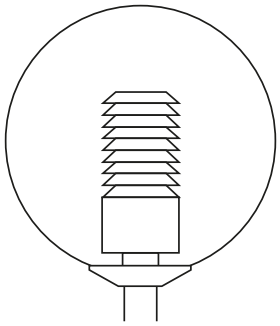
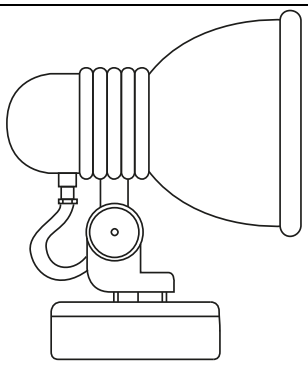
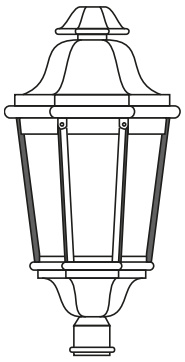
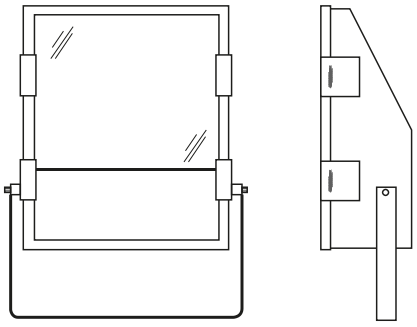
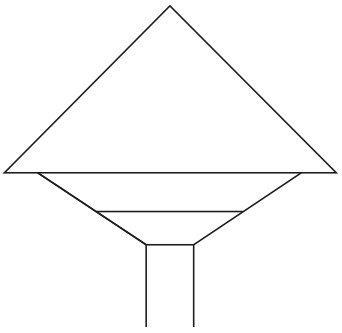
118		206	
201		207	
203		208	
204		209	
205		210	

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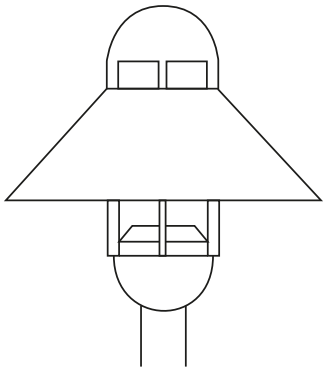
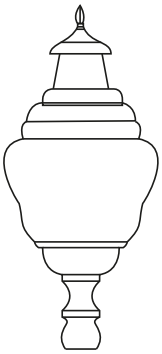
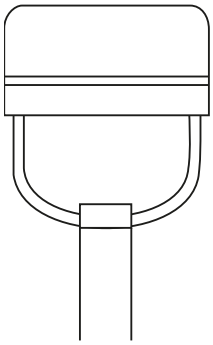
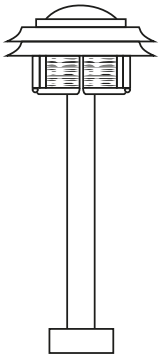
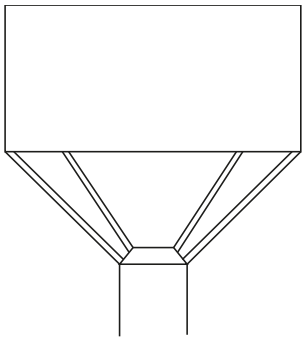
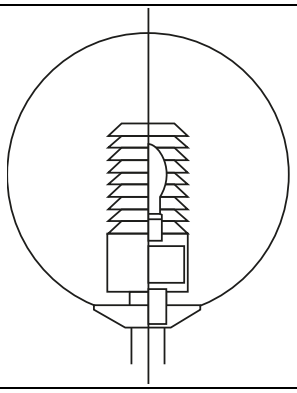
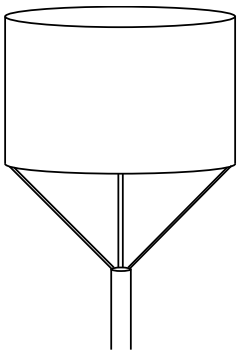
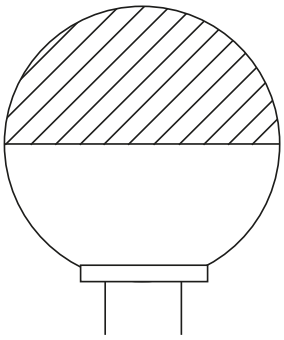
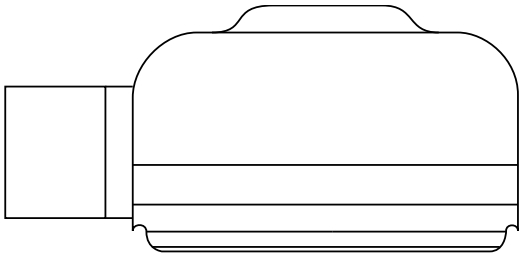
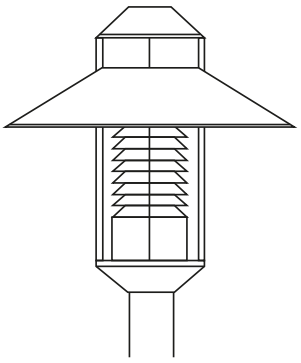
211		216	
212		217	
213		218	
214		219	
215		220	

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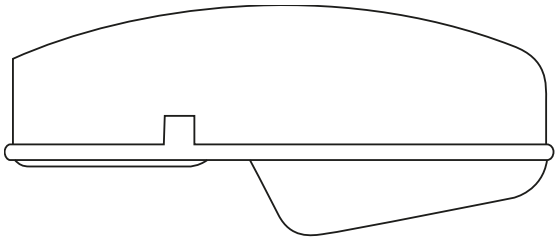
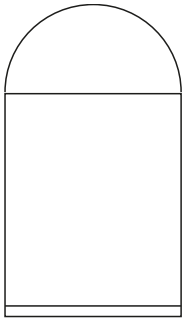
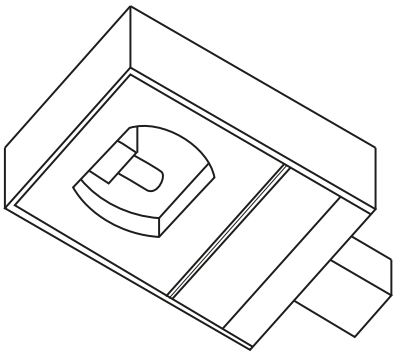
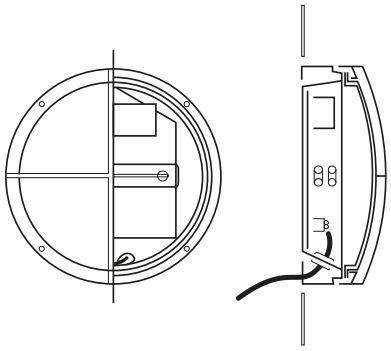
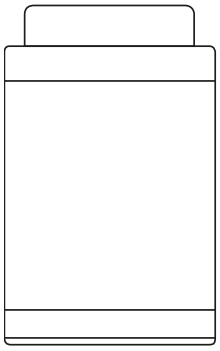
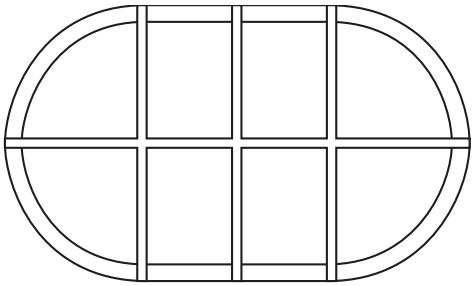
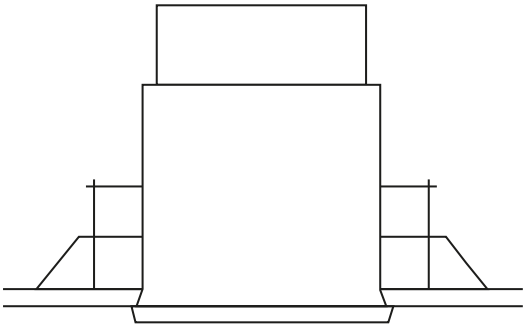
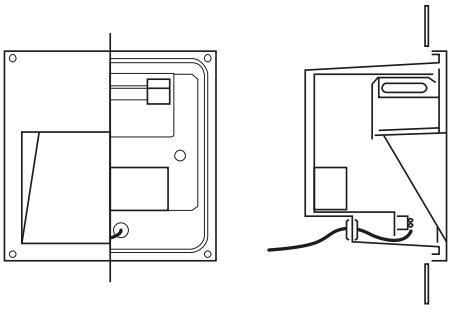
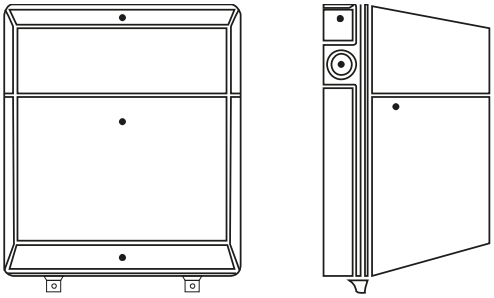
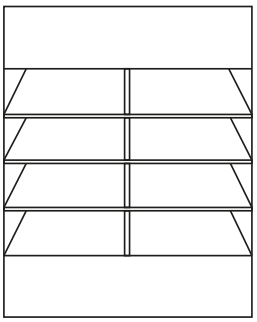
221		226	
222		227	
223		228	
224		229	
225		230	

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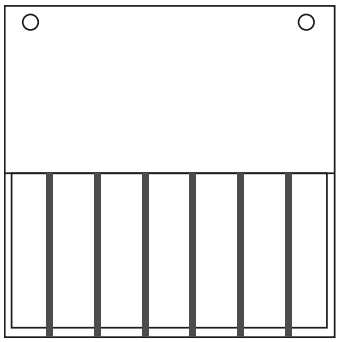
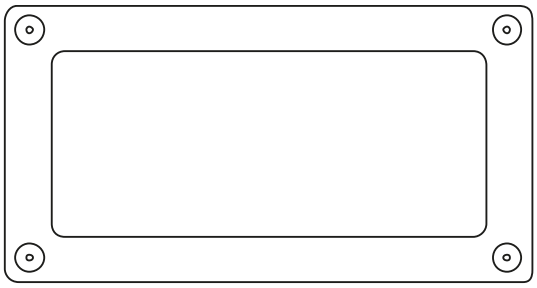
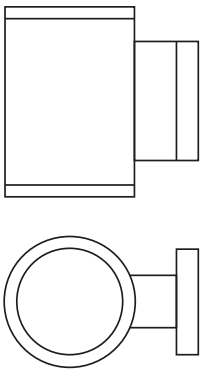
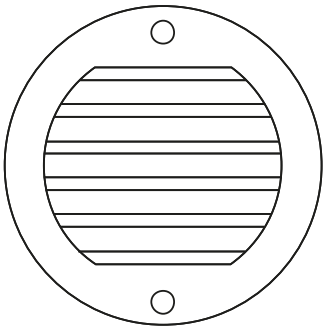
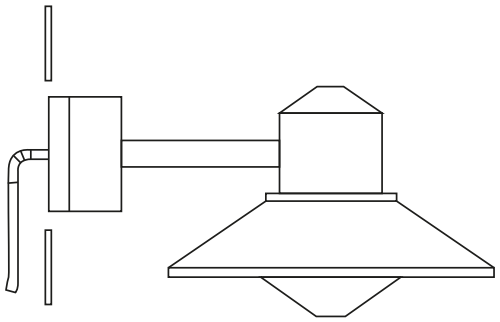
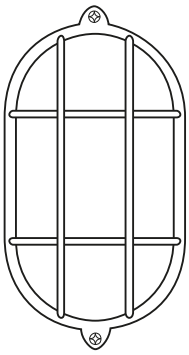
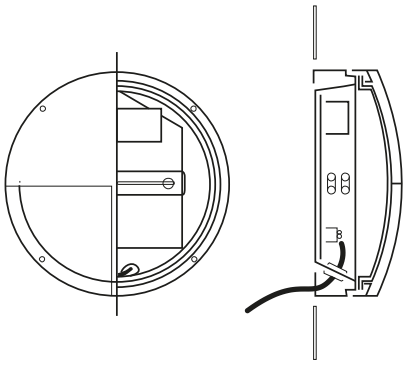
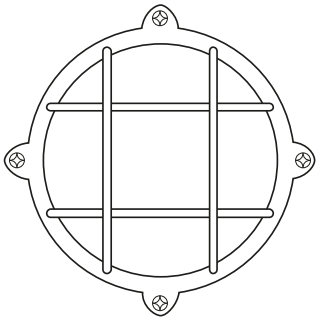
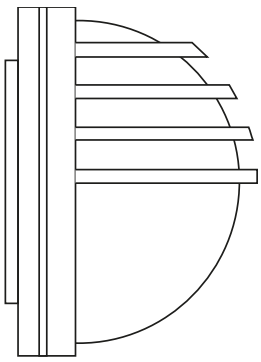
231		236	
232		237	
233		238	
234		239	
235		240	

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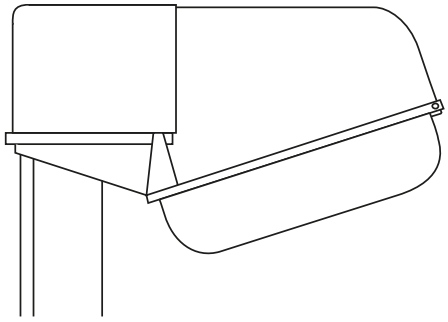
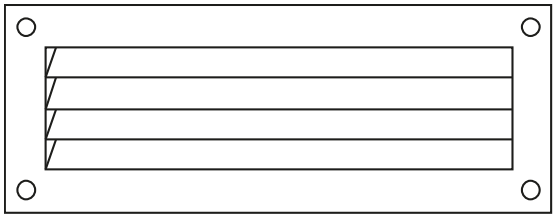
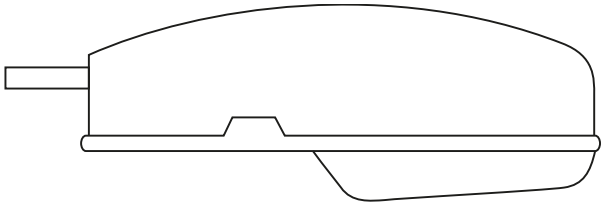
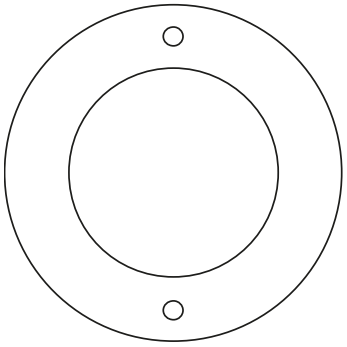
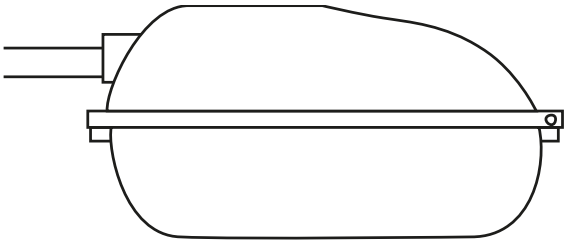
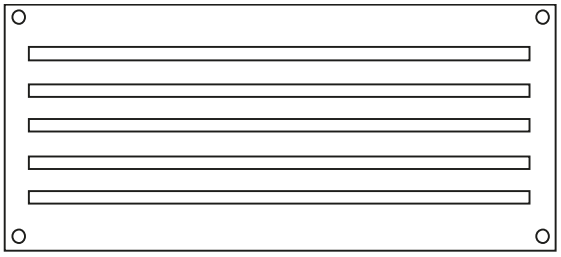
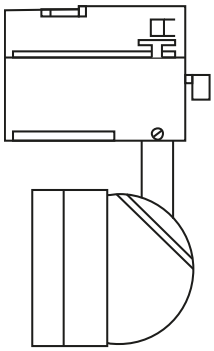
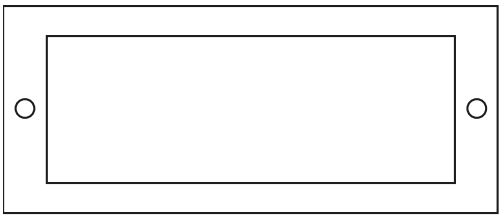
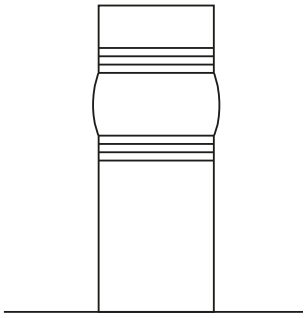
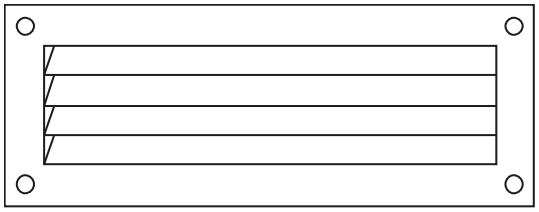
SFA No.	SHAPE	SFA No.	SHAPE
241		246	
242		247	
243		248	
244		249	
245		250	

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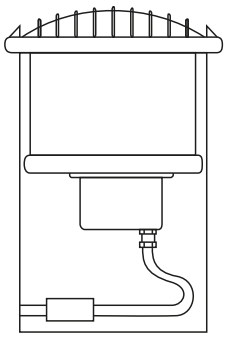
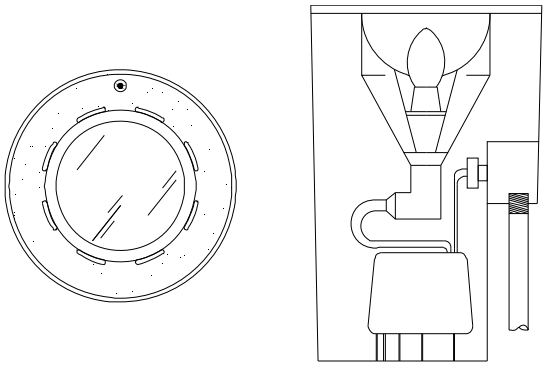
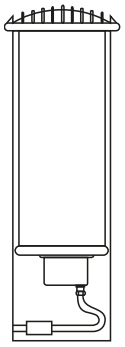
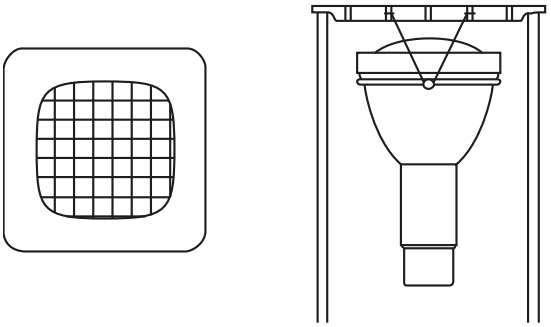
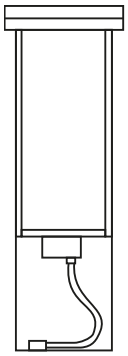
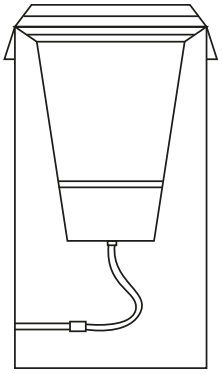
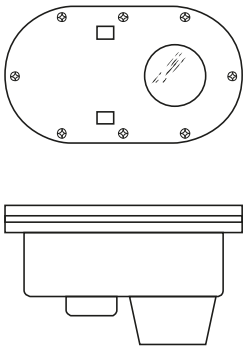
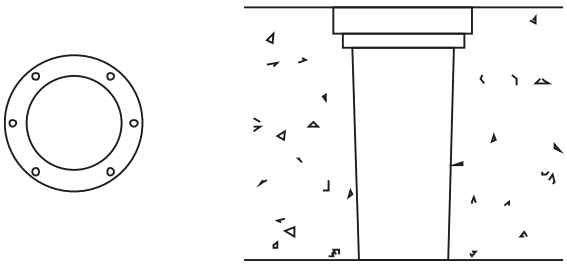
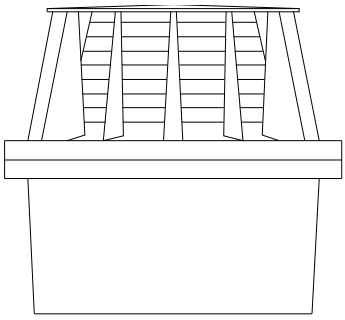
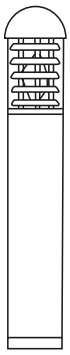
251		256	
252		257	
253		258	
254		259	
255		260	

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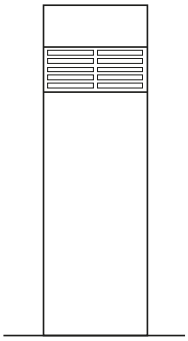
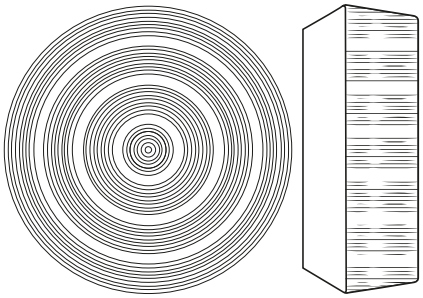
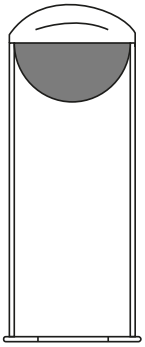
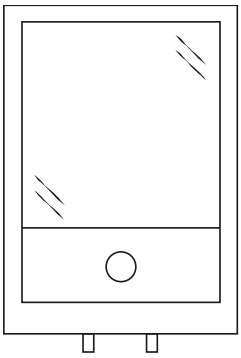
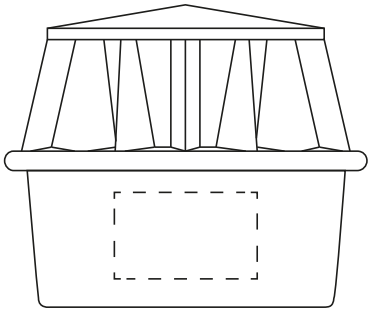
SFA No.	SHAPE	SFA No.	SHAPE
261		266	
262		267	
263			
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265			

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