

BUILDING SERVICES BRANCH
TESTING AND COMMISSIONING
PROCEDURE NO. 12
FOR
STEAM BOILER AND CALORIFIER
INSTALLATION
IN
GOVERNMENT BUILDINGS
HONG KONG

HONG KONG SPECIAL ADMINISTRATIVE REGION GOVERNMENT

Building Services Branch
Architectural Services Department
(2000 Edition)

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Testing and Commissioning progress chart for Steam Boiler and Calorifier Installation

1 – 3

B.S.B. Testing and Commissioning Procedure No. 12

Steam Boiler and Calorifier Installation

1. Introduction

- 1.1 This procedure is intended to lay down the minimum testing and commissioning requirements to be carried out by the Contractor on a new Steam Boiler & Calorifier Installation upon completion or on an existing Steam Boiler & Calorifier Installation after a major alteration. Additional testing and commissioning (T & C) requirements may be proposed by the Contractor as appropriate and agreed by the Project Electrical and Mechanical Engineer (PEME), e.g. for special equipment supplied and/or installed by the Contractor.
- 1.2 This procedure is also written to facilitate the PEME and Project Electrical and Mechanical Inspector (PEMI) in carrying out the following aspects of work with respect to T & C.
 - (i) To vet and approve the T & C procedures proposed and submitted by the Contractor.
 - (ii) To witness those T & C procedures as specified.
 - (iii) To receive the T & C certificate and other supporting data.

2. General Requirements

- 2.1 The Contractor shall submit the T&C procedures together with the Testing and Commissioning progress chart in Appendix B to the PEME. The submission shall be made at least one month before the commencement of T&C.
- 2.2 Where tests are required to be witnessed by the PEME/PEMI, the Contractor shall give due advance notice (usually not less than three days) and provide details of date, time and type of tests to be performed.
- 2.3 Upon completion of such T & C procedure, the Contractor shall complete and sign a testing and commissioning certificate as Appendix A, to the effect that agreed T & C procedures have been duly carried out.
- 2.4 Before carrying out any test, the Contractor shall ensure that installation comply with the statutory requirements and regulations.
- 2.5 One month before the actual commissioning of the steam boilers and pressure receiver, the equipment should be registered with the Pressure Equipment Division, Labour Department through Form 3 Boiler & Pressure Receiver Ordinance (Chapter 56) with the related documents (Appendix A).
- 2.6 The equipment under the Boiler & Pressure Receiver Ordinance shall be arranged for inspection by an approved examiner.

2.7 The Contractor shall make arrangements with PEME/PEMI to carry out factory inspection of underground tank at appropriate time of the manufacturing process in order that the quality of welding, surface preparation and application of primer can be ascertained. The results of hydraulic test shall also be submitted.

3. Testing and Inspection

3.1 The Contractor shall carry out the tests and inspections as shown in Part 3 and record the test results on Part 4 of Appendix A and as agreed between the PEME and the Contractor.

3.2 The Contractor shall provide all the necessary staff, labour, materials and equipment for a thorough test and examination of the installation.

4. Statutory Inspection/Commissioning

4.1 After the proper testing and commissioning of the Steam Boiler & Calorifier Installation, the Contractor shall notify the appropriate Authority, through PEME, on the completion of the installation and its readiness of inspection and testing.

4.2 The Steam Boiler & Calorifier Installation can only be put into use after it has been inspected, tested and approved by the appropriate Authority.

5. Calibrated Equipment

5.1 The contractor shall supply calibrated equipment as stipulated in the Specification of the Contract for the inspection, measuring and testing of the installation. The equipment shall be calibrated by laboratories accredited by the Hong Kong Laboratory Accreditation Scheme (HKLAS) or other recognised accredited laboratories.

Testing and Commissioning Certificate on Steam Boiler and Calorifier Installation

Part 1 : Detail of Project

- 1.1 Project title (with location) :
- 1.2 * P.W.P. / Project No. :
- 1.3 *Contract/sub-contract/Quotation No. :
- 1.4 * Contractor/Sub-contractor :
- 1.5 PEME :
- 1.6 PEMI :

Part 2 : Declaration

- 2.1 I certify that the Steam Boiler and Calorifier Installation as specified in the Contract/Sub-contract/Quotation at the above location has been inspected, tested and commissioned in accordance with this procedure and/or any other procedures agreed between the PEME and the Contractor. The results are satisfactory in the aspects as mentioned in Part 3 and/or as recorded in Part 4 of this Certificate, except as indicated in the COMMENTS items.
- 2.2 I also certify that site tests have been performed in accordance with the requirements set out in Appendix A of this procedure and that the results are satisfactory. A record of the tests has been prepared and submitted to the PEME.

Signature of Contractor's Representative _____

Full Name of Contractor's Representative _____

Designation of Contractor's Representative _____

Name and Stamp of Contractor _____

Date _____

Note : This certificate must be signed by a person authorized by the Firm/Company.
* Delete if not applicable

Items tested
checked by
Contractor

Items witnessed
by
PEME/PEMI

Part 3. Items Inspected and Tested

- | | | | |
|---------|---|---------|---------|
| 3.1 | <u>Pre-commissioning Inspection</u> | | |
| 3.1.1 | <u>Boiler</u> | | |
| 3.1.1.1 | Before securing the access doors and manholes ensure the following items are clean and free from foreign matter. | | |
| a) | Boiler interiors, both fireside and waterside | *Yes/No | *Yes/No |
| b) | Water storage and/or expansion tank | *Yes/No | *Yes/No |
| c) | De-aerators (if installed) | *Yes/No | *Yes/No |
| d) | Chimney & flue gas ducting from boiler | *Yes/No | *Yes/No |
| e) | Blowdown vessel or pits | *Yes/No | *Yes/No |
| f) | Water treatment plant | *Yes/No | *Yes/No |
| g) | Gas booster | *Yes/No | *Yes/No |
| h) | Air inlet to the boiler room | *Yes/No | *Yes/No |
| 3.1.1.2 | <u>Mechanical Check</u> | | |
| a) | Access doors and manholes are secure and that joints are tight | *Yes/No | *Yes/No |
| b) | Boiler mountings, fittings and valves are correctly installed, with provision for drainage or blowdown and that provision for boiler expansion movement has been made at support or cradles. | *Yes/No | *Yes/No |
| c) | The flue gas ducting is correctly installed, adequately supported with due provision for expansion and that access covers are secure and fitted with joints. | *Yes/No | *Yes/No |
| d) | The chimneys are complete, with access doors secured. | *Yes/No | *Yes/No |
| e) | The piping connections are correctly installed & blowdown piping, where fitted, is terminated in suitable chambers with drain vents and internal baffles or weirs, and that blowdown chamber covers are secure. | *Yes/No | *Yes/No |

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
f)	The fire fighting systems are installed and ready for use.	*Yes/No	*Yes/No
g)	Safety valve relief piping is secure, unobstructed and led to a safe position and that the safety valves are free to operate and provided with unrestricted drain connections. Where specified, a works test certificate should be available for the valves. Check other safety devices as appropriate.	*Yes/No	*Yes/No
3.1.1.3	Burner		
a)	All oil and gas connections are properly made and that the piping system is complete and that there are no open ends which can discharge fuel into the space or boilers.	*Yes/No	*Yes/No
b)	All flame failure, ignition and fuel control devices are correctly installed.	*Yes/No	*Yes/No
c)	Control devices, such as safety shut-off valves, governors, thermostats, pressure-stats, draught regulators, air pressure switches etc. are installed and in good condition.	*Yes/No	*Yes/No
d)	Correct filters are installed on oil and gas piping.	*Yes/No	*Yes/No
e)	Vents terminating at roof level are installed from safety shut-off systems, meters, over-pressure valves and governors, as specified.	*Yes/No	*Yes/No
f)	Emergency isolating valves have been installed outside the building in safe and accessible positions, on both gas and oil supply lines.	*Yes/No	*Yes/No
g)	In the case of rotary cup oil burners, the cups and forced draught fan impellers spin freely, the cup edges are undamaged and the drive belts, where fitted, are correctly tensioned and aligned.	*Yes/No/N.A.	*Yes/No/N.A.
h)	In the case of pressure jet burners, the correct nozzles are fitted, the orifices are undamaged, the primary air fans spin freely, the draught tubes are unobstructed and clean filters are fitted.	*Yes/No/N.A.	*Yes/No/N.A.

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
i)	In the case of air atomizing burners, the primary and secondary air supply ducting and silencers are unobstructed and securely connected, the fuel tube slides or flame shape adjustments operate freely and the fan impellers spin freely on their bearings.	*Yes/No/N.A.	*Yes/No/N.A.
j)	In the case of gas burners, nozzles and governor parts are clean and unobstructed, the nozzle types and adjustments are consistent with the gas supply, the forced draught fans, where fitted, spin freely and the draught tubes are unobstructed. Check that gas pressure proving devices, if provided, are correctly installed.	*Yes/No/N.A.	*Yes/No/N.A.
3.1.1.4	Fuel Oil System		
a)	The oil storage tanks have been adequately charged with the correct oil at the correct storage temperature and the content gauges are operative.	*Yes/No	*Yes/No
b)	Electrical supplies are available to pump motors, heaters and controls.	*Yes/No	*Yes/No
c)	Valves are open or closed according to the priming plan.	*Yes/No	*Yes/No
d)	Drains and piping vents are closed.	*Yes/No	*Yes/No
e)	The system is primed by releasing the vents and drains until a steady flow is achieved at the correct temperature.	*Yes/No	*Yes/No
f)	Ventilation of the tank room is available.	*Yes/No	*Yes/No
3.1.1.5	Gas System		
a)	Pressure testing of the gas piping has been carried out by the gas supply authority.	*Yes/No	*Yes/No
b)	The gas supply is available at the correct pressure and is of the correct type.	*Yes/No	*Yes/No
c)	The electrical supply is available to the safety shut-off controls and the booster, if installed.	*Yes/No	*Yes/No
d)	The main supply and safety shut-off valves are closed.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
3.1.1.6	Underground Tank		
a)	The welding has been examined and the effectiveness of the welding and standard of workmanship is satisfactory.	*Yes/No	*Yes/No
b)	The metal surface has been properly prepared in accordance with the specification.	*Yes/No	*Yes/No
c)	The manufacturer's application procedure for the primer has been followed and the type of primer, the number of coatings are in accordance with the specification.	*Yes/No	*Yes/No
d)	The underground tank has been subjected to hydraulic test to a pressure as specified and the results are satisfactory.	*Yes/No	*Yes/No
3.1.2	<u>Water Tanks, Calorifiers and De-aerators</u>		
3.1.2.1	These are clean and, where lined or galvanized, are undamaged.	*Yes/No	*Yes/No
3.1.2.2	The vessels are adequately and securely supported, particularly sectional tanks.	*Yes/No	*Yes/No
3.1.2.3	Piping connections and valves are installed as specified.	*Yes/No	*Yes/No
3.1.2.4	Covers, where specified, are supplied and properly fitted.	*Yes/No	*Yes/No
3.1.2.5	All fittings are supplied and secured.	*Yes/No	*Yes/No
3.1.2.6	Where tanks contain a chemical solution, adequate overflow arrangements are provided and that these, together with the drains, are piped to a suitable discharge.	*Yes/No	*Yes/No
3.1.2.7	Where motorized or hand stirring facilities are specified, these are installed and in working order.	*Yes/No	*Yes/No
3.1.3	<u>Steam and Condensate Pipework System</u>		
3.1.3.1	This has been correctly installed.	*Yes/No	*Yes/No
3.1.3.2	All flanged joints and connections are securely made.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
3.1.3.3	The correct valves have been installed and each is free to operate.	*Yes/No	*Yes/No
3.1.3.4	All probes, pockets, pressure gauges, thermostats, syphons, strainers, orifice plates and taps and air vents etc. are correctly installed.	*Yes/No	*Yes/No
3.1.3.5	The steam pipework is installed with the correct gradient so that pockets of condensate cannot collect, the steam traps sets are correctly installed and the piping connections are correctly made.	*Yes/No	*Yes/No
3.1.3.6	The condensate pipework is installed with the correct gradient.	*Yes/No	*Yes/No
3.1.3.7	All pipework is adequately supported and secured, with adequate provision for expansion.	*Yes/No	*Yes/No
3.1.3.8	The thermal insulation is complete.	*Yes/No	*Yes/No
3.1.3.9	The condensate receivers and pump sets have been correctly installed, with piping connections securely made, the valves are free to operate and the level controls and gauge glasses are installed as specified.	*Yes/No	*Yes/No
3.1.3.10	The pipeworks are correctly painted with the proper colour band and direction of flow.	*Yes/No	*Yes/No
3.1.3.11	The valves, fittings & controls are properly labelled.	*Yes/No	*Yes/No
3.2	<u>Preparation for Firing</u>		
3.2.1	<u>Hot Water Steam</u>		
	Check :		
3.2.1.1	that the system is filled with water to the appropriate level, vented and that the condition of the water is chemically correct.	*Yes/No	*Yes/No
3.2.1.2	that the main isolating valves on the distribution headers and pumps are open and the system has been checked.	*Yes/No	*Yes/No
3.2.2	<u>Steam Boilers</u>		
3.2.2.1	Open the air vent on the boiler shell.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
3.2.2.2	Close the main boiler stop valve and the drain valves on the level and alarm controls.	*Yes/No	*Yes/No
3.2.2.3	Open the feed check valve and the isolating valves to the water level controls and the alarm and the feed pump.	*Yes/No	*Yes/No
3.2.2.4	Check that the blow-down valve is fully closed.	*Yes/No	*Yes/No
3.2.2.5	Check that electrical supplies are available at the boiler control panel and that the feed system is available for immediate use.	*Yes/No	*Yes/No
3.2.2.6	Check that the condition of the water in the hot-well is chemically correct and then start the feed pump and fill the boilers to correct gauge glass level. Check also that the direction of rotation of the feed pumps is correct, that the casings are purged of air and that the feed pump motors are not overloaded. Alternatively, fill the boiler from a hose pipe.	*Yes/No	*Yes/No
3.2.2.7	Check the operation of the water level control by allowing the feed pump to run until switched by operation of the level controller. open the blow-down valve and check that the pump restarts at correct level. Close the blow-down valve.	*Yes/No	*Yes/No
3.2.2.8	Check the operation of the high level alarm by isolating the water level controller and opening its drain valve. The high level alarm should sound when the feed pump has raised the water level to the pre-set condition. Open the isolating valves on the level controller and close its drain valve.	*Yes/No	*Yes/No
3.2.2.9	Check the operation of the low level alarm by opening the blow-down valve. The low level alarm should sound at the correct low water level. Close the blow-down valve and allow the feed pump to restore the water level. Check that the supply of water to the feed tank is adequate. Repeat the sequence and check the operation of the burner lock out at the second low water level.	*Yes/No	*Yes/No
3.2.2.10	Check that the water level in the blow-down vessel is satisfactory and that the vent is adequate.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Appendix B

		Items tested checked by <u>Contractor</u>	Items witnessed by <u>PEME/PEMI</u>
3.3	<u>Performance Tests</u>		
3.3.1	A full-load performance test has been carried out. The results are satisfactory.	*Yes/No/N.A.	*Yes/No/N.A.
3.3.2	A full-load performance test have NOT been carried out but it will be carried out during the maintenance period.	*Yes/No/N.A.	*Yes/No/N.A.
3.4	<u>Record of Tests</u>		
	A record of test as indicated in Appendix A Part 4 of this procedure has been completed and submitted to the PEME.	*Yes/No	*Yes/No

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PEME/*PEMI)

Appendix B

Items tested
checked by _____
Contractor

Items witnessed
by _____
PEME/PEMI

3.5 Comments

Note: * Delete if not appropriate

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

Part 4 : Test Record attached to the Test Certificate4.1 Equipment Details

4.1.1 Steam Boiler

4.1.1.1 General

- a) Manufacturer
- b) Model
- c) Rated steam output (kg/hr)
- d) Rated output pressure (kPa)
- e) Maximum output pressure (kPa)
- f) Overall dimension L x W x H (mm)
- g) Diameter of the flue (mm)
- h) No. of pass

4.1.1.2 Burner

- a) Manufacturer
- b) Type
- c) Rating (kW)
- d) Minimum gas supply pressure (kPa)
- e) Gas consumption at rated output (m³/s)
- f) Minimum oil supply pressure (kPa)
- g) Oil consumption at rated output (l/s)

4.1.1.3 Feed Pump

- a) Type
- b) Manufacturer
- c) Flow rate (l/s)
- d) Pump head (kPa)

4.1.1.4 Accessories

- a) Size of safety valves
- b) Size of steam outlet valves
- c) Size of blowdown valves
- d) Size of manholes
- e) Induced draft fan rating (kW)
- f) Induced draft fan flow rate (m³/s)
- g) No. of thermometer
- h) No. of steam pressure gauge

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PEME/*PEMI)

4.1.1.5 Instrumentation Panel

Manufacturer/ Model No.

- a) Smoke density meter
- b) Draught gauge
- c) Carbon dioxide meter
- d) Flue gas temperature indicator
- e) Steam pressure indicator
- f) Steam mass flow integrating meter
- g) Ambient temperature indicator
- h) Quartz clock

4.1.1.6 Chemical Dosing Equipment

- a) Type of chemical used
- b) Size of the mixing tank
- c) Material of Construction of the tank
- d) Make/model of dosing pump
- e) Dosing rate of the pump (l/s)

4.1.2 Calorifier

- a) Manufacturer/Model
- b) Type Hotwater/Steam
- c) Dimension L x W x H (mm)
- d) Storage capacity (L)
- e) Cycle time (min.)
- f) Steam shell working pressure (kPa)
- g) Steam/hotwater consumption (kg/h or l/h)
- h) Steam pressure (kPa)
- i) Secondary water flow rate (l/h)

4.1.3 Fuel Pump

- a) Manufacturer/Model
- b) Speed
- c) Flowrate (l/h)
- d) Pump head (kPa)
- e) Flame proof motor & wiring

4.1.4 Level Switch

- a) Manufacturer/Model
- b) Type

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PEME/*PEMI)

4.2 Assessing the Thermal Performance of the System

4.2.1 General

Name of Premises : _____
 Date of Assessment : _____
 Name of the Contractor : _____
 Contractor Representatives : _____
 Operation & Maintenance Representatives : _____
 Site Inspector : _____

4.2.2 Boiler Data

Manufacturer/Make : _____
 No. of Boilers : _____
 Type & Description : _____
 Maximum Rated Steam Output (kg/hr) : _____
 Working Gauge Pressure (kPa) : _____
 Final Steam Temperature (°C) : _____

4.2.3 Burner Data

Burner Manufacturer : _____
 Type of Burner : _____
 Thermal Capacity (MJ/Min) : _____

4.2.4 Fuel Data

Type : _____
 Calorific Value (gross)
 Liquid fuel Q_{IF} (kJ/kg) : _____
 Gaseous fuel Q_{gF} (MJ/m³) : _____

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PEME/*PEMI)

4.2.5 Test Data

Three readings (1st / 2nd / 3rd) should be taken for each firing Rate & average out these data (Av.).

Measurement	Symbols	Unit	Fire Rate		
			High 1st / 2nd / 3rd / Av.	Medium 1st / 2nd / 3rd / Av.	Low 1st / 2nd / 3rd / Av.
Duration of test	T	Sec.			
Temperature of combustion air	t_a	$^{\circ}\text{C}$			
Temperature of liquid fuel	t_c	$^{\circ}\text{C}$			
Temperature of gas Fuel	t_g	$^{\circ}\text{C}$			
Liquid fuel fired	M_f	kg			
Gas fuel fired	V_g	m^3/kg			
Flow rate of steam leaving boiler or feed water entering boiler	F_s	m^3/s kg/s			
Temperature of water entering boiler	t_w	$^{\circ}\text{C}$			
Mean gauge pressure of steam in boiler	P_s	mbar			
Mean temperature of steam	t_s	$^{\circ}\text{C}$			
Mean temperature of Feed water	t_f	$^{\circ}\text{C}$			

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

4.2.6 Calculation

(a) Constant from Steam Table

Measurement	Symbols	Unit	Firing Rate		
			High	Medium	Low
Specific volume of saturated steam at the tested temperature & pressure	V_g	m^3/kg			
Specific volume of saturated liquid at the tested temperature & pressure	V_f	m^3/kg			
Sensible heat of steam at the pressure of steam discharged from boiler	h_f	KJ/kg			
Latent heat of steam at pressure of steam discharged from boiler	S	kJ/kg			

(b) Rate of Heat Supply by Fuel

(i) Liquid Fuel

$$Q_{lf} = \frac{M_f}{T} [Q_{lf} + 1.92 (t_c - t_a)]$$

(ii) Gaseous Fuel

$$Q_{gf} = 1000V Q_F Q_{gF}$$

$$\text{Where } V = \frac{V_g (P_a + P_g) 288}{1013 (t_g + 273)}$$

P_g = Pressure of gaseous fuel at meter in m bar

Q_{lf} = Rate of heat supply by liquid fuel

Q_{gf} = Rate of supply by gaseous fuel

Tested / Checked by _____ Signature _____
(Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
(Name(s) of *PEME/*PEMI)

(c) Heat output from the Steam Boiler

$$Q_B = F_s (h_f + xS) - t_a C$$

Where C = 4.1868 kJ/kg.K for water
 x = dryness fraction

(d) Boiler Efficiency

$$E_B = \frac{Q_B}{Q_{lf} \text{ or } Q_{gf}} \times 100\%$$

4.2.7 Result

Measurement	Symbols	Unit	Firing Rate		
			High	Medium	Low
Output from boiler	Q _B	kW			
Boiler Efficiency	E _B	%			

Tested / Checked by _____ Signature _____
 (Name of Contractor's Representative)

Witnessed by _____ Signature(s) _____
 (Name(s) of *PEME/*PEMI)

4.3 Document to Labour Department

One month before the actual commission of the steam boilers and pressure receiver, the equipment should be registered with the Pressure Equipment Division, Labour Department through FORM 3 Boiler & Pressure Receiver Ordinance (Chapter 56) (form attached in Appendix A for reference). In addition two copies of the following documents after endorsement by an Approved Examiner certifying that they relate to the equipment under application should also be attached for submission :

- (i) The maker's certificate;
- (ii) Where the boiler or pressure receiver was constructed in Hong Kong a certificate as to the inspection thereof during construction issued by an Approved Examiner;
- (iii) Where the boiler or pressure receiver was not constructed in Hong Kong, a certificate issued in respect of the boiler or pressure receiver by a recognised inspecting authority in the country in which it was constructed.

Before it being put in use the equipment under the above Ordinance must be examined by a Boiler Inspector appointed under the Boilers and Pressure Receiver Ordinance, Cap. 56.

Testing and commissioning progress chart “Steam Boiler and Calorifier Installation”

Contract No. : _____

Contract Title : _____

Name of Contractor/sub-contractor : _____

Contract Period : ____ / ____ /20 ____ to ____ / ____ /20 * Revised/Actual Completion Date : ____ / ____ /20

Testing and Commissioning Progress Chart for Steam Boiler and Calorifier Installation (Rev.) ⁽¹⁾																				
Dates ⁽²⁾																				Remark
Activities	Refer to Appendix A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	S	A	
1.	General Inspections/Tests	3.1																		
	Boiler																			
	Water storage and expansion tank																			
	De-aerators																			
	Steam and condensate pipework system																			
	Chimney & flue gas ducting																			
	Blowdown vessel																			
	Water treatment plant																			
	Gas booster & burner																			
	Air inlet																			
	Burner																			
	Gas supply system																			
	Fuel oil system																			
	Underground oil tank																			
	Submission of Record of Test																			
2.	Mechanical Check	3.1																		
	Access doors and manholes																			
	Boiler mountings, fittings and valves																			
	Flue gas ducting																			
	Chimney																			
	Water piping connections																			

