

**General Specification for Fire Service Installation in Government  
Buildings of the Hong Kong Special Administrative Region  
(2017 Edition)**

The 2017 edition of the General Specification for Fire Service Installation has incorporated updates and revisions to the 2012 edition (incorporating Corrigendum No. GSFS01-2012). Please refer to the summary of major changes for the updates and revisions involved.

Electronic version of this 2017 edition can be viewed on the ArchSD Internet website.

In view of the updates and revisions, there will be an introductory period of 6 months in preparation for full implementation of this 2017 edition as contract document by 1 October 2017. In summary,

- For tenders to be invited on or after 1 October 2017, this 2017 edition shall be used.
- Existing contracts (including contracts using previous editions tendered before 1 October 2017) will not be affected.

**MAJOR CHANGES IN THE GENERAL SPECIFICATION FOR FIRE SERVICE INSTALLATION IN  
GOVERNMENT BUILDINGS OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION  
2017 EDITION**

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
<b>PART A</b>		
<b>SECTION A1</b>		
A1.3.1	A1.3.1	<p>(a) The term “current edition” is added to the definition of “A/C General Specification”, “Electrical General Specification” and “Lift General Specification”.</p> <p>(b) Definition of “Conditions” revised to “The “Conditions of Contract” as defined in the Contract. For Nominated Sub-contract works, the “Main Contract Conditions” and the “Sub-contract Conditions” as defined in the Nominated Sub-contract as appropriate.”</p> <p>(c) Definition of “Proprietary brand name materials or products” revised to “The phrase “or alternative products or materials having equivalent functions or performance” is deemed to be included wherever products or materials are specified by proprietary brand names in the Contract. Alternative products or materials of different brands or manufacture having equivalent functions or performance may be submitted for the consideration of the Supervising Officer.”</p>
A1.3.2	A1.3.2	<p>(a) Rectified the terms to the correct ones on “Testing and Commissioning Procedure for Electrical Installation in Government Buildings of the Hong Kong Special Administrative Region, current edition issued by the ArchSD”, “Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment, current edition published by the Fire Services Department, the Government of the Hong Kong Special Administrative Region”, and “Testing and Commissioning Procedure for Fire Service Installation in Government Buildings, Hong Kong, issued by the ArchSD, the HKSAR” by “Testing and Commissioning Procedure for Fire Service Installation in Government Buildings of the Hong Kong Special Administrative Region, current edition issued by the ArchSD”.</p> <p>(b) Added in the definition of EPD</p> <p>(c) Revised the term “FRP Fire resisting period” to “FRR Fire resistance rating as defined in the current Code of Practice for Fire Safety in Buildings and its subsequent corrigenda/amendments</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		<p>issued by the Buildings Department”.</p> <p>(d) Replaced “IEE Wiring Regulations” by “IET Wiring Regulations”.</p> <p>(e) Replaced BS 7671: 2008 to “Requirements for Electrical Installations (BS 7671: 2008+A3: 2015) published by the Institution of Engineering and Technology, UK”.</p> <p>(f) Replaced “International Organisation for Standardisation Publications” by “International Organisation for Standardisation”.</p> <p>(g) Replaced “OFTA” by “OFCA”.</p> <p>(h) Replaced “Office of the Telecommunications Authority of the Hong Kong Special Administrative Region” by “Office of the Communications Authority of the Government of the Hong Kong Special Administrative Region”.</p>
<b>SECTION A2</b>		
A2.1.1 (a)	A2.1.1 (a)	Revised the term to “Lifts and Escalators Ordinance (Cap. 618), and other subsidiary legislation made under the Ordinance;”.
A2.1.2 (e)	A2.1.2 (e)	Updated Loss Prevention Council Rules for Automatic Sprinkler Installations incorporating BS EN 12845: 2003, and FSD Circular Letters No. 3/2006 and No. 4/2010 to “Loss Prevention Council Rules for Automatic Sprinkler Installations (including all the LPC Technical Bulletins, Notes, Commentary, and Recommendation) incorporating BS EN 12845: 2003, FSD Circular Letters No. 3/2006, No. 4/2010 and No. 3/2012, and all the subsequent amendments by the FSD (hereinafter referred collectively as LPC Rules for Sprinkler Installations);”.
A2.1.2 (f)	A2.1.2 (f)	Updated BS 5839-1: 2002+A2: 2008 and FSD Circular Letters No. 1/2009 and No. 3/2010 to “BS 5839-1: 2002+A2: 2008 (Fire Detection and Fire Alarm Systems for Buildings. Code of Practice for System Design, Installation, Commissioning and Maintenance), FSD Circular Letters No. 1/2009, No. 3/2010, No. 2/2012 and No. 1/2015 and all the subsequent amendments by the FSD (hereinafter referred collectively as Modified BS 5839-1);”.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
<b>SECTION A3</b>		
A3.5, 1 <sup>st</sup> Para.	A3.5, 1 <sup>st</sup> Para.	Added the phrase “and keep the site in a clean and tidy condition”.
A3.6	A3.6	<p>(a) Revised the heading to “Site Supervision” and transferred old Clause A3.6, Paras. 4 to 7 to new Section E2, Clause E2.2, Other Training Requirements.</p> <p>(b) Added in the phrase “and his Representatives.”</p> <p>(c) Added in an additional requirement “The qualified and competent site supervisor shall have a minimum 5 years site experience for similar type of installation works.”</p> <p>(d) Transferred the 1<sup>st</sup> and 2<sup>nd</sup> Paras. of old Clause A5.1.8 to the last two Paras. of Clause A3.6.</p>
A3.9, 2 <sup>nd</sup> and 3 <sup>rd</sup> Para.	A3.9, 2 <sup>nd</sup> Para.	Deleted the sentence “Materials and equipment delivered to Site are the Employer’s property”.
-	A3.9, Last Para.	Added new Para., “The FS Contractor shall submit the major technical details on equipment/materials or supporting documents (e.g. delivery note), or else submit a written declaration to confirm compliance of the equipment/materials with the approved technical details so as to facilitate checking of equipment/materials delivered on site.” to be the last Para.
B13.1	A3.11	Transferred the old Clause B13.1, Labels And Notices to new Clause A3.11, Labels and Notices.
A5.1.11 & B13.2	A3.12	Transferred the old Clause A5.1.11, Warning Notices and Clause B13.2, Danger Notices to new Clause A3.12, Warning Notices.
A5.1.12	A3.13	Transferred the old Clause A5.1.12, Guard and Railing for Moving and Rotating Parts of Equipment to new Clause A3.13, Guard and Railing for Moving and Rotating Parts of Equipment.
A5.1.1 – A5.1.7	A3.14.1 – A3.14.7, New Clauses	Transferred the old Clauses A5.1.1 to A5.1.7 to Clauses A3.14.1 to A3.14.7 under the new Clause A3.14, General Requirements on Material, Equipment and Installations.
A3.11	A3.15, New Clause	Old Clause A3.11 on Registered Personnel is re-numbered as the new Clause A3.15.
A5.1.9	A3.16, New Clause	Transferred the old Clause A5.1.9, Tools and Instruments to the new Clause A3.16.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
A5.1.10	A3.17, New Clause	Transferred the old Clause A5.1.10, Workmanship Standard to new Clause A3.17, Workmanship Standard.
A5.1.13	A3.18, New Clause	Transferred the old Clause A5.1.13, Space for Plant to new Clause A3.18, Space for Plant.
A5.1.14	A3.19, New Clause	Transferred the old Clause A5.1.14, Quality Assurance Standards to new Clause A3.19, Quality Assurance Standards.
A5.1.15	A3.20, New Clause	Deleted the 2 <sup>nd</sup> & 3 <sup>rd</sup> Para. and transfer the 1 <sup>st</sup> Para. of the old Clause A5.1.15, Equipment Deviations to new Clause A3.20, Equipment Deviations.
A5.2	A3.21, New Clause	Transferred the old Clause A5.2, General Design Requirements to new Clause A3.21, General Design Requirements.
A5.3	A3.22, New Clause	Transferred the old Clause A5.3, General Requirements on Operation and Maintenance Provisions to new Clause A3.22, General Requirements on Operation and Maintenance Provisions.
<b>SECTION A4</b>		
-	A4.2.1, New Para.	Added “Unless otherwise indicated or instructed, the FS Contractor shall, in the stated or in adequate time before each section of the work proceeds, prepare, and submit for acceptance by the Supervising Officer, detailed installation drawings and/or shop drawings (which may also be referred to as working drawings) to demonstrate how they propose to install the works. These drawings shall be fully dimensioned and shall be based on the basic intentions of the Drawings.” and inserted as the last Para. so that it could be in line with other General Specifications on the same topic.
-	A4.2.2, New Para.	Added “The FS Contractor’s installation drawings and/or shop drawings shall be prepared to such scales that will clearly show all necessary details.” and inserted as the last Para. so that it could be in line with other General Specifications on the same topic.
-	A4.2.3	Added in a new para. “The FS Contractor shall ensure all installation drawings are accurate representation of the Installations, before submitting them to the Supervising Officer. All installation drawings shall be fully dimensioned and suitably scaled showing construction, sizes, weights, arrangements, operating clearances and performance characteristics.”

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
A4.3.1, 1 <sup>st</sup> Para.	A4.3.1, 1 <sup>st</sup> & 2 <sup>nd</sup> Paras.	Added in the 1 <sup>st</sup> para. “The FS Contractor shall submit to the Supervising Officer as-built drawings, including the draft prints and revised draft prints for checking and final approved drawings for record in accordance with the requirements set out in the contract documents. Add the phrase “Unless otherwise specified in other part of the contract documents” in the 2 <sup>nd</sup> para.
-	A4.3.2, New Para.	Added “The FS Contractor’s as-built drawings shall be prepared to such scales that will clearly show all necessary details.” as the last Para.
A4.3.3	A4.3.3	(a) Added in the phrase “In addition to those required by the contract documents” in the 1 <sup>st</sup> para. (b) Added the following new Para. below item (e) as last Para.:  “All the as-built drawings shall be completed with updated equipment schedule data. Any amendments noted on these drawings during the commissioning and testing stage shall subsequently be transferred to the original as-built drawings once the amendments have been accepted by the Supervising Officer.”
A4.3.4	A4.3.4	Replaced the word “submit” by “provide and install”.
A4.4.5	A4.4.2	Transferred the old Clause A4.4.5, Presentation to Clause A4.4.2, Presentation and re-number other subsequent Clauses.
A4.4.2	A4.4.3	(a) Added the following to the 1st Para. “The FS Contractor shall submit to the Supervising Officer the draft of O&M Manual and User Manual for checking and approval and the approved O&M Manual and User Manual for record according to the requirements as specified in the contract documents. Unless otherwise specified in other part of the contract documents, the requirements on checking and approval shall comply with the requirements as stipulated in the following paragraphs.” (b) Revised the 2 <sup>nd</sup> Para. to “The FS Contractor shall submit the first draft of O&M Manuals ... to the Supervising Officer for comment at least 56 working days prior to ...”. (c) Revised the 3 <sup>rd</sup> Para. to “The Supervising Officer will check the drafts and return them to the FS Contractor within 42 working days from the date of submission ...”. (d) Revised “one set of electronic copy of the final approved O&M Manual and User Manual” to “3 sets of electronic copy of the final approved O&M Manual and User Manual”, and change

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		“CD-ROM” to “CD/DVD-ROM”.
A4.4.3	A4.4.4	(a) Re-numbered the old Clause A4.4.3 to Clause A4.4.4. (b) Replaced the term “Contract” to “contract documents”.
A4.4.4	A4.4.5	(a) Re-numbered the old Clause A4.4.4 to Clause A4.4.5. (b) Added in new item (i) Bounding Conditions of Performance Based Fire Engineering Design, “If performance based fire engineering design has been adopted, the approved bounding conditions of performance based fire engineering design shall be provided.”
A4.5	A4.4.6	Transferred the old Clause A4.5, Intellectual Property Rights to Clause A4.4.6, Intellectual Property Rights and re-number other subsequent Clauses.
A4.6	A4.5	Re-numbered the old Clause A4.6 to Clause A4.5.
A4.7	A4.6	Re-numbered the old Clause A4.7 to Clause A4.6.
<b>SECTION A5</b>		
All Clauses	Various Clauses in Section A3	Transferred all the Clauses in Section A5 to Section A3 and delete this Section A5.
<b>PART B</b>		
<b>SECTION B1</b>		
B1.1, 2 <sup>nd</sup> Para.	B1.1, 2 <sup>nd</sup> Para.	Revised the 3 <sup>rd</sup> para. to “For operation at working pressure on or below 1600 kPa, pipes up to and including 150 mm diameter shall be galvanised mild steel of at least medium grade to BS EN 10255: 2004, ISO 65: 1981 or BS EN 10217-1: 2002 for screwing to BS EN 10226-1: 2004, ISO 7-1: 1994 or BS 21: 1985 pipe threads.”

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B1.1, 3 <sup>rd</sup> Para.	B1.1, 3 <sup>rd</sup> Para.	<p>Revised the para. to “For operation at working pressure on or below 1,600 kPa, pipes and fittings above 150 mm diameter shall be ductile iron to BS EN 545: 2010 with minimum thickness in full compliance with the following Table B1.1. The ductile iron pipes and fittings shall be coated externally with a layer of metallic zinc, covered by a finishing layer of a bituminous product to BS 3416: 1991 Type II and lined internally with bitumen, cement mortar or other better materials approved by the Supervising Officer.”.</p> <p style="text-align: center;"><u>Table B1.1 – Minimum Ductile Iron Pipe &amp; Fitting Thickness</u></p> <table border="1" data-bbox="907 491 2009 991"> <thead> <tr> <th data-bbox="907 491 1256 564"><u>Nominal Size DN (mm)</u></th> <th data-bbox="1256 491 1592 564"><u>Class</u></th> <th data-bbox="1592 491 2009 564"><u>Minimum Pipe &amp; Fitting Thickness (mm)</u></th> </tr> </thead> <tbody> <tr><td data-bbox="907 564 1256 604">80</td><td data-bbox="1256 564 1592 604">100</td><td data-bbox="1592 564 2009 604">5.62</td></tr> <tr><td data-bbox="907 604 1256 644">100</td><td data-bbox="1256 604 1592 644">100</td><td data-bbox="1592 604 2009 644">5.8</td></tr> <tr><td data-bbox="907 644 1256 684">150</td><td data-bbox="1256 644 1592 684">100</td><td data-bbox="1592 644 2009 684">6.35</td></tr> <tr><td data-bbox="907 684 1256 724">200</td><td data-bbox="1256 684 1592 724">64</td><td data-bbox="1592 684 2009 724">6.9</td></tr> <tr><td data-bbox="907 724 1256 764">250</td><td data-bbox="1256 724 1592 764">64</td><td data-bbox="1592 724 2009 764">7.45</td></tr> <tr><td data-bbox="907 764 1256 804">300</td><td data-bbox="1256 764 1592 804">64</td><td data-bbox="1592 764 2009 804">8</td></tr> <tr><td data-bbox="907 804 1256 844">350</td><td data-bbox="1256 804 1592 844">64</td><td data-bbox="1592 804 2009 844">8.55</td></tr> <tr><td data-bbox="907 844 1256 884">400</td><td data-bbox="1256 844 1592 884">50</td><td data-bbox="1592 844 2009 884">9.1</td></tr> <tr><td data-bbox="907 884 1256 924">450</td><td data-bbox="1256 884 1592 924">50</td><td data-bbox="1592 884 2009 924">9.65</td></tr> <tr><td data-bbox="907 924 1256 963">500</td><td data-bbox="1256 924 1592 963">50</td><td data-bbox="1592 924 2009 963">10.2</td></tr> <tr><td data-bbox="907 963 1256 991">600</td><td data-bbox="1256 963 1592 991">50</td><td data-bbox="1592 963 2009 991">11.3</td></tr> </tbody> </table>	<u>Nominal Size DN (mm)</u>	<u>Class</u>	<u>Minimum Pipe &amp; Fitting Thickness (mm)</u>	80	100	5.62	100	100	5.8	150	100	6.35	200	64	6.9	250	64	7.45	300	64	8	350	64	8.55	400	50	9.1	450	50	9.65	500	50	10.2	600	50	11.3
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B1.1, 4 <sup>th</sup> Para.	B1.1, 4 <sup>th</sup> Para.	<p>Revised to “For operation at working pressure above 1600 kPa, pipes above 150 mm diameter shall be at least carbon steel of grade P265TR1 to BS EN 10216-1: 2013, BS EN 10217-1: 2002 or better materials approved by the Supervising Officer to suit the high-pressure requirement and shall have dimensions to BS EN 10220: 2002. All fittings shall be butt-welding type carbon steel for pressure purposes to BS EN 10253-1: 1999 or BS EN 10253-2: 2007.”.</p>																																				
B1.2	B1.2	<p>Revised to “Where copper pipe is specified, the copper pipe shall comprise of seamless half hard (designation R250 in accordance with BS EN 1173: 2008) copper tubes up to and including 28 mm diameter and hard drawn (designation R290 in accordance with BS EN 1173: 2008) copper tubes larger than 28 mm diameter with both manufactured to BS EN 1057: 2006+A1: 2010 and of appropriate gauge to suit the working pressure of the system.”.</p>																																				



Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
B1.3(a)	B1.3(a)	Replaced “BS EN 10255: 2004 or ISO 65: 1981 - Steel tubes and tubular of heavy grade for screwing to BS EN 10226-1: 2004 or ISO 7-1: 1994 pipe threads, or” by “BS EN 10255: 2004 or ISO 65: 1981 - Steel tubes and tubular of heavy grade for screwing to BS EN 10226-1: 2004, ISO 7-1: 1994 or BS 21: 1985 pipe threads, or”.
B1.3(b)	B1.3(b)	Revised the para. to “BS EN 545: 2010 - Ductile iron pipes and fittings, with minimum thickness in full compliance with Table B1.1. The ductile iron pipes and fittings shall be coated externally with a layer of metallic zinc, covered by a finishing layer of a bituminous product to BS 3416: 1991 Type II or better and lined internally with bitumen or cement mortar or other better materials approved by the Supervising Officer.”.
B1.3	B1.3	Revised to “Ductile iron pipes laid underground shall be coated externally with a layer of metallic zinc, covered by a finishing layer of a bituminous product. Metallic zinc content shall be not less than 99.9% by mass. The zinc coating shall be applied at the manufacturer’s works to the oxide skin of the pipe surface. The zinc coating shall cover the external surface of the pipe to a mean density of 200 g/m <sup>2</sup> .”.
B1.5, 4 <sup>th</sup> Para.	B1.5, 4 <sup>th</sup> Para.	Revised to “Screwed joints shall have tapered threads to BS EN 10226-1: 2004, ISO 7-1: 1994 or BS 21: 1985 and shall be made with approved jointing material.”
B1.5, 13 <sup>th</sup> Para.	B1.5, 13 <sup>th</sup> Para.	Revised to “Before couplings are assembled, pipe ends and outsides of gaskets shall be lightly coated with grease, graphite paste or lubricants in accordance with the manufacturer’s recommendations to facilitate installation.”.
B1.6, 1 <sup>st</sup> Para.	B1.6, 1 <sup>st</sup> Para.	Revised to “For copper pipework above 54 mm, fittings shall be of the capillary type joint.”
B1.8, 1 <sup>st</sup> Para.	B1.8, 1 <sup>st</sup> Para.	Revised to “ ..... Short radius elbows may be used for pipe sized up to 50 mm diameter, and for pipes installed inside false ceiling or inside concealed void with limited spaces. Short radius elbows for pipe larger than 50 mm diameter in areas other than the spaces inside false ceiling and concealed void may be used subjected to the approval by the Supervising Officer where long radius elbows will not fit within a limited space or are not manufactured.”.
B1.11	B1.11	Revised to “Underground pipes shall be protected against corrosion and mechanical damage. Galvanised steel pipework, non-ductile iron pipe and fitting, steel flange joint, bolt and nuts shall be cleaned after jointing and treated and coated with at least two coats of good quality bituminous paint

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		and wrapped with corrosion and water resistance self-amalgamating tapes and mastics, or protective materials as approved by the Supervising Officer, having minimum 55% overlapping before laying, and bedded in washed sand free of all salts or sieved soil before the trench is back filled.”.
B1.14, 2 <sup>nd</sup> Para.	B1.14, 2 <sup>nd</sup> Para.	Replaced by “BS EN 13547: 2013 Industrial valves. Copper alloy ball valves.”.
B1.14, 6 <sup>th</sup> Para.	B1.14, 6 <sup>th</sup> Para.	Revised to “Bodies of valves and cocks up to 50 mm shall be of cast gunmetal or bronze. Valves having heavy pattern hot-pressed bodies may be used subject to the approval of the Supervising Officer. Valves over 50 mm shall have cast iron or ductile iron bodies with bolted cast iron or ductile iron bonnet and wedge with bronze seat rings or resilient seats, forged manganese bronze or high tensile bronze or stainless steel spindle, with graphite packing and compressed fibre.”.
B1.14, 7 <sup>th</sup> Para.	B1.14, 7 <sup>th</sup> Para.	Revised to “ ..... Gate valves shall have split or solid wedge gates of cast iron or ductile iron with bronze seat rings or resilient seats. .... ”.
B1.14, 11 <sup>th</sup> Para.	B1.14, 11 <sup>th</sup> Para.	Revised to “ ..... The discs of check valves shall be of light construction and pivoting on a gunmetal, bronze or stainless steel trim. .... ”.
B1.19	B1.19	Revised to “..... Ball float valves over 50 mm shall be of cast iron body. They shall be with nickel or copper alloy and stainless steel working parts. ....”.
<b>SECTION B2</b>		
B2.3	B2.3	Revised to “All hydrant risers shall be supplied and installed with automatic air vents of 15 mm size at the highest points and drain valves at the lowest points of the systems as specified in Clause B1.13.”.
B2.7	B2.7	Revised to “Inspection and testing on the street fire hydrant system shall be in compliance with the checklist as stipulated in the FSD Circular Letter No. 1/2015 and all its subsequent amendments by FSD issued by FSD, besides the relevant BSB Testing & Commissioning Procedures.”.
<b>SECTION B3</b>		
B3.1(a)	B3.1(a)	Replaced by “Loss Prevention Council Rules for Automatic Sprinkler Installations (including all the

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		LPC Technical Bulletins, Notes, Commentary, and Recommendation) incorporating BS EN 12845: 2003, FSD Circular Letters No. 3/2006, No. 4/2010 and No. 3/2012, and all the subsequent amendments by the FSD;”.
B3.23	B3.23, 1 <sup>st</sup> Para.	Added in “Whenever recycling system is adopted, the main system shall be in full compliance with Clause B3.1(a) to (c) and the recycling system/installation shall be in full compliance with relevant sections of BS 5306-2: 1990 (Incorporating Amendment No.1 and implementing Corrigendum No. 1). In addition, prior approval from both the Supervising Officer and FSD is required.”.
B3.25	B3.25	(a) Delete the phrase “such as in theatre stages with safety curtain provision” in the 1 <sup>st</sup> para. (b) Revised the 2 <sup>nd</sup> last para. with “For safety curtain provision in stage and auditorium, where specified, the drencher shall be designed to provide a protection of not less than the FRR required with the use of safety curtain. The water storage shall be enough for not less than the operation duration of the drencher system under the required FRR.”.
<b>SECTION B4</b>		
B4.5(a)	B4.5(a)	Updated the standard to “Casing: Cast iron to BS EN 1561: 2011, material designation EN-GJL-200;”.
B4.6, 6 <sup>th</sup> Para.	B4.6, 6 <sup>th</sup> Para.	Replaced the para. by “ ..... Except for the proprietary package pump set and proprietary starter panel of FSD approved type and manufactured with ISO 9001: 2015 quality assurance system, the starter panel shall be made from at least 1.6 mm thick steel plate with lockable door. The enclosure for the motor starter and its control and indicating panel shall have a degree of protection not less than IP 65 as specified in BS EN 60529: 1992+A2: 2013 or the whole enclosure for the motor starter and its control and indicating panel shall be properly and fully protected by a waterproof cabinet or waterproof enclosure of steel with the required IP rating, which would not affect the continuous and normal operation, control and viewing of any part of the panel. All the enclosures shall be finished in white colour internally and grey colour externally. All electrical live parts shall be properly covered and protected for the best electrical safety, to the full satisfaction of the Supervising Officer.”.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
B4.13	B4.13	<p>Revised the 1<sup>st</sup> para. by “Each of the sprinkler pumps to be used in a project shall either be on the approved listed of the LPCB and suitable for the purposes and requirements, or, before delivery, shall be factory tested and certified on the performance to the requirements. Original factory test certificates and records signed by the pump manufacturer showing the related pump pressure head, flow rate, pump input power and efficiency curves specifically for each of the pumps shall be submitted to the Supervising Officer for checking, acceptance and record. Where the manufacturer does not have appropriate pump test facilities, the FS Contractor shall, before delivery, arrange the test to be carried out by an accredited laboratory, or internationally well recognised independent testing organisation or regulatory body acceptable to the Supervising Officer. On-site test will not be accepted as a substitute for the factory test or the test by the independent testing organisation or regulatory body. For pump test or certification approval test done by the independent testing or regulatory organisation or accredited laboratory, the original test certificates shall be endorsed by the independent testing or regulatory organisation or accredited laboratory and submitted to the Supervising Officer for checking, acceptance and record.”</p>
<b>SECTION B5</b>		
B5.1	B5.1	<p>(a) Updated the standards to “Other gaseous extinguishing systems shall use clean agents unless otherwise specified. The system shall be designed and installed in accordance with NFPA 2001: 2015, BS EN 15004-1 to 10: 2008 or other recognised established system design manual published by the manufacturer and acceptable to the Supervising Officer. The system shall also comply with UL 2166: 2012 and UL 2127: 2012 as relevant.”.</p> <p>(b) Updated the agents to “Where the agent for the gaseous extinguishing system is not specified in the Particular Specification and Drawings, the FS Contractor shall use Dodecafluoro-2-methylpentan -3-one (FK-5-1-12), Heptafluoropropane (HFC-227ea) or other alternatives clean agents which shall fully comply with FSD and EPD’s requirements for the gaseous extinguishing system, to the acceptance of the Supervising Officer.”.</p> <p>(c) Updated the agents to “For installation in areas with high ceiling height, low temperature or with limitation in the storage spaces for the clean agent cylinders making the use of FK-5-1-12 and HFC-227ea unsuitable, the FS Contractor may propose to use other clean agents such as Trifluoromethane (HFC-23), inert gas etc. together with detailed manufacturer’s design proposal and hydraulic flow calculations using the manufacturer's approved computer software with relevant manuals submitted for approval by the Supervising Officer. .... ”.</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		(d) Updated the standard to “The gaseous extinguishing system shall be a proprietary product approved by the LPCB, UL, FM or Vds and has been accepted by the FSD for use in buildings in Hong Kong in past projects. ....”.
B5.2, 2 <sup>nd</sup> Para.	B5.2, 2 <sup>nd</sup> Para.	Updated the standard to “Clean agents shall comply with NFPA 2001: 2015 or BS EN 15004-1 to 10: 2008, in particular, the acute toxicity, the ozone depletion potential and global warming potential.”.
B5.8, 1 <sup>st</sup> Para.	B5.8, 1 <sup>st</sup> Para.	Updated the standard to “Carbon dioxide cylinders shall be of seamless steel construction to BS EN ISO 9809-1: 2010 and BS EN ISO 9809-3: 2010 or API-ASME Code for Unfired Pressure Vessels for Petroleum Liquids and Gases.”.
-	B5.8, New Para. 6	Added in “A low pressure supervisory switch for continuous monitoring of the pressure of the cylinder shall be provided and when the cylinder pressure drops below 70% of the storage pressure, the supervisory switch shall transmit an abnormal signal to the system control panel.”
B5.8, 10 <sup>th</sup> Para.	B5.8, 11 <sup>th</sup> Para.	Revised the requirement to “The gas cylinder shall pass the pressure tests as required under Chapter 295 –Dangerous Goods Ordinance before filling with gas. Relevant test result shall be submitted to the FSD. ....”.
B5.13	B5.13	<p>(a) Updated the standard to “Electric resistance and induction welded carbon steel pipe to BS EN 10217-1: 2002 with wall thickness not lower than ASME B36.10M-2004 Schedule No. 80 pipe and with steel grade P265TR1 or ASTM A106/A106M: 2008 Grade A hot finished or cold Schedule 80”.</p> <p>(b) Updated the standard to “BS EN 10217-1: 2002 with wall thickness not lower than ASME B36.10M-2004 Schedule No. 80 pipe and with steel grade P265TR1”.</p> <p>(c) Added in “and BS EN 10253-2: 2007 Butt-welding pipe fittings. Non-alloy and ferritic alloy steels with specific inspection requirements”.</p> <p>(d) Revised the requirement to “Clean agent discharge nozzles shall be of robust construction and designed for use with the expected working pressure and temperature without deformation. The discharge nozzle shall be made of brass or stainless steel capable of being installed in the upright or pendent positions. Corner (90 degree), sidewall (180 degree) or centre (360 degree) of room placement shall be accommodated. If the discharge nozzles are required to be placed in a back to</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		back pattern, they shall be in full compliance with the guidelines and requirements of the manufacturer’s manual. Part number; orifice diameter and direction arrow shall be etched prominently on the nozzle to ensure that the nozzle is placed in the proper orientation. The limitations mentioned by the manufacturer and/or detailed in the installation and maintenance manual shall be strictly followed for all piping drops to the nozzles.”
B5.16	B5.16	Revised the requirement to “Odorisers or oil of wintergreen where specified shall be capable of automatically treating the gas after releasing from the cylinder and shall be of citrus/distinctive odour type, so that hazardous atmosphere can be recognised at once. Where odorisers or oil of wintergreen are installed, a suitable notice to the effect that anyone detecting the citrus/distinctive odour should leave the area immediately and report the occurrence to a responsible person.”
<b>SECTION B6</b>		
B6.1, 1 <sup>st</sup> Para.	B6.1, 1 <sup>st</sup> Para.	Revised the requirement to “ ..... The FS Contractor shall supply and install highly reliable approved manual and automatic fire alarm systems. Substantiation on a good record of reliability shall be obtained from the suppliers and submitted to the Supervising Officer. System that has a poor false fire alarm record or has failed to provide the required record when asked will not be accepted for the Installations. .... ”.
B6.2, 1 <sup>st</sup> Para.	B6.2, 1 <sup>st</sup> Para.	Updated the standard to “Manual call point shall be of “break-glass” or “resettable” type complying with BS EN 54-11: 2001, or a type approved by the Supervising Officer. ....”.
B6.3, 3 <sup>rd</sup> Para.	B6.3, 3 <sup>rd</sup> Para.	<p>(a) Updated the standard to “Heat detector shall function correctly at ambient temperature between -20 °C to the maximum application temperature specified in BS EN 54-5: 2001 for respective class. Heat detector shall be designed to assume minimum protection rating of IP 43 or equivalent standards. .... ”.</p> <p>(b) Revised the requirement to “ ..... The FS Contractor shall submit manufacturer’s printed catalogue or other certification proving that the heat detector in either air-conditioned space or non-air-conditioned space is suitable for operation under relative humidity up to 95% continuous non-condensing. In rooms or spaces where the relative humidity is usually high, such as boiler room and plant rooms, and other areas specified by the Supervising Officer, the heat detector</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		shall be suitable for operation under relative humidity up to 99% continuous non-condensing.”.
B6.15	B6.15	Add in a new 3 <sup>rd</sup> Para. “The FS Contractor shall supply all the necessary tools, kits, electronic and computerized devices/instruments for initial setting, adjustment and subsequent resetting, retesting and re-commissioning of all the addressable detectors/ components and the whole fire alarm addressable system after any detectors are replaced or any part of the addressable system are modified. All relevant instructions and manuals giving clear guidelines on how to use the tools, kits, and electronic/computerized devices/instruments, and adequate training, shall be provided to the operation and maintenance personnel to enable them to use such tools, kits and devices/instruments readily for works on the addressable system. The FS Contractor shall make sure that all hardware and software licensing agreements and any future software upgrading for such tools, kits and devices/instruments if required are wholly allowed for and granted when they are handed over, together with other spares and tools, as detailed in Clause B13.2, to the satisfaction of the Supervising Officer.”
B6.4	B6.4	Revised the requirement to “Smoke detector shall have minimum protection rating of IP 43 or equivalent standards.”.
B6.16 (c), 2 <sup>nd</sup> Para.	B6.16 (c), 2 <sup>nd</sup> Para.	Revised the requirement to “Fault isolator or module shall be provided for every intelligent addressable device, i.e. detectors, manual call points, monitor modules and control modules to limit the number of devices lost in the event of a short circuit.”.
<b>SECTION B7</b>		
B7.1 5 <sup>th</sup> Para.	B7.1 5 <sup>th</sup> Para.	Revised the requirement to “The audio/visual advisory system shall comprise ... amplifiers, CD/DVD recorders and players, EEPROM and other associated built-in recording and playing components/devices, loudspeakers and other accessories ...”
B7.2 (b) Amplifier	B7.2 (b) Amplifier	Revised the requirement to “Preamplifier shall be provided with connection to power amplifier, microphone, CD/DVD decks, EEPROM and other associated built-in recording and playing components/devices, and other audio equipment.”  Revised the requirement to “Power amplifier shall be capable of connecting with microphone,

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		CD/DVD decks, built-in recording and playing components and devices, and other audio equipment.”
B7.2 (d) Cassette Deck	B7.2 (d) Recording and Play Back Devices/Decks	Replace the whole paragraph by “The recording and play back components, devices and decks shall be of proprietary products with proven quality capable of recording and play back music and audio messages either on high quality CDs/DVDs or EEPROMs and other associated electronic chips. Each CD, DVD or EEPROM shall be of adequate capacity for recording and playing back not less than 120 minutes of high quality music and audio messages. The FS Contractor shall propose details of the recording and play back devices and decks using CDs, DVDs, or EEPROM technology to the Supervising Officer for approval. The recording and play back system shall also be to the acceptance of the FSD.”
B7.3	B7.3	Updated the standard to “The system shall be approved by the Supervising Officer and shall comply with FSDCoP, relevant FSD Requirements and Circular Letters, BS ISO 3864-1: 2011, BS 5499-4: 2013, BS EN 60598-1: 2008, BS EN 60598-2-22: 1999, BS 5266-1: 2011, BS EN 50172: 2004 and BS EN 1838: 2013 unless otherwise specified.”.
B7.6	B7.6	Revised the requirement to “The power supply cables to the audio/visual advisory systems shall be fire resisting cables which shall comply with the relevant Clauses and Appendices of the FSDCoP, relevant FSD’s Circular Letters and latest amendments and Clause B9.9 of the Specification.”.
<b>SECTION B8</b>		
B8.1	B8.1	Revised the requirement to “Fire alarm control and indicating panel shall comply with BS EN 54-2: 1997+A1: 2006 (Incorporating corrigenda January 2007 and July 2009), shall be listed by the Product Certification Bodies in accordance with FSD Circular Letters Nos. 1/2007, 2/2012 or of FSD approved type and acceptable by the Supervising Officer. The fire alarm control and indicating panel shall be constructed of, or enclosed with cabinet, at least 1.6 mm stainless steel plate to BS EN 10088-1: 2014 No. 1.4401,”.
B8.3, 6 <sup>th</sup> Para.	B8.3, 6 <sup>th</sup> Para.	Revised the requirement to “(f) Back up batteries shall be of sealed nickel-metal hydride type or of a type with equivalent or better functions and environmental performance approved by the Supervising Officer. For batteries built in and integrated with proprietary panels, or for individual battery with



Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		power capacity each exceeding 50 Ah, other types of battery will only be accepted subject to the approval of the Supervising Officer.”.
B8.10, 5 <sup>th</sup> Para.	B8.10, 5 <sup>th</sup> Para.	Revised the requirement to “In any case, the ampere-hour rating of the battery shall not be less than 10 Ah, except for batteries provided and built in by the panel manufacturer in the proprietary made panels, with relevant test records and certificates on the battery performance and capacity of each panel to be submitted to the Supervising Officer for approval.”
B8.10, 9 <sup>th</sup> Para.	B8.10, 9 <sup>th</sup> Para.	Revised the requirement to “Back up batteries shall be of sealed nickel-metal hydride type or of a type with equivalent or better functions and environmental performance approved by the Supervising Officer. For batteries built in and integrated with proprietary panels, or for individual battery with power capacity each exceeding 50 Ah, other types of battery will only be accepted subject to the approval of the Supervising Officer.”
<b>SECTION B9</b>		
B9.2	B9.2	To replace the title, “General Electrical Specification” by “General Electrical Requirements”.
B9.4	B9.4	To add “Concealed PVC conduits shall only be accepted subject to the full compliance with the conditions stipulated in Clause B9.6, to the approval and satisfaction of the Supervising Officer.” to form the last sentence of Clause B9.4.
B9.6, 1 <sup>st</sup> Para.	B9.6, 1 <sup>st</sup> Para.	<p>Revised the requirement to “Surface mounted conduit and trunking if specified or allowed to be used shall be of steel complying with relevant Clauses of the Electrical General Specification. Concealed PVC conduits shall only be accepted subject to the full compliance with the following conditions.</p> <p>(a) Concealed PVC conduits shall be embedded by concrete to a depth of at least 12mm; or</p> <p>(b) Concealed PVC conduits shall be embedded by plaster to a depth of at least 12mm provided that the area where the conduits are installed shall be protected by a sprinkler system, other automatic fixed fire extinguishing installation using water or an automatic fixed fire extinguishing installation other than water; or</p> <p>(c) Other conditions and criteria required or imposed by, and to the acceptance of, either or both of the Supervising Officer and FSD.”</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
B9.6, 2 <sup>nd</sup> Para.	B9.6, 2 <sup>nd</sup> Para.	Revised to “In general, conduits shall be concealed, except in protected rooms having approved FRR such as in fire control room, pump room and sprinkler control valve cabinet/room, or unless otherwise specified. Conduit and trunking shall be completely separated from those of other services, and used exclusively and solely for the purpose with no wiring of other services present. Trunking shall only be used in fire rated protected enclosures/ducts/rooms having approved FRR.”.
B9.9, 1 <sup>st</sup> Para.	B9.9, 1 <sup>st</sup> Para.	<p>To replace</p> <p>“Unless otherwise specified or approved by the Architect, fire resistant cables used for the Installations shall be of low smoke zero halogen type and shall be in full compliance with the requirements of FSD. Fire resistance cables shall also comply with the following standards :</p> <ul style="list-style-type: none"> <li>(a) BS 6387: 1994 Category CWZ;</li> <li>(b) BS EN 50200: 2006 (class PH30 or better);</li> <li>(c) BS EN 61034-1: 2005 or IEC 61034-1 or 2: 2005;</li> <li>(d) BS EN 50267-2: 1999 or IEC 60754-1: 1994 / IEC 60754-2: 1991: (with less than 0.5% acid gas emission and pH level for the gases evolved not less than 4.3); and</li> <li>(e) BS 7629-1: 2008 or BS 7846: 2009 where applicable for relevant types of cables under the standard.”</li> </ul> <p>by</p> <p>“Unless otherwise specified or approved by the Supervising Officer, fire resistant cables used for the Installations shall be of low smoke zero halogen type and shall be in full compliance with the requirements of relevant Clauses and Appendix of the FSDCoP and relevant FSD’s Circular Letters and amendments. Fire resistance cables shall also comply with the following standards :</p> <ul style="list-style-type: none"> <li>(a) BS 6387: 2013 Category CWZ;</li> <li>(b) BS EN 50200: 2006 (class PH30 or better) and Annex E of BS EN 50200 (a duration of survival time of 30 minutes or better);</li> <li>(c) BS EN61034-1:2005+A1:2014 and BSEN61034-2:2005+A1:2013 or IEC 61034-1 and 2:2005;</li> <li>(d) BS EN 60754-1: 2014 and BS EN 60754-2: 2014 (with less than 0.5% acid gas emission and pH level for the gases evolved not less than 4.3); and</li> </ul>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes						
		(e) BS 7629-1: 2008 or BS 7846: 2009 (Cat. F2 for cable not exceeding 20 mm overall diameter or Cat. F30 or better for overall diameter exceeding 20 mm) where applicable for relevant types of cables under the standard.”						
B9.10, 1 <sup>st</sup> Para.	B9.10, 1 <sup>st</sup> Para.	Revised the requirement to “Except for the proprietary motor starter accepted by the FSD and manufactured with ISO 9001, or type tested starter panel complying with BS EN 60439-1 Form 3B Standard, or manufactured by a manufacturer certified by ISO 9001 quality system, the enclosure for the motor starter and its control and indicating panel shall be constructed from at least 1.6 mm thick steel plate with lockable door. The enclosure for the motor starter and its control and indicating panel shall have a degree of protection not less than IP 65 as specified in BS EN 60529: 1992+A2: 2013 or the whole enclosure for the motor starter and its control and indicating panel shall be properly and fully protected by a waterproof cabinet or waterproof enclosure of steel with the required IP rating, which would not affect the continuous and normal operation, control and viewing of any part of the panel. All the enclosures shall be finished in white colour internally and grey colour externally. All electrical live parts shall be properly covered and protected for the best electrical safety, to the full satisfaction of the Supervising Officer.”						
-	B9.11, 1 <sup>st</sup> Para.	Revised the requirement to “Armoured cable shall only be used outside plant room where the use of concealed conduit is not acceptable or feasible. The cable support shall be non-combustible and that the overall wiring and circuit integrity shall not be reduced below that afforded by any of the cables it supported. The fire resistant integrity of any cable support shall also be not less than that equivalent to the cables it supported.”						
B9.11, Table 3	B9.11, Table 3	Revised the table to: <b>Table 3 : Installations to use Fire Resistant Cables</b> <table border="1" data-bbox="763 1136 2047 1417"> <thead> <tr> <th data-bbox="763 1136 1234 1230">Type of Fire Service Installation or location, where specified</th> <th data-bbox="1234 1136 2047 1230">System/Equipment requiring the use of Fire Resistant Cables</th> </tr> </thead> <tbody> <tr> <td data-bbox="763 1230 1234 1342">Fire alarm system</td> <td data-bbox="1234 1230 2047 1342">The power supply/signalling cables to manual call points, alarm bells, visual alarm signal units and other field devices from fire alarm control and indication panels.</td> </tr> <tr> <td data-bbox="763 1342 1234 1417">Fireman’s lift</td> <td data-bbox="1234 1342 2047 1417">The power supply cable from main/sub-main switchboards to traction motors/car lighting/power circuit of lift.</td> </tr> </tbody> </table>	Type of Fire Service Installation or location, where specified	System/Equipment requiring the use of Fire Resistant Cables	Fire alarm system	The power supply/signalling cables to manual call points, alarm bells, visual alarm signal units and other field devices from fire alarm control and indication panels.	Fireman’s lift	The power supply cable from main/sub-main switchboards to traction motors/car lighting/power circuit of lift.
Type of Fire Service Installation or location, where specified	System/Equipment requiring the use of Fire Resistant Cables							
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Fireman’s lift	The power supply cable from main/sub-main switchboards to traction motors/car lighting/power circuit of lift.							

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
B9.11, 3 <sup>rd</sup> Para. Item (a)	B9.11, 3 <sup>rd</sup> Para. Item (a)	Revised the requirement to “Cables running in trunkings or in cable trays inside fire resistant plant rooms/enclosures of approved FRR where termination of cables at both ends are located;”.
B9.11, 3 <sup>rd</sup> Para. Item (b)	B9.11, 3 <sup>rd</sup> Para. Item (b)	Revised the requirement to “Cables running inside concealed steel conduits embedded in concrete to a depth of at least 12 mm;”.
<b>SECTION B10</b>		
B10.1, 2 <sup>nd</sup> Para.	B10.1, 2 <sup>nd</sup> Para.	Revised the requirement to “The FS Contractor shall supply and install portable hand-operated appliances approved by the FSD and the Supervising Officer and in accordance with (i) the type(s) of occupancy or risk in individual area(s) such as Dangerous Goods Stores, LPG Stores, plant rooms and various licensed premises and (ii) the Laws of the Hong Kong Special Administrative Region.”.
B10.1, 5 <sup>th</sup> Para.	B10.1, 5 <sup>th</sup> Para.	Revised to “ ..... Portable hand-operated approved appliance located outdoor shall be installed inside a cabinet to the approval of the Supervising Officer. Where the portable hand-operated approved appliance is installed outdoor, the FS Contractor shall submit details of the cabinet for housing the appliance to the Supervising Officer for approval. .... ”.
B10.2	B10.2	Revised to “Fire blankets and sand buckets shall conform to the requirements of the FSD. Buckets shall have a capacity not less than 10 litres and shall be made of galvanised steel and painted red. .... ”.
B10.3, 1 <sup>st</sup> Para.	B10.3, 1 <sup>st</sup> Para.	Updated the standard to “Fire extinguishers shall be rechargeable hand-operated extinguishers complying with FSDCoP and of appropriate type to BS EN 3-7: 2004, NFPA 10: 2013, ISO 7165: 2009, BS 5306-3: 2009 and BS 7863: 2009 for water, foam, dry powder, carbon dioxide, Novec 1230, FM200 or other approved agent type with a capacity as specified. .... ”.
B10.4, 1 <sup>st</sup> Para.	B10.4, 1 <sup>st</sup> Para.	Updated the requirement to “Fixed sprayer units shall be of self-contained automatically operated clean agent or dry powder type fitted with a sprinkler head or other actuation device complying with UL, FM, NFPA, BS or other relevant international standards and approved by FSD. The activation temperature rating of the actuation device shall meet with the protection requirements stipulated by and to the acceptance of FSD. .... ”.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
<b>SECTION B13</b>		
B13.3	B13.1	(a) Re-numbered old B13.3, Painting, Finishing, Protection and Identification as new B13.1, Painting, Finishing, Protection and Identification. (b) Updated the requirement on VOC content of paints. (c) Standard CP231 is replaced by BS 6150:2006+A1:2014
<b>PART C</b>		
<b>SECTION C1</b>		
C1.1, 1 <sup>st</sup> Para.	C1.1, 1 <sup>st</sup> Para.	Revised to “..... selection and/or holistic evaluation of the whole fire service and building design, fire service equipment/installation, building material/construction, life safety protection, property protection, fire intervention approach, associated fire risk and hazard, and performance of systems in fire.”.
C1.1, 2 <sup>nd</sup> Para.	C1.1, 2 <sup>nd</sup> Para.	Revised the requirement to “..... The professional engineer(s) responsible for the PBF E shall be a Registered Professional Engineer in Hong Kong under the Engineers Registration Ordinance (Cap. 409) in Fire, Building Services, Mechanical or Electrical discipline (or other equivalent approved professional qualifications) with proof of experience of completed successful cases of at least 3 years in relevant Fire Service Installation design and fire safety engineering studies, have recognised and approved academic qualifications, training and post-qualification professional experience in PBF E, and have adequate knowledge of Building Regulations in Hong Kong, all to the satisfaction and approval of the Supervising Officer. The completed successful cases to be submitted as a proof of experience in relevant Fire Service Installation design and fire safety engineering studies shall be those cases successfully approved by the Fire Safety Committee of the Buildings Department of the Government of the HKSAR, and the approval letter from the Fire Safety Committee for each of such cases shall be submitted for Supervising Officer’s inspection and approval.. ..”.
-	C1.2, New Items (a), (b), (c) & (d)	Added in the following items to form the 1 <sup>st</sup> four new items below the 1 <sup>st</sup> Para. and re-adjust other subsequent items to suit. (a) Buildings Department - Code of Practice for Fire Safety in Buildings: 2011; (b) Fire Services Department - Code of Practice for Minimum Fire Service Installations and

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		<p>Equipment and Inspection, Testing and Maintenance of Installations and Equipment;</p> <p>(c) Society of Fire Protection Engineers - SPFE Handbook of Fire Protection Engineering, 4<sup>th</sup> Edition, 2008;</p> <p>(d) National Fire Protection Association - NFPA 92 Standard for Smoke Control Systems, 2015 Edition;</p>
C1.2 (a)	C1.2 (e)	<p>Updated the requirement to “Society of Fire Protection Engineers - Engineering Guide to Performance-Based Fire Protection Analysis and Design of Buildings, and The Society of Fire Protection Engineers Code Official Guide to Performance Based Design Review and Analysis of Building;”.</p>
C1.5, 1 <sup>st</sup> Para.	C1.5, 1 <sup>st</sup> Para.	<p>Revised the requirement to “ ..... The independent checking engineer shall be a Registered Professional Engineer in Hong Kong under the Engineers Registration Ordinance (Cap. 409) in Fire, Building Services, Mechanical or Electrical discipline (or other equivalent approved professional qualifications) with proof of experience of completed successful cases of at least 3 years in relevant Fire Service Installation design and fire safety engineering studies, have recognised and approved academic qualifications, training and post-qualification professional experience in PBE, and have adequate knowledge of Building Regulations in Hong Kong, all to the satisfaction and approval of the Supervising Officer. The completed successful cases to be submitted as a proof of experience in relevant Fire Service Installation design and fire safety engineering studies shall be those cases successfully approved by the Fire Safety Committee of the Buildings Department of the Government of the HKSAR, and the approval letter from the Fire Safety Committee for each of such cases shall be submitted for Supervising Officer’s inspection and approval. The professional status and qualifications of the Registered Professional Engineer shall also be acceptable by FSD and the Supervising Officer. ”.</p>
-	C1.6, New Item (h)	<p>Added in the following item to the 5<sup>th</sup> Para. below the existing item (g) and re-adjust other subsequent items to suit.</p> <p>(h) Building designs with deviations from code requirements;</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
<b>PART D</b>		
<b>SECTION D1</b>		
-	D1.1, New Paras.	<p>Added in “The inspection, testing and commissioning shall be carried out in accordance with the requirements specified in this Part and Testing and Commissioning Procedure for Fire Service Installation in Government Buildings which shall be referred to and adopted where appropriate.</p> <p>Throughout the execution of the Installations, the FS Contractor shall be responsible for ensuring compliance with the statutory and related requirements included in Section A2 and shall notify the Supervising Officer of any infringement which directly or indirectly detracts from the safe and satisfactory operation of the Installations whether or not such infringement relates to the works covered in the Installations or to those associated with others. All substandard works or defects found during inspection, testing and commissioning shall be rectified or replaced to the satisfaction of the Supervising Officer.” as the new 1<sup>st</sup> &amp; 2<sup>nd</sup> Paras. and re-arrange the old 1<sup>st</sup> Para. to the 3<sup>rd</sup> Para.</p>
D1.1.1 – D1.1.3	Various Clauses in Section D3	Transferred all the old Clauses D1.1.1 to D1.1.3 in Section D1 to new Section D3. For details of all the transferred Clauses, refer to new Section D3 below.
D1.1.4	D1.2	<p>(a) Transferred the old Clause D1.1.4, Inspection, Testing and Commissioning Methods and Procedures to new Clause D1.2, Methods and Procedures.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p>
D1.1.10	D1.3	<p>(a) Transferred the contents of old Clauses D1.1.10, Notice of Inspection, Testing and Commissioning Works to new Clause D1.3, Notices of Inspection, Testing and Commissioning Works and re-arrange old Clause D1.3, Water System Tests to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
D1.1.5 & D1.1.6	D1.4	<p>(a) Transferred the contents of old Clauses D1.1.5, Equipment, Apparatus and Tools &amp; D1.1.6, Labour and Materials to form new Clause D1.4, Labour and Materials and re-arrange old Clause D1.4, Electrical and Alarm System tests to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clauses to make them in line with other General Specifications on the same topic.</p>
D1.1.7	D1.5, New Clause	<p>(a) Transferred the contents of old Clauses D1.1.7, Supply of Inspection, Measuring and Testing Equipment to new Clause D1.5, Inspection, Measuring and Testing Equipment and re-arrange old Clause D1.5, Gaseous Extinguishing System Tests to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p> <p>(c) Added in new Para., “The calibration requirements for test instruments used for testing/measuring shall also comply with FSD Circular Letter No. 1/2016 and all subsequent amendments and subsequent issued FSD Circulars in connection with the subject matters.” as the last Para. of the new Clause D1.5.</p>
D1.1.8	D1.6, New Clause	<p>(a) Transferred the contents of old Clauses D1.1.8, Readiness for Commissioning and Testing to new Clause D1.6, Readiness for Inspection, Testing and Commissioning and re-arrange old Clause D1.6, Emergency Lighting and Exit Sign Tests to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p>
D1.1.9	D1.7, New Clause	<p>(a) Transferred the contents of old Clauses D1.1.9, Type-Test Certificate to new Clause D1.7, “Type-test” Certificate and re-arrange old Clause D1.7, Emergency Generators Tests to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p>



Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
D1.2.1	D1.8, New Clause	<p>(a) Transferred the contents of old Clauses D1.2.1, Factory Tests and Off-site Tests to new Clause D1.8, Off-site Tests/ Factory Tests and re-arrange old Clause D1.8, Hot Smoke Test to new Section D4, Other Technical Requirements.</p> <p>(b) Fine tuned the wordings of the transferred Clause to make them in line with other General Specifications on the same topic.</p> <p>(c) Added in new Para., “Where collection of test samples on the Site is required for the off-site tests, the FS Contractor shall submit the sampling and analysis methodology, including but not limited to the proposed independent accredited laboratory and the procedures for collection and analysis of test samples and submission of test results, for the Supervising Officer’s approval. The FS Contractor shall notify in advance the date for collection of test samples to the Supervising Officer’s Representative, who shall supervise the sampling, transport and delivery of the test samples. Collection of test samples shall be conducted by the independent accredited laboratory unless otherwise agreed by the Supervising Officer. The collected test samples shall be kept in sealed and locked containers inaccessible to unauthorised persons at all times. The test results in sealed envelope shall be submitted by the independent accredited laboratory to the Supervising Officer directly.” as the 2<sup>nd</sup> Para.</p>
<b>SECTION D2</b>		
-	D2.1, New Clause	Added in new Section D2, Inspection with new Clause D2.1, Inspection of Materials and Equipment Delivered to Site so that it is in line with other General Specifications on the same topic.
D1.2.2	D2.2, New Clause	<p>(a) Transferred the old Clause D1.2.2, Visual Inspection and Checking to new Clause D2.2, Visual Inspection and Checking.</p> <p>(b) Fine tuned the wordings and Paras. of the transferred Clause to make them in line with other General Specifications on the same topic.</p>
-	D2,3, New Clause	Added in new new Clause D2.3, Handover Inspection so that it could be in line with other General Specifications on the same topic.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
-	D2.4, New Clause	Added in new Clause D2.4, Inspection Required by Authority, “The FS Contractor shall be responsible for arranging adequate manpower strength, provisions, measuring instruments/meters with valid calibration certificates and necessary tools required by WSD and FSD’s officers and inspectors for testing, visual inspections and checking of all the completed works. Prior to the WSD and FSD’s inspections, the FS Contractor shall submit or make ready with all the required equipment/materials’ lists, test certificates, test records, duly completed and signed forms and checklists to WSD and FSD as required under FSD Circular Letter No. 1/2015 or other relevant circular letters and notices issued by either or both of WSD and FSD. Any sub-standard, defective and outstanding works found during WSD and FSD’s testing, visual inspection and checking shall be rectified or replaced before proceeding on arrangement of further re-inspection.”.
<b>SECTION D3</b>		
-	D3.1, New Clause	Added in new Section D3, Testing and Commissioning with new Clause D3.1, General so that it is in line with other General Specifications on the same topic.
D1.1.1	D3.2, New Clause	(a) Transferred the old Clause D1.1.1, Standards and Requirements to new Clause D3.2, Procedures, Standards and Requirements.  (b) Revised the requirement to “Testing and Commissioning Procedure for Fire Service Installation in Government Buildings, Hong Kong Special Administrative Region, Testing and Commissioning Procedure for Electrical Installation in Government Buildings, Hong Kong Special Administrative Region and Testing and Commissioning Procedure for Air-conditioning, Refrigeration, Ventilation and Central Monitoring & Control System Installation in Government Buildings, Hong Kong Special Administrative Region;”.
D1.1.3	D3.3, New Clause	(a) Transferred the old Clause D1.1.3, Master Programme of Testing and Commissioning Works to new Clause D3.3, Master Programme of Testing and Commissioning Works.  (b) Find tuned the wordings and Paras. of the transferred Clause to make them in line with other General Specifications on the same topic.
D1.1.11	D3.4, New Clause	(a) Transferred the old Clause D1.1.11, Documentation and Deliverables to new Clause D3.4,

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		Documentation and Deliverables.
D1.2, 1 <sup>st</sup> – 6 <sup>th</sup> Paras.	D3.5, New Clause	(a) Transferred the old Clause D1.2, 1 <sup>st</sup> – 6 <sup>th</sup> Paras., Adjustments, Commissioning, Functional and Performance Tests to new Clause D3.5, 1 <sup>st</sup> – 6 <sup>th</sup> Paras., Safety, Functional and Performance Tests.
D1.2.3 – D1.2.6	D3.5.1 – D3.5.4, New Clauses	(a) Transferred the old Clause D1.2.3, Setting to Work, Safety and Quality Tests, D1.2.4, Commissioning, Regulations, Tuning and Adjustment, D1.2.5, Functional Tests and D1.2.6, Performance Tests to new Clause D3.5.1, Setting to Work, Safety and Quality Tests, D3.5.2, Commissioning, Regulations, Tuning and Adjustment, D3.5.3, Functional Tests and D3.5.4, Performance Tests.
D1.1.2	D3.6, New Clause	Transferred the old Clause D1.1.3, Commissioning Engineer to new Clause D3.6, Testing and Commissioning Engineer.
<b>SECTION D4</b>		
D1.3	D4.1, New Clause	Transferred the old Clause D1.3, Water System Tests to new Clause D4.1, Water System Tests.
D1.4	D4.2, New Clause	Transferred the old Clause D1.4, Electrical and Alarm System Tests to new Clause D4.2, Electrical and Alarm System Tests.
D1.5	D4.3, New Clause	Transferred the old Clause D1.5, Gaseous Extinguishing System Tests to new Clause D4.3, Gaseous Extinguishing System Tests.
D1.6	D4.4, New Clause	Transferred the old Clause D1.6, Emergency Lighting and Exit Sign Tests to new Clause D4.4, Emergency Lighting and Exit Sign Tests.
D1.7	D4.5, New Clause	Transferred the old Clause D1.7, Emergency Generators Tests to new Clause D4.5, Emergency Generators Tests.
D1.8	D4.6, New Clause	Transferred the old Clause D1.8, Hot Smoke Test to new Clause D4.6, Hot Smoke Tests.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
D1.9	D4.7, New Clause	Transferred the old Clause D1.9, Tests On Other Fire Service Installations to new Clause D4.7, Tests On Other Fire Service Installations.
D1.10	D4.8, New Clause	Transferred the old Clause D1.10, Final Mock-Up Test to new Clause D4.8, Final Mock-Up Test.
D1.11	D4.9, New Clause	<p>(a) Transferred the old Clause D1.11, Fire Service Department Inspections and Witness of Tests to new Clause D4.9, Fire Service Department Inspections and Witness of Tests.</p> <p>(b) Added in new Para., “Prior to FSD’s inspections, the FS Contractor shall submit or make ready with all the required equipment/materials’ lists, test certificates, test records, duly completed and signed forms and checklists to FSD as required under FSD Circular Letter No. 1/2015 or other relevant circular letters issued by FSD.” as the last Para.</p>
D1.12	D4.10, New Clause	Transferred the old Clause D1.12, Testing of Fire Service Installations and Provisions Installed by Others to new Clause D4.10, Testing of Fire Service Installations and Provisions Installed by Others.
D1.13	D4.11, New Clause	Transferred the old Clause D1.13, Cleaning of Detectors to new Clause D4.11, Cleaning of Detectors.
D1.14	D4.12, New Clause	Transferred the old Clause D1.14, Testing and Commissioning Report and Certificate of Completion to new Clause D4.12, Testing and Commissioning Report and Certificate of Completion.
<b>PART E</b>		
<b>SECTION E1</b>		
-	E1.1, New Paras.	<p>(a) Added in new Paras. to form the first 4 Paras. of the new Clause E1.1, General so that this Clause will be in line with other General Specifications on the same topic.</p> <p>(b) Updated the requirement to “The FS Contractor shall submit duly signed FSD’s Form FS251, Certificate of Fire Service Installation and Equipment after the final inspection, testing and maintenance of all the installed systems and equipments to FSD at the end of the Maintenance Period. The copies of FS251 and proof of FS251’s submission record to FSD shall also be submitted to the Supervising Officer and the relevant maintenance agents.”.</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		(c) Added in new Para., “For quarterly inspection, testing and maintenance service, the FS Contractor shall arrange inspections, tests and maintenance covering all the installed systems and equipments. Prior to carry out the works on the quarterly maintenance service, the FS Contractor shall submit a schedule showing the scope of maintenance service which shall cover all the installed systems to the Supervising Officer for agreement and approval.” to form the last Para.
E1.1	E1.1, 5 <sup>th</sup> – last Paras.	Transferred the contents (except Paras. 15 & 17 related to repair and maintenance records which would be transferred to new Clause E1.3) of old Clause E1.1, General Maintenance Requirements to form the 5 <sup>th</sup> Para. to the last Para. of new Clause D1.1, General.
-	E1.2, New Clause	Added in 2 new Paras. to form the new Clause E1.2, Completion of Outstanding and Defective Works so that it will be in line with other General Specifications on the same topic.
E1.1, Paras. 15 & 17	E1.3, New Clause	<p>(a) Transferred Paras. 15 &amp; 17 of old Clause E1.1, General Maintenance Requirements to new Clause D1.3, Repair and Maintenance Records.</p> <p>(b) Added in “The FS Contractor shall submit duly signed FSD’s Form FS251, Certificate of Fire Service Installation and Equipment after the final inspection, testing and maintenance of all the installed systems and equipments to FSD at the end of the Maintenance Period. The copies of FS251 and proof of FS251’s submission record to FSD shall be submitted to the Supervising Officer and the relevant maintenance agents.” to form the last Para.</p>
<b>SECTION E2</b>		
-	E2.1, New Clause	Added in new Section E2, Training to Users and Operation and Maintenance Agents, Clause E2.1, General so that it will be in line with other General Specifications on the same topic.
A3.6, 4 <sup>th</sup> – 7 <sup>th</sup> Paras.	E2.2, New Clause	Transferred the 4 <sup>th</sup> – 7 <sup>th</sup> Paras. of the old Clause A3.6, Site Supervision and Training of Employer’s Staff to new Clause E2.2, Other Training Requirements.

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
<b>SECTION E3</b>		
E1.2	E3.1, New Clause	Transferred the content of old Clause E1.2, Emergency Inspections, Tests and Repairs to new Clause D3.1, Response and Attendance to Emergency and Fault Calls.
-	E3.2, New Clause	Added in new Clause E3.2, Maintenance Schedule so that it will be in line with other General Specifications on the same topic.
E1.3	E3.3, New Clause	<p>(a) Transferred the content of old Clause E1.3, Routine Quarterly Inspection, Testing and Maintenance Of Fire Detection and Alarm System to new Clause E3.3, Routine Quarterly Inspection, Testing and Maintenance of Fire Detection and Alarm System.</p> <p>(b) Updated the requirement to “At least 25% of the detectors shall be selected for tests in accordance with the approved schedule in each quarter, in such a way that all the installed detectors shall be tested at least once in each year. Smoke detectors shall be tested with simulated smoke, and rate-of-rise heat detectors with an artificial heat source, e.g. hair dryer, smoke generator or others.”.</p> <p>(c) Replaced the last paragraph with ”If the sources or reasons for false fire alarms can be identified or established, the FS Contractor shall implement measures and carry out maintenance work such as cleaning, adjustment, etc. to the acceptance and satisfaction of the Supervising Officer to eliminate similar causes of false fire alarms in all other detectors/initiating devices in the building including those not having any false fire alarms reported. Measures shall include but not limited to relocation of detectors, change of appropriate types of detectors, re-routing of cables and conduit works, sealing up conduits to avoid water ingress, installation of proprietary heaters for beam detectors, etc. to the approval of the Supervising Officer.”</p>
E1.4	E3.4, New Clause	Transferred the content of old Clause E1.4, Final/Annual Inspection, Testing and Maintenance Of Fire Detection and Alarm System to new Clause E3.4, Final/Annual Inspection, Testing and Maintenance Of Fire Detection and Alarm System.
E1.5	E3.5, New Clause	Transferred the content of old Clause E1.5, Routine Quarterly Inspection, Testing and Maintenance

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
		Of Gaseous Extinguishing Systems to new Clause E3.5, Routine Quarterly Inspection, Testing and Maintenance Of Gaseous Extinguishing Systems.
E1.6	E3.6, New Clause	Transferred the content of old Clause E1.6, Final/Annual Inspection, Testing and Maintenance Of Gaseous Extinguishing Systems to new Clause E3.6, Final/Annual Inspection, Testing and Maintenance Of Gaseous Extinguishing Systems.
E1.7	E3.7, New Clause	Transferred the content of old Clause E1.7, Routine Quarterly Inspection, Testing and Maintenance Of Fixed Fire Protection Systems Using Water As A Extinguishing Agent to new Clause E3.7, Routine Quarterly Inspection, Testing and Maintenance Of Fixed Fire Protection Systems Using Water As An Extinguishing Agent.
E1.8	E3.8, New Clause	Transferred the content of old Clause E1.8, Final/Annual Inspection, Testing and Maintenance Of Fixed Fire Protection Systems Using Water As An Extinguishing Agent to new Clause E3.8, Final/Annual Inspection, Testing and Maintenance Of Fixed Fire Protection Systems Using Water As An Extinguishing Agent.
E1.9	E3.9, New Clause	Transferred the content of old Clause E1.9, Routine Weekly/Monthly Inspection, Testing and Maintenance Of Emergency Lighting and Exit Signs to new Clause E3.9, Routine Weekly/Monthly Inspection, Testing and Maintenance Of Emergency Lighting and Exit Signs.
E1.10	E3.10, New Clause	Transferred the content of old Clause E1.10, Final/Annual Inspection, Testing and Maintenance Of Emergency Lighting and Exit Signs to new Clause E3.10, Final/Annual Inspection, Testing and Maintenance Of Emergency Lighting and Exit Signs.
E1.11	E3.11, New Clause	<p>(a) Transferred the content of old Clause E1.11, Routine Monthly Inspection, Testing and Maintenance Of Emergency Generators to new Clause E3.11, Routine Monthly Inspection, Testing and Maintenance Of Emergency Generators.</p> <p>(b) Added in “The FS Contractor shall be responsible for the diesel fuel used in all the tests. After each test, all the fuel storage tanks and daily fuel tanks shall be re-filled to its normal level to comply with the FSD’s requirements.” As last sentence to the 2<sup>nd</sup> Para.</p>

Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
E1.12	E3.12, New Clause	<p>(a) Transferred the content of old Clause E1.12, Final/Annual Inspection, Testing and Maintenance Of Emergency Generators to new Clause E3.12, Final/Annual Inspection, Testing and Maintenance Of Emergency Generators.</p> <p>(b) Revised the 3<sup>rd</sup> para. to “Where the emergency generator installation is carried out by others and not included in the Installations, the FS Contractor shall co-ordinate with relevant parties and collects the information on the final/annual inspection/testing on the emergency generator to confirm their compliance with the requirements of the FSD. The FS Contractor shall be responsible for checking and submission of duly signed FSD Form FS251, Certificate of Fire Service Installation and Equipment to FSD. Any installations found not complying with the requirements of the FSD shall be reported to the Supervising Officer.”.</p>
E1.13	E3.13, New Clause	Transferred the content of old Clause E1.13, Quarterly and Final/Annual Inspection and Maintenance Of Portable Fire Extinguishers to new Clause E3.13, Quarterly and Final/Annual Inspection and Maintenance Of Portable Fire Extinguishers.
E1.14	E3.14, New Clause	Transferred the content of old Clause E1.14, Inspection, Testing and Maintenance Of Other Fire Service Installations to new Clause E3.14, Inspection, Testing and Maintenance Of Other Fire Service Installations.
E1.15	E3.15, New Clause	Transferred the content of old Clause E1.15, Certificate of Maintenance to new Clause E3.15, Certificate of Maintenance.
E1.16	E3.16, New Clause	(a) Added in Para., “The FS Contractor shall attend inspections to the Installations at the expiry of the Maintenance Period in order to facilitate the acceptance and handing over of the Installations to the Employer’s operation and maintenance agents. The FS Contractor shall conduct site checking and make necessary adjustments to the equipment/systems one month before expiry of the Maintenance Period as to ensure that the Installations are in good working order, safe and satisfactory operation condition for handover.” as the new 1 <sup>st</sup> Para.



Old Ref No. (2012)	New Ref. No. (2017)	Major Changes
E1.16 (Cont'd)	E3.16, New Clause (Cont'd)	<p>(b) Transferred the content of old Clause E1.16, Handover of Fire Service Installations to form the 2<sup>nd</sup> Para. of the new Clause E3.16, Joint Inspection at the End of Maintenance Period.</p> <p>(c) Revised the requirement to “The Installations shall not deem as acceptable for handover to the Supervising Officer until the Installations is in good working order and all as-built drawings, instruction and maintenance manuals, spare parts lists, duly signed FSD Form FS251, test reports, test certificates etc. have been submitted to the Supervising Officer.”.</p>