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LICENSING AND CERTIFICATION COMMAND
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21 September 2017

To: Recipients of FSD Circular Letters

Dear Sir/Madam,

FSD Circular Letter No. 2/2017

Minimum Fire Resisting Cable Requirements for Fire Service Installations

This Circular Letter announces the revised minimum fire resisting cable requirements for Fire Service Installations (FSI) which supersede relevant requirements stipulated in the *Codes of Practice for Minimum Fire Service Installations and Equipment and Inspection, Testing and Maintenance of Installations and Equipment, April 2012* (FSI Codes) and relevant FSD Circular Letters.

With a view to keeping fire safety requirements in pace with technological advances in the FSI industry, the Fire Services Department has established a working group under the Fire Safety Standard Advisory Group to review the minimum fire resisting cable requirements for FSI. After a comprehensive research and consultation with key stakeholders, the revised requirements have been formulated and appended in the Appendix I for observance. To this effect, FSD Circular Letter No. 1/2003 and the following cable requirements will be superseded or amended:

A. Requirements to be superseded

Item	FSI	Details
1	Sprinkler system	(a) Paragraph 5.15 of Part V of FSI Codes (LPC Rules for Automatic Sprinkler Installations incorporating BS EN 12845); and (b) Item 2.29 of List Two of FSD Circular Letter No. 3/2006.

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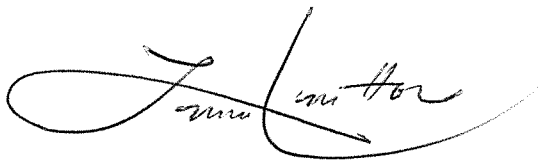
2	Fire detection and fire alarm system	(a) Paragraph 5.15 of Part V of FSI Codes (BS 5839: Part 1); (b) Items 2.85 and 2.86 of List Two of FSD Circular Letter No. 1/2009; and (c) Paragraphs 3.6.1 and 3.6.2 of Appendix 4 of FSD Circular No. 1/2015.
3	Emergency lighting	(a) Paragraph 5.9(m) of Part V of FSI Codes; and (b) Paragraph 5.15 of Part V of FSI Codes (BS 5266: Part 1)
4	All FSI	APPENDIX 8 of FSI Codes and Paragraphs 3 & 5.1 of Part IX of FSD Circular Letter 4/96.

B. Requirements to be amended

Item	FSI	Details
1	Fire detection and fire alarm system	Items 2.78 to 2.80 of List Two of FSD Circular Letter No. 1/2009 are replaced by the amendments appended in the Appendix II.

This Circular Letter will take effect for all initial building plan submissions received by the Buildings Department and /or Fire Services Department on and after **12 June 2018**.

Yours faithfully,



(LEUNG Kwun-hong)
for Director of Fire Services

Encl.

Minimum Fire Resisting Cable Requirements for Fire Service Installations

Item	Type of Fire Service Installations	Minimum Requirements
1.	Audio/visual advisory system	<u>For standard cables or cable systems as defined in BS 5839-1, they shall comply with</u>: (a) BS EN 50200 (PH30) and Annex E of BS EN 50200 (a duration of survival time of 30 minutes); or (b) BS EN 60702; or (c) BS 7629-1 (Cat. Standard 30); or (d) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm or Cat. F30 for cables of overall diameter exceeding 20mm); or (e) BS 6387 Cat. CWZ; or (f) Other international standards acceptable to the Director of Fire Services. <u>For enhanced cables or cable systems as defined in BS 5839-1, they shall comply with</u>: (g) BS EN 50200 (PH120) and BS 8434-2 (a duration of survival time of 120 minutes); or (h) BS EN 60702; or (i) BS 7629-1 (Cat. Enhanced 120); or (j) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm or Cat. F120 for cables of overall diameter exceeding 20mm); or (k) BS 6387 Cat. CWZ; or (l) Other international standards acceptable to the Director of Fire Services.
2.	Automatic actuating device	<u>Cables shall comply with</u>: (a) BS 6387 Cat. CWZ; or (b) BS EN 60702; or (c) BS 8491 (minimum fire survival time of 120 minutes); or (d) BS 7629-1 (Cat. Enhanced 120); or (e) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm or Cat. F120 for cables of overall
3.	Automatic fixed installation other than water	
4.	Automatic fixed installation using water (other than sprinkler system)	
5.	Deluge system	
6.	Drencher system	

7.	Fire hydrant/hose reel system	diameter exceeding 20mm); or (f) BS EN 50200 (PH120) and BS 8434-2 (a duration of survival time of 120 minutes); or (g) Other international standards acceptable to the Director of Fire Services.
8.	Fixed foam system	
9.	Pressurization of staircase	
10.	Ring main system with fixed pump(s)	
11.	Smoke extraction system	
12.	Street fire hydrant system	
13.	Water mist system	
14.	Water spray system	
15.	Fire Service water supply system	
16.	Emergency generator	Cables from emergency generator to main essential switchboard(s) for fire service installations shall comply with the same requirements as those for items 2 to 15.
17.	Emergency lighting	<u>For standard cables or cable systems as defined in BS 5266-1, they shall comply with</u>: (a) BS 5266-1; or (b) BS EN 50200 (PH60) and Annex E of BS EN 50200 (a duration of survival time of 30 minutes) and one of following standards: (i) BS EN 60702 (ii) BS 7629-1 (Cat. Standard 60) (iii) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm); or (c) BS 6387 Cat. CWZ; or (d) BS 7846 (Cat. F60 for cables of overall diameter exceeding 20mm); or (e) Other international standards acceptable to the Director of Fire Services. <u>For enhanced cables or cable systems as defined in BS 5266-1, they shall comply with</u>: (f) BS 5266-1; or (g) BS EN 50200 (PH120) and BS 8434-2 (a duration of survival time of 120 minutes) and one of the

		following standards: (i) BS EN 60702 (ii) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm); or (h) BS 7629-1 (Cat. Enhanced 120); or (i) BS 6387 Cat. CWZ; or (j) BS 7846 (Cat. F120 for cables of overall diameter exceeding 20mm); or (k) Other international standards acceptable to the Director of Fire Services.
18.	Exit sign	The same requirements as those for item 17.
19.	Fire alarm system	<u>For standard cables or cable systems as defined in BS 5839-1, they shall comply with</u>: (a) BS 5839-1; or (b) BS EN 50200 (PH30) and Annex E of BS EN 50200 (a duration of survival time of 30 minutes); or (c) BS EN 60702; or (d) BS 7629-1 (Cat. Standard 30); or (e) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm or Cat. F30 for cables of overall diameter exceeding 20mm); or (f) BS 6387 Cat. CWZ; or (g) Other international standards acceptable to the Director of Fire Services. <u>For enhanced cables or cable systems as defined in BS 5839-1, they shall comply with</u>: (h) BS EN 50200 (PH120) and BS 8434-2 (a duration of survival time of 120 minutes); or (i) BS EN 60702; or (j) BS 7629-1 (Cat. Enhanced 120); or (k) BS 7846 (Cat. F2 for cables of overall diameter not exceeding 20mm or Cat. F120 for cables of overall diameter exceeding 20mm); or (l) BS 6387 Cat. CWZ; or (m) Other international standards acceptable to the

		Director of Fire Services.
20.	Fire detection system	The same requirements as those for item 19.
21.	Fireman's lift	Cables from the main essential switchboard for fire service installations to the main switch for lift power circuit, car lighting, etc., in the lift machine room shall comply with the same requirements as those for items 2 to 15.
22.	Sprinkler system	The same requirements as those for items 2 to 15.

Remarks:

Cables for fire service installations under any of the following conditions may be exempted from the above minimum fire resistance requirements:-

(a) Cables installed inside a switch/plant room or fire control centre and finally connected to fire service equipment in that particular room;

(b) Cables installed only within two adjoined switch/plant rooms and finally connected to fire service equipment in these two rooms with cables passing through the common compartment wall;

(c) Cables inside concealed metal or PVC conduits which are embedded by concrete to a depth of at least 12mm;

(d) Cables inside concealed metal or PVC conduits which are embedded by plaster to a depth of at least 12mm provided that the area is protected by a sprinkler system, other automatic fixed installation using water or an automatic fixed installation other than water;

(e) Cables inside underground cable ducts or reinforced concrete cable trenches;

(f) Cables embedded in the soil to a depth of at least 300mm;

(g) Cables within fire resisting cable ducts/enclosures which are not used by other services; the Fire Resistance Ratings of those cables ducts/enclosures shall be not less than that of the building fire compartment;

(h) Cable inside flexible metal conduit or surface metal conduit not exceeding 2m in total length for connection to fire service equipment/device in area protected by a sprinkler system, other automatic fixed installation using water or an automatic fixed installation other than water;

(i) Cables inside surface metal conduit/trunking (not exceeding 3m in total length) installed and terminated within the same fire compartment for connection to a fire alarm panel/fire alarm repeater panel; or

(j) Exposed short connection cables which form an integral part of the fire service equipment listed by a Product Certification Body or cables inside fire service equipment.

List Two : Clauses to be replaced by modified conditions
BS 5839 – 1 : 2002+A2:2008

List-Item	BS Clause/Paragraph/ Table/Page	Context	Replaced by	Reason
2.78	Clause 26.2 Para. b) (Page 70)	Cables used for all parts of the critical signal paths (see 3.13), for the extra low voltage supply from an external power supply unit and for the final circuit providing low voltage mains supply to the system, should comply with the recommendations of 26.2d) or 26.2e) and comprise one of the following: 1) mineral insulated copper sheathed cables, with an overall polymeric covering, conforming to BS EN 60702-1, with terminations conforming to BS EN 60702-2; 2) cables that conform to BS 7629; 3) cables that conform to BS 7846; 4) cables rated at 300/500V (or greater) that provide the same degree of safety to that afforded by compliance with BS 7629. NOTE 1 The fire resistance requirements of 1) to 4) above need not be applied because these requirements are covered by the standards referred to in d) and e) following.	Cables used for all parts of the critical signal paths (see 3.13), for the extra low voltage supply from an external power supply unit and for the final circuit providing low voltage mains supply to the system or power supply to the fire alarm sounders, shall comply with Item 19 of Appendix I of FSD Circular Letter No. 2/2017. Cables under the conditions mentioned in the Remarks section of Appendix I of FSD Circular Letter No. 2/2017 may be exempted from the above minimum requirements.	To suit local practice, fire resisting power supply cables for fire alarm sounders shall be used. To suit requirements and add conditions as stipulated in the Circular Letter for exemption on use of fire resisting cables.

List Two : Clauses to be replaced by modified conditions
BS 5839 – 1 : 2002+A2:2008

List-Item	BS Clause/Paragraph/ Table/Page	Context	Replaced by	Reason
2.79	Clause 26.2 c) Para. 1 (Page 70)	Cable systems used for all parts of the critical signal paths, and for the low voltage mains supply to the system, should adequately resist the effects of fire. For most fire alarm systems, standard fire resisting cables [see 26.2d)] should be considered to provide sufficient resistance to the effects of fire, with appropriate methods of support and jointing [see 26.2g)].	Cable systems used for all parts of the critical signal paths, and for the low voltage mains supply to the system, should adequately resist the effects of fire. For most fire alarm systems, standard fire resisting cables [see Item 19 of Appendix I of FSD Circular Letter No. 2/2017] or fire resisting cables complying with other international standards and subject to assessment and acceptance of FSD should be considered to provide sufficient resistance to the effects of fire, with appropriate methods of support and jointing [see 26.2g)]. (Cables under the conditions mentioned in the Remarks section of Appendix I of FSD Circular Letter No. 2/2017 may be exempted from this requirement).	To allow more flexibility by adopting other international standards in addition to the quoted BS standards. To suit local requirements and add conditions as stipulated in the Circular Letter for exemption on use of fire resisting cables.
2.80	Clause 26.2 c) Para. 2 (Page 70)	For fire alarm systems for applications as listed below, cable systems comprising "enhanced" fire resisting cables [see 26.2(e)], with appropriate methods of support and jointing should generally be used [see 26.2(g)]:	For fire alarm systems for applications as listed below, cable systems comprising "enhanced" fire resisting cables [see Item 19 of Appendix I of FSD Circular Letter No. 2/2017] or fire resisting cables complying with other international standards and subject to assessment and acceptance of FSD, with appropriate methods of support and jointing should generally be used [see 26.2(g)] (Cables under the conditions mentioned in the Remarks section of Appendix I of FSD Circular Letter No. 2/2017 may be exempted from this requirement):	To allow more flexibility by adopting other international standards in addition to the quoted BS standards. To suit local requirements and add conditions as stipulated in the Circular Letter for exemption on use of fire resisting cables.