

General Specification for Fire Service Installation
in Government Buildings of the Hong Kong Special Administrative Region
2017 Edition (Incorporating Corrigendum No. GSFS02-2017)

The General Specification for Fire Service Installation in Government Buildings of the Hong Kong Special Administrative Region 2017 Edition (hereinafter referred to as “General Specification for Fire Service Installation 2017 edition”) is reviewed from time to time to ensure that requirements stipulated in the document are clear, concise and in pace with technological advancements.

Corrigendum No. GSFS02-2017 is issued to incorporate updates and revisions to the General Specification for Fire Service Installation 2017 edition (incorporating Corrigendum No. GSFS01-2017) which are highlighted in the ensuing summary of major changes.

Electronic version of the General Specification for Fire Service Installation 2017 edition incorporating Corrigendum No. GSFS02-2017 can be viewed on the ArchSD Internet website.

After an introductory period of 3 months, the General Specification for Fire Service Installation 2017 edition (incorporating Corrigendum No. GSFS02-2017) shall apply to all tenders to be invited on or after **1 April 2020**.

(12/2019)

MAJOR CHANGES IN THE CORRIGENDUM (NO. GSFS02-2017) OF THE
GENERAL SPECIFICATION FOR FIRE SERVICE INSTALLATION
IN GOVERNMENT BUILDINGS OF THE HONG KONG SPECIAL ADMINISTRATIVE REGION
2017 EDITION

Old Ref. No.	New Ref. No.	Major Changes
PART B – FIRE SERVICE INSTALLATIONS		
SECTION B6 – MANUAL AND AUTOMATIC FIRE ALARM SYSTEM		
B6.1	B6.1	To add a paragraphs at the end to specify equipment equipment/devices shall be FSD approved type or listed by PCB as recognized by FSD.
B6.2	B6.2	To change the text of 1st sentence “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” as “Manual call point shall be of “break-glass” or “resettable” type complying with BS EN 54-11: 2001 or other standards acceptable to FSD.”
B6.3	B6.3	To change the text “Heat detector shall be of point-type complying with BS EN 54-5: 2001” as “Heat detector shall be of point-type complying with BS EN 54-5: 2001 or other standards acceptable to FSD.”
B6.5	B6.5	To change the text “Ionisation smoke detector shall comply with BS EN 54-7: 2001.” as “Ionisation smoke detector shall comply with BS EN 54-7: 2001 or other standards acceptable to FSD.”
B6.6	B6.6	To change the text “Optical (or photoelectric) smoke detector shall comply with BS EN 54-7: 2001” as “Optical (or photoelectric) smoke detector shall comply with BS EN 54-7: 2001 or other standards acceptable to FSD.”
B6.7	B6.7	To change the text “Multi-sensors detector shall conform to the appropriate standards for smoke detectors such as BS EN 54-7: 2001” as “Multi-sensors detector shall conform to the appropriate standard for the type of combination of sensors such as BS EN 54-29:2015 for combination of smoke and heat sensors, BS EN 54-30:2015 for combination of carbon monoxide and heat sensors and BS EN 54-31:2014 for smoke, carbon monoxide and optionally heat sensors or other standards acceptable to FSD.”

Old Ref. No.	New Ref. No.	Major Changes
B6.10	B6.10	To change the text “They shall comply with BS EN 54-3: 2014” as “They shall comply with BS EN 54-3:2014 or other standards acceptable to FSD.”
B6.16(c)	B6.16(c)	To change the text “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” as “At least one fault isolator or module shall be provided for every 20 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.”
B6.17	B6.17	To include the requirement of “or other standards acceptable to FSD”
ANNEX I –LIST OF TECHNICAL STANDARDS AND QUALITY STANDARDS QUOTED IN THIS GENERAL SPECIFICATION		
Annex I	Annex I	Updating of Technical Standards for BS EN 593: 2017, BS EN 1171: 2015, BS EN 1982: 2017, BS EN 12101-3: 2015, BS EN 12334: 2016, BS EN 60034-12: 2017, BS EN 60947-4-1: 2010+A1:2012, BS EN 61034-1: 2005+A1: 2014 & BS 61034-2: 2005 + A1: 2013 and EN 50160: 2010+A1:2015

ARCHITECTURAL SERVICES DEPARTMENT
BUILDING SERVICES BRANCH

GENERAL SPECIFICATION FOR
FIRE SERVICE INSTALLATION
IN GOVERNMENT BUILDINGS OF
THE HONG KONG SPECIAL ADMINISTRATIVE REGION

2017 EDITION

Corrigendum No. GSFS02-2017

(Effective from 1 April 2020)

The following clauses are amended in the above edition of General Specification for Fire Service Installation.

Clauses

PART B – INSTALLATION METHODOLOGY

SECTION B6

MANUAL AND AUTOMATIC FIRE ALARM SYSTEM

B6.1 GENERAL

All equipment/devices such as fire manual call points, heat/fire/flame/beam/multi-sensors detectors, detectors with integration devices, alarm bells, visual alarm units, etc. shall be:

- (a) FSD approved type; or
- (b) Listed by the Product Certification Body as recognized by FSD and conform to all relevant local requirements of FSD.

B6.2 MANUAL CALL POINT

Manual call point shall be of “break-glass” or “resettable” type complying with BS EN 54-11: 2001 or other standards acceptable to FSD. The method of operation of all manual call points in a system shall be that of type A as specified in BS EN 54-11: 2001. Electrical contacts shall operate automatically upon breaking of the frangible element at the front of the unit. The cover shall be locked in position with a special key and the frangible element shall be clipped firmly into place.

B6.3 HEAT DETECTOR

Heat detector shall be of point-type complying with BS EN 54-5: 2001 or other standards acceptable to FSD.

B6.5 IONISATION SMOKE DETECTOR

Ionisation smoke detector shall comply with BS EN 54-7: 2001 or other standards acceptable to FSD.

B6.6 OPTICAL SMOKE DETECTOR

Optical (or photoelectric) smoke detector shall comply with BS EN 54-7: 2001 or other standards acceptable to FSD.

The optical smoke detector shall respond to the product of combustion based on photo detection of light scattered in a forward direction by smoke particles. The detection chamber shall consist of a horizontal optical bench housing an infra-red emitter and sensor arranged radially to detect forward scattered light. The sensor shall be of silicon DIN photo diode or better design. The emitter shall be infra-red light emitting diode. The sampling and confirmation frequency shall not be less than once every 10 seconds and 2 seconds respectively. At least three consecutive sensed alarm signals shall be needed to trigger detector alarm. The detector shall have built-in devices or labyrinth arrangement to prevent false fire alarm due to an exterior high-energy light sources.

B6.7 MULTI-SENSORS DETECTOR

Multi-sensors detector shall comprise a combination of heat sensor, optical/ionisation smoke sensor, flame sensor, carbon monoxide sensor, ultraviolet/infrared sensors, and/or other sensors as recommended by the manufacturer to suit a particular fire risk and growth of fire. Multi-sensors detector shall comprise at least one smoke sensor and one heat sensor. Unless otherwise specified, the smoke sensor shall be optical smoke sensor type. The heat sensor shall be combined fixed temperature and rate-of-temperature-rise type.

Multi-sensors detector shall conform to the appropriate standards for type of combination of sensors such as BS EN 54-29:2015 for combination of smoke and heat sensors, BS EN 54-30:2015 for combination of carbon monoxide and heat sensors and BS EN 54-31:2014 for smoke, carbon monoxide and optionally heat sensors or other standards acceptable to FSD. Only multi-sensors detector suitable for the required application, environmental condition, fire growth characteristic, fire risk and hazard shall be selected and used. The FS Contractor shall submit performance data, equipment catalogue, technical details, software algorithm, test report and certificate to the Supervising Officer for approval. The FS Contractor shall submit information proving suitability of multi-sensors detector for a particular application and hazard for approval.

B6.8 PROBE UNIT

Duct type smoke detector with probe unit shall be provided for smoke detector installed for the air duct. Probe unit for air duct insertion mounting shall be of robust corrosion-proof construction and capable of accurately sampling the air flowing in the duct over a wide range of velocities. Insertion of the probe shall cause negligible air flow head loss. Probe unit shall be designed to suit the type of smoke detector installed. Probe unit shall be installed in the centre of a straight section of air duct that has a length at least 6 times its width. The probe unit shall be supplied and installed with filter and the filter element shall be designed such that it can be removed for routine cleaning without the need of removing the probe unit and it does not cause the detection system to raise a false fire alarm.

Where duct type smoke detector is provided to air ducts in area vulnerable to false fire alarm for ventilation/air-conditioning control system, two duct type smoke detectors fed by the same or separated probe units shall be provided and connected in coincidence (cross-zoned) operation as agreed by the FSD and approved by the Supervising Officer. Activation of one detector shall give visual and audible alarm indication on the control panel only, and the ventilation/air-conditioning control system and building fire alarm shall only be actuated when two detectors in coincidence connection are activated.

B6.10 ALARM BELL

Alarm bells shall be of minimum 150 mm diameter gong suitable for 24 V DC operation. They shall comply with BS EN 54-3: 2014 or other standards acceptable to FSD. Each alarm bell shall be capable of producing a minimum sound level of 80 dB(A) at 3 m. The bell shall consist of a micro motor as the driving unit offering high performance and reliability together with low current consumption and low starting voltage characteristics. The bells shall be painted red and labelled “FIRE ALARM 火警警鐘” in both English and Chinese.

B6.16 ADDRESSABLE INTERFACE MODULE

Various modules shall be provided for the addressable automatic fire alarm system for the required functions, interfacing with non-addressable devices and other services. Modules shall be mounted into junction boxes for ease of installation. The addresses of these modules shall be easily set, seen and changed.

The module shall have a conspicuously located LED, which blinks or does not blink, upon being scanned by the panel. Upon determination of an alarm condition, the LED shall be latched on and blink or not blink as assigned.

(c) Fault Isolator Module

The non-addressable fault isolator module shall detect and isolate a short-circuited segment of a fault-tolerant loop whilst allowing the rest of the addressing circuit to function normally.

At least one fault isolator or module shall be provided for every 20 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.

- (d) Facilities for interfacing with any other systems as shown on the Drawings or as specified in the Particular Specification.

B6.17 SPECIAL DETECTION SYSTEM

Special detection systems, including optical light beam smoke detection system (complying with BS EN 54-12: 2015 or other standards acceptable to FSD), VESDA (very early smoke detection alarm system), line-type heat detection system, flame detection system (complying with BS EN 54-10: 2002 or other standards acceptable to FSD), aspirating smoke detection system (complying with BS EN 54-20: 2006 or other standards acceptable to FSD), carbon monoxide detection system, gas detection system, infrared detection system, ultraviolet detection system, video smoke detection system, dust detection system etc. shall be provided where specified or where required to meet with the requirements for a particular application. The detection system shall be of a type acceptable to the FSD and approved by the Supervising Officer. Selection of special detection system shall be to suit a particular application, environmental condition and fire hazard. The FS Contractor shall submit detailed performance data, equipment catalogue, description, technical information, test report and certificate to the Supervising Officer for approval. The FS Contractor shall submit information justifying the suitability of the special detection system for approval.