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SOUTH AUSTRALIAN METROPOLITAN FIRE SERVICE

BUILT ENVIRONS SECTION POLICY 037

Fire Alarm Conditions of Connection

SCHEDULE 1

**BUILT ENVIRONS SECTION POLICY 037:
FIRE ALARM CONDITIONS OF CONNECTION**

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GLOSSARY

AS	Australian Standard
ASE	Alarm Signalling Equipment
BCA	Building Code of Australia
CIE	Control and Indicating Equipment
EWIS	Emergency warning and Intercommunication System
FBP	Fire Brigade Panel
FIP	Fire Indicator Panel
FFF	Fire Fighters Facility
FRL	Fire-Resistance Level (as defined by the BCA/NCC)
LED	Light Emitting Diode
MECP	Master Emergency Control Panel
MFS	Metropolitan Fire Service
NCC	National Construction Code
OWS	Occupant Warning System
PSTN	Public Switched Telephone Network
SIP	Sub Fire Indicator Panel
SECP	Secondary Emergency Control Panel
SSISEP	Sound Systems and Intercom Systems for Emergency Purposes (interchangeable with 'EWIS')

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DEFINITIONS FOR THE PURPOSE OF THIS POLICY

Approved Fire Alarm Contractor	A person or company approved by the MFS as being qualified to perform installation/alterations/maintenance to systems connected to the MFS monitoring equipment.
Mimic Panel	A stand-alone panel containing an alphanumeric display that duplicates the FIP display
Annunciator Panel	A geographical display incorporating lights that give indication of a subsystem connected to and monitored by the FIP.
SIP	A FIP that operates independently from the main FIP, monitoring a separate area, room or system and in turn activates the Main FIP.
Integrated Fire Fighters Facility	A facility where a set of the FIP controls and indicators are arranged within or adjacent to the FIP enclosure to meet the requirements of AS 4428.1 clause 2.12.
Remote Fire Fighters Facility	A stand-alone panel where a set of the FIP controls and indicators are arranged to meet the requirements of AS 4428.1 clause 2.12.
Integrated Fire Brigade Panel	A facility where a set of the FIP controls and indicators are arranged within or adjacent to the FIP enclosure to meet the requirements of AS 4428.3.
Remote Fire Brigade Panel	A stand-alone panel where a set of the FIP controls and indicators are arranged to meet the requirements of AS 4428.3.

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REFERENCED DOCUMENTS

The following Australian Standards are referred to in this Schedule:

AS 1668.1	Australian/New Zealand Standard 1668 – ‘ <i>The use of ventilation and air-conditioning in buildings</i> ’.
AS 1670.1	Australian Standard 1670 – ‘ <i>Fire detection, warning, control and intercom systems – System design, installation and commissioning</i> ’ Part 1: Fire.
AS 1670.4	Australian Standard 1670 - ‘ <i>Fire detection, warning, control and intercom systems – System design, installation and commissioning</i> ’ Part 4: Sound systems and intercom systems for emergency purposes.
AS 1851	Australian Standard 1851 – ‘ <i>Maintenance of fire protection systems and equipment</i> ’.
AS 2118	Australian Standard 2118 - ‘ <i>Automatic fire sprinkler systems</i> ’.
AS 2220.1	Australian Standard 2220 – ‘ <i>Emergency warning and intercommunications systems in buildings</i> ’ Part 1: Equipment design and manufacture.
AS 2419	Australian Standard 2419 - ‘ <i>Fire hydrant installations</i> ’.
AS 14520.1	Australian Standard 14520 - ‘ <i>Gaseous fire extinguishing systems – Physical properties and system design</i> ’.
AS 4428.1	Australian Standard 4428 - ‘ <i>Fire detection, warning, control and intercom systems – Control and indicating equipment</i> ’ Part 1: Fire.
AS 4428.3	Australian Standard 4428 - ‘ <i>Fire detection, warning, control and intercom systems – Control and indicating equipment</i> ’ Part 3: Fire Brigade Panel.
AS 4428.4	Australian Standard 4428.4 - ‘ <i>Fire detection, warning, control and intercom systems – Control indicating equipment</i> ’ Part 4: Intercommunication systems for emergency purposes.
AS 7240.2	Australian Standard 7240 – ‘ <i>Fire detection and alarm systems</i> ’ Part 2: Control and Indicating Equipment.
AS 7240.4	Australian Standard 7240 – ‘ <i>Fire detection and alarm systems</i> ’ Part 2: Power supply equipment.

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1 SCOPE AND GENERAL

1.1 Scope

This document details the minimum requirements and standards for automatic fire alarm detection and/or suppression systems, monitored by the South Australian Metropolitan Fire Service (MFS).

1.2 Application

This document is "Schedule 1" as referred to in the "MFS Agreement to Connect".

This document provides detail to approved fire alarm contractors to enable the installation and design of systems to meet MFS requirements.

This document provides detail to the building owner/occupier as to their responsibilities.

Current installations should upgrade existing systems, to meet the requirements of this document where extensions or refurbishments are taking place.

Generally where an upgrade involves more than 50% of the building detectors, then the whole building shall have detectors and identification upgraded in accordance with the current standards and this Schedule.

1.3 Approved Contractors

The MFS will not accept fire alarms for monitoring unless the installation/upgrade has been performed by a MFS approved fire alarm contractor. For approved contractor requirements contact the Fire Alarms Officer for further details.

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2 APPLICATION AND APPROVAL

2.1 Notice to the MFS prior to the commencement of work on site

2.1.1 Commencement notification

The Contractor responsible for the work shall notify the MFS at least fourteen (14) days prior to the commencement of any work to:

- Install a fire alarm detection or suppression system; or
- Alter or add to an existing fire alarm detection or suppression system.

This applies to any fire suppression or detection system, which is to be, or currently is, connected to MFS monitoring equipment.

2.1.2 Lodgement of Notification

Notification shall be in writing, on the standard MFS form:

- ***“Application for Fire Alarm Connection / Alteration”***

And shall be accompanied by the following MFS forms:

- ***MFS Alarm Connection and Monitoring “Agreement to Connect”***
- ***MFS Monitored Alarm – “Required Information”***.

Exception - If the work is an addition or alteration to an existing system, the ‘*MFS Alarm Connection and Monitoring Agreement*’ forms are not required, providing the current owner/s details are correct as shown on MFS records.

NOTE: The Agreement Forms are to be filled out by the Owner and the Contractor. The originals shall be forwarded to the MFS (with any other required documentation).

Copies of the above forms are available on the MFS Website (www.mfs.sa.gov.au/site/community_safety/standard_forms.jsp) or by request from the MFS Alarms Officer, Community Safety and Resilience Department.

If there is any doubt as to whether Agreement Forms are required, contact the MFS Alarms Officer for clarification.

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2.1.3 Site Plan with Application

The above documentation shall be submitted to the MFS, accompanied by a site plan in accordance with Clause 2.2 of this Schedule.

2.1.4 Telstra Fire Line Application

An application for an IP (Internet protocol) Fire Line shall be forwarded to the MFS Alarms Officer for approval and then sent to Telstra for processing.

2.1.5 ASE Monitoring in Fibre networks

In areas where the Communications Network consists on an independent fibre Optic network (e.g. Opticomm, NBN) the Fire Alarm Contractor shall liaise directly with the MFS Communications Fire Alarms Officer to determine the required solution.

NOTE: The required solution may be a temporary measure based on both hardware and software upgrades required to ensure reliability and redundancy.

2.2 Site plans to be lodged with the *Application for Fire Alarm Connection / Alteration form*

2.2.1 Preparation of Site Plan

Site plans lodged with the MFS shall be drawn to scale, preferably on A4 size paper, with A3 size paper being the maximum size drawing acceptable to the MFS for large and complex projects. Site plans shall include the following information, which is pertinent to MFS operations:

- Vehicular access within the site suitable for use by MFS appliances;
- Fire fighter entry points to the building/buildings and, where applicable, the location of any fire lift or fire isolate/disabled stair, ramp or passageway;
- The location of any sprinkler valve room, valve set, booster connection, pump and bell(s);
- The location of any FIP, SIP, remote FFF or FBP, alarm bell(s) and any other fire protection indicating device;
- The location of any MECP, SSISEP and SECP;
- The location of any fire control room and other special fire system, e.g. gas suppression system.

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NOTE: MFS fire appliances can only operate on hard standing surfaces that can withstand vehicular loads of up to 27 tonnes.

2.3 Scope of work

2.3.1 Fire system coverage and compliance

It is incumbent on the Contractor to indicate if the proposed fire alarm detection or suppression system:

- Provides full or partial coverage to the premises; and
- Complies with the requirements of this Schedule.

The Contractor shall provide a written summary detailing the scope of proposed works.

2.4 Acknowledgement of Approval

2.4.1 Issue of approval documentation

A successful applicant shall be issued with a MFS "*Fire Alarm Detection and Suppression System Connection / Addition / Alteration Approval*" documentation. This record of approval shall be obtained from the MFS prior to the execution of any work on site.

2.4.2 Correspondence regarding Approval

In all further correspondence from the Contractor to the MFS, the approval number, which appears in the top right hand corner of the approval documentation, shall be referenced.

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3 FIRE DETECTION AND ALARM SYSTEMS

3.1 Compliance with Australian Standards

3.1.1 Compliance with AS 1670.1

All fire detection and alarm systems which are to be monitored by the MFS shall be installed to comply with this document and AS 1670.1, unless specific alternatives have been agreed to by the Built Environment Section of the Community Safety and Resilience Department.

3.1.2 Compliance with AS 4428.1 and AS 7240.2

- (i) All Fire Indicator Panels (Conventional and Addressable) shall comply with either AS 4428.1 or AS 7240.2. and shall incorporate a F/F Facility
- (ii) FIP's complying with AS 4428.1 shall have an integrated Fire Fighter Facility complying with Clause 2.12 of AS 4428.1. Where prior consent is granted by the MFS a Remote Fire Fighter Facility may be incorporated as part of the detection system.
- (iii) FIP's complying with AS 7240.2 shall have an integrated Fire Brigade Panel complying with AS 4428.3, where prior consent is granted by the MFS a Remote Fire Brigade Panel may be incorporated as part of the detection system.
- (iv) Addressable FIP's complying with either AS 4428.1 or AS 7240.2 shall identify and display the individual actuating devices in addition to displaying the zone in alarm.
- (v) The isolate / disable facility within the FFF or FBP on addressable FIP,s complying with either AS 4428.1 or AS 7240.2 shall be capable of isolating the individual actuating devices within the zone in alarm.

3.1.3 Multi-sensor detection

Fire detection and alarm systems incorporating multi-sensor type detectors shall be discussed with, and the detector sensing modes agreed upon by the Built Environment Section of the Community Safety and Resilience Department on a job-by-job basis.

3.2 Non-standard systems

The connection of non-standard systems will generally only be considered where the system has been designed as part of a fire-engineered package.

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NOTE: For clarification, liaison with the MFS Senior Fire Safety Engineer or Alarms Officer may be necessary.

3.3 Acceptance of Fire Protection Equipment

All commercial products used in fire protection, fire detection and fire alarm systems that are to be monitored by the MFS, shall meet the evidence of suitability requirements of the Building Code of Australia (BCA/NCC) Clause A2.2.

3.4 Locks and mounting height for FIP and SIP

Locks and mounting heights of all FIPs, SIPs and any other panel containing ancillary functions necessary to operate any required fire safety facilities within the building, shall comply with AS 1670 and the following:

- the lock to the door of the cabinet or panel shall be operable by a Lockwood '003' key; and
- control panels and remote displays for aspirated smoke detection systems shall be mounted as near as practicable to the FIP within the same specified height limitations, unless specifically agreed otherwise by the Built Environment Section of the Community Safety and Resilience Department.

3.5 Location of Alarm Signalling Equipment (ASE)

Location of the ASE shall comply with the following:

- Be located within the FIP cabinet or a document cabinet mounted adjacent to the FIP.
- The front of the unit shall be flush with the front face of the cabinet.
- Prevent the FIP or document cabinet door from closing when the key is inserted in the ASE.
- ASE shall not be located in any compartment containing wet cell batteries.
- The MFS Fire Alarm Monitoring Number shall be clearly marked in characters not less than 5mm high on the front cover of the ASE unit.
- The MFS Fire Alarm Monitoring Number shall be clearly marked in large characters on the front cover of the FIP Log Book and Fire Service Attendance Book e.g. 040/177.

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3.6 Control switches and indication within the FIP cabinet

Control switches, push buttons and indicators shall be provided at the FIP in compliance with AS 1668.1, for:

- each stair pressurisation fan; and
- any other fan required for smoke control purposes, with one switch serving each fan, except where these comprise a group of fans and each fan has individual stop start status indication, one switch may be used for the group; and
- for each installed fire pump, in accordance with the requirements of MFS Built Environs Section Policy No. 006 '*Control & Indication for Diesel & Electric Fire Pumps*'.

NOTE: Whilst sprinkler and hydrant pumps have other specified control and indication requirements, the colour coding of indication lights and the principles embodied in AS 1668.1 shall be applied.

3.7 Sub Fire Indicator Panels

Each SIP shall be connected to a master FIP and shall register as a separately identifiable alarm at the FIP. The operation of any alarm at the SIP shall also initiate relevant building fire mode functions and initiate an alarm transmission to the MFS.

3.8 Annunciator Repeater and Mimic Panels

Annunciator, repeater or mimic panels, intended for use where the FIP is capable of identifying and displaying the individual actuating devices shall indicate with the use of LED indicators or a alphanumeric display or both , in which case the following shall apply.

When using LED indication only, a separate LED indicator for each actuating device shall be provided. General arrangement of LED indicator panels shall be determined in consultation with the Built Environment Section of the Community Safety and Resilience Department prior to final specification and fabrication.

When using an alphanumeric display, the information displayed shall be the same as that displayed by the FIP

NOTE: Check with the MFS Alarms Officer prior to considering the installation and location of SIP and/or Mimic panels.

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3.9 The provision of cabinets for other facilities

Where the construction of the FIP cabinet is such that insufficient space is available within to contain:

- The ASE; and
- Fire Service Block Plans, Fire Service Attendance Log Book, and
- any required FIP Log Book; and
- any building précis documentation; and
- copies of any Alternative Solutions agreed to by the MFS; and
- any other pertinent equipment, such as switches and indication for smoke control fans or documents required by the MFS or Council,

then an additional Lockwood 003 locked document cabinet shall be provided to contain such facilities.

NOTE: This is to ensure that all relevant documentation, as required above, is secure and remains in situ for attending MFS crews and building management.

The document cabinet may be located beneath the FIP provided that where the ASE is also located in the cabinet, the key control of the ASE is not less than 600mm above finished floor level.

3.10 Operating Instruction for the FIP

Due to the variety in types of FIP and differing modes of operation, concise written instructions shall be provided that precisely detail the method of FFF and FBP operation to attending MFS crews. Such notices shall be individually approved by the MFS for each type of panel manufactured and be displayed inside each set of required block plans next to the legend. *An example of such a notice is given below:*

Fire Fighters Facility operation complying with AS 4428.1

- Press 'Acknowledge' then 'Next' to view all Circuit/Zone/Devices in alarm.
- After investigation, press the RED 'Reset' control. This resets the whole system, including air-conditioning.

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- If the system indicates a faulty device following a 'Reset' press the 'Isolate control, which will isolate the faulty Device currently displayed.

Fire Brigade Panel operation complying with AS 4428.3

- Press the 'Next' to view all Circuit/Zone/Devices in alarm. If the "Multiple Alarm" indicator is not illuminated then there is only one active alarm.
- Press the RED 'Silence / Resound Alarms" button to silence the audible alarms.
- After investigation, press the GREEN 'Reset' control. This resets the system, including air-conditioning.
- If the system indicates a faulty device following a 'Reset', press the YELLOW 'Isolate control, which will isolate the faulty Device currently displayed.

Note: Neither the reset or disable control will operate unless the silence alarms control has been pressed

3.11 Vaults/Strong-rooms

Where an addressable system is not installed, strong rooms shall be provided with positive alarm area identification by means of a separate alarm group at the FIP or a remote LED mounted externally to the strong-room so as to be clearly visible to the attending MFS crews.

NOTE: All remote LED plates shall be marked with Alarm Zone (Circuit/Zone/Device number), device number and type of detector, in accordance with Clause 3.15.

3.12 SA Power Networks sub-stations and enclosures

These shall comply with the requirements set out in Clause 3.11 for strong-rooms.

3.13 Exemption to the requirements of Clauses 3.11 & 3.12

Where more than one strong-room or more than one SA Power Networks sub-station or enclosure exists on a COMMON LEVEL, one alarm group may be acceptable for rooms of the same use, provided a remote LED is installed adjacent to the door entry to each room served by the common Circuit/Zone/Device.

NOTE: All remote LED plates shall be marked in accordance with Clause 3.15.

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3.14 Identification of concealed detectors

Identification of each concealed detector shall comply with the requirements of AS 1670.1. Consideration shall be given to the safety apparel worn by fire fighters and the size of the access points for all concealed detectors. It is therefore important to align the detector indicator to the position of entry.

Where access is particularly difficult and operational requirements may be affected, the MFS may require the provision of remote indicators for concealed detectors regardless of the type of fire detection system installed

It is therefore incumbent on the Fire Alarm Contractor to ensure that there is consultation with the MFS Alarms Officer before inspection.

NOTE: All remote LED plates shall be marked in accordance with Clause 3.15.

3.15 Identification of detectors

Alarm Zone (or Circuit/Zone number), device number and Type of detector shall identify each installed device. Manual call points shall also be marked with Alarm Zone (or Circuit/Zone number) and device number.

NOTE: Identification on the detector is to be consistent with the information displayed at the FIP. **The Blockplan Legend and the device number shall read the same as the display on the FIP.**

An example of detector identification which the MFS accepts includes:

(For Alarm Zone 1, Loop 2, and detector number 23 which is a photo optical type smoke detector)

AZ 1 – 023P

L2 – Z1 – 023P

AZ 1 – L2 – 023P

Z1 – L2 – 023P

L2 – P023 – Z1

The type of detector information shall be permanently inscribed on the detector head as noted below:

C Carbon monoxide (CO) detector; or

I Ionisation or combustion detector; or

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- M Multisensor detector; or
- P Photo optical smoke detector; or
- T Thermal detector fixed or rate of rise.

IMPORTANT: The type identification shall not be inscribed on the detector base as future changes could result in a different detector having incorrect identification.

3.16 LED indicator

LED indication shall be provided on all detectors and shall be integral to the device in accordance with AS 1670.1 Clause 3.7 (a) and (b).

Detectors shall be orientated so that the LED is immediately visible from the direction of fire fighter access. This is of particular importance in concealed spaces.

3.17 External warning devices

In accordance with AS 1670.1, a red strobe light shall be installed, visible from the main approach to the building and located as near as practical to the doorway accessing the FIP. If the red strobe is not clearly visible from the main approach to the building then an audible device will be required in addition to the strobe.

3.18 Fire Alarm Block Plans

At the time of inspection/connection, three (3) sets of Block Plans shall be provided to the inspecting officer; one (1) set in PDF format for retention by the MFS Community Safety and Resilience Department, and two (2) hard copy sets to be stored within the FIP.

Block plans shall:

- a) Be A3 or A4 size, and in accordance with Clause 2.2.1.
- b) Be bound into a booklet with the sheets protected from damage by clear plastic envelopes.
- c) Show access paths to any concealed detectors e.g. access panels and removable tiles.
- d) The booklet front cover shall be clearly labelled in 10mm uppercase lettering:

FIRE ALARM PLANS
- DO NOT REMOVE -
FOR FIRE SERVICE USE ONLY

- e) The plans shall be numbered, one per floor level, which show:

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- i) the building outline; and
 - ii) where relevant, a master site or key plan on each page, and
 - iii) any internal full height walls/partitions; and
 - iv) means of access to each room in the building; and
 - v) the location of each detector/manual call point (using AS 1670 symbols); and
 - vi) location of Warden Intercom Point phones and Master Evacuation Control Panel (using the standard symbol required by the relevant Australian Standard); and
 - vii) any additional information necessary so that every installed detector may be accessed by the attending MFS crews; and
 - viii) the north orientation.
- f) Include a Legend at the front of the set of plans, which shall:
- i) list each separate alarm device/group and identify the floor number and block plan number where each listed group appears; and
 - ii) include a key of the symbols used; and
 - iii) where relevant, master site plan;
 - iv) It is important to ensure that the display on the FIP is the same as the Block Plan and the identification on the detector base.
- g) Have areas covered by each detector group coloured, and use the same colour for identification in the Legend at the front of the Block Plans.
- h) Be maintained in a legible condition at all times which shall not be altered, unless an application and approval is sought in accordance with this Schedule.

3.19 Secondary alarm facility

The MFS will accept and monitor the following connections as secondary inputs in an ASE:

- Pump Run (fire pump running);
- Pump Isolate/disable (fire pump isolate/disabled);
- Pump room fault;
- Monitored Valve (fire valve tamper switches);

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- Tank Level (firefighting water level requires monitoring); and
- Low batteries

The connection of detection and suppression systems to secondary inputs is generally not permitted.

Activation of secondary inputs will generally result in the maintenance contractor or building owner being notified of the activation by telephone.

4 FIRE SPRINKLER SYSTEMS

4.1 Compliance with Australian Standards

Sprinkler systems that are required to be connected to the MFS shall comply with Australian Standard 2118 '*Automatic Fire Sprinkler Systems*', unless specific alternatives have been supported by the Built Environment Section of the MFS Community Safety and Resilience Department.

Confirmation of compliance with the appropriate Standard may be required from an independent organisation.

4.2 Non-standard systems

The connection of systems that do not comply with the appropriate Australian Standard will only be considered where the system has been designed on a performance-based concept and the Built Environment Section of the MFS Community Safety and Resilience Department has commented on such alternatives.

NOTE: Liaison with the MFS Senior Fire Safety Officer or Senior Fire Safety Engineer will be necessary for clarification on the acceptance of non-standard systems.

4.3 Power supply for stand-alone Alarm Signalling Equipment

Where an ASE unit is installed in a building that does not have a FIP, the Contractor may design power supplies to the unit. The power supply shall include a battery backup in accordance with the requirements of AS 4428.1–1998 '*Fire detection, warning, control and intercom systems – Control and indicating equipment*' for CIE power supply and charging equipment, or AS 7240.4 – '*Fire detection and alarm systems*' Part 4: Power supply equipment as if the signalling equipment were an FIP.

4.4 Sprinkler valve rooms

The location of sprinkler control valve rooms shall be approved by the MFS and should generally be at ground level or not more than one level above or below ground level.

All valves shall be located in a secure room or enclosure, and where possible, adjacent to the main entry to the building.

Where the enclosure is located outside the building, it shall be weatherproof and not more than 25 metres distance from a door gaining access to the protected building.

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Where the door to the valve room does not open onto a public place, access shall be provided from the valve room to a door opening onto a public place. Such paths of travel shall be protected by fire and smoke sealed construction.

Minimum room dimensions for sprinkler alarm valves shall be not less than:

- 1850mm deep x 1400mm wide x 2100mm high for the first valve set; and
- An increase in room width of not less than 900mm for each additional valve set installed within the room,

Unless written approval has been provided by the Built Environment Section of the MFS Community Safety and Resilience Department.

Equipment installed within sprinkler valve rooms shall be limited to sprinkler alarm valves and, where written approval has been provided by the MFS, may include panels required to control other ancillary fire/smoke control functions.

Unless specifically approved by the MFS, building services other than those necessary for the operation of the equipment contained within the room/enclosure shall not pass through or be located in it.

Combustible materials permitted in sprinkler valve rooms shall be limited to the approved equipment installed within the room.

NOTE: FIPs shall not be installed in Sprinkler Valve Rooms.

4.5 Sprinkler fire alarm connection

Unless otherwise approved, initiation of a fire alarm to the MFS via the ASE shall be in accordance with the relevant Australian Standard.

Each sprinkler control installation, or installation group, shall be connected as a separate primary alarm unless otherwise approved by the MFS. This will enable attending crews to proceed immediately to the identified valve set, to ensure correct operation and to identify the area of operation for immediate investigation, shut down or boosting purposes.

All indicating devices (Flow switches, pressure switches etc) shall be identified with the appropriate identification, as displayed at the FIP.

4.6 Sprinkler boosters

The fire service booster point for sprinkler valves shall be installed:

- within an external wall of the sprinkler valve room/enclosure; or
- within any required fire hydrant booster cabinet; or

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- in a remote location as approved by the MFS.

Any cabinet doors and equipment located within the booster shall comply with the requirements of AS 2419 '*Fire hydrant installations*' as though the booster were for a hydrant system, except that:

- the wording on the door shall read 'SPRINKLER BOOSTER', 'HYDRANT AND SPRINKLER BOOSTER' or 'COMBINED HYDRANT AND SPRINKLER BOOSTER' as appropriate in 75mm uppercase lettering of contrasting colour to that of the background; and
- Hydrant outlets shall be located within the booster cabinet, unless a double outlet pillar hydrant with an upstand of not less than 100mm is located within 10 metres of the cabinet.
- All booster cabinet doors shall be fitted with a "Budget Lock" unless otherwise agreed with the MFS

4.7 Sprinkler/Combined System Pumps

Where fire pumps are installed adjacent to the sprinkler valves, they shall be acoustically separated from the valve room in accordance with the requirements of MFS Built Environs Section Policy No. 006 '*Control & Indication for Diesel & Electric Fire Pumps*'.

Fire and smoke-free access will usually be required to the pump room, dependent upon its location. An assessment of this need will be made on a job-by-job basis.

Where tanks are installed, load testing of the pumps shall return water to the tank.

FIPs shall not be installed in Sprinkler Pump Rooms.

The MFS recommends sprinkler protection in accordance with AS 2118, be provided in all pump rooms.

4.8 Sprinkler block plans

A permanent, water resistant, fade-resistant block plan shall be fixed adjacent to the sprinkler alarm valve, showing all information required in accordance with AS 2118.

The Contractor is to supply a further electronic copy (preferred) or paper hard copy of the plan to the MFS Alarms Officer at or before the time of inspection/connection.

NOTE: Where sprinkler installations serve a large building complex, portable plans similar to those employed for detection systems may be required to show valve set coverage, location of flow switches, test valves and other pertinent fire fighting details.

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4.9 Valve monitoring (anti-tamper devices)

Valve monitoring devices may be required in addition to the requirements of AS 2118. The inspecting officer will assess such requirements on a job-by-job basis. Such devices shall be identified in accordance with Clause 3.15.

4.10 Log Book and document cabinet

A metal cabinet, keyed Lockwood "003" shall be provided in each sprinkler valve room of sufficient size to contain:

- any required portable block plans;
- records of required tests and inspections;
- any required building précis; and
- any other required information or documentation.

5 SPECIAL FIRE SUPPRESSION SYSTEMS

5.1 Gaseous fire extinguishing systems

Unless otherwise approved all gaseous fire suppression systems are to be installed in accordance with AS 14520 suite of Standards and AS 6183, as appropriate. System components shall comply with the relevant Australian Standards. Where no Standards exist, components shall be subject to acceptance by the MFS and the authority having jurisdiction.

A SIP shall be provided adjacent to and outside the main entry door to the protected area.

Any services within the protected area which, if left running, would impair the efficiency of the system shall be shut down prior to or simultaneously with the release of the extinguishing agent. The operation of the SIP shall isolate/disable air handling systems to ensure room integrity during discharge.

Provision shall be made for the prompt and safe removal of any discharged fire suppressant in the protected area after a fire has been extinguished, in accordance with the safety precautions outlined in Clause 5.2 of AS 14520.1. This may require the use of mechanical exhaust. Such exhaust fans shall be clearly identifiable and labelled with controls within the relevant SIP.

Operating instructions and specialist instructions should be provided at the SIP for MFS use.

5.2 Other specialised suppression systems

Water mist, Liquid Chemical / Saponification, Foam, Deluge and other special suppression systems shall be discussed with the MFS prior to their design and installation to ensure compatibility with fire service operational procedures and MFS policy.

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6 SOUND SYSTEMS AND INTERCOMMUNICATION SYSTEMS FOR EMERGENCY PURPOSES (EWIS)

6.1 General

As required by the BCA/NCC the installation of any occupant warning system shall comply with AS 1670.1.

Where SSISEP systems are installed and required to comply with AS2220.1 then the system shall comply with AS 1670.4

The Fire Warden Intercom System shall comply with AS4428.4

The MECP shall be located adjacent to or within line of sight of the FIP.

All warning systems shall be automatically initiated by alarm signals from the detection/suppression system unless other evacuation procedures have been formalise with the Built Environment Section

NOTE: MFS preference is that a pre-recorded female voice message be incorporated in both alert and evacuate signals. MFS Built Environs Section Guideline No. 023 'Emergency Evacuation of Cinemas' details specific evacuation system requirements and voice messages.

6.2 Plans and instructions

A set of operating instructions shall be provided adjacent to the MECP, affixed in a clearly visible location for MFS crews.

The instructions shall clearly and concisely detail the procedure MFS crews shall follow to enable the alert/evacuation signals to be stopped whilst retaining control over the Warden Intercom Point phones/handsets and Public Address Systems.

Warden Intercom Point phone/handset locations shall be shown on all Block Plans with the standard symbol required by the relevant Australian Standard.

For larger complexes, colour coding shall be used to identify EWIS zones.

7 FIRE SERVICE KEY ACCESS

7.1 Access keys general

Unless a building having a fire alarm connection is continuously occupied and 24 hour access for MFS crews is assured, door keys shall be provided to access all parts of the building.

Keys shall also be provided to access and control any installed emergency lifts.

Master keying shall be employed to reduce the number of key types necessary. Unless otherwise approved, not more than four different keys will be accepted for any one building.

7.2 Number of keys sets provided to MFS

Where a building having a rise in storeys of not more than three (3) is located in the Adelaide City Council area or a MFS Regional Operations area, one set of access keys shall be provided.

All Buildings having a rise in storeys of four (4) or more shall provide two (2) sets of access keys.

All metropolitan Adelaide buildings, outside the Adelaide City Council area, require two sets of keys in all cases.

NOTE: If in doubt, contact the Fire Alarms Officer to ascertain how many sets of keys are required.

7.3 Fire service/emergency lift control keys

A fire service keyed switch facility is to be provided in the lift lobby at the storey affording egress to a public place.

This key may be a security key, mastered to the main building key system providing it is removable in all positions.

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8 COMPLIANCE WITH MFS DOCUMENTS

8.1 Fire pump control and indication

Fire pump control and indication shall comply with the requirements of MFS Built Environs Section Policy No. 006 '*Control & Indication for Diesel & Electric Fire Pumps*'.

Refer also to clause 3.6 and 4.7 of this document

8.2 Miscellaneous

Information provided in MFS Built Environs Section policy and guideline documents should be consulted for other information pertinent to MFS needs.

9 ADDITIONAL REQUIRED DOCUMENTATION

9.1 Completion certificates

The Contractor shall supply the MFS Fire Alarms Officer with copies of the completion certificates and/or installers statements as per the relevant Standard.

(E.g. AS 2118, AS 1670 and AS 14520, etc) and a declaration that cabling complies with AS/ACIF s009:

This documentation is required to be supplied to the inspecting officer at or prior to inspection.

9.2 Building System Précis of Operation

Building system précis of operation will be required where the integration of building management and fire systems is reasonably complex and shall comply with MFS Built Environs Section Policy No. 038 '*The Preparation of a Building Fire System Précis*'

9.3 Layout plans and other information

For large or complex projects, additional documentation may be required to be kept in the fire control room, such as architectural and mechanical drawings, wall charts and other schematic drawings.

Such requirements are to be determined on a job-by-job basis. Contact the MFS Alarms Officer for further discussion on this matter.

10 SITE INSPECTION AND CONNECTION TO THE MFS

10.1 Preliminary line test procedure

The following procedure shall be adopted when initially testing a Telstra fire alarm connection connected to the MFS:

- a) Ensure the ASE is connected to the telecommunications system.
- b) Contact 8204 3666. Explain to the Communications Officer that you wish to conduct a fire alarm preliminary line test.
- c) Quote the 'Application Approval' or alarm number described in Clause 2.4.
- d) The Communications Officer will tell you when to commence the test, proceed as instructed.
 - Alarm agent shall demonstrate each primary and each secondary alarm input will operate.
 - Test the operation of the switch, test-isolate-normal.
 - Force the ASE to dial in, function 5P.
 - Read the signal strength of the NextG network, function 7, and ensure it is within specs.
 - Disconnect the PSTN line and ensure the ASE displays Primary Link Fail and switches to the NextG network.
 - Restore ASE to primary PSTN connection.
- e) Confirm with the Communications Officer that the test(s) and alarm(s) have been received at the MFS Communication Centre, then turn the ASE key to the 'Normal' position and reset the fire alarm Circuit/Zone/Device at the FIP.
- f) After a satisfactory confirmation of test, the Communications Officer will render the installation 'off line' and 'not auto enabled' until the final MFS on-site inspection, as described in Clause 10.2, has been satisfactorily completed.
- g) Contact the Fire Alarms Officer in the Community Safety Department and arrange a suitable time/date for an on-site inspection and connection.

NOTE: Always ask for and record the MFS Communication Officer's name.

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10.2 Site inspection prior to connection

An inspection of the premises will be carried out provided that the following conditions have been met:

- a) The building or portion of the building is complete, ostensibly free of building contractors and is not a construction site.

NOTE: The determination of what is and what is not a construction site will be decided by the MFS Alarms Officer, giving due consideration to the safety of MFS crews and building occupants in the event of an emergency in the particular building.

If the Officer is in doubt as to the safety of personnel, both civilian and fire service, due to construction work, including internal fit out, carpet laying, painting and the like, inspection and connection will not take place. Generally a site will be considered a building site if hard hats are still compulsory and building work is still occurring.

- b) For new alarm systems or additional primary alarms, a successful line test has been carried out in accordance with Clause 10.1, between the ASE on the site and MFS alarm receiving equipment.
- c) The installing contractor is in attendance at the time of inspection.
- d) Any other contractor or labour necessary to test the system and ancillary functions is in attendance at the time of inspection.
- e) The Owner, or his/her representative, should be in attendance at the time of inspection, however if this is not possible then the appropriate paperwork that is normally required to be completed by the owner, shall be available.
- f) All materials and equipment necessary to carry out the test and inspection are available on site at the time of the inspection.
- g) The installed system(s) is (are) complete and has (have) been fully tested to ensure compliance with the appropriate Standards and/or conditions of approval.
- h) Any installed fire hydrant and hose reel facility has been previously inspected and flow tested to the written satisfaction of the MFS, unless specific circumstances as agreed by the MFS preclude this.

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NOTE: It is in the best interest of the Fire Alarm Contractor to ascertain whether any fire hydrant or hose reel work is being carried out in the premises to which a fire alarm connection is required. If this is the case, please notify the MFS of this fact so that a MFS Flow Test can be scheduled prior to alarm connection. A connection certificate will not be issued unless all hoses/reels/hydrants/boosters have been tested.

- i) All documentation for the project in accordance with the requirements of this Schedule has been completed. All required documents shall be on site at the time of inspection, if not previously supplied.
- j) All required keys are available on site at the time of inspection. The Contractor will be responsible to ensure that keys are available. The alarm connection will not be completed unless all keys are available.
- k) Where any significant and/or outstanding issues are considered to compromise the following items, connection may be refused where:
 - MFS cannot verify the approved facilities have been installed and operate satisfactorily; and/or
 - Occupant safety; and/or
 - MFS ability to efficiently and effectively deliver service.

10.3 Unsatisfactory inspection

If at the time of site inspection and test, any requirements of the '*MFS Alarm Connection and Monitoring Agreement*' are not met, connection may be refused and a "Defect Report" issued to the Fire Contractor.

The Fire Alarms Officer in the Community Safety and Resilience Department will be required to be contacted to arrange a suitable time/date for a subsequent on-site inspection and connection upon rectification of any outstanding deficiencies.

10.4 Satisfactory inspection

Upon satisfactory completion of an inspection and test, the installation may be connected to MFS monitoring equipment and a MFS Fire Alarm Certificate of Connection issued to the Contractor.

Interim certificates will not be issued

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NOTE: The Certificate of Connection confirms that the fire alarm detection and suppression system is connected to MFS monitoring equipment and that the MFS is receiving a signal.

A Fire Alarm Certificate of Connection does not confirm that the building or installed fire alarm detection and suppression systems comply with the requirements of the BCA/NCC or any Australian Standard or other legislative requirement, and shall not be used as evidence of such compliance.

11 INSTALLATION MAINTENANCE

11.1 Maintenance Mechanics

The responsible MFS recognised contractor shall be available at all times to attend and rectify any faults detected within any of the fire safety equipment nominated in this Schedule.

Any critical faults that relate to an installed fire detection / suppression system shall be reported to the MFS Community Safety and Resilience Department.

11.2 Maintenance

Maintenance carried out as required by legislation shall be performed by MFS recognised contractors. Any work carried out shall be recorded in the Log Book.

AS 1851 prescribes monthly testing of automatic fire detection and alarm systems, however, weekly testing is recommended by the MFS, particularly in premises with sleeping occupancies. Such testing may be performed by suitably trained on-site personnel.

Where fire alarm maintenance will involve the shut-down of any part of the building which eliminates the installed fire detection/protection coverage, the MFS shall be notified before commencement of the work and on completion of the work after subsequent reinstatement of the system.

NOTE: Unless this Clause is complied with, any ASE left in the 'Test' or 'Isolate/disable' position for a prolonged period without notification may result in a fire appliance attending and investigating the building. This is a chargeable occurrence.

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12 BUILDING OWNER'S RESPONSIBILITY

12.1 Emergency phone numbers

The Owner shall provide a list of names and telephone numbers for not less than three (3) after-hours contact persons, who can be contacted in the event of a fire alarm or fault, found by the MFS.

Such lists shall be available at the time of inspection and connection, and be kept up to date at all times. Any changes made to the contact names and telephone numbers shall be forwarded in writing to:

Manager Communications, SA Metropolitan Fire Service, GPO Box 98, Adelaide SA 5001.

NOTE: It is incumbent on the Owner/occupier to notify the MFS of any changes / alterations to the above names or telephone numbers as and when they occur. This includes any changes to the Fire Alarm Contractor.

12.2 Avoidable alarm signal (unwanted false alarms)

Owners are advised that a charge for fire service attendance may be made for fire alarm calls where the alarm is caused by an irresponsible act or other cause deemed avoidable by the MFS.

Many unwanted false alarms have been attributed to the following:

- Incorrect and/or poor maintenance of the installed system;
- Incorrect testing or operation of the installed system;
- Workmen on the premises using disc cutting or heat-generating equipment which trigger the installed fire system; or
- Failure to take adequate precautions to protect fire equipment from damage.

The final responsibility for maintenance of the installed system to ensure correct operation, as required by legislation and/or the appropriate Australian Standard, rests with the Owner/occupier of the building.

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12.3 MFS procedure for fire alarm response – Unoccupied buildings

Upon receipt of an automatic fire alarm, the MFS will respond to the building as quickly as possible and investigate the area of the alarm.

Where the premises are unoccupied at the time of the alarm, the building Owner/occupier will be notified and advised of any pertinent details regarding defects or the cause of the alarm.

The Owner shall then execute any actions necessary to reinstate the building to its proper operating condition. This shall be done as soon as possible regardless of the time of day.

12.4 MFS procedure for fire alarm response – Occupied buildings

Upon receipt of an automatic fire alarm, the MFS will respond to the building as quickly as possible and investigate the area of the alarm.

Where the building is occupied, the building Occupier will be notified and advised of any pertinent details regarding defects or the cause of the alarm.

It will be incumbent on the Occupier to notify the Owner of any defect found or cause of the alarm on the premises. The Owner will not necessarily be notified by the MFS.

12.5 Maintaining MFS Monitoring Requirements

Once on line, the Alarm Signalling Equipment (including the Telstra IP Fire Line) shall be maintained.

It is an offence to leave the system unmonitored (ie. by leaving it in test, isolate, offline, primary communication fail, secondary communication fail or total communication fail). If it is necessary to leave it in this state for any reason, the MFS shall be notified. Any condition that prevents the system sending a signal to the MFS shall be rectified immediately. Failure to do so may result in a fine up to \$5000, affect insurance on the property and/or occupancy of the premises.

12.6 Request for disconnection of MFS monitoring

If a building owner no longer requires their system to be monitored by the MFS, the applicant shall lodge an application to request disconnection, accompanied by a letter from the Relevant Statutory Authority (Council) approving the disconnection.

Until the MFS approves an 'application for alarm disconnection', the applicant will remain liable to comply with the terms of the agreement (including the payment of all fees and charges in relation to the connection and monitoring of the protected premises).

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Once approved by the Relevant Statutory Authority (Council) an application will also need to be lodged with Telstra to disconnect the IP Fire Line. The application to disconnect requires authorisation by the MFS 'Alarms Officer' before being forwarded to Telstra for processing.

12.7 Change of Ownership

If the ownership of the protected premises changes, the applicant will provide the MFS with a written request with the details of the current owner and the proposed new owner within 28 days from the date of transfer of ownership of the protected premises.

In addition, a new 'Agreement to Connect' form, 'Required Information' form and/or keys will need to be supplied where applicable.

The MFS will not refund any fees paid in advance by the applicant under this agreement.

A Telstra Fire Line 'Change of Lessee' form will also need to be completed by the outgoing and incoming parties and forwarded to Telstra.