



**Attachment 9 - Practice Note FSD01 - Fire Systems Design Accreditation Levels and Restrictions**





## Fire Systems Design Accreditation Levels and Restrictions

The Fire Systems Design class of accreditation under the FPAS Scheme accredits practitioners to undertake design of the following fire safety systems:

- Fire Sprinkler Systems
- Fire Hydrant and Fire Hose Reel Systems
- Fire Detection and Alarm Systems

For each fire safety system, practitioners can select the appropriate level of work that best suits their individual needs and circumstances. Each Level specifies the system types, configurations and the nature of work a practitioner at that level is accredited to undertake, as well as any conditions that relate to the defined level.

For each fire safety system covered by the FPAS Scheme, Accredited Practitioners are only accredited to undertake the work described in this document applicable to the level for which they hold accreditation. Undertaking non accredited work could be assessed as being a breach of the Code of Professional Conduct, particularly where such work is governed by legislation and this may result in a practitioner's accreditation being suspended or cancelled.

This Practice Note defines the design work that a practitioner is accredited to undertake for each available level of accreditation within the Fire Systems Design class of accreditation.

### Definitions

#### *Tenancy Work*

Tenancy Work is defined as modification of internal building elements, such as walls, doors and ceilings within an existing building housing one or multiple tenants, such as shopping centres and offices, to meet the needs of a new or existing tenant. This work is most often associated with class 5 and 6 buildings but may be applicable to a lesser extent to other classes of building.



## Fire Sprinkler System Design

### Level 4 (Specialist)

*Practitioners at this level are accredited to undertake design of any fire sprinkler system subject to specific conditions*

- 4.1. Accredited to undertake design on any fire sprinkler system other than combined sprinkler and hydrant systems unless:
  - 4.1.1. the practitioner also holds *Level 3 (Advanced) Fire Hydrant and Fire Hose Reel System Design* accreditation in order to undertake design of *AS 2118.6 Combined sprinkler and hydrant systems; and / or*
  - 4.1.2. the practitioner also holds *Level 2 (Intermediate) or Level 3 (Advanced) Fire Hydrant and Fire Hose Reel System Design* accreditation in order to undertake design of *FPAA101H Automatic fire sprinkler system design and installation – hydrant water supply applications*

*Note: Practitioners at this level will be required to demonstrate competency and experience in the design of sprinkler systems for High Hazard Occupancies, Commodities Requiring Special Consideration and Flammable and Combustible Liquids Storage in accordance with AS2118.1 Automatic Fire Sprinkler Systems – General Systems.*

### Level 3 (Advanced)

*Practitioners at this level are accredited to undertake design of any fire sprinkler system with the exception of high hazard systems, subject to specific conditions*

- 3.1. Accredited to undertake design of any fire sprinkler system, excluding sprinkler systems that protect:
  - 3.1.1. High Hazard Occupancies
  - 3.1.2. Commodities Requiring Special Consideration; and
  - 3.1.3. Flammable and Combustible Liquids Storage.
- 3.2. Accredited to undertake design on any fire sprinkler system other than combined sprinkler and hydrant systems unless:
  - 3.2.1. the practitioner also holds *Level 3 (Advanced) Fire Hydrant and Fire Hose Reel System Design* accreditation in order to undertake design of *AS 2118.6 Combined sprinkler and hydrant systems; and / or*
  - 3.2.2. the practitioner also holds *Level 2 (Intermediate) or Level 3 (Advanced) Fire Hydrant and Fire Hose Reel System Design* accreditation in order to undertake design of *FPAA101H Automatic fire sprinkler system design and installation – hydrant water supply applications*
- 3.3. Accredited to undertake the activities described for a Level 2 (Intermediate) Fire Sprinkler System Design practitioner

## Level 2 (Intermediate)

*Practitioners at this level are accredited to undertake design of a restricted range of fire sprinkler systems that include less complex hydraulic or hazard protection considerations*

- 2.1. Accredited to undertake design of fire sprinkler systems, excluding:
  - 2.1.1. Systems that include multiple pressure zones
  - 2.1.2. AS 2118.6 Combined sprinkler and hydrant systems except for those activities permitted for a Level 1 (Basic) Fire Sprinkler System Design practitioner; and
  - 2.1.3. Sprinkler systems designed to protect:
    - 2.1.3.1. High Hazard Occupancies
    - 2.1.3.2. Commodities Requiring Special Consideration; and
    - 2.1.3.3. Flammable and Combustible Liquids Storage.
- 2.2. Accredited to undertake design of FPAA101H Automatic fire sprinkler system design and installation – hydrant water supply applications only where the practitioner also holds Level 2 (Intermediate) or Level 3 (Advanced) Fire Hydrant and Fire Hose Reel System Design accreditation
- 2.3. Accredited to undertake the activities described for a Level 1 (Basic) Fire Sprinkler System Design practitioner

## Level 1 (Basic)

Practitioners at this level are accredited to only undertake design of specified minor modifications to existing low complexity fire sprinkler systems generally associated with *tenancy work*.

- 1.1. Accredited to undertake design of minor modifications to existing light hazard or ordinary hazard automatic fire sprinkler systems with the following limitations:
  - 1.1.1. Not an existing fire sprinkler system that protects any of the following –
    - 1.1.1.1. incidental high hazard storage risk (AS 2118.1-2017, Clause A.4.2.2)
    - 1.1.1.2. High Hazard Occupancies
    - 1.1.1.3. Commodities Requiring Special Consideration; and
    - 1.1.1.4. Flammable and Combustible Liquids Storage.
  - 1.1.2. Not to incorporate the alteration of an existing drencher, wall wetting, deluge, residential and/or domestic systems.
  - 1.1.3. Not to incorporate the alteration of extended coverage sprinklers or gridded systems.
  - 1.1.4. Not to incorporate the alteration of any water supply and/or water supply connection.
  - 1.1.5. Not to incorporate the alteration of any in line water supply or distribution pipework valves or fire pump set.
  - 1.1.6. Not to incorporate an increase in fire water flow or pressure requirements.
  - 1.1.7. Modifications shall be limited to fire sprinkler placement, additions and removals as allowed under 'Minor works' (AS 2118.1:2017, Appendix F).
  - 1.1.8. Modifications to AS 2118.6 Combined sprinkler and hydrant systems are only permitted downstream of the floor level sprinkler control valve assembly.
  - 1.1.9. Hazard classification shall not be altered from the original approved design.
  - 1.1.10. Building Classifications (Class 2 to 9) shall not have changed from that considered by the original approved design.

## Fire Hydrant and Fire Hose Reel System Design

### Level 3 (Advanced)

*Practitioners at this level are accredited to undertake design of any fire hydrant or fire hose reel system subject to specific conditions*

- 3.1. Accredited to undertake design of any fire hydrant and fire hose reel system other than combined sprinkler and hydrant systems unless:
  - 3.1.1. the practitioner also holds *Level 3 (Advanced) Fire Sprinkler System Design* accreditation in order to undertake design of *AS 2118.6 Combined sprinkler and hydrant systems*; and / or
  - 3.1.2. the practitioner also holds *Level 2 (Intermediate) or Level 3 (Advanced) Fire Sprinkler System Design* accreditation in order to undertake design of *FPAA101H Automatic fire sprinkler system design and installation – hydrant water supply applications*

### Level 2 (Intermediate)

*Practitioners at this level are accredited to undertake design of a restricted range of fire hydrant systems that include less complex hydraulic considerations subject to specific conditions, and the design of any fire hose reel system*

- 2.1. Accredited to undertake design of fire hydrant and fire hose reel systems, excluding:
  - 2.1.1. Systems that include multiple pressure zones
  - 2.1.2. AS 2118.6 Combined sprinkler and hydrant systems except for those activities permitted for a Level 1 (Basic) Fire Hydrant and Fire Hose Reel System Design practitioner
- 2.2. Accredited to undertake design of FPAA101H Automatic fire sprinkler system design and installation – hydrant water supply applications only where the practitioner also holds Level 2 (Intermediate) or Level 3 (Advanced) Fire Sprinkler System Design accreditation
- 2.3. Accredited to undertake the activities described for a Level 1 (Basic) Fire Hydrant and Fire Hose Reel System Design practitioner

### Level 1 (Basic)

Practitioners at this level are accredited to only undertake design of specified minor modifications to existing fire hydrant systems and the design of additional fire hose reel systems in limited circumstances generally associated with *tenancy work*.

- 1.1. Accredited to undertake design of fire hydrant and hose reel systems as follows:
  - 1.1.1. minor relocations only of existing fire hydrant outlets and hose reels.
  - 1.1.2. adding a new fire hose reel to an existing system to achieve coverage for an existing building

## Fire Detection and Alarm System Design

### Level 3 (Advanced)

*Practitioners at this level are accredited to undertake design of any fire detection and alarm system*

3.1. No restriction on scope of fire detection and alarm system design.

**Note:** Accredited persons carrying out designs in hazardous areas (gas, vapour or dust) as defined in AS 3000 shall also hold appropriate competencies as required in AS/NZS 60079.14.

### Level 2 (Intermediate)

*Practitioners at this level are accredited to undertake design of a restricted range of fire detection and alarm systems, generally limited to systems that do not provide multiple programmable outputs to control interfaces associated with a range of complex systems*

2.1. Accredited to undertake design of fire detection and alarm systems, excluding:

2.1.1. systems that provide multiple programmable outputs to control interfaces with any or all of the following:

- 2.1.1.1. AS 1670.4 emergency warning system (EWS) or emergency warning and intercommunication systems (EWIS) or customised building occupant warning systems
- 2.1.1.2. zoned fire suppression systems
- 2.1.1.3. zone pressurisation systems
- 2.1.1.4. purge systems
- 2.1.1.5. smoke exhaust systems or smoke vents and heat vents
- 2.1.1.6. automatic air pressurisation systems including those for lift shafts and pressurized exits
- 2.1.1.7. associated ancillary equipment, such as dampers, fans, louvers, automatic opening doors and the like with respect to 2.1.1.3 to 2.1.1.6 above
- 2.1.1.8. fire and/or smoke curtains, fire and/or smoke shutters (where required for mechanical air handling systems).

2.1.2. systems for hazardous areas (gas, vapour or dust) as defined in AS 3000 and required to comply with the AS/NZS 60079 series.

2.2. Accredited to undertake design of new protection only incorporating smoke and heat alarms

2.3. Accredited to undertake the activities described for a Level 1 (Basic) Fire Detection and Alarm System Design practitioner

**Note:** Automatic fire detection and alarm systems, controlling single zone occupant warning systems, single-zone door releases and fire monitoring can be designed under Level 2 (Intermediate) Fire Detection and Alarm System Design accreditation.



## Level 1 (Basic)

Practitioners at this level are accredited to only undertake design of specified minor modifications to existing low complexity fire detection and alarm systems generally associated with *tenancy work*.

- 1.1. Accredited to undertake design of minor modifications to existing fire detection and alarm systems with the following limitations:
  - 1.1.1. Modifications limited to relocation, addition and deletion of smoke or heat detectors and smoke or heat alarms to allow for wall or partition changes to a tenancy
  - 1.1.2. Where required, the design may include works to upgrade to AS 4428.16 occupant warning amplifiers and splitter devices or isolation devices for combined detection and occupant warning using AADs to comply with current standards.
  - 1.1.3. Not to alter the FDCIE input zones or alter the cause and effects matrix
  - 1.1.4. Not to adversely affect the sound pressure levels (SPL) or speech intelligibility for that building
  - 1.1.5. Not to include reprogramming of FDCIE or modification of FDCIE outputs, except for reprogramming directly related to the addition or deletion of detectors
  - 1.1.6. Not to include the modification of FDCIE inputs (software), except if a new detector is installed or existing delete, in which case, it must be designed to operate as other existing 'such' detectors of a similar type and location in the zone
  - 1.1.7. Not to include the design or upgrade of any systems hardware or software except when upgrading to AS 4428.16 occupant warning amplifiers with splitter cards
  - 1.1.8. Not to incorporate the alteration of multiple programmable outputs to control interfaces with any or all of the following:
    - 1.1.8.1. AS 1670.4 emergency warning system (EWS) or emergency warning and intercommunication systems (EWIS) or customised building occupant warning systems
    - 1.1.8.2. zoned fire suppression systems
    - 1.1.8.3. zone pressurisation systems
    - 1.1.8.4. purge systems
    - 1.1.8.5. smoke exhaust systems or smoke vents and heat vents
    - 1.1.8.6. automatic air pressurisation systems including those for lift shafts and pressurized exits
    - 1.1.8.7. associated ancillary equipment, such as dampers, fans, louvers, automatic opening doors and the like with respect to 1.1.7.3 to 1.1.7.6 above
    - 1.1.8.8. fire and/or smoke curtains, fire and/or smoke shutters (where required for mechanical air handling systems).

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*Fire Detection and Alarm System Design - Level 1 (Basic) continued*

- - 1.1.9. Not to incorporate the alteration of flame detectors, duct sampling smoke detectors, optical beam smoke detectors or aspirated smoke detection
  - 1.1.10. Not to protect hazardous areas (gas, vapour or dust) as defined in AS 3000 and required to comply with the AS/NZS 60079 series.
  - 1.1.11. Not to incorporate the alteration of any electrical supply or upgrade of a connected panel
  - 1.1.12. Not to apply to a Class 9 building or Class 3 accommodation for the aged, children or people with disabilities
  - 1.1.13. Building Classifications (Class 2 to 9) shall not have changed from that considered by the original approved design.

## Restrictions or considerations applicable to all accredited practitioners

### Performance (Alternative) Solutions

Accredited individuals will retain transitional accreditation for the development and endorsement of design. This may include designs that represent deemed-to-satisfy (DtS) compliance or designs that incorporate elements of performance (alternative) solutions developed by fire safety engineers.

### General Restrictions

1. All categories exclude design of mechanical ducted smoke control systems, except for Fire Detection and Alarm Systems that includes accreditation for designing the fire detection and activation aspects of mechanical ducted smoke control systems (not the mechanical aspect).
2. Any performance solution involving a *relevant fire safety system* requires an alternative solution report under clauses 130 (2A) or 144A of the EP&A Regulation before a complying development certificate (CDC) or construction certificate (CC) can be issued by the certifying authority. Therefore, any APFS, accredited to undertake FSD of a *relevant fire safety system* that incorporates elements as a result of an alternative solution, must obtain a report or certification from the APFS who prepared the alternative solution report relied upon by the certifying authority for this work and ensure that their design incorporates these elements prior to endorsing it under clauses 136AA (2) (C) (ii) or 146B (2) (C) (ii) of the EP&A Regulation.