

<b>Title</b>	<b>Install special hazards fire detection and alarm systems</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	<p>This unit standard is for the training of fire alarm technicians and covers installation of special hazards fire detection and alarm systems in accordance with standard NZS 4512:2021, Part 4 and other relevant and accepted standards.</p> <p>People credited with this unit standard are able to: plan and prepare for installation of special hazards fire detection and alarm systems; install cabling for special hazards fire detection and alarm systems; install special hazards fire detection and alarm systems; complete installation documentation for special hazards fire detection and alarm systems.</p>
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<b>Classification</b>	Mechanical Engineering > Fire Detection and Alarm Systems
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<b>Available grade</b>	Achieved
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### Guidance Information

- Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

Building Act 2004,  
Electricity Act 1992,  
Electricity Regulations 1997,  
Ministry of Business, Innovation and Employment (MBIE) *Acceptable Solutions (AS) and Verification Methods (VM)*,  
New Zealand Building Code,  
AS ISO 14520.1-2009 *Gaseous fire-extinguishing systems – Physical properties and system design*,  
AS/NZS 3000:2018, *Electrical Installations* (known as the Australian/New Zealand Wiring Rules),  
NZS 4512:2021, *Fire Detection and Alarm Systems in Buildings*.

Any new, amended or replacement Acts, regulations, standards, codes of practice, guidelines, or authority requirements or conditions affecting this unit standard will take precedence for assessment purposes, pending review of this unit standard.
- Definitions**

*Equipment specifications* refer to manufacturer's specifications for installation, operation, and performance of their equipment.

*Fire detection and alarm system* refers to an installation of apparatus, which performs specified fire related functions in response to the operation of a detector, manual call point, or other input. It includes – manual call points, detectors, control and indication equipment, alerting devices, interconnections, fittings, labels, energy sources, and remote signalling devices and may include emergency warning and intercommunication systems (EWIS) where applicable.

*Industry practice* refers to the safe and sound trade practice generally accepted by competent persons within the fire protection industry.

*Installation specifications* refer to the specifications for all details of a particular installation. Typically, this includes installation drawings, installation procedures, parts and cabling schedules, test and commissioning procedures, and verbal instructions.

*Special hazards fire detection and alarm system* refers to fire detection and alarm systems which apply electrical actuation to operate mechanical extinguishing systems. It includes water based, chemical, and clean agent gas flood installations.

*Standards* refer to AS ISO 14520.1-2009, NZS 4512:2021, and AS/NZS 3000:2018.

*Workplace procedures* refer to the documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, codes of practice, quality assurance procedures, housekeeping standards, charging of time and materials, management of drawings and documentation, procedures to comply with legislative and local body requirements.

### 3 Assessment information

- a. All activities must comply with relevant legislative and/or regulatory requirements and recognised codes of practice.
- b. All activities must be completed and reported within agreed timeframes.
- c. All installation work must comply with the Building Code, and standards AS/NZS 3000:2018, NZS 4512:2021, and other relevant and accepted standards.
- d. All activities must be done in accordance with systems documentation and workplace procedures.
- e. All activities must be done in accordance with applicable standards and installation and equipment specifications.

### 4 Range

For assessment purposes, competence must be demonstrated on at least three systems with at least one gas flood system.

### 5 Recommended skills and knowledge:

Unit 28816, *Demonstrate knowledge of special hazards fire detection and alarm systems and installation practices*, or demonstrate equivalent knowledge and skills.

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## Outcomes and performance criteria

### Outcome 1

Plan and prepare for installation of special hazards fire detection and alarm systems.

**Performance criteria**

- 1.1 Site access and timing of the installation and commissioning work are established from contract and installation specifications, and agreed with customer.
- 1.2 Site occupational safety and health implications for self and others are identified and control measures are put in place.
- 1.3 Construction and schematic diagrams are read and explained with references to the installation of fire detection and alarm systems, and any special requirements are identified and explained.
- 1.4 Materials are purchased or drawn from stock and delivery to the site confirmed.

**Outcome 2**

Install cabling for special hazards fire detection and alarm systems.

**Performance criteria**

- 2.1 Cable support systems are installed.  
  
Range support systems – trunking, conduit, catenary wires, cable trays.
- 2.2 Cable barriers are penetrated and reinstated in accordance with standards and installation specifications.
- 2.3 Cables are selected and installed.
- 2.4 Cable and cable support systems installed comply with passive fire protection specifications for the site.

**Outcome 3**

Install special hazards fire detection and alarm system components.

Range components – control equipment including power supply, detectors, manual call points, alerting devices, zone control and indicating units.

**Performance criteria**

- 3.1 Components are positioned and fitted.
- 3.2 Fixings, fastenings, and supports are installed.
- 3.3 Equipment and surroundings are not impaired by the process of installation.
- 3.4 Wiring connections are made in a manner that ensures safe and reliable contacts.
- 3.5 Arrangements for connection to power are made.

- 3.6 Equipment is labelled in accordance with standards.
- 3.7 Controllers are configured and appropriate software is loaded.
- 3.8 Installation tests are completed.
- 3.9 Remedial action taken as a result of penetrations and any other damage to passive fire protection systems as a result of component and system installation are completed to meet the passive fire protection system compliance.
- 3.10 Sites are restored in accordance with workplace procedures following completion of installation.
- 3.11 Management is kept informed of installation progress.

#### Outcome 4

Complete installation documentation for special hazards fire detection and alarm systems.

#### Performance criteria

- 4.1 Log books and documentation for the site are supplied.
- 4.2 Drawings are marked up to show as-built condition and processed.
- 4.3 Installation documentation is completed and distributed.

<b>Planned review date</b>	31 December 2029
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	15 October 2015	31 December 2026
Review	2	27 June 2024	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact the Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council [qualifications@hangaarorau.nz](mailto:qualifications@hangaarorau.nz) if you wish to suggest changes to the content of this unit standard.