

<b>Title</b>	<b>Install fire detection and alarm systems</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>25</b>

<b>Purpose</b>	<p>This unit standard is for the training of fire alarm technicians, and covers installation of fire detection and alarm systems in accordance with standard NZS 4512:2010, Part 4.</p> <p>People credited with this unit standard are able to: plan and prepare for installations; install cabling; install fire detection and alarm system components; and complete installation documentation.</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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<b>Entry information</b>	
<b>Recommended skills and knowledge</b>	Unit 23258, <i>Demonstrate knowledge of fire detection and alarm systems and installation practices</i> , Unit 28813, <i>Demonstrate knowledge of fire detection and alarm system components and installation practices</i> , and Unit 28815, <i>Install fire detection and alarm system components under supervision</i> , or demonstrate equivalent knowledge and skills.

## Explanatory notes

- References
  - New Zealand Building Code
  - AS/NZS 3000:2007, *Electrical Installations* (known as the Australian/New Zealand Wiring Rules)
  - NZS 4512:2010, *Fire Detection and Alarm Systems in Buildings*.
- Definitions
  - Enterprise 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.
  - 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.

*Standards* refer to NZS 4512:2010 and AS/NZS 3000:2007.

#### 4 Range

- a All activities must comply with relevant legislative and/or regulatory requirements and recognised codes of practice.
- b All activities must demonstrate safe working practices.
- c All activities must be completed and reported within agreed timeframes.
- d All installation work must comply with the New Zealand Building Code, and standards AS/NZS 3000:2007 and NZS 4512:2010.

#### 5 Assessment

- a Competence must be demonstrated on systems defined by NZS 4512:2010.
- b For assessment purposes, competence must be demonstrated on at least five systems including three different system types with at least two addressable systems.

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## Outcomes and evidence requirements

### Outcome 1

Plan and prepare for installations.

#### Evidence requirements

- 1.1 Site access and timing of the installation 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 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, explained, and documented.
- 1.4 Materials are purchased or drawn from stock and delivery to the site confirmed in accordance with enterprise procedures.
- 1.5 Materials and equipment are stored and handled in accordance with enterprise procedures and industry practice.

**Outcome 2**

Install cabling.

**Evidence requirements**

- 2.1 Cable support systems are installed in accordance with standards and installation specifications.
- Range support systems may include but are not limited to – trunking, conduit, catenary wires, cable trays, cable clips.
- 2.2 Cable penetrations are made, reinstated, and documented in accordance with standards, installation specifications, and enterprise procedures.
- 2.3 Cables are selected and installed in accordance with standards and installation specifications.
- 2.4 Cable and cable support systems installed comply with passive fire protection specifications for the site in accordance with job specifications and enterprise procedures.

**Outcome 3**

Install fire detection and alarm system components.

Range components – control equipment, power supplies, detectors, manual call points, alerting devices, zone control and indicating units, interconnections, remote signalling devices, labels.

**Evidence requirements**

- 3.1 Components are positioned and fitted in accordance with standards, and installation and component specifications.
- 3.2 Fixings, fastenings, and supports are installed in accordance with industry practice and enterprise procedures.
- 3.3 Components and surroundings are not impaired by the process of installation.
- 3.4 Wiring connections are made in a manner that ensures safe and reliable contact.
- 3.5 Arrangements for connection to mains power supply are made in accordance with enterprise procedures and AS/NZS 3000:2007.
- 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 in accordance with installation and equipment specifications, and enterprise procedures.

- 3.9 Remedial action taken as a result of penetrations and any other damage to passive fire protection systems as a result of system installation is completed to meet the passive fire protection system compliance.
- 3.10 Sites are restored in accordance with enterprise procedures following completion of installation.
- 3.10 Management is kept informed of installation progress in accordance with enterprise procedures.

#### Outcome 4

Complete installation documentation.

#### Evidence requirements

- 4.1 Log books and documentation for the site are supplied in accordance with standards and enterprise procedures.
- 4.2 Drawings are marked up to show as-built condition and processed in accordance with enterprise procedures.
- 4.3 Installation documentation is completed in accordance with enterprise procedures.

<b>Replacement information</b>	This unit standard replaced unit standard 18435, unit standard 18436, and unit standard 18437.
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<b>Planned review date</b>	31 December 2020
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	27 October 2006	31 December 2017
Review	2	15 October 2015	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>.

#### Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMRs). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

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### **Comments on this unit standard**

Please contact Competenz at [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.