Title	**Install fire detection and alarm systems**		
Level	**4**	**Credits**	**25**

Purpose	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 4512:2021, Part 4. People credited with this unit standard are able to: plan and prepare for installations of fire detection and alarm systems; install cabling of fire detection and alarm systems; install fire detection and alarm system components; complete installation documentation for fire detection and alarm systems.

Classification	Mechanical Engineering > Fire Detection and Alarm Systems

Available grade	Achieved

Guidance Information

1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
New Zealand Building Code,
AS/NZS 3000:2018, *Electrical Installations* (known as the Australian/New Zealand Wiring Rules),
NZS 4512:2021, *Fire Detection and Alarm Systems in Buildings*.
Available at https://www.standards.govt.nz/
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.

2 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.

Standards refer to 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 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 3000:2018 and NZS 4512:2021.
- e Competence must be demonstrated on systems defined by NZS 4512:2021.
- f All activities must be done in accordance with applicable industry practice, systems documentation, standards, job specifications, installation and equipment specifications and workplace procedures.

4 Range
For assessment purposes, competence must be demonstrated on at least five systems including three different system types with at least two addressable systems.

5 Recommended skills and knowledge
Unit 23258, *Demonstrate knowledge of fire detection and alarm systems and installation practices*, Unit 28813, *Demonstrate knowledge of fire detection and alarm system components and installation practices*, and Unit 28815, *Install fire detection and alarm system components under supervision*, or demonstrate equivalent knowledge and skills.

Outcomes and performance criteria

Outcome 1

Plan and prepare for installations of fire detection and alarm systems.

Performance criteria

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.

1.5 Materials and equipment are stored and handled.

Outcome 2

Install cabling of fire detection and alarm systems.

Performance criteria

2.1 Cable support systems are installed.

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.

2.3 Cables are selected and installed.

2.4 Cable and cable support systems installed comply with passive fire protection specifications and seismic restraint requirements for the site.

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.

Performance criteria

3.1 Components are positioned and fitted in accordance with standards, seismic requirements, and installation and component specifications.

3.2 Fixings, fastenings, and supports are installed in accordance with industry practice and workplace 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 AS/NZS 3000:2018.

3.6 Equipment is labelled.

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 system installation is completed to meet the passive fire protection system compliance.

3.10 Sites are restored following completion of installation.

3.11 Management is kept informed of installation progress.

Outcome 4

Complete installation documentation for fire detection and alarm systems.

Performance criteria

4.1 Logbooks and documentation for the site are supplied to appropriate parties.

4.2 Drawings are marked up to show as-built condition and processed.

4.3 Installation documentation is completed.

Replacement information	This unit standard replaced unit standard 18435, unit standard 18436, and unit standard 18437.

Planned review date	31 December 2029

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	31 December 2026
Review	3	27 June 2024	N/A

Consent and Moderation Requirements (CMR) reference	0013

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 if you wish to suggest changes to the content of this unit standard.