Title	**Install fire detection and alarm system components under supervision**		
Level	**3**	**Credits**	**30**

Purpose	This unit standard is for the training of fire alarm technicians and covers installation of fire detection and alarm system components, wiring and cabling, cable support systems, racks, and battery chargers in accordance with standard NZS 4512:2021, Part 4. People credited with this unit standard are, under supervision, able to: plan and prepare for installation of fire detection and alarm system components; install cabling; install fire detection and alarm components; and complete installation documentation and reporting.

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:
Building Act 2004,
Ministry of Business, Innovation and Employment (MBIE) *Acceptable Solutions (AS) and Verification Methods (VM)*,
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.

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. Competence must be demonstrated on systems defined by NZS 4512:2021.
- b. All activities must comply with relevant legislative and/or regulatory requirements and recognised codes of practice.
- c. All activities must be completed and reported within agreed timeframes.
- d. All activities must be done in accordance with applicable equipment specifications, systems documentation, plans, standards, installation specifications, and workplace procedures.

4 Range
- a. All installation work must comply with the Building Code, and standards AS/NZS 3000:2018 and NZS 4512:2021.
- b. For assessment purposes, competence must be demonstrated on at least five systems. On the five systems, these must include at least three different system types. At least one of the system types must be addressable.

Outcomes and performance criteria

Outcome 1

Plan and prepare for installation of fire detection and alarm system components under supervision.

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 identified by supervisor are noted and control measures are put in place.

1.3 Installation plan drawn up by the supervisor are read and explained with references to the requirements of the fire detection and alarm system, and any special requirements are identified and explained.

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 under supervision.

Performance criteria

2.1 Cable support systems are installed.

Range support systems – trunking, conduit, catenary wires, cable trays.

2.2 Cable penetrations are made and reinstated.

2.3 Cables are installed.

Outcome 3

Install fire detection and alarm system components under supervision.

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 installed.

3.2 Fixings, fastenings, and supports are of adequate strength and appropriately installed.

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 Potential impacts on the compliance of the passive fire protection system as a result of penetrations and installation of fire detection and alarm system components and cabling are recorded.

3.8 Site is cleared and restored to a clean and tidy state.

Outcome 4

Complete installation documentation and reporting under supervision.

Performance criteria

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

4.2 Installation documentation is completed.

4.3 Supervisor is kept informed of installation progress.

4.4 Potential adverse effects to passive fire protection systems as a result of installation of fire detection and alarm system components are reported to the supervisor for remedial action.

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	15 October 2015	31 December 2026
Review	2	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.