

Title	Demonstrate knowledge of fire detection and alarm system design		
Level	5	Credits	10

Purpose	<p>This unit standard is for the training of fire alarm technicians, and covers knowledge of the principles of design of fire detection and alarm systems, using both conventional and addressable devices.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of legislation, standards, codes of practice, and job specific documentation relating to fire detection and alarm systems; and design fire detection and alarm systems for given simulated situations.</p>
----------------	--

Classification	Mechanical Engineering > Fire Detection and Alarm Systems
-----------------------	---

Available grade	Achieved
------------------------	----------

Entry information	
Recommended skills and knowledge	Unit 23258, <i>Demonstrate knowledge of fire detection and alarm systems and installation practices</i> , and Unit 28813, <i>Demonstrate knowledge of fire detection and alarm system components and installation practices</i> , or demonstrate equivalent knowledge and skills.

Explanatory notes

- 1 References
 - Building Act 2004
 - Ministry of Business, Innovation and Employment (MBIE) *Acceptable Solutions (AS) and Verification Methods (VM)*. Available at <http://www.dbh.govt.nz/AS/VM-documents>
 - 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*.

- 2 Definitions
 - Ancillary services* refer to ventilating systems, emergency lighting, lift control, or other building services.
 - Design brief* refers to notes and/or sketches that record the requirements of the system including the owner’s functional requirements.

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.

Project documentation refers to all documentation required for designing and may include design brief, building plans, building drawings and specifications, and equipment specifications.

Job specific documentation includes fire reports and system specification.

3 Range

Use of legislation, standards, and codes of practice listed in the references by candidates during assessment is encouraged.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of legislation, standards, codes of practice and job specific documentation relating to fire detection and alarm systems.

Evidence requirements

- 1.1 Answers including references to relevant clauses are presented in response to questions regarding the provisions of the legislation, standards, and code of practice.
- 1.2 The legislation, standards, and codes of practice are applied to given situations.
- 1.3 Documentation required for an installation is explained in accordance with the standards and legislation.

Outcome 2

Design fire detection and alarm systems for given simulated situations.

Range evidence of two designs using conventional devices and two designs using addressable devices is required, and must include one type 4 system and one type 5 system.

Evidence requirements

- 2.1 Requirements for fire detection and alarm systems are identified and explained in accordance with the standards, AS/VM documents, and project documentation.
- 2.2 System layouts are established and components are selected and defined in accordance with the project documentation.
- Range zones, sectors, detectors, call points, indicators, alerting devices, remote signalling equipment, ancillary services requirements, control and display equipment, battery and battery charging system, cabling systems and cables, zone index.
- 2.3 Drawings and project design for the installation of systems are prepared in accordance with standards and project documentation.
- 2.4 Assumptions and decisions are recorded in accordance with enterprise procedures.

Replacement information	This unit standard and unit standard 23267 replaced unit standard 9398, unit standard 10924, and unit standard 17724.
--------------------------------	---

Planned review date	31 December 2020
----------------------------	------------------

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

Consent and Moderation Requirements (CMR) reference	0013
--	------

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.

Comments on this unit standard

Please contact Competenz at qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.