

Title	Demonstrate knowledge of interconnected control and fire detection and alarm systems		
Level	4	Credits	6

Purpose	<p>This unit standard is for personnel employed in the fire protection industry and covers knowledge of interconnected control and fire detection and alarm systems.</p> <p>People credited with this unit standard are able to demonstrate knowledge of: sprinkler systems interconnected with fire detection and alarm systems; and ancillary services interconnected with fire detection and alarm systems.</p>
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Classification	Mechanical Engineering > Fire Protection Systems Technology
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Available grade	Achieved
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Guidance Information

- 1 Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:
 - Building Act 2004,
 - Building (Forms) Regulations 2004,
 - Ministry of Business, Innovation and Employment (MBIE) *Acceptable Solutions (AS) and Verification Methods (VM)*,
 - MBIE New Zealand Building Code Handbook,
 - AS 1851:2012, *Routine service of fire protection systems and equipment*,
 - AS/NZS 3000:2018, *Electrical installations (known as the Australian/New Zealand Wiring Rules)*,
 - National Fire Protection Association, NFPA 72:2022, *National Fire Alarm Code® (NFPA 72)*,
 - NZS 4512:2021, *Fire detection and alarm systems in buildings*,
 - NZS 4541:2020, *Automatic fire sprinkler systems*.

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

Ancillary services refer to a variety of operations beyond fire detection and alarm systems that are required to maintain a life-safety application such as air handling and mechanical extraction systems, emergency power and lighting systems, lifts and escalators, smoke and fire doors, smoke curtains, and access control.

Control systems of other building features or ancillary services that are interconnected with fire detection and alarm systems in this unit standard include the control panels and wiring for – sprinkler systems, mechanical extraction systems, air-handling systems, and emergency power and lighting systems.

Fire detection and alarm systems refer to installations of apparatus, which perform 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.

Systems documentation refers to the documentation required to be maintained by NZS 4512:2021 and other relevant standards, including logbook, test reports, equipment details and drawings, specifications, contract agreement, software configurations and versions, additions and alterations, fire reports, building consents standards, codes of practice, installation instructions, test and commissioning procedures, and test and maintenance records.

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 activities must be done in accordance with applicable relevant standards, systems documentation, plans and workplace procedures.
- e. All activities must be done in accordance with applicable aspects of NZS 4541:2020, NFPA 72; New Zealand Building Code Section, the fire report, and specifications for given systems. and applicable plans, systems documentation, and workplace procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of sprinkler systems interconnected with fire detection and alarm systems.

Performance criteria

- 1.1 Reasons for sprinkler systems being interconnected with fire detection and alarm systems are described.

- 1.2 Descriptions of the methods of interconnecting the two systems, including hand drawn sketches, of the wiring systems, are provided.
- 1.3 Operational and safety requirements when testing interconnected systems are identified.
- 1.4 Routine tests and checks as required by a procedural document or plan are described.

Outcome 2

Demonstrate knowledge of ancillary services interconnected with fire detection and alarm systems.

Range ancillary services include but are not limited to – air handling and mechanical extraction systems, emergency power and lighting systems, lifts and escalators, smoke and fire doors, smoke curtains, access control.

Performance criteria

- 2.1 Reasons for ancillary services interconnected with a fire detection and alarm system are identified and described.
- 2.2 Descriptions of the methods of interconnecting systems, including hand drawn sketches of the wiring systems, are provided.
- 2.3 Operational and safety requirements when testing interconnected systems are identified.
- 2.4 Routine tests and checks as required by a procedural document or plan are described.

Planned review date	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	31 December 2000	31 December 2017
Review	2	26 March 2007	31 December 2017
Revision	3	23 April 2008	31 December 2017
Review	4	15 October 2015	31 December 2026
Review	5	27 June 2024	N/A

Consent and Moderation Requirements (CMR) reference	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 if you wish to suggest changes to the content of this unit standard.