

Title	Demonstrate knowledge of special hazards and non-standard fixed fire protection systems		
Level	4	Credits	6

Purpose	<p>This unit standard is for personnel in the fire protection industry.</p> <p>People credited with this unit standard are able to demonstrate knowledge of special hazards fixed fire protection systems, and non-standard fixed fire protection systems.</p>
----------------	--

Classification	Mechanical Engineering > Fixed Fire Protection 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,
 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 4214:2018, *Gaseous fire extinguishing systems*,
 AS 4587:2020, *Water mist fire protection systems - System design, installation, and commissioning*,
 National Fire Protection Association, NFPA 15:2022, *Water spray fixed systems for fire protection*,
 NFPA 16:2019, *Installation of foam-water sprinkler and foam-water spray systems*,
 NFPA 17:2024, *Dry chemical extinguishing systems*,
 NFPA 17A:2021, *Wet chemical extinguishing systems*,
 NFPA 750:2023, *Water mist fire protection systems*,
 NFPA 2001:2022, *Clean agent fire extinguishing systems*,
 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

Certification procedures refer to compliance procedures involved in or to obtaining certifications.

Commissioning refers to the process by which the newly installed components and systems are tested to verify if they function according to their design objectives and/or specifications and are brought into operation.

Fixed fire protection system refers to engineered sets of components that work together to detect fires, alert occupants, and extinguish fires, and may include fixed or automatic systems, such as those described by the standards listed in the references, used for controlling or putting out fires.

Non-standard fixed fire protection systems are those systems that have features that do not meet all the requirements of NZS 4541:2013, but that do however meet the specific fire problems for which they are designed.

Special hazards fixed fire protection systems refer to systems designed and installed to AS 4214:2018, AS 4587:2020, NFPA 12:2022, NFPA 15:2022, NFPA 16:2019, NFPA 17:2024, NFPA 17A:2021, NFPA 750:2023, or NFPA 2001:2022 standards. They may include but are not limited to: carbon, inert gas; dry chemical; wet chemical; foam, foam-water, water mist; and explosion suppression types of systems.

Standards refer to AS 4214:2018, AS 4587:2020, NFPA 12:2022, NFPA 15:2022, NFPA 16:2019, NFPA 17:2024, NFPA 17A:2021, NFPA 750:2023, and NFPA 2001:2022.

Systems documentation refers to the documentation required to be maintained by the relevant special hazards fixed fire protection system standards, including logbook, test reports, equipment details and drawings, specifications, contract agreement, additions and alterations, fire reports, building consents standards, codes of practice, installation instructions, test and commissioning procedures, 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. Use of standards listed in the references by candidates during assessment is encouraged.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of special hazards fixed fire protection systems.

Performance criteria

- 1.1 The principles of operation of special hazards fixed fire protection systems are identified and explained with reference to components.
- Range system type – water based, chemical, clean agent gas flood systems;
system components – extinguishant, extinguishant containers, control valves, isolating valves, pipe work, outlets, fixings, seismic restraints.
- 1.2 Commissioning procedures for a typical system are outlined with reference to systems documentation.
- 1.3 General safety requirements for the installation of special hazards fixed fire protection systems are identified.
- 1.4 Certification procedures applicable to special hazards fixed fire protection systems are identified.

Outcome 2

Demonstrate knowledge of non-standard fixed fire protection systems.

Performance criteria

- 2.1 The principles of operation of non-standard fixed fire protection systems are identified and explained with reference to components.
- 2.2 Commissioning procedures for a typical system are outlined with reference to systems documentation.
- 2.3 General safety requirements for the installation of non-standard fixed fire protection systems are identified.
- 2.4 Certification procedures applicable to non-standard fixed fire protection systems are identified.

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	31 December 2000	31 December 2017
Revision	2	17 May 2001	31 December 2017
Review	3	26 March 2007	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

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.