

Title	Demonstrate knowledge of passive fire protection system elements and products, and installation practices		
Level	3	Credits	10

Purpose	<p>This unit standard is for the training of fire stopping specialists.</p> <p>People credited with this unit standard are able to: demonstrate knowledge of legislation, standards, and codes for passive fire protection (PFP) and quality control, passive fire products, and installation practices for compliant PFP; and describe documentation required for installation and compliance of PFP systems, the roles of people in achieving compliant PFP, fire resistance of building elements.</p>
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Classification	Mechanical Engineering > Passive Fire Protection
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Available grade	Achieved
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Guidance Information

1 Legislation and References

Legislation, regulations and/or industry standards relevant to this unit standard include but are not limited to the:

[Building Act 2004](#),

[New Zealand Building Code](#),

[Building \(Forms\) Regulations 2004](#),

[Health and Safety at Work Act 2015](#),

[Ministry of Business, Innovation and Employment \(MBIE\) New Zealand Building Code Handbook](#),

[MBIE Acceptable Solutions \(AS\) and Verification Methods \(VM\)](#),

Association of Wall and Ceiling Industries of New Zealand Inc,

[Code of practice For Design, Installation and Seismic Restraint of Suspended Ceilings](#),

[Guide to Passive Fire Protection in Buildings 2017](#),

AS/NZS 1668.1:2015, *The use of ventilation and air conditioning in buildings*, Part 1:

Fire and smoke control in buildings,

AS 1530.4-2014, *Methods for fire tests on building materials, components and structures – Fire-resistance test of elements of construction*,

NZS/BS 476.20:1987, *Fire tests on building materials and structures – Method for determination of the fire resistance of elements of construction (general principles)*,

NZS 4219:2009, *Seismic performance of engineering systems in buildings*,

NZS 4520:2010, *Fire-resistant door sets*,

AS 4072.1-2005, *Components for the protection of openings in fire-resistant separating elements – Service penetrations and control joints*,

Standards can be found at [Standards New Zealand](#).

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

As near as reasonably practicable (ANARP) refers to putting in place the highest level of protection considering what can be done and whether it is reasonable given the circumstances.

Building elements are the primary parts or components of a building such as floors, walls, doors, windows, roofs, steps, stairs, and lifts, finishing work, building services.

Building services are the services installed in buildings to make them functional, comfortable, efficient, and safe. They may include electricity supply, water supply, Information and communication network, sanitation, gas supply, air-conditioning, HVAC (heating, ventilation, and air conditioning).

FRR refers to fire resistance rating.

Fire stopping specialist refers to installers of complaint passive fire elements, products, and systems.

Passive fire protection (PFP) refers to components or systems of a building or structure that slows or impedes the spread of the effects of fire or smoke without system activation, and usually without movement. Examples of passive systems include floor-ceilings and roofs, fire doors, windows, and wall assemblies, fire-resistant coatings, and other fire and smoke control assemblies. Passive fire protection systems can include active components such as fire dampers.

Workplace procedures – 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

All activities must comply with – any policies, workplace procedures, business protocols, and requirements of the organisation/s involved, and ethical codes and standards of relevant professional bodies.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of legislation, standards, and codes for compliant PFP and quality control.

Performance criteria

- 1.1 Acts, regulations, standards, and codes relevant to the installation and quality control of PFP systems are identified and the purpose of each is stated.
- 1.2 The compliance system for PFP in new and existing buildings is described.

1.3 The risk groups defined in the Acceptable Solutions and/or Verification Methods (ASVM) documents are stated.

1.4 The term “as near as reasonably practicable” (ANARP) is explained in relation to PFP.

Outcome 2

Describe the documentation required for the installation and compliance of PFP systems.

Performance criteria

2.1 Documents required for installation and compliance of PFP systems are described.

Range fire engineering reports and plans, consent documents, plans, evidence of compliance, regulatory information report, assessment report, appraisal certificate, manufacturer’s data sheet and catalogue, test report, ASVM;
description includes – document title, purpose or function, legal requirement, who is responsible for completion, processing or filing requirements.

Outcome 3

Describe the roles of people in achieving compliant PFP.

Performance criteria

3.1 The roles of people involved to ensure initial and ongoing compliance of PFP are described.

Range systems designer/architect/engineer, building consent officer/building inspector, project manager/head contractor/installer, independent qualified person (IQP), suppliers, specialist installers, on-site supervisor.

3.2 Quality control and inspection requirements for PFP are described.

3.3 The candidate’s own role as a fire stopping specialist is described.

Range for installation guarantee, what the guarantee means, how to get drawings modified and/or corrected, quality management.

Outcome 4

Describe fire resistance of building elements.

Performance criteria

4.1 Fire cells and their function are described in a building in conjunction with the fire report and design.

- 4.2 The numbering system that designates the fire resistance rating (FRR) of a building element is described.
- 4.3 Test reports and or results for various fire stopping elements and products are interpreted and described.
- Range elements and products may include but are not limited to – doors, walls, floors, windows, ceilings, claddings, sleeves, collars, wraps, bandages, blocks, plugs, boards, sealants, sprays, putties, coatings, mortars, fasteners.
- 4.4 Processes used by a fire stopping specialist to obtain FRR and evidence of compliance of products used for the building elements and passive fire products are described.
- 4.5 The difference between one way FRR and two way FRR is described.
- 4.6 The material group numbers listed in the New Zealand Building Code, and the fire growth rate (FIRGA ratio) and the information they convey are described.

Outcome 5

Demonstrate knowledge of passive fire products.

Performance criteria

- 5.1 Reports and datasheets are read and interpreted.
- 5.2 Actions to take to resolve differences between specifications and the evidence from compliance reports are described.
- 5.3 Methods used by manufacturers to test and determine the FRR for their products are described.
- 5.4 Different substrates used in the building industry and their make-up and fire rating are described.
- 5.5 Limitations of passive fire products are described.
- 5.6 Combination or hybridisation, and substitution of passive fire products are described in terms of when and where they are done.
- 5.7 Differences between fire seals and smoke seals, and their functions are described.

Outcome 6

Demonstrate knowledge of installation practices for compliant PFP.

Range may include but is not limited to – walls, doors, ducts, ceilings, fire dampers, structures, sealing of penetrations, fire protection coatings, fasteners.

Performance criteria

- 6.1 Installation procedures and practices for building elements are described.
- 6.2 Drawings and specifications are read and interpreted.
- 6.3 Limitations and best practices for managing service penetrations are described.
- Range may include but is not limited to – pipes, electrical cables, data cables, penetration size, separation of services, distance between penetrations.
- 6.4 Labelling and documenting requirements for service penetrations and control joints are described.

Planned review date	31 December 2028
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 August 2019	31 December 2026
Review	2	28 March 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.