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

Purpose	This unit standard is for the training of fire stopping specialists. People credited with this unit standard are able to demonstrate knowledge of: legislation, standards, and codes for passive fire protection installation and quality control; documentation required for installation and compliance of passive fire systems; roles of people in achieving compliant passive fire protection; fire resistance of building elements; passive fire products; and installation practices for compliant passive fire protection.

Classification	Mechanical Engineering > Passive Fire Protection

Available grade	Achieved

Guidance Information

1 Legislation and References
Building Act 2004 and New Zealand Building Code.
Health and Safety at Work Act 2015.
MBIE *Acceptable Solutions (AS) and Verification Methods (VM),* available at https://www.building.govt.nz/.
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 doorsets*.
AS 4072.1-2005, *Components for the protection of openings in fire-resistant separating elements* – Service penetrations and control joints.
Association of Wall and Ceiling Industries of New Zealand Inc.,
Code of practice for Design, Installation and Seismic Restraint of Suspended Ceilings, available at https://awci.org.nz/wp-content/uploads/AWCI-CoP-Web.pdf.
Guide to Passive Fire Protection in Buildings 2017, available at https://www.branz.co.nz/.

2 Definitions
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), sprinkler systems, fire detection and alarm systems, security systems, escalators and lifts.
Fire stopping specialist refers to installers of complaint passive fire elements, products, and systems.
Passive fire protection (PFP) is an integral part of the three components of structural fire protection and fire safety (i.e. Fire Resistance Rating) in a building. PFP attempts to contain fires or slow the spread by compartmentalising the building and through the use of fire resistant walls, floors, doors, ceilings, and roofs.

3 Assessment information
It is recommended that the candidates use standards listed in the references during assessment.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of legislation, standards, and codes for compliant passive fire protection installation and quality control.

Performance criteria

1.1 Acts, regulations, standards, and codes relevant to the installation and quality control of passive fire protection systems are identified and the purpose of each is stated.

1.2 The compliance system for passive fire protection in new and existing buildings is described.

1.3 The risk groups defined in the AS/VM documents are stated.

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

Outcome 2

Describe the documentation required for the installation and compliance of passive fire systems.

Performance criteria

2.1 Documents required for installation and compliance of passive fire 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, Acceptable Solutions, Verification Method; 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 passive fire protection.

Performance criteria

3.1 The roles of people involved to ensure initial and ongoing compliance of passive fire protection 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 passive fire protection 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 Firecells are described in terms of what they are and their function 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) are described in terms of what they are and the information they convey.

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 be done.

5.7 Differences between fire seals and smoke seals, and their functions are described.

Outcome 6

Demonstrate knowledge of installation practices for compliant passive fire protection.

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 2024

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	22 August 2019	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 Competenz at qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.