Title	**Demonstrate knowledge of passive fire protection systems and product functionality in buildings**		
Level	**4**	**Credits**	**20**

Purpose	People credited with this unit standard are able to demonstrate knowledge of PFP system components drawings and engineering documentation, explain key installation criteria for PFP components, and demonstrate knowledge of achieving and maintaining compliance in product functionality in buildings.

Classification	Mechanical Engineering > Passive Fire Protection

Available grade	Achieved

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.
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 (R2016), *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., AWCI, *Code of practice for Design, Installation and Seismic Restraint of Suspended Ceilings, Guide to Passive Fire Protection in Buildings 2017*.
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
Datasheets refer to the installation guide provided by the supplier instead of the fire test report and gives guidelines and information to the installer of compliance and rating as well as installation instructions.

Drawing set refers to a collection of fire engineering drawings, service drawings, design drawings and mechanical drawings.
Passive fire protection (PFP) refers to components or systems of a building or structure that slow or impede 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 refer to 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, and procedures to comply with legislative and local body requirements.

3 Assessment information
All activities must comply with – any policies, procedures, business protocols, and requirements of the organisation/s involved, and ethical codes and standards of relevant professional bodies.
All the assessment activities in this unit standard are intended to assess learners' ability to read and identify components from a set of drawings and locate components on site.
Range
At least 3 examples from each applicable range must be assessed.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of PFP system components drawings and engineering documentation.

Range must include fire ratings, quantities, and suitable placements.

Performance criteria

1.1 PFP system components are identified from the drawing and engineering documentation provided.

Range may include but is not limited to– fire and smoke dampers, fire-rated ducts, fire and smoke control doors, fire shutters, fire curtains, glazing, structural steel protection, and service penetrations.

1.2 Drawings and engineering documentation are evaluated to ensure compliance with building codes when assessing PFP systems.

Range may include but is not limited to – fire and smoke dampers, fire-rated ducts, fire and smoke control doors, fire shutters, fire curtains, glazing, structural steel protection, and service penetrations.

1.3 The alignment of all drawings and engineering documentation with each other in the assessment of PFP systems is verified and confirmed.

Range may include but is not limited to – fire and smoke dampers, fire-rated ducts, fire and smoke control doors, fire shutters, fire curtains, glazing, structural steel protection, and service penetrations.

Outcome 2

Explain key installation criteria for PFP components.

Performance criteria

2.1 Installation criteria for heating, ventilation, and air conditioning (HVAC) components are explained.

Range HVAC components may include but are not limited to – motorised fire and smoke dampers, fusible link fire dampers, intumescent fire dampers, duct wrap.
installation may include but is not limited to – substrate preparation, orientation, duct connections, commissioning, functional testing.

2.2 Installation criteria for fire and smoke-controlled doors are explained.

Range may include but is not limited to – substrate preparation, sealing, acceptable clearances, seals, closing action, door hardware, labelling requirements, latching, functional testing of interfaced components.

2.3 Installation criteria for fire shutters and fire and smoke control curtains are explained as used in PFP systems in accordance with the manufacturer's specifications.

Range may include but is not limited to – motorised fire shutters, fusible link fire shutters, motorised fire and smoke control curtains.
installation may include but not limited to: substrate preparation, acceptable clearances, functional testing, manufacturer's recommendations.

2.4 Installation criteria for glazing are explained as used in PFP systems in accordance with manufacturer's specifications.

Range may include but is not limited to – fire-rated glazing systems, glazing in smoke separations, labelling requirements. installation may include but is not limited to – substrate preparation, sealing, acceptable clearances, labelling requirements.

2.5 Installation criteria for encapsulated steel protection are explained as used in PFP systems in accordance with manufacturer's specifications.

Range may include but is not limited to – installation: framing, mechanical fixings, substrate preparation, sealing, acceptable clearances, labelling, HP/A determination, junction and joints termination.

2.6 Installation criteria for coated steel protection are explained as used in PFP systems in accordance with manufacturers specifications.

Range may include but is not limited to – installation loading schedules, substrate preparation, atmospheric readings, prime, base layer, topcoat, protective film thickness, HP/A determination.

2.7 Installation criteria for dampers and doors with electro-magnetic integrated hold-open systems are explained.

Outcome 3

Demonstrate knowledge of achieving and maintaining compliance in product functionality in buildings.

Range may include but is not limited to – fire stop locations, type and ratings, substrate materials, orientation, service type, service penetrations, testing and certifications, and maintenance requirements.

Performance criteria

3.1 Relationship between product testing and installation methodology in achieving compliance is identified.

3.2 PFP fire resistance ratings, limitations, and product specifications from fire test reports and/or datasheets are explained.

3.3 Service and maintenance requirements in order to maintain compliance are explained.

Planned review date	31 December 2028

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	28 March 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.