



Australian Government

Department of Education, Employment and Workplace Relations

CPPFES3040A Install passive fire and smoke containment systems

Release: 1

CPPFES3040A Install passive fire and smoke containment systems

Modification History

Revised unit

Unit updated and equivalent to PRMPFES40A Install passive fire and smoke containment systems

Unit Descriptor

This unit of competency specifies the outcomes required to install and adjust passive fire and smoke containment systems. This includes both fireproofing and fire stopping installations. The unit covers the skills and knowledge required to install passive fire and smoke containment systems, and follow labelling and certification procedures.

Application of the Unit

This unit of competency supports fire protection technicians responsible for installing passive fire and smoke containment systems. This unit does not apply to the installation of fire doors or to any other functions performed by licensed tradespersons.

Licensing/Regulatory Information

Installation of passive fire and smoke containment systems must be completed according to relevant legislative, industry, and organisational requirements, including occupational health and safety (OHS) policies and procedures.

The passive fire service technician is not permitted to undertake any installation, replacement, maintenance and repair functions that are restricted to licensed trades or occupations (subject to relevant state or territory regulations).

Different states and territories may have regulatory mechanisms that apply to this unit. Candidates are advised to check for regulatory limitations.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | | | |
|---|---|-----|---|
| 1 | Apply rules and regulations to installation operations. | 1.1 | Requirements of relevant <i>rules and regulations</i> are <i>confirmed</i> and applied to <i>work procedures</i> . |
| | | 1.2 | <i>Compliance requirements are checked</i> and <i>action</i> is taken according to <i>organisational policies and procedures</i> . |
| 2 | Prepare for system installation. | 2.1 | Work permits are obtained prior to entering customer premises. |
| | | 2.2 | <i>Customer requirements</i> are discussed and a suitable <i>passive fire and smoke containment system</i> is selected according to organisational and customer requirements. |
| | | 2.3 | Relevant measurement processes are applied to installation site and passive fire and smoke containment system components. |
| | | 2.4 | Components, tools, equipment and materials required for installation are identified and assembled. |
| | | 2.5 | Fireproofing or fire-stopping materials required for installation of system are identified and assembled. |
| 3 | Prepare fireproofing substrate or fire stopping opening for the system. | 3.1 | <i>Structural or penetrated elements</i> are checked for compliance with required smoke resistance or fire resistance level. |
| | | 3.2 | Fireproofing substrate or fire stopping opening is prepared. |
| | | 3.3 | Materials for installation of fireproofing or fire stopping system are measured and prepared. |

- | | | | |
|---|--|-----|--|
| 4 | Install passive fire and smoke containment system. | 4.1 | Fireproofing material or fire stopping system is installed according to manufacturers' installation instructions. |
| | | 4.2 | Passive fire and smoke containment system is inspected and tested for defects and checked to ensure that installation is sound and aesthetically pleasing, according to standard testing procedures and acceptable workmanship. |
| | | 4.3 | Impediments are rectified and reported according to organisational requirements. |
| 5 | Label or mark and certify passive fire and smoke containment system. | 5.1 | Installation is assessed and labelled or marked according to provisions of relevant Australian standard and manufacturer, Building Code of Australia (BCA) and organisational requirements. |
| | | 5.2 | Relevant schedule of evidence of compliance set out in relevant Australian standard or logbook is completed according to relevant Australian standard, and organisational and customer requirements. |
| 6 | Complete installation. | 6.1 | Customer premises are left in a clean and tidy condition on completion of installation functions. |
| | | 6.2 | Documentation is completed and distributed according to organisational and customer requirements. |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- initiative and enterprise skills to identify, select and comply with Australian standards and related legislation
- language and literacy skills to:
 - access information from technical manuals
 - communicate technical information to customers and colleagues
 - complete and distribute relevant documentation
 - find and use written information, including building specifications
 - interpret manufacturers' data sheets for determining installation requirements for a range of passive fire and smoke containment system components installed into or onto elements of construction, including structural elements and openings in or through fire compartments
 - interpret manufacturers' installation specifications and maintenance instructions
 - understand and comply with work instructions
 - use technical terminology relating to installing passive fire and smoke containment systems and work practices
- planning skills to organise work according to organisational requirements
- technical skills to recognise components of passive fire and smoke containment systems
- skills to work safely when:
 - applying workplace housekeeping procedures
 - following work procedures
 - identifying potential and existing hazards and risks
 - selecting and using tools relating to installation procedures
 - selecting and using personal protective equipment (PPE)
 - using equipment and products

Required knowledge

- action to take when a breach of health, safety or other policy occurs
- common technical terminology used in the installation of passive fire and smoke containment systems, including:
 - plumb, level, square and perpendicular
 - mix ratio, density, wet film thickness, dry film thickness, section factor (H_p/A), exposed surface to mass (ESM) ratio and critical temperature
 - fire-rated walls, masonry, concrete, plasterboard and shaft wall
 - fire-rated floors and floor ceiling systems

- penetration dimensions, i.e. width, height, depth and orientation
- ambient and cold smoke, medium smoke and elevated and hot smoke
- intumescent products and ablative products
- clearance, field of application, fire resistance levels, incipient spread of fire, spread of flame indices, fire test report, assessments and letters of opinion
- dangers of incorrect installation of passive fire and smoke containment systems
- key features of legislation, Australian standards and building code requirements relating to:
 - installing passive fire and smoke containment systems
 - passive fire and smoke containment
- implications of not applying legislative requirements to job functions
- methods of converting imperial units of measurement to metric
- organisational requirements for labelling and certifying passive fire and smoke containment system installations
- passive fire and smoke containment labelling types
- principles of passive fire protection related to overall fire safety and containment systems specific to passive fire and smoke containment systems
- procedures for determining fire resistance levels and smoke resistance levels
- purpose and interpretation of Australian standards and technical documentation relating to passive fire and smoke containment systems
- technical terms relating to passive fire and smoke containment system installation
- fireproofing and fire stopping variables, including types, components and fire barrier types

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment	This unit of competency could be assessed by observation of practical demonstration of the installation of a range of passive fire and smoke containment systems in customers' premises or simulated workplace environments.
Critical aspects for assessment and evidence required to demonstrate competency in this unit	A person who demonstrates competency in this unit must be able to provide evidence of the required skills and knowledge specified in this unit. In particular the person should demonstrate the ability to: - install different types of fireproofing to structural steel and ductwork: - spray - intumescent paint - board - install fire stopping systems - comply with the requirements of: - Australian standards identified as relevant to work procedures - building Acts, regulations and codes - environmental regulations - manufacturers' specifications - OHS legislation, codes and regulations - organisational requirements, including OHS policies and procedures.
Context of and specific resources for assessment	Assessment of essential underpinning knowledge may be conducted in an off-site context. It is to comply with relevant regulatory or Australian standards' requirements. Resource implications for assessment include: - actual or simulated work environment - access to relevant standards and legislation - access to a variety of installation procedures relating to hinged fire and smoke doors - assessment documentation - training and assessment record book.
Method of assessment	Assessment methods must: satisfy the endorsed Assessment Guidelines of the Property

	Services Training Package • include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application • reinforce the integration of employability skills with workplace tasks and job roles • confirm that competency is verified and able to be transferred to other circumstances and environments.
Guidance information for assessment	Reasonable adjustments for people with disabilities must be made to assessment processes where required. This could include access to modified equipment and other physical resources, and the provision of appropriate assessment support. Assessment processes and techniques should as far as is practical take into account the language, literacy and numeracy capacity of the candidate in relation to the competency being assessed. This unit could be assessed on its own or in combination with other units relevant to the job function, for example: • CPPFES2039A Identify, inspect and test passive fire and smoke containment products and systems.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

<i>Rules and regulations</i> may include:	• dangerous goods regulations • environmental regulations • licensing arrangements • OHS legislation, regulations and codes • relevant commonwealth and state or territory building Acts, regulations and codes, such as the BCA • relevant Australian standards, such as: • AS 1851 Maintenance of fire protection systems and equipment • note: Australian standards are frequently revised and users must always check for currency and amendments • other relevant legislation relating to fire protection equipment, including: • international shipping codes • marine codes for different Australian States • requirements of Australian petroleum industry.
Requirements may be <i>confirmed</i> with:	• colleagues • managers • supervisors • team leaders.
<i>Work procedures</i> may include:	• assignment instructions • equipment manufacturers' requirements • instructions from colleagues, supervisor or manager • PPE requirements • reporting and documentation requirements • specific customer requirements.
<i>Checking compliance requirements</i> may include:	• undertaking commissioning tests detailed in Australian standards and manufacturers' documentation to verify performance of an installed, repaired or altered piece of equipment or system • reviewing documentation to verify that installed systems comply with relevant rules and regulations.
<i>Action</i> may include:	• advising customer • documenting non-compliance • making equipment safe • reporting, as required.

Organisational policies and procedures may include:	• job scheduling systems and communication devices • personnel practices and guidelines outlining work roles, responsibilities and delegations • recording and reporting documentation and systems • relevant OHS policies, procedures and programs • relevant rules and regulations • standard operating procedures, work instructions and manuals.
Customer requirements may include:	• confirming or varying service instructions • cost, reliability and maintenance requirements of the selected passive fire and smoke containment system • following sign-in and sign-out procedures for entry to or exit from premises • providing non-routine or urgent services • providing routine services • providing written or verbal confirmation of services provided or future maintenance schedule • sighting work permits.
Passive fire and smoke containment systems include:	• passive fire and smoke containment products, including: • fabric and timber protection, impregnated or sprayed • fire-rated air transfer grilles • fire-rated sealants, caulks and putties: • acrylic • polyurethane • silicone • fire resistant boards: • calcium silicate • vermiculite • fire resistant mortars and grouts: • load bearing • non-load bearing • fire resistant pillows: • intumescent • non-intumescent • fire stop collars: • cast in • retrofit • wall • intumescent paints and coatings (other than those used for fireproofing structural steel) • linear gaps seals: • impregnated foams

	• tapes • intumescent gaskets • sealants • materials into or onto which passive fire and smoke containment products are installed, including: • concrete • fire resistant board • masonry • plasterboard • steel • timber • UPVC • mechanical and intumescent fire dampers • smoke dampers • passive fire and smoke containment solutions, including: • access panels and hatches • ceiling and partition systems • control joints and expansion joints • duct fireproofing and protection • duct and damper penetration protection • fire-rated sealants • industrial fire protection • intumescent dampers and seals • openings in structural elements • penetration solutions • protection against spread of flame • structural steel fireproofing and protection • UPVC and plumbing penetrations.
Structural element requiring fireproofing may be:	• self-supporting duct work or bulkheads (made from calcium silicate or other proprietary board material) • sheet metal smoke exhaust ductwork • structural steel element, including: • beam • column • truss.
Penetrated element of construction requiring fire stopping may be:	• bulkhead • concrete floor slab • drywall (plasterboard or lightweight construction) • drywall ceiling (plasterboard or lightweight construction) • fire or smoke door panel

	• masonry wall (brick, blockwork or pre-cast concrete panels).
Defects may include:	• items that do not comply with: • Australian standards • manufacturers' instructions • requirements of the necessary legislation.
Documentation may include:	• certificates of inspection • corrective action reports • customer recommendation forms • equipment recommendation forms • job cards • maintenance record systems • product documentation and installation instructions • service agreements.

Unit Sector(s)

Fire protection equipment

Custom Content Section

Not applicable.