



Australian Government

CPCPFS3036A Install special hazard systems

Release 1

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Modification History

Prerequisite unit updated

Changes to performance criteria, required skills and knowledge, range statement and critical aspects

Not equivalent to CPCPFS3016A

Unit Descriptor

This unit of competency specifies the outcomes required to install special hazard extinguishing systems, including decommissioning gaseous agent containers and actuation devices.

Application of the Unit

Site location for work application may be either domestic or commercial, and may be a new work site or an existing structure being renovated, extended, restored or maintained.

Licensing/Regulatory Information

All technicians performing work described in this unit that involves the handling of prescribed ozone depleting substances (ODS) and synthetic greenhouse gases (SGG) extinguishing agents must hold an appropriate extinguishing agent handling licence (EAHL).

Pre-Requisites

CPCPCM2043A Carry out WHS requirements

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

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| 1 | Prepare for work. | 1.1 | Plans and specifications are obtained. |
| | | 1.2 | <i>Work health and safety</i> (WHS) and <i>environmental requirements</i> associated with installing special hazard extinguishing systems are adhered to throughout the work. |
| | | 1.3 | <i>Quality assurance requirements</i> are identified and adhered to according to workplace requirements. |
| | | 1.4 | Knowledge and understanding of ODS and SGG legislative and industry requirements are applied to install activities for special hazard fire suppression systems. |
| | | 1.5 | Tasks are planned and sequenced in conjunction with others involved in or affected by the work. |
| | | 1.6 | <i>Tools and equipment</i> for installing <i>special hazard extinguishing systems</i> , including personal protective equipment, are selected and checked for serviceability. |
| | | 1.7 | Work area is prepared to support efficient installation of special hazard extinguishing systems. |

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| 2 | Identify installation requirements. | 2.1 | System requirements are identified from job design criteria, specifications and standards. |
| | | 2.2 | Components for special hazard system are selected according to plans, specifications, standards, manufacturer recommendations and job requirements. |
| | | 2.3 | Components and other materials are identified, ordered and collected according to workplace procedures. |
| | | 2.4 | Components are checked for compliance with standards, docket and order form, and for acceptable condition. |
| 3 | Decommission gaseous agent containers and actuation devices. | 3.1 | Gaseous agent containers and actuation devices are decommissioned according to decommissioning guidelines; organisational, customer, legislative and industry requirements; and manufacturer specifications. |
| | | 3.2 | All interface actuation control devices are confirmed and isolated; and appropriate signage, documentation and lock-off are put in place. |
| | | 3.3 | Manual, electrical and mechanical actuation control devices are disconnected. |
| | | 3.4 | Pneumatic actuation control devices, and pilot and slave tubes and fittings are identified and disconnected. |
| | | 3.5 | Transport caps on actuation outlets, plugs and locking devices are connected. |
| | | 3.6 | Container bank manifold connection components are disconnected. |
| | | 3.7 | Transport caps on valve outlets are connected. |
| | | 3.8 | Removal and transportation of gaseous agent containers to storage or reclaim facility are organised according to legislative requirements and WHS policies and procedures. |
| | | 3.9 | Documentation and decommissioning sign-off requirements are completed and confirmed with relevant persons. |

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| 4 | Install and test special hazard systems. | 4.1 | System is set out according to drawings, specifications and job instructions. |
| | | 4.2 | Fixings are installed to plans and manufacturer specifications. |
| | | 4.3 | Pipe supports are compliant with standards, plans and specifications. |
| | | 4.4 | Pipes, fittings and components are installed according to plans, specifications and standards. |
| | | 4.5 | Piping system is subjected to pressure testing according to standards, plans and specifications. |
| | | 4.6 | Test data is recorded in format required by plans, specifications and authorities' requirements. |
| | | 4.7 | Sustainability principles and concepts are observed when preparing for and undertaking work process. |
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| 5 | Clean up. | 5.1 | Work area is cleared and materials disposed of, reused or recycled according to legislation, regulations, codes of practice and job specification. |
| | | 5.2 | Tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and workplace procedures. |
| | | 5.3 | Information is accessed and documentation completed according to regulatory authorities and workplace requirements. |

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - access information
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow and give instructions
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- initiative and enterprise skills to identify and report to appropriate personnel any faults in tools, equipment or materials
- literacy skills to:
 - complete workplace documentation
 - read and interpret:
 - documentation from a variety of sources
 - plans and specifications
 - record test results in writing
- numeracy skills to apply measurements and calculations
- planning and organising skills to:
 - plan and sequence tasks with others
 - plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- technical skills to install and test special hazard protection system consisting of an extinguishing agent, piping, actuating devices and sprinkler delivery
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology

Required knowledge

- function and operation of system components
- hazard categories, classes of fire hazard, extinguishing agents and application methods
- job safety analysis (JSA) and safe work method statements (SWMS)
- National Fire Protection Association (NFPA) and Factory Mutual performance-based

codes of practice

- pressure test systems and procedures
- procedures for cylinder anchorage
- process of installing and testing special hazard systems
- relevant statutory and authorities' requirements related to installing special hazard systems
- requirements for room ventilation and integrity
- SI system of measurement
- structural systems, building materials and building services
- workplace and equipment safety requirements

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 in the workplace or a close simulation of the workplace environment providing that simulated or project-based assessment techniques fully replicate plumbing and services workplace conditions, materials, activities, responsibilities and procedures.

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:

- locating, interpreting and applying relevant information, standards and specifications to install and test special hazard systems
- applying safety requirements throughout work sequence, including electrical safety and the use of personal protective clothing and equipment
- given the plans and system specifications of a special hazard fire suppression system, identifying the requirements and installing one special hazards fire suppression system (not prescribed ODS or SGG extinguishing agent), incorporating a high pressure carbon dioxide gas storage cylinder, connected by piping to a simple distribution system with one actuating device, to design criteria and standards, ensuring:
 - application of sustainability principles and concepts
 - correct identification of requirement, design and details of proposed installation
 - correct selection and use of appropriate processes, tools and equipment, including those for use with installed gaseous agent containers and actuation devices
 - completing all work to specification
 - compliance with regulations, standards and organisational quality procedures and processes, including ODS and SGG regulations, standards, order requirements and organisational quality procedures and processes
 - decommissioning installed gaseous agent

containers and actuation devices using decommissioning guidelines

- communicating and working effectively and safely with others.

Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- realistic tasks or simulated tasks covering the minimum task requirements
- relevant specifications and work instructions
- tools and equipment appropriate to applying safe work practices
- support materials appropriate to activity
- workplace instructions relating to safe work practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry-related systems information.

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.

Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and 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.

Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

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.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

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.

Work health and safety is to be according to commonwealth, state and territory legislation and regulations and may include:

- handling of materials
- hazard control
- personal protective clothing and equipment prescribed under legislation, regulations and workplace policies and practices

- safe operating procedures, including recognising and preventing hazards associated with:
 - electricity
 - hazardous materials and substances
 - service lines
 - surrounding structures and facilities
 - trip hazards
 - use of tools and equipment
 - work site visitors and the public
 - working at heights
 - working in proximity to others
- use of firefighting equipment
- use of first aid equipment
- workplace environment and safety.

Environmental requirements cover water quality management and may include:

- clean-up protection
- complying with ODS and SGG legislation, codes and regulations, e.g. Ozone Protection and Synthetic Greenhouse Gas Management Act 1989
- preventing emissions of prescribed ODS and SGG extinguishing agents
- waste management.

Quality assurance requirements may include:

- Australian standards
- Environment Protection Authority (EPA)
- internal company quality assurance policy and risk management strategy
- International Standards Organisation
- site safety plan
- workplace operations and procedures.

Tools and equipment may include:

- angle grinders
- cutting and threading equipment
- elevated work platforms
- hand and power tools
- ladders
- scaffolds
- testing equipment
- welding equipment.

Special hazard extinguishing systems may include:

- carbon dioxide and other gases (such as inergen and argonite)
- chemical reaction and explosion suppression systems
- dry chemical
- foam
- prescribed ODS and SGG extinguishing agents (such as halon and NAF S-III)
- water
- water mist.

Materials may include:

- actuating devices
- extinguishing agents, including prescribed ODS and SGG materials or other approved materials
- pipes
- sprinkler and delivery systems.

Actuation control devices (also known as actuators) may include:

- electrical operation by signal generated from control and indicating equipment (CIE) panel as part of a fire alarm detection system
- manual operation by direct push lever or pull cable system
- mechanical operation via signal from local control station or fire detector
- pneumatic operation from fire detector (typically heat).

Documentation may include:

- corrective action reports
- customer recommendation forms
- equipment recommendation forms
- expense claims
- job cards
- maintenance record system
- manufacturer system documentation
- product documentation
- service agreements
- test results and test reports.

Sustainability principles and concepts:

- cover the current and future social, economic and environmental use of resources
- may include:

- disposing of waste material to ensure minimal environmental impact
- efficient energy use
- efficient use and recycling of material
- selecting appropriate components to ensure minimal environmental impact.

Information may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- manufacturer specifications and instructions
- material safety data sheets (MSDS)
- memos
- NFPA and Factory Mutual performance-based codes of practice
- organisation work specifications and requirements
- plans and sketches
- regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
- relevant Australian standards
- safe work procedures relating to installing special hazard systems
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Functional area

Unit sector Plumbing and services

Custom Content Section

Not applicable.