



Australian Government

Department of Education, Employment and Workplace Relations

CPCPFS3016A Install special hazard systems

Release: 1

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Modification History

Not Applicable

Unit Descriptor

Unit descriptor

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

NOTE: 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).

Application of the Unit

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

Not Applicable

Pre-Requisites

Prerequisite units

CPCPCM2023A

Carry out OHS requirements

Employability Skills Information

Employability skills 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

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for work.	1.1. Plans and specifications are obtained. 1.2. Safety (OHS) requirements associated with installing special hazard extinguishing systems and workplace environmental requirements are adhered to throughout the work. 1.3. Quality assurance requirements are identified and adhered to in accordance with 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. Tools and equipment for installing special hazard extinguishing systems, 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.
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 in accordance with plans, specifications, standards, manufacturer recommendations and job requirements. 2.3. Components and other materials are identified, ordered and collected in accordance with 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

ELEMENT**PERFORMANCE CRITERIA**

	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 in accordance with legislative requirements and OHS policies and procedures. 3.9. Documentation and decommissioning sign-off requirements are completed and confirmed with relevant persons.
4. Install and test special hazard systems.	4.1. System is set out in accordance with 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 in accordance with plans, specifications and standards. 4.5. Piping system is subjected to pressure testing in accordance with standards, plans and specifications. 4.6. Test data is recorded in format required by plans, specifications and authorities' requirements.
5. Clean up.	5.1. Work area is cleared, with materials disposed of or recycled in accordance with state or territory statutory and regulatory authority legislation. 5.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and workplace procedures. 5.3. Information is accessed and documentation completed in accordance with regulatory authorities and workplace requirements.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

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

Required skills

Required skills for this unit are:

- communication skills to:
 - access information
 - complete workplace documentation
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow and give instructions
 - plan and sequence tasks with others
 - read and interpret:
 - documentation from a variety of sources
 - drawings and specifications
 - record test results in writing
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- installing and testing special hazard protection system consisting of an extinguishing agent, piping, actuating devices and sprinkler delivery
- numeracy skills to apply measurements and calculations
- organisational skills, including the ability to plan and set out work
- identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
- 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
- technological skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology.

Required knowledge

Required knowledge for this unit is:

- 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

REQUIRED SKILLS AND KNOWLEDGE

based codes of practice

- pressure test systems and procedures
- process of installing and testing special hazard systems
- relevant statutory and authority requirements related to installation of special hazard systems
- SI system of measurement
- structural systems, building materials and building services
- workplace and equipment safety requirements.

Evidence Guide

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 the use of personal protective clothing and equipment
- as a minimum the ability to, given the plans and system specifications of a special hazard fire suppression system, identify the requirements and install one special hazards fire suppression system (not prescribed ODS or SGG extinguishing agent), incorporating a high pressure carbon dioxide (CO₂) gas storage cylinder, connected by piping to a simple distribution system with one actuating device, to design criteria and standards, ensuring:
 - 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

EVIDENCE GUIDE

Context of and specific resources for assessment

- decommissioning installed gaseous agent containers and actuation devices using decommissioning guidelines
- communicating and working effectively and safely with others.

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 working 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

EVIDENCE GUIDE

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

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.

RANGE STATEMENT

Safety (OHS) is to be in accordance with 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:
 - 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

RANGE STATEMENT

Special hazard extinguishing systems include:

- testing equipment
- welding equipment.
- 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 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.

Statutory and regulatory authorities include:

- statutory gasfitting authority
- statutory plumbing authority
- state or territory statutory authority.

RANGE STATEMENT

Information may include:

- charts and hand drawings
- diagrams or sketches
- 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
- regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - OHS 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)

Unit sector Plumbing and services

Co-requisite units

Co-requisite units Nil

Functional area

Functional area