



Australian Government

CPCPFS3047A Test and maintain automatic fire sprinklers

Release 1

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Modification History

This version first released with CPC08 Construction, Plumbing and Services Training Package Version 9.

- Outcomes changed to include references to draining down and recharging. References to sustainability and work health and safety strengthened
- Range of other minor editorial changes

Not equivalent to CPCPFS3039A Test and maintain automatic fire sprinklers

Unit Descriptor

This unit of competency specifies the outcomes required to test and maintain automatic fire sprinkler installations in the full range of commercial, industrial or residential situations.

Application of the Unit

This unit of competency supports the work of fire protection industry personnel responsible for testing and maintaining automatic fire sprinklers.

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

Licensing/Regulatory Information

Licensing, legislative, regulatory or certification requirements may apply to this unit. Candidates are advised to check for regulatory requirements.

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 required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the required skills and knowledge and/or 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. | <p>1.1 Plans, specifications, maintenance manuals, previous maintenance reports, and equipment data are obtained and reviewed.</p> <p>1.2 <i>Work health and safety (WHS) requirements</i> associated with testing and maintaining automatic fire sprinklers, and workplace <i>environmental requirements</i>, are identified and applied to planning.</p> <p>1.3 <i>Quality assurance requirements</i> are identified according to workplace requirements.</p> <p>1.4 Tasks are planned and sequenced in conjunction with others involved in or affected by the work.</p> <p>1.5 <i>Tools, equipment</i> and <i>materials</i> for testing and maintaining automatic fire sprinklers, including personal protective equipment, are selected and checked for serviceability.</p> <p>1.6 Work area is prepared to support efficient testing and maintenance of automatic fire sprinklers.</p> |
| 2 | Perform routine maintenance tasks. | <p>2.1 Maintenance tasks detailed in maintenance schedule are performed to specification.</p> <p>2.2 Mechanical equipment and system components are checked using appropriate instruments according to standards and job specifications.</p> <p>2.3 Faulty items or components are identified and appropriate service procedure is selected.</p> |

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| 3 | Repair or replace faulty components and test job. | 3.1 | WHS requirements , workplace environmental requirements and quality requirements are applied to work tasks. |
| | | 3.2 | System is isolated and drained down , as required, to complete tasks without causing water damage. |
| | | 3.3 | Faulty items or components are removed using appropriate procedures, tools and equipment. |
| | | 3.4 | Replacement items or components are selected and fitted according to manufacturer recommendations and site specifications. |
| | | 3.5 | Adjustments are made to equipment or components to ensure specifications are met. |
| | | 3.6 | System is recharged with water according to specifications. |
| | | 3.7 | Operational check of system is carried out to ensure compliance with job specifications. |
| | | 3.8 | Maintenance report is documented in format required by maintenance specification. |
| | | 3.9 | Sustainability principles and concepts are observed when preparing for and undertaking work process. |
| 4 | Clean up. | 4.1 | Work area is cleared and waste materials disposed of or recycled according to statutory and regulatory authority requirements. |
| | | 4.2 | Tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and workplace procedures. |
| | | 4.3 | 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:
 - enable clear and direct communication, using questioning to identify and confirm requirements, and share information
 - follow and give instructions
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- numeracy skills to apply measurements and calculations
- planning and organisational skills to:
 - plan and sequence tasks with others
 - plan and set out work
- problem-solving skills to determine safe draining down methods
- reading skills to interpret drawings and specifications
- teamwork skills to work with others to action tasks
- technical skills to use tools and equipment required to test and maintain automatic fire sprinklers
- technology skills to:
 - access site-specific instructions in a variety of media
 - use mobile communication technology
- writing skills to:
 - record test results
 - complete workplace checklists and forms

Required knowledge

- function and operation of automatic fire sprinkler systems and components
- National Fire Protection Association (NFPA) and Factory Mutual performance-based codes of practice
- relevant statutory and authority requirements relating to testing and maintaining automatic fire sprinkler systems
- requirements of job safety analyses (JSA) and safe work method statements (SWMS)
- SI system of measurement
- structural systems, building materials and building services that support or surround automatic fire sprinkler systems
- automatic fire sprinkler test apparatus and procedures

- workplace and equipment safety requirements that apply to testing and maintaining automatic fire sprinklers

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 should demonstrate the ability to:

- locate, interpret and apply relevant information, standards and specifications to test and maintain automatic fire sprinklers
- apply safety requirements throughout the work sequence, including the use of personal protective clothing and equipment
- as a minimum, given a faulty automatic fire sprinkler system, the ability to conduct routine testing and maintenance to diagnose and repair faults and perform component service or replacement, ensuring:
 - application of sustainability principles and concepts
 - conduct of operational checks to confirm system is operating to specification
 - isolation and draining down of the system, as required
 - diagnosis of faults and conduct of necessary repairs or replacement of faulty components
 - identification and accurate reporting of faults in tools, equipment or materials to appropriate personnel
 - identification of the requirement for, and then the conduct of, system testing and maintenance
 - selection and use of appropriate processes, tools and equipment
 - completion of work to specification
 - compliance with regulations, standards and organisational quality procedures and processes
 - effective communication with others
 - safe work practices.

Context of and specific resources for assessment

Assessment of this unit:

- must be in the context of the work environment
- may be conducted in an off-site context, provided it is realistic and sufficiently rigorous to cover all aspects of workplace performance, including task skills, task management skills,

contingency management skills and job role environment skills

- must meet relevant compliance requirements.

Resource implications for assessment include:

- an induction procedure
- 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
- safety data sheets, job safety analyses and safe work method statements
- research resources, including industry-related systems information.

Method of assessment

Assessment for this unit must verify the practical application of the required skills and knowledge, using one or more of the following methods:

- direct observation of tasks in real or simulated work conditions
- questioning to confirm the ability to identify and interpret the essential underpinning knowledge required for practical application.

Guidance information for assessment

This unit could be assessed on its own or in combination with other units relevant to the job function.

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.

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 requirements must comply 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:
 - 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
- workplace environmental health and safety.
- cover water quality management
- may include:
 - clean-up protection
 - stormwater protection
 - waste management.

Environmental requirements:

Quality assurance requirements may include:

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

Tools and equipment may include:

- elevated work platforms (EWPs)
- hand and power tools
- ladders
- scaffolds
- testing equipment.

Materials may include:

- actuating devices
- alarms initiating devices
- control valve assemblies
- fittings and connections
- sprinkler heads.

Isolation and draining down must include:

- identifying the correct system
- isolating:
 - alarm initiating devices
 - alarm signalling equipment
 - control and indicating equipment (CIE)
 - emergency warning system
 - water supply
- operating the main drain valve
- identifying and operating low drain point valves, if present
- checking system for residual water pressure
- applying drain-down water management techniques to prevent water damage.

Sustainability principles and concepts

- cover the current and future social, economic and environmental use of resources
- may include efficient:
 - energy use
 - use and recycling of material
 - water use, harvesting and disposal.

Statutory and regulatory authorities may include:

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

Information may include:

- charts, drawings and sketches
- instructions issued by authorised organisational or external personnel
- memos
- organisation's work requirements
- regulatory and legislative requirements, particularly those relating to:
 - building codes
 - WHS and environmental requirements
 - plumbing regulations
- relevant Australian standards
- safe work procedures relating testing and maintaining automatic fire sprinklers
- safety data sheets (SDS)
- signage
- verbal, written and graphical instructions, including manufacturer specifications and instructions where specified
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Plumbing and services

Custom Content Section

Not applicable.