

Unit of Competency CPCPFS3040

Conduct basic functional testing of water-based fire-suppression systems

Application

This unit specifies the skills and knowledge required to complete monthly and six-monthly routine service procedures on water-based fire suppression systems according to AS 1851 Routine service of fire protection systems and equipment in new or existing residential or commercial structures.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Prerequisite Unit

Nil.

Elements and Performance Criteria

1. Plan and apply compliance requirements to service operations.	<ul style="list-style-type: none">1.1 Determine current legislative and industry requirements against organisational service operations and adjust as required to ensure compliance.1.2 Interpret and follow the requirements of section one of AS 1851 Routine service of fire protection systems and equipment.1.3 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.1.4 Prepare for functional testing of water-based fire-suppression systems according to identified requirements.
2. Conduct monthly and six-monthly routine service inspections and record results.	<ul style="list-style-type: none">2.1 Notify appropriate site contact of entry and follow site procedures for notifying occupants and/or staff of planned fire sprinkler system test.2.2 Apply appropriate workplace procedures and risk control measures when inspecting water-based fire-suppression systems.2.3 Identify plant and other system interfaces that must be isolated to allow for inspection activities.2.4 Identify key control valves and determine their functions with reference to manufacturer instructions to allow for routine inspection activities.2.5 Perform and record visual inspections and results according to AS 1851 Routine service of fire protection systems and equipment.
3. Conduct monthly and six-monthly testing and record results.	<ul style="list-style-type: none">3.1 Implement test methods for monthly and six-monthly testing.3.2 Perform routine testing procedures according to the required frequency schedule determined by AS 1851 Routine service of fire protection systems and equipment to verify the system functions as intended.3.3 Compare test results with manufacturer, legislative and industry requirements.3.4 Document results in accordance with AS 1851 Routine service of fire protection systems and equipment.3.5 Identify, record and report any defects or non-conformances in accordance with AS 1851 Routine service of fire protection systems and equipment

	3.6 Prepare and forward reports to relevant persons for action. 3.7 Reinstall system according to organisational and manufacturer requirements. 3.8 Notify site contact of completion of test and follow site procedures for notifying occupants and or staff.
4. Clean up.	4.1 Clear the work area, and dispose of, reuse or recycle materials in accordance with state and territory legislation and workplace policies and procedures. 4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure according to workplace procedures.

Foundation skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS3040A Conduct basic functional testing of water-based fire suppression systems.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPFS3040

Conduct basic functional testing of water-based fire-suppression systems

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit and must:

- conduct inspections and perform routine services for three scheduled monthly activities and two scheduled six-monthly activities on:
 - two different wet systems
 - two different pre-action systems
 - two different deluge systems
- perform six monthly tests to include:
 - main drain test and floor zone flow switch test, one manually operated and one solenoid operated on wet set
 - two different pre-action systems, including full trip test
- include all of the following water-based fire-suppression systems:
 - deluge
 - wet or general system
 - residential system
 - combined sprinkler and hydrant system
 - double interlock pre-action
- ensure all systems are interfaced to a fire indicator panel (FIP) and connected to alarm signalling equipment
- comply with all relevant job plans and specifications, codes, Australian Standards, manufacturer's specifications and jurisdictional requirements.
- complete reports and work according to customer and organisational expectations within accepted timeframes.

Knowledge Evidence

To be competent in this unit, a person must demonstrate knowledge of:

- the basic principles of operation and purpose of components of water-based fire suppression systems:
 - accelerators and exhausters
 - alarm 'dry' (i.e. deluge) control valve assembly components
 - alarm 'wet' control valve assembly components
 - batteries
 - circulation and system pressure relief valves
 - isolation and control valves
 - pressure and flow switches

- o pressure gauges
 - o pump controllers and ancillary equipment for control and indication
 - o pumpsets
 - o retard chambers
 - o solenoid valves
 - o sprinkler heads
 - o system block plans
 - o system pressure gauge schedules
 - o water motor alarm gong
 - o water supply tanks: atmospheric and suction with priming tanks
- the general operation of water-based systems
- the general operation of a gauge
- the key features of legislation, regulations and codes applicable to inspecting and testing water-based fire-suppression systems
- metric and imperial pressure gauge readings
- systems and components of water-based fire-suppression systems:
 - o air compressors fitted to systems
 - o circulation and system pressure relief valves
- controls on the pumpset controller panel:
 - o fuel gauges
 - o indicators
 - o main isolating switch
 - o flow switches and associated testing equipment
 - o isolating valves associated with water-based fire-suppression system
 - o main water supply underground key-operated valve location
 - o pressure gauges
 - o pumpsets associated with water-based fire-suppression system
 - o pump starting switches
 - o suction inlet strainers or screen on a static water supply for the water-based fire-suppression system
 - o system block plan requirements for design details of systems installed since 1972
 - o system main alarm bell and/or alarm strobe indicating building entry point for emergency personnel
 - o system pressure gauge schedules, where required
 - o system pressure maintenance or jacking pumps
 - o water-based fire-suppression system control and alarm valves and ancillary equipment for control and alarm operation indication/interface
 - o water supply tanks, water level indicators and automatic inflow valves
- key control valves which may include those specified in AS 2118 Automatic fire sprinkler systems installed in:
 - o associated control valve trim
 - o activation small bore pipework to the alarm and control valve assembly
- terminology used in relation to water-based fire-suppression systems
- types of water supply tanks:

- o atmospheric
 - o suction with priming
- applications of water-based systems
- water-based fire-suppression systems:
 - o alternate wet or dry systems
 - o combined sprinkler or hydrant systems
 - o deluge systems
 - o dry systems
 - o pre-action and double interlock pre-action systems
 - o residential and domestic systems
 - o tail-end systems
 - o wet and general systems
- legislative and industry requirements:
 - o dangerous goods regulations
 - o licensing arrangements
 - o environmental regulations
 - o work health and safety (WHS) legislation, regulations and codes
 - o relevant Commonwealth and state or territory building acts, regulations and codes, such as National Construction Code (NCC)
 - o AS 1851 Routine service of fire protection systems and equipment
- other relevant legislation relating to fire suppression equipment
- organisational requirements:
 - o client-specific contractual requirements
 - o documentation and information systems and processes
 - o legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
 - o use of electronic job scheduling and communication devices
- system interfaces:
 - o flow switches
 - o pressure switches
 - o tamper switches
 - o valve positioning switches
 - o control and indicating equipment (CIE)
 - o plant shutdowns
- devices that operate signals between the water-based fire-suppression system and other services:
 - o building heating, ventilation and air conditioning (HVAC) services
 - o fire brigade monitoring providers
 - o CIE
- other life safety systems:
 - o warning systems
 - o fire indicator panel (FIP)
- methods to apply sustainability principles and concepts
- testing procedures for:

- o checking desiccant condition (air dryer or crystals, water separator bowl) and cleaning or replacing as required
 - o checking oil level and visually assessing condition of oil on air compressor
- routine service frequency schedules including reference to AS 1851 Routine service of fire protection systems and equipment schedules of work conducted at regular frequencies that relate to the work scope for weekly, monthly, and six-monthly inspection and testing schedules
- how to access relevant information, including codes and standards
- tools, materials and equipment used for testing and maintaining water-based fire-suppression systems
- WHS requirements for testing and maintaining water-based fire-suppression systems
- installation requirements for water-based fire-suppression systems.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>