

# Unit of Competency CPCPFS3041

## Inspect and test fire pumpsets

### Application

This unit specifies the skills and knowledge required to complete monthly and six-monthly routine service procedures according to AS 1851 Routine service of fire protection systems and equipment in new or existing, residential or commercial buildings to verify that fire pumpsets function as intended.

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"><li>1.1 Identify and confirm current legislative and industry requirements against organisational service operations and adjust as required to ensure compliance.</li><li>1.2 Interpret and follow the requirements of section 1 of AS 1851 Routine service of fire protection systems and equipment.</li><li>1.3 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements and sustainability principles.</li><li>1.4 Confirm schedule and entry to premises at arranged time with appropriate personnel and site contact.</li><li>1.5 Check location and equipment for compliance with legislative and industry requirements and take action according to organisational requirements to ensure compliance.</li><li>1.6 Prepare for functional inspection and testing according to identified requirements.</li></ul>
2. Conduct monthly and six-monthly inspections and record results.	<ul style="list-style-type: none"><li>2.1 Notify appropriate site contact of entry and follow site procedures for notifying occupants and or staff of planned fire sprinkler system test.</li><li>2.2 Apply appropriate workplace procedures and risk control measures when inspecting fire pumpsets.</li><li>2.3 Use manufacturers' instructions to identify functions of fire pumpset controls and conduct inspections and tests.</li><li>2.4 Isolate or disable plant and other system interfaces.</li><li>2.5 Perform visual inspections according to AS 1851 Routine service of fire protection systems and equipment.</li><li>2.6 Record fire pumpset inspection results according to AS 1851 Routine service of fire protection systems and equipment.</li></ul>
3. Conduct monthly and six-monthly tests and record results.	<ul style="list-style-type: none"><li>3.1 Implement test methods for monthly and six-monthly testing.</li><li>3.2 Perform routine test procedures according to the required frequency schedule to verify that the system functions as intended.</li><li>3.3 Compare test results with manufacturer, legislative and industry requirements.</li><li>3.4 Document results according to AS 1851 Routine service of fire protection systems and equipment.</li></ul>

	<p>3.5 Identify, record and report any defects or non-conformances in accordance with AS 1851 Routine service of fire protection systems and equipment.</p> <p>3.6 Complete and forward report to relevant persons for action.</p> <p>3.7 Reinstall system and system interfaces according to organisational requirements.</p> <p>3.8 Notify site contact of completion of test and follow site procedures for notifying occupants and or staff.</p>
4. Clean up.	<p>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.</p> <p>4.2 Clean tools and equipment, check for serviceability and report any damage, and store and secure.</p>

## 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 CPCPFS3041A Inspect and test fire pumpsets.

## Links

Companion Volume Implementation Guide:

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

# Assessment Requirements for CPCPFS3041 Inspect and test fire pumpsets

## Performance Evidence

To demonstrate competency in this unit a candidate must meet the performance criteria for this unit by:

- conducting four routine services on a fire pumpset, including:
  - o three scheduled monthly, and
  - o one scheduled six-monthly activities

and include:

- compression ignition pumpsets used as a booster pumpset on a sprinkler/hydrant system
- an electrical pumpset used as a:
  - o booster pumpset on a sprinkler/hydrant system fed from a town mains supply or a static water supply
- conducting all routine service in compliance with current Australian standards, regulations, codes and organisational requirements
- completing work according to customer and organisational expectations within accepted timeframes.

## Knowledge Evidence

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

- application of fire pumpsets as defined in AS 2941 Fixed fire protection installations – Pumpset systems and AS 2118 Automatic fire sprinkler systems
- terminology used in relation to pumpsets
- basic principles of hydraulics:
  - o basic head or pressure calculation for height per metre
  - o metric and imperial pressure scales
- basic principles of operation and purpose of components:
  - o accumulators
  - o batteries
  - o circulation and system pressure relief valves
  - o compression ignition pumpset drivers
  - o electrical pumpset drivers
  - o engine starting and control or monitor batteries
  - o header tanks
  - o impellers
  - o isolating valves associated with pumpsets
  - o jacking or jockey pumps

- o multi-stage pumps
  - o pressure gauges
  - o pump controllers and ancillary equipment for control and indications
  - o pump drivers
  - o pump glands and seals
  - o pump performance curves
  - o pump starting devices
  - o pumpset couplings
  - o safety guards
  - o system pressure gauge schedules
- water supply tanks:
  - o atmospheric
  - o suction with priming tanks
- general operation of pumpsets:
  - o cooling systems
  - o design speed requirements
  - o exhaust systems
  - o fuel systems
  - o full load operation
  - o normal running operation
  - o pre-start and post-start checks
  - o pumpset controllers
  - o starting and stopping methods
  - o suction and discharge connections and pressure readings
- pumpset types which may include those used in fire protection systems that comply with Australian standards such as:
  - o AS 1851 Routine service of fire protection systems and equipment
  - o AS 2118 Automatic fire sprinkler systems
  - o AS 2419 Fire hydrant installations
  - o AS 2941 Fixed fire protection installations - Pumpset systems
  - o AS CA16-1962 Automatic sprinkler installations
  - o NFPA 20 Standard for the installation of stationary fire pumps for fire protection (US)
- system interfaces:
  - o flow switches
  - o pressure switches
  - o tamper switches
  - o valve positioning switches
  - o control and indicating equipment (CIE)
- devices that operate signals between pumpset and other services such as building monitoring services
- other life safety systems:
  - o warning systems
  - o fire indicator panel (FIP)
  - o security monitoring services

- legislative and industry requirements:
  - dangerous goods regulations
  - licensing arrangements
  - environmental regulations
  - work health and safety (WHS) legislation, regulations and codes associated with fire pump rooms such as: working in isolation, lighting, fumes, trip hazards
  - relevant Commonwealth and state or territory building acts, regulations and codes, such as National Construction Code (NCC)
  - AS 1851 Routine service of fire protection systems and equipment
- organisational requirements:
  - client-specific contractual requirements
  - documentation and information systems and processes
  - legal and organisational policies and guidelines, including personnel practices and guidelines outlining work roles, responsibilities and delegations
  - use of electronic job scheduling and communication devices
- documentation to review and verify that installed systems comply with legislative and industry requirements such as:
  - building's essential services or fire safety measures listing
  - relevant commonwealth and state or territory building acts, regulations and codes
  - relevant Australian standards listed on essential service listing
  - environmental regulations
- methods of applying sustainability principles and concepts
- testing procedures and activities that comply with requirements of AS 1851 Routine service of fire protection systems and equipment to verify the following pump functions:
  - pump starts at correct pressure
  - pump supplies correct kPa at no flow condition requirements
- routine service frequency schedules:
  - 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 monthly and six-monthly routine service schedules
- how to access relevant information, including codes and standards
- tools, materials and equipment used for inspecting and testing test fire pumpsets
- WHS requirements for inspecting and testing test fire pumpsets.

## 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>