



Australian Government

CPCPFS3048A Install fixed fire pumpsets

Release 1

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Modification History

New unit.

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

Unit Descriptor

This unit of competency specifies the outcomes required to install fixed fire pumpsets, including the pump base, power sources, pumps, pipework and associated components.

Application of the Unit

This unit of competency supports the work of fire protection industry personnel responsible for installing fixed fire pumpsets.

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

or both:

CPPCMN2002A Participate in workplace safety arrangements

and

CPPFES2006A Prepare for installation and servicing operations

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

- | | | |
|---|-------------------------------------|--|
| 1 | Prepare for work. | <p>1.1 Approved plans and specifications are obtained from <i>statutory and regulatory authority</i>.</p> <p>1.2 <i>Work health and safety (WHS) requirements</i> associated with installing <i>fixed fire pumpsets</i>, 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 and according to work and statutory and regulatory authority requirements.</p> <p>1.5 <i>Tools and equipment</i> for installing fixed fire pumpsets, including personal protective equipment, are selected and checked for serviceability.</p> <p>1.6 Sustainability principles and concepts are applied to work preparation and application.</p> |
| 2 | Identify installation requirements. | <p>2.1 Site is inspected and location for fixed fire pumpset is determined.</p> <p>2.2 Pump base requirements are identified from <i>information</i>, drawings and specifications.</p> <p>2.3 <i>Materials</i> and <i>components</i> required for installation of fixed fire pumpset are identified and ordered according to workplace procedures.</p> |

- 2.4 Materials and components are collected and checked for acceptable condition and compliance with relevant Australian standards, docket and order form.
 - 2.5 Work area is prepared to support efficient installation of fixed fire pumpsets.
- 3 Install fixed fire pumpsets.
 - 3.1 **WHS requirements**, workplace **environmental requirements** and quality requirements are applied to work tasks.
 - 3.2 Pump base is set out to comply with drawings and specifications.
 - 3.3 Pump base is installed according to drawings and specifications.
 - 3.4 Fixed fire pumpsets are installed according to relevant Australian standards, drawings, specifications and manufacturer instructions.
 - 3.5 Pumpset pipework and associated pumpset valves are installed according to job specifications, Australian standards and manufacturer requirements.
 - 3.6 Pipework, connections and pumpset valves are checked for water tightness and correct operation.
 - 3.7 Piping system is pressure tested and results are recorded according to specifications.
 - 3.8 Pumpset is tested according to specifications and test data is recorded in required format.
- 4 Clean up.
 - 4.1 Work area is cleared and waste materials disposed of, reused or recycled according to legislation, regulations, codes of practice and job specification.
 - 4.2 Tools and equipment are cleaned, checked, maintained and stored according to manufacturer recommendations and workplace procedures.
 - 4.3 Documentation is completed according to regulatory authorities' and workplace requirements.

Required Skills and Knowledge

Required skills

- communication skills to:
 - enable clear and direct communication, using questioning to identify and confirm requirements, and share information
 - follow 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 report faults in tools, equipment or materials to appropriate personnel
- 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 install fixed fire pumpsets
- technology skills to:
 - access site-specific instructions in a variety of media
 - use mobile communication technology
- writing skills to complete workplace documentation

Required knowledge

- atmospheric pressure measurements and principles in relation to fixed fire pumpset performance
- fixing techniques for mounting fixed fire pumpsets
- levelling and alignment requirements for correct installation of fixed fire pump and motor
- operation of fixed fire pumpsets and pumpset valves
- performance measures for fixed fire pumpsets
- power sources for fixed fire pumpsets, including operation and interaction of power sources
- properties of water, including pressure and flow rates
- relevant statutory and authority requirements relating to installing fixed fire pumpsets
- requirements of job safety analyses (JSA) and safe work method statements (SWMS)
- SI system of measurements
- Australian standards applicable to the installation of fixed fire pumpsets
- pressure testing equipment and procedures

- 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 should demonstrate the ability to:

- locate, interpret and apply relevant information, Australian standards and specifications to install fixed fire pumpsets
- apply safety requirements throughout the work sequence, including electrical requirements and the use of personal protective clothing and equipment
- given the plans and specifications, plan the layout, and then install and test a fixed fire pumpset, ensuring:
 - correct identification of location, design and details of proposed installations
 - correct selection and use of appropriate processes, tools and equipment
 - completion of work to specification
 - compliance with regulations, relevant Australian standards and organisational quality procedures and processes
 - application of sustainability principles and concepts
 - 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.

Statutory and regulatory authority may include:

- commonwealth, state or territory and local authorities administering applicable Acts, regulations and codes of practice.

Work health and safety requirements must comply with commonwealth, state and territory legislation and

- 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

regulations, and may include:

preventing hazards associated with:

- electricity
- hazardous materials and substances
- other machines
- surrounding structure and facilities
- trip hazards
- underground services
- use of tools and equipment
- work site visitors and the public
- working at heights
- working in confined spaces
- working in proximity to others
- use of firefighting equipment
- workplace environmental health and safety.

Fixed fire pumpsets may include:

- centrifugal
- diesel driven, including:
 - close coupled
 - long coupled with mechanical joints
- electrically driven
- hydrant, hose reel or sprinkler pumpsets
- multi-outlet
- multi-stage
- positive displacement.
- cover water quality management
- may include:
 - clean-up protection
 - stormwater protection
 - waste management.

Environmental requirements:

Quality assurance requirements may include:

- Environment Protection Authority (EPA) requirements
- environment policy
- 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:

- chain blocks
- concreting tools
- forklifts
- hand and power tools
- hand trolleys

- hoists and jacks
- lifting and load shifting equipment
- measuring and alignment tools
- pressure testing equipment
- rollers.

Information may include:

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

Materials may include:

- fixings
- pipe fabrication materials, such as:
 - black steel
 - copper
 - galvanised steel
 - polyvinyl chloride (PVC)
 - steel braided hose
- pipe supports.

Components may include:

- control panels
- diesel cooling system
- diesel exhaust system
- discharge expansion coupling
- eccentric reducer
- flow switches
- fuel tanks
- gauges

- hydro pneumatic accumulator, also known as bladder tank
- jacking pump
- pipework, including:
 - annubar
 - circulation
 - discharge
 - drainage
 - suction
 - tank return lines
- power sources, which may be:
 - diesel
 - electric
- pressure switches
- pump base
- pumps
- starting devices
- valves, including:
 - circulation
 - isolation
 - pressure limiting
 - pressure reducing
 - pressure relief.

Unit Sector(s)

Plumbing and services

Custom Content Section

Not applicable.