



Australian Government

Department of Education, Employment and Workplace Relations

PRMPFES41A Install pre-engineered fixed plant fire suppression systems

Release: 1

PRMPFES41A Install pre-engineered fixed plant fire suppression systems

Modification History

Not Applicable

Unit Descriptor

Unit descriptor

This unit of competency covers the requirements for a fire system technician to install a pre-engineered fire suppression system onto and in a fixed plant system. Pre-engineered fixed plant fire suppression systems include aqueous, powder, wet chemical, gaseous and water mist systems or compatible combinations of these systems. All work in this area must be completed in accordance with relevant legislative, industry, customer and organisational requirements, including occupational health and safety (OHS) policies and procedures.

Application of the Unit

Not Applicable

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Not Applicable

Employability Skills Information

Not Applicable

Elements and Performance Criteria Pre-Content

Not Applicable

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Interpret and comply with legal and industry requirements relating to fire system operations	1.1 Apply knowledge and understanding of <i>legislative and industry requirements to work procedures</i> 1.2 Confirm or clarify knowledge and understanding of <i>legislative and industry requirements</i>, where necessary, with <i>relevant persons</i> 1.3 Identify <i>potential and actual breaches</i> of <i>legislative and industry requirements</i> and take action according to <i>organisational requirements and OHS policies and procedures</i>
2 Install a pre-engineered fixed plant fire suppression system	2.1 Obtain all necessary work permits prior to entering customer premises 2.2 Adhere to all <i>safety procedures</i> according to <i>organisational requirements, customer requirements</i> and manufacturers' requirements 2.3 Conduct risk assessment of equipment and determine risk reduction measures to <i>legislative and industry requirements</i> 2.4 Confirm the installation site as appropriate according to <i>customer requirements</i> and manufacturers' specifications 2.5 Determine system scope of protection fire system operational parameters and fire system/equipment interfaces according to <i>customer requirements, Australian Standards</i> and manufacturers' specifications 2.6 Plan the installation and location of all equipment with <i>relevant person</i> to satisfy <i>customer requirements</i> and manufacturers' specifications 2.7 Assemble materials ready for installation in accordance with <i>manufacturers' specifications</i> 2.8 Cut access holes and fix support systems within the plant system according to <i>customer requirements and manufacturers' specifications</i> 2.9 Install all <i>system components</i> according to <i>customer requirements, Australian Standards, manufacturers' instructions</i> and specifications

ELEMENT	PERFORMANCE CRITERIA
	2.10 Install auxiliary shutdown fire system/equipment interface and alarm device connections in accordance with <i>customer requirements</i>, Australian Standards and <i>manufacturers' specifications</i> 2.11 Commission system in accordance with <i>customer requirements</i>, Australian Standards and <i>manufacturers' specifications</i>. 2.12 Leave the installation site clean and tidy on completion of work functions 2.13 Complete all <i>documentation</i> and provide system manual specific to the equipment according to <i>organisational requirements</i> and <i>customer requirements</i>

Required Skills and Knowledge

Refer to Evidence Guide

Evidence Guide

EVIDENCE GUIDE

Knowledge needed to achieve the performance criteria

Knowledge and understanding are essential to apply this unit of competency in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this unit are listed below.

- The key features of legislation, regulations relevant to fixed plant equipment.
- manufacturers' requirements and standards applicable to design, installing, commissioning, inspecting, testing and maintaining a pre-engineered fixed plant equipment fire suppression system.
- The implications of NOT applying legislative and manufacturers' requirements to job functions.
- Action to take when a breach of health, safety and other policies occurs.
- Purpose for installing the system.
- Reasons for commissioning after installation.
- Identification and purpose of the major components in the fire suppression system for different manufacturers' proprietary systems.
- Methods of activating the system.

Specific skills needed to achieve the performance criteria

To achieve the performance criteria, some complementary skills are required. These relate to the ability to:

- use hand and power tools safely and with dexterity
- install system components in accordance with manufactures requirements
- terminate/join flexible high-pressure hose and metal tubing to meet manufacturers' requirements
- install brackets and high-pressure hose and metal tubing to meet manufacturers' requirements
- locate nozzles, pipe runs, containers, actuators, fire detectors and other system components to meet manufacturers' requirements
- handle and transport cylinders in accordance with legislation, manufacturers' procedures and work practices
- report and record information neatly and legibly when completing documentation
- plan and organise work in order to estimate time to complete activities and prioritise tasks
- apply language, literacy and numeracy skills to:
 - communicate with others in a clear and concise manner in both written and verbal modes
 - read, understand and comply with work instructions/specifications
 - read, understand and record measurements
- use appropriate workplace housekeeping procedures
- utilise effective customer service skills and relate to people from a range of social and cultural backgrounds.

Other units of competency that could be assessed with this unit

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

Resources required to assess this unit

The following resources should be available:

- access to customer premises or a simulated workplace environment
- assessment documentation
- all necessary tools, specialist equipment, manuals and relevant documentation
- training and assessment record book.

Gaining evidence to assess this unit

For valid and reliable assessment of this unit, the competency should be demonstrated over a period of time and be observed by the assessor (or assessment team working together to conduct the assessment). The competency is to be demonstrated in a range of situations, which may include customer/workplace interruptions and involvement in related activities normally experienced in the workplace.

Assessment of competence over the full range of performance criteria should be made through practical demonstrations at a customer's premises. However, at times this may not be practicable, and in these situations, the conditions normally available to the candidate may be simulated in an environment suitable for assessment.

Competency is to be demonstrated through a single, practical demonstration covering the full range of performance criteria for each proprietary system. The ability to transfer skills to other situations described in the range statement is inferred from this assessment. (Oral questioning may be used to provide evidence of this ability.)

Candidates should also be given the opportunity to practise and undertake self-assessment of performance before requesting formal assessment.

All safety requirements must be strictly adhered to during all practical activities.

Oral questioning or a written assessment may be used to assess underpinning knowledge. (In assessment situations where the candidate is offered a preference between oral questioning and written assessment, questions are to be identical.)

Assessment of evidence should establish the candidate's ability to perform the job to the standard required in the workplace and meet manufacturers' endorsement of installing their proprietary system.

Supplementary evidence may be obtained from relevant authenticated correspondence or reports from supervisors or team leaders and manufacturers' endorsement of competency on their proprietary system. Other forms of evidence may include audit reports, client/customer survey reports and appraisal reports.

Note: The candidate should be encouraged to compile a portfolio of examples of completed documentation relevant to the candidate's organisation. One accurate example of each completed document is suggested as sufficient to infer competency and the ability to transfer the appropriate skills to each document type when required in the workplace. (Oral questioning may contribute as evidence of this ability.)

Information derived from enterprise policy and practices must be treated as commercial-in-confidence.

Performance and assessment of this unit must be carried out within the relevant requirements of the following legislative and industry framework:

- building Acts/regulations/codes
- Australian Standards identified as relevant to the required maintenance procedure
- environmental regulations
- manufacturers' specifications
- organisational requirements, including OHS policies and procedures
- OHS legislation, codes and regulations.

Key competency levels

There are a number of processes learnt throughout work and daily life that are required in all jobs. They are fundamental processes and generally transferable to other work environments. Some of these work processes are covered by the key competencies listed below. Information provided to each question highlights how these processes are applied in this unit of competency.

The number in brackets indicates the level to which the key competency should be demonstrated.

- | | | |
|------------------------------|---|---|
| 1 Perform the process | 2 Perform and administer the process | 3 Perform, administer and design the process |
|------------------------------|---|---|

How can information be collected, analysed and organised (3) ?	Gather information from a number of sources including regulatory, manufacturer and organisational sources ensuring all work falls within service technician's scope of responsibility.
How can communication of ideas and information (2) be applied?	Discuss to confirm customer requirements is clearly structured and defined and administrative documentation is completed accurately and clearly.
How are activities planned and organised (3) ?	Design planning of Installation activities with regard to assembling appropriate tools and hardware for on-site services and organising work schedules to suit customer and organisational requirements.
How can teamwork (2) be applied?	Apply consultative and collaborative approaches through support and assistance provided to customers and work groups.
How can the use of mathematical ideas and techniques (3) be applied?	Apply complex mathematical techniques and time management principles for installation, testing and maintenance on-site activities and reporting requirements while adhering to designated work schedules.
How can problem-solving skills (3) be applied?	Identify and apply problem-solving and systematic techniques throughout inspection and servicing activities while considering ambiguous information received from information sources, potential risks and due processes to be followed when unusual faults are detected.
How can the use of technology (3) be applied?	Demonstrate sound technical knowledge of features of equipment and accuracy throughout inspection and servicing while being able to use, organise, record and present information utilising technology.

Range Statement

RANGE STATEMENT

The range statement links the required knowledge and organisational and technical requirements to the workplace context. It describes any contextual variables that will be used or encountered when applying the competency in work situations. It allows for different work practices and work and knowledge requirements as well as for differences between organisations and workplaces. The following variables may be present for this particular unit. **Legislative and industry requirements** may include:

- relevant Commonwealth and state/territory building Acts/regulations/codes
- relevant current Australian Standard (i.e. AS 1851)
- system approval listing (i.e. SSL, FM and UL)
- risk assessment portion of AS 4360 - Risk Management
- manufacturers' listed documentation.
- Building Code of Australia
- dangerous goods regulations
- licensing arrangements
- environmental regulations
- building surveyor requirements
- other relevant legislation (including international and shipping/marine codes) relating to fire protection equipment
- Australian petroleum industries' requirements.

Work procedures may include:

- instructions from colleagues/supervisor/manager
- specific customer requirements
- assignment instructions
- equipment manufacturers' requirements
- reporting and documentation requirements
- personal protective equipment requirements.

Relevant persons may include:

- team leaders
- supervisors
- managers
- colleagues
- customers.

Potential and actual breaches of legislative and industry requirements could be identified by:

- direct observation
- as part of workplace quality assurance teams.

Organisational requirements may be located in quality assurance and/or procedures manuals relating to:

- legal and organisational policy/guidelines
- personnel practices and guidelines outlining work roles, responsibilities and delegations
- legislation relevant to the service operation
- OHS policies, procedures and programs
- documentation and information systems and processes
- use of electronic job scheduling and communication devices.

OHS policies and procedures may relate to:

- employer/employee rights and responsibilities
- the OHS hierarchy of control
- assessing the worksite for hazards and risks prior to preparing the worksite for the work procedure
- displaying signs and/or utilising barriers in the work area

- hazard and risk identification and reporting
- risk assessment and control measures
- incident/accident investigation
- OHS audits and safety inspections
- safe operating procedures/instructions including:
 - working safely around electrical wiring, cables and overhead powerlines
 - working safely around tools and equipment
 - working safely off ladders and raised platforms
 - risk and hazard recognition
 - emergency procedures
 - awareness of electrical hazards
 - following confined spaces procedures
 - utilising personal protective equipment including:
 - safety glasses or goggles
 - safety boots or shoes
 - hard hat
 - ear muffs or plugs
 - appropriate gloves and overalls
 - sun hat
 - dust mask
- equipment maintenance and use
- use and storage of hazardous substances
- First Aid.

Customer requirements may include:

- system specifications
- insurance requirement
- industry requirement
- provision of routine services
- provision of non-routine or urgent services
- confirmation of, or variations to, service instructions
- sighting work permits
- sign-in/out procedures for entry to or exit from premises
- written or verbal confirmation of services provided and/or future maintenance schedule.

System components may include:

- extinguishing agent containers (tanks/cylinders)
- container valves
- actuation devices
- support brackets
- control equipment
- agent distribution pipe-work and hose
- agent discharge nozzles
- detection devices.

Safety procedures may include:

- working safely around electrical wiring, cables and overhead powerlines
- working safely around tools and equipment

- risk and hazard recognition
- emergency procedures
- awareness of electrical hazards
- following confined spaces procedures
- First Aid
- utilising personal protective equipment including:
 - safety glasses or goggles
 - safety boots or shoes
 - hard hat
 - ear muffs or plugs.

Discharge test for commissioning purposes may involve:

- aqueous fire suppression systems
- powder fire suppression systems
- wet chemical fire suppression systems
- gaseous agent fire suppression systems
- water mist suppression systems
- combination of any of the above when compatible.

Documentation may include:

- system manufacturers' documentation
- job card
- customer recommendation forms
- service agreements
- expense claims
- application for credit form
- equipment recommendation form
- Fleetcard
- corrective action report
- petty cash voucher
- certificate of inspection
- product documentation
- maintenance record system.

Procedural documentation may include:

- manufacturers' specifications and instructions
- customer requirements
- state/territory requirements (*where specified*).

Note: Australian Standards are frequently revised and users must always check for currency.

Unit Sector(s)

Not Applicable