



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **CPCPGS3016A Install LPG systems in caravans, mobile homes, water craft and mobile workplaces**

**Release: 1**

## **CPCPGS3016A Install LPG systems in caravans, mobile homes, water craft and mobile workplaces**

### **Modification History**

Not Applicable

### **Unit Descriptor**

**Unit descriptor** This unit of competency specifies the outcomes required to install and commission liquefied petroleum gas (LPG) systems in caravans, mobile homes, water craft and mobile workplaces.

The unit requires the determination of requirements, the installation and commissioning of LPG systems with an operating pressure not exceeding 2.75kPa in caravans, mobile homes, water craft and mobile workplaces.

The design requirements of this unit are limited to the application of the design to layout and installation.

### **Application of the Unit**

**Application of the unit** Site location for work application may be a purpose-built workshop or customer's premises.

### **Licensing/Regulatory Information**

Not Applicable

### **Pre-Requisites**

#### **Prerequisite units**

|             |                            |
|-------------|----------------------------|
| CPCPCM2023A | Carry out OHS requirements |
|-------------|----------------------------|

## Employability Skills Information

**Employability skills** This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

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Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

| ELEMENT  | PERFORMANCE CRITERIA   |
|--|--|
| 1. Identify LPG system requirements.                   | <ul style="list-style-type: none"><li>1.1. Plans, specifications and any special instructions are obtained.</li><li>1.2. <b>Safety (OHS)</b> requirements associated with installing and commissioning LPG systems in caravans, mobile homes, water craft and mobile workplaces, and workplace <b>environmental requirements</b>, are adhered to throughout the work.</li><li>1.3. <b>Quality assurance</b> requirements for company operations are identified and adhered to.</li><li>1.4. Gas load and design requirements are determined from plans, specifications, and job drawing or workplace instructions.</li><li>1.5. System capacity is calculated to ensure adequacy for the required load and compliance with standards and workplace requirements.</li><li>1.6. Appropriate regulator and piping are identified in terms of size, connection sizes and capacity, in accordance with standards and workplace requirements.</li><li>1.7. Location of cylinders, appliances and piping set out is identified in accordance with job requirements and in compliance with standards and workplace requirements.</li><li>1.8. Quantity of piping, components and fittings are estimated in compliance with standards and workplace requirements.</li></ul> |
| 2. Prepare for installation.                           | <ul style="list-style-type: none"><li>2.1. <b>Materials</b>, equipment, appliances and cylinders are ordered and checked for compliance with docket and order form, and for acceptable condition.</li><li>2.2. Appropriate <b>tools and equipment</b> for installing and commissioning <b>LPG systems</b> in caravans, mobile homes, water craft and mobile workplaces, including personal protective equipment, are identified and selected.</li><li>2.3. Work is planned in conjunction with others involved in or affected by the work.</li><li>2.4. Work area and materials are prepared to support efficient installation of the system.</li></ul>  |
| 3. Install LPG system, including flue and ventilation. | <ul style="list-style-type: none"><li>3.1. Cylinders, regulators, associated pipework, appliances and fixings are installed in compliance with manufacturer requirements, standards and workplace requirements.</li><li>3.2. Compliance plates are located and fitted in accordance with <b>statutory and regulatory authority</b></li></ul>   |

**ELEMENT**

**PERFORMANCE CRITERIA**

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requirements, standards and workplace requirements.

| ELEMENT                            | PERFORMANCE CRITERIA  |
|------------------------------------|---|
| 4. Test and commission LPG system. | <p>4.1. Appropriate test equipment is selected.</p> <p>4.2. System is tested in accordance with standards and workplace requirements.</p> <p>4.3. System is adjusted to provide required flow pressure in conformance to standards and workplace requirements.</p> <p>4.4. Test data is recorded in format required by regulatory and workplace requirements.</p>   |
| 5. Clean up.                       | <p>5.1. Work area is cleared and materials disposed of or recycled in accordance with state or territory statutory and regulatory authority legislation and workplace procedures.</p> <p>5.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and workplace procedures.</p> <p>5.3. <b>Information</b> is accessed and documentation completed in accordance with workplace requirements.</p> |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

#### Required skills

Required skills for this unit are:

- communication skills to:
  - access information
  - complete workplace documentation
  - determine requirements
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - inform relevant authorities and supervisors of completion of job
  - plan work with others
  - record data in writing
  - read and interpret:
    - documentation from a variety of sources

## **REQUIRED SKILLS AND KNOWLEDGE**

- drawings and specifications
- use language and concepts appropriate to cultural differences
- use and interpret non-verbal communication, such as hand signals
- determining requirements, and installing and commissioning LPG systems
- identifying and accurately reporting to appropriate personnel any faults in tools, equipment or materials
- numeracy skills to apply measurements and calculations
- organisational skills, including the ability to plan and set out work
- teamwork skills to work with others to action tasks and relate to people from a range of cultural and ethnic backgrounds and with varying physical and mental abilities
- technological skills to:
  - access and understand site-specific instructions in a variety of media
  - use mobile communication technology.

### **Required knowledge**

Required knowledge for this unit is:

- electrical safety and requisite precautions
- how to access relevant information, including codes and technical standards
- job safety analysis (JSA) and safe work method statements (SWMS)
- material requirements determination process
- procedures for installing and commissioning gas systems in caravans, mobile homes, water craft and mobile workplaces
- properties of gas, gas safety, combustion principles, pressure and flow rates
- relevant statutory and authority requirements related to installing and testing gas storage facilities
- SI system of measurements
- workplace and equipment safety requirements.

# Evidence Guide

## EVIDENCE GUIDE

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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 who demonstrates competency in this unit must be able to provide evidence of:

- locating, interpreting and applying relevant information, standards and specifications to determine requirements, and install and commission LPG systems in caravans, mobile homes, water craft and mobile workplaces
- applying safety requirements throughout the work sequence, including the use of personal protective clothing and equipment
- as a minimum the ability to, given the plans and specifications, determine the requirements, install and commission LPG systems in either a caravan, mobile home or mobile workplace and a water craft (or simulated environment) by determining the gas load and storage capacity requirements for two gas appliances in both a caravan and a water craft and installing and commissioning the gas systems for the installations, ensuring:
  - correct identification of location, design and details of proposed installation
  - correct selection and use of appropriate processes, tools and equipment
  - completing all work to specification
  - compliance with regulations, standards and organisational quality procedures and processes
  - communicating and working effectively and safely with others.



## EVIDENCE GUIDE

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### Context of and specific resources for assessment

This competency is to be assessed using standard and authorised work practices, safety requirements and environmental constraints.

Assessment of essential underpinning knowledge will usually be conducted in an off-site context.

Assessment is to comply with relevant regulatory or Australian standards' requirements.

Resource implications for assessment include:

- an induction procedure and requirement
- 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 working practices and addressing hazards and emergencies
- material safety data sheets
- research resources, including industry related systems information.

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.

### Method of assessment

Assessment methods must:

- satisfy the endorsed Assessment Guidelines of the Construction, Plumbing and Services Training Package
- include direct observation of tasks in real or simulated work conditions, with questioning to confirm the ability to consistently identify and correctly interpret the essential underpinning knowledge required for practical application
- reinforce the integration of employability skills with workplace tasks and job roles
- confirm that competency is verified and able to be transferred to other circumstances and environments.

## EVIDENCE GUIDE

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Validity and sufficiency of evidence requires that:

- competency will need to be demonstrated over a period of time reflecting the scope of the role and the practical requirements of the workplace
- where the assessment is part of a structured learning experience the evidence collected must relate to a number of performances assessed at different points in time and separated by further learning and practice, with a decision on competency only taken at the point when the assessor has complete confidence in the person's demonstrated ability and applied knowledge
- all assessment that is part of a structured learning experience must include a combination of direct, indirect and supplementary evidence.

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.

Supplementary evidence of competency may be obtained from relevant authenticated documentation from third parties, such as existing supervisors, team leaders or specialist training staff.

## Range Statement

### RANGE STATEMENT

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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.

***Safety (OHS)*** is to be in accordance with commonwealth, state and territory legislation and

- handling of materials
- hazard control
- personal protective clothing and equipment

## RANGE STATEMENT

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regulations and may include:

- prescribed under legislation, regulations and workplace policies and practices
- safe operating procedures, including recognising and preventing hazards associated with:
  - 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
- use of first aid equipment
- workplace environment and safety.

## RANGE STATEMENT

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***Environmental requirements***  
include:

- clean-up protection
- waste management.

***Quality assurance*** requirements  
may include:

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

***Materials:***

- may include:
  - copper tubing
  - fitting and fixing materials
  - gas cylinders
  - gas operated appliances
  - gas regulators
  - non-metallic hose assemblies
  - stainless steel
  - other approved materials
- are to comply with job specifications and appropriate standards for gas installations.

***Tools and equipment*** may  
include:

- chain blocks
- files
- flaring tools
- hacksaws
- hand trolleys
- hoists and jacks
- lifting and load shifting equipment
- measuring equipment
- power cutting tools
- rollers
- silver brazing equipment
- spanners
- testing equipment
- wrenches.

***LPG system*** includes:

- appliances
- cylinders
- piping
- regulators.

***Statutory and regulatory***

- state or territory statutory authority

## **RANGE STATEMENT**

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*authorities* include:

- statutory gasfitting authority
- statutory plumbing authority.

## RANGE STATEMENT

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**Information** may include:

- charts and hand drawings
- diagrams or sketches
- instructions issued by authorised organisational or external personnel
- job drawings
- manufacturer specifications and instructions
- material safety data sheets (MSDS)
- memos
- organisation work specifications and requirements
- recognised formulas or tables accepted by the regulatory authority
- regulatory and legislative requirements, particularly those pertaining to:
  - building and gasfitting authority codes
  - OHS and environmental requirements
  - plumbing regulations
- relevant Australian standards
- safe work procedures relating to determining requirements, and installing and commissioning LPG systems in caravans, mobile homes, water craft and mobile workplaces
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

## Unit Sector(s)

**Unit sector** Plumbing and services

## Co-requisite units

**Co-requisite units** Nil

**Co-requisite units** Nil

## **Functional area**

**Functional area**