



**Australian Government**

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

# **CPCPGS3033A Install and Commission Type A gas appliances**

**Release: 1**

## CPCPGS3033A Install and Commission Type A gas appliances

### Modification History

ISC upgrade. Unit code updated from CPCPGS3013A to CPCPGS3033A Install and commission Type A gas appliances.

### Unit Descriptor

#### Unit descriptor

This unit of competency specifies the outcomes required to install and commission Type A gas appliances approved for use with natural gas (NG) or liquefied petroleum gas (LPG) up to 200kPa.

Type A gas appliances are badged appliances of less than 500 megajoules (MJ) for which an approval scheme exists. They include but are not limited to space heaters, ducted heating systems, heated water storage, instant heated water heaters, decorative heaters, and gas stoves and hot plates.

### Application of the Unit

#### Application of the unit

Site location for work application may be either domestic or commercial, and may be a new work site or an existing structure being renovated, extended, restored or maintained.

### 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. Prepare for work.	<p>1.1. Building plans and specifications and any special instructions are obtained.</p> <p>1.2. <b>Safety (OHS)</b> requirements associated with installing and commissioning Type A gas appliances, and workplace <b>environmental requirements</b>, are adhered to throughout the work.</p> <p>1.3. <b>Quality assurance</b> requirements for company operations are identified and adhered to.</p> <p>1.4. Appropriate work notices and required documentation are completed and dispatched in accordance with the authorities' requirements.</p> <p>1.5. Tasks are planned in conjunction with others involved in or affected by the work.</p> <p>1.6. <b>Tools and equipment</b> and <b>materials</b>, including personal protective equipment, are selected and checked for serviceability.</p> <p>1.7. Work area is prepared to support efficient installation of Type A gas appliances.</p>
2. Identify appliance requirements.	<p>2.1. Appropriate appliance for the gas supply type is selected in accordance with the job specification, ensuring the currency of the Australian Gas Association (AGA) or Australian Liquefied Petroleum Gas Association (ALPGA) approval number.</p> <p>2.2. Existing piping is checked to ensure its compliance with relevant Australian standards and that its capacity is adequate for the additional load.</p> <p>2.3. Appliance is located in conformance to regulatory requirements and relevant Australian standards, and is appropriate for appliance use and for piping, flue and ventilation requirements.</p>
3. Determine installation requirements.	<p>3.1. Appropriate pipe fittings and components for the installation are selected in accordance with relevant Australian standards.</p> <p>3.2. Size of branch line is calculated in accordance with regulating authorities' requirements.</p> <p>3.3. Ventilation openings and source of air supply are determined in conformance to relevant Australian standards and format required by the job specifications.</p> <p>3.4. Quantity and type of materials and other</p>

**ELEMENT****PERFORMANCE CRITERIA**


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	components required are estimated from design drawing or on-site dimensions.
	3.5. Requirements for natural gas or LPG appliance regulator installation are determined.
4. Install appliance.	4.1. Piping system is installed in accordance with design drawing or instruction and relevant Australian standards.
	4.2. Pipe system is tested in accordance with relevant Australian standards and regulatory authorities' requirements.
	4.3. Appliance is installed in accordance with relevant Australian standards and manufacturer instructions and without damage or distortion to surrounding environment or other services.
	4.4. <b><i>Sustainability principles and concepts</i></b> are applied throughout the installation.
5. Commission appliance.	5.1. Electrical safety check is conducted.
	5.2. Consumer piping is purged and joints are reconnected in accordance with workplace requirements.
	5.3. Appropriate testing instrument is selected and operated, with data being recorded in accordance with workplace requirements.
	5.4. Pipe system is tested in accordance with relevant Australian standards and statutory and regulatory authority requirements.
	5.5. Appliance is adjusted and reassembled and operation is checked in accordance with manufacturer specifications.
	5.6. Operation of appliance is explained to customer.
6. Clean up.	6.1. Work area is cleared and materials disposed of, reused or recycled according to legislation, regulations, codes of practice and job specification.
	6.2. Tools and equipment are cleaned, checked, maintained and stored in accordance with manufacturer recommendations and workplace procedures.
	6.3. <b><i>Information</i></b> is accessed and documentation completed in accordance with workplace requirements.

## 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 work notices and other relevant documentation
  - determine requirements
  - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
  - follow instructions
  - plan work with others
  - read and interpret:
    - documentation from a variety of sources
    - drawings and specifications
  - record test data in writing
  - use language and concepts appropriate to cultural differences
  - use and interpret non-verbal communication, such as hand signals
- 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 Type A gas appliances, including flashing and requirements for flues and ventilation

**REQUIRED SKILLS AND KNOWLEDGE**

- properties of gas, gas safety, combustion principles, pressure and flow rates
- relevant statutory and authority requirements related to installing and commissioning Type A gas appliances
- 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, relevant Australian standards and specifications to determine the requirements for the installation and commissioning of Type A gas appliances
- applying safety requirements throughout the work sequence, including electrical requirements and personal protective clothing and equipment
- as a minimum and given the plans and specifications, the ability to install and commission a water heater, space heater, and cooking appliance; at least one of which is to be a domestic installation, one a commercial installation, and one a fan assisted flued appliance, ensuring:
  - application of sustainability principles and concepts
  - correct identification of location, design and details of proposed installations
  - correct selection and use of appropriate processes, tools and equipment
  - completing all work to specification
  - compliance with regulations, relevant Australian 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 regulations and may include:

- handling of materials
- hazard control
- identification and testing for electrical hazards
- personal protective clothing and equipment

## RANGE STATEMENT

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prescribed under legislation, regulations and workplace policies and practices

- safe operating procedures, including recognising and preventing hazards associated with:
  - electricity
  - 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.

*Environmental requirements* may include:

- clean-up protection
- waste management.

*Quality assurance* requirements may include:

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

*Tools and equipment* may include:

- chain blocks
- drills
- flaring tools
- forklifts
- hacksaws
- hand trolleys
- hoists and jacks
- lifting and load shifting equipment
- limited height scaffolding
- measuring equipment
- rollers
- silver brazing equipment
- spanners

## RANGE STATEMENT

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**Materials** for installing and commissioning Type A gas appliances:

- test equipment and instruments
- tin snips
- wrenches.
- are to include Type A:
  - gas appliances
  - piping materials
  - flues
  - ventilation materials and components
- are to comply with relevant Australian standards for installing and commissioning Type A gas appliances.

**Sustainability principles and concepts:**

- Cover the current and future social, economic and environmental use of resources
- may include:
  - appropriate component selection that has minimal environmental impact
  - choice of energy and water efficient appliances
  - efficient use and recycling of material
  - correct handling of hazardous materials
  - disposal of waste material to ensure minimal environmental impact.

**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
- regulatory and legislative requirements, particularly those pertaining to:
  - building codes
  - OHS and environmental requirements
  - plumbing and gasfitting authority regulations
- recognised formulas or tables accepted by the regulatory authority
- relevant Australian standards
- safe work procedures relating to installing and

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**RANGE STATEMENT**

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commissioning Type A gas appliances

- 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**

**Functional area**

**Functional area**