



Australian Government

CPCPGS3061A Install and commission Type A gas appliances

Release 1

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Modification History

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

- Performance criterion and item in required knowledge section added

Not equivalent to CPCPGS3058A Install and commission Type A gas appliances

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

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

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-Requisites

CPCPCM2043A Carry out WHS requirements

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 Building plans and specifications and any special instructions are obtained.</p> <p>1.2 <i>Work health and safety</i> (WHS) and <i>environmental requirements</i> associated with installing and commissioning Type A gas appliances are adhered to throughout the work.</p> <p>1.3 <i>Quality assurance requirements</i> for company operations are identified and adhered to.</p> <p>1.4 Appropriate work notices and required documentation are completed and dispatched according to 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 <i>Tools, equipment</i> and <i>materials</i>, 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 according to 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</p> |

- adequate for the additional load.
- 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.
- 3 Determine installation requirements.
- 3.1 Appropriate pipe fittings and components for the installation are selected according to relevant Australian standards.
- 3.2 Size of branch line is calculated according to regulating authorities' requirements.
- 3.3 Ventilation openings and source of air supply are determined that conform to relevant Australian standards and format required by the job specifications.
- 3.4 Quantity and type of materials and other 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 according to design drawing or instruction and relevant Australian standards.
- 4.2 Pipe system is tested according to relevant Australian standards and regulatory authorities' requirements.
- 4.3 Appliance is installed according to relevant Australian standards and manufacturer instructions and without damage or distortion to surrounding environment or other services.
- 4.4 ***Sustainability principles and concepts*** 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 according to workplace requirements.
- 5.3 Appropriate testing instrument is selected and operated, with data being recorded according to workplace

- requirements.
- 5.4 Pipe system is tested according to relevant Australian standards and statutory and regulatory authorities' requirements.
 - 5.5 Appliance is adjusted and reassembled and operation is checked according to manufacturer specifications.
 - 5.6 Appropriate test is carried out to ensure that there is no leakage or spillage of combustion products into the circulating air system.
 - 5.7 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 according to manufacturer recommendations and workplace procedures.
 - 6.3 **Information** is accessed and documentation completed according to workplace requirements.

Required Skills and Knowledge

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

Required skills

- communication skills to:
 - access information
 - determine requirements
 - enable clear and direct communication, using questioning to identify and confirm requirements, share information, listen and understand
 - follow instructions
 - use language and concepts appropriate to cultural differences
 - use and interpret non-verbal communication, such as hand signals
- initiative and enterprise skills to identify and report to appropriate personnel any faults in tools, equipment or materials
- literacy skills to:
 - complete work notices and other relevant documentation
 - read and interpret:
 - documentation from a variety of sources
 - plans and specifications
 - record data in writing
- numeracy skills to apply measurements and calculations
- planning and organising skills to:
 - plan and set out work
 - plan work with others
- 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
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology

Required knowledge

- 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

- procedures for using carbon monoxide testing equipment to check appliances for spillage
- properties of gas, gas safety, combustion principles, pressure and flow rates
- relevant statutory requirements related to installing and commissioning Type A gas appliances
- SI system of measurements
- 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 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 installing and commissioning Type A gas appliances
- applying safety requirements throughout the work sequence, including electrical safety requirements and the use of personal protective clothing and equipment
- given the plans and specifications, installing and commissioning 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.

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 work practices and addressing hazards and emergencies
- research resources, including industry-related systems information
- safety data sheets.

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.

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

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.

Work health and safety is to be according to commonwealth, state and territory legislation and regulations and may include:

- 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 preventing hazards associated with:

- electricity
- hazardous materials and substances
- identifying and testing for electrical hazards
- 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 policy
- Environment Protection Authority (EPA)
- 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

- test equipment and instruments
- tin snips
- wrenches.

Materials for installing and commissioning Type A gas appliances:

- 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:
 - choice of energy and water-efficient appliances
 - efficient use and recycling of material
 - correct handling of hazardous materials
 - disposing of waste material to ensure minimal environmental impact
 - selecting appropriate components to ensure minimal environmental impact.

Information may include:

- charts and hand drawings
- instructions issued by authorised organisational or external personnel
- job drawings
- manufacturer specifications and instructions
- memos
- organisation work specifications and requirements
- plans and sketches
- regulatory and legislative requirements, particularly those pertaining to:
 - building codes
 - WHS 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 commissioning Type A gas appliances
- safety data sheets (SDS)
- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Plumbing and services

Custom Content Section

Not applicable.