



Australian Government

CPCPGS3048A Install gas pressure control equipment

Release 1

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Modification History

Prerequisite unit updated
Minor changes throughout the unit
Not equivalent to CPCPGS3018A

Unit Descriptor

This unit of competency specifies the outcomes required to install and commission gas control and regulating equipment for consumer gas piping carrying natural gas (NG), liquefied petroleum gas (LPG), or tempered liquefied petroleum gas (TLPG) up to 200kPa.

This unit requires the determination of the requirements for gas control and regulating equipment (for pressures up to 200kPa), and its installation, testing and commissioning according to standards.

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

Application of the Unit

Site location for work application may be a customer's premises.

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 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

1	Identify requirements for gas pressure control equipment.	1.1	Plans, specifications and any special instructions are obtained.
		1.2	<i>Work health and safety</i> (WHS) and <i>environmental requirements</i> associated with installing gas pressure control and regulating equipment are adhered to throughout the work.
		1.3	<i>Quality assurance requirements</i> for company operations are identified and adhered to.
		1.4	Gas load and design requirements are determined from design drawing or workplace instructions.
		1.5	Available gas pressure is measured and suitability of supply determined.
		1.6	Calculations are recorded in format required by job specification or workplace requirements.
		1.7	Selected gas pressure controls and regulator, specified locations and venting requirements are checked for compliance against standards and workplace requirements.
		1.8	Quantity and type of materials are estimated from design drawing or on-site dimensions.
		1.9	<i>Materials</i> , pipe fittings and components are selected to comply with standards and regulatory authorities'

- requirements.
- 2 Prepare for installation.
 - 2.1 Materials, equipment and cylinders are ordered and checked for compliance with docket and order form, and for acceptable condition.
 - 2.2 Appropriate **tools and equipment** for the installation, including personal protective equipment, are identified and selected.
 - 2.3 Work is planned in conjunction with others involved in or affected by the work.
 - 2.4 Work area and materials are prepared to support efficient installation of equipment.
 - 3 Install and commission control and regulating equipment.
 - 3.1 **Gas control and regulating equipment** is installed in compliance with standards and **statutory and regulatory authorities'** requirements.
 - 3.2 Appropriate test apparatus is selected for commissioning the control and regulating equipment.
 - 3.3 Commissioning is carried out according to standards, and authorities' and manufacturer requirements, and the commissioning data is recorded in format required by the authority or job specification.
 - 3.4 Pressure is correctly adjusted to comply with standards and job specification.
 - 3.5 **Sustainability principles and concepts** are applied throughout the installation process.
 - 4 Clean up.
 - 4.1 Work area is cleared and 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 **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
 - inform relevant authorities and supervisors of completion of job
 - 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 workplace 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
- technical skills to:
 - determine requirements for gas control and regulating equipment (for pressures up to 200kPa)
 - install, test and commission gas control and regulating equipment according to standards
- 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
- gas pressure control equipment
- how to access relevant information, including codes and technical standards
- job safety analysis (JSA) and safe work method statements (SWMS)
- procedures for installing and testing gas pressure control and regulating equipment
- properties of gas, gas safety, combustion principles, pressure and flow rates
- relevant statutory requirements related to installing and commissioning gas control and regulating equipment
- 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, standards and specifications to determine requirements, and install and commission gas pressure control equipment
- applying safety requirements throughout the work sequence, including the use of personal protective clothing and equipment
- given the plans and specifications for the installation of gas pressure control and regulating equipment, determining the requirements, and installing, testing and commissioning a single and a two-stage gas regulator, ensuring:
 - it operates to appropriate reduced pressure
 - application of sustainability principles and concepts throughout
 - correctly identifying requirements, and installing and commissioning pressure control and regulating equipment
 - correctly selecting and using 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.

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
- 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.

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:
 - 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 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 for installing gas pressure control and regulating equipment:

- may include:
 - copper tubing
 - fitting and fixing materials
 - gas cylinders
 - gas pressure 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
- flaring tools
- forklifts
- grinders
- hacksaws
- hand trolleys
- hoists and jacks
- ladders
- load and lifting equipment
- measuring equipment
- rollers

- scaffolding
- silver brazing equipment
- spanners
- testing equipment
- wrenches.

Gas control and regulating equipment is to include:

- over-pressure regulators, including internal relief and over-pressure shut off (OPSO) valve.

Statutory and regulatory authorities include:

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

Sustainability principles and concepts:

- cover the current and future social, economic and environmental use of resources
- may include:
 - selecting appropriate components to ensure minimal environmental impact
 - efficient energy use
 - efficient use and recycling of material
 - correct handling of hazardous materials
 - disposing of waste material 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
- material safety data sheets (MSDS)
- 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
- relevant Australian standards
- safe work procedures relating to installing and

testing gas pressure control and regulating equipment

- signage
- verbal, written and graphical instructions
- work bulletins
- work schedules, plans and specifications.

Unit Sector(s)

Functional area

Unit sector Plumbing and services

Custom Content Section

Not applicable.