

Unit of Competency CPCPGS4011

Design and size consumer gas installations

Application

This unit specifies the skills and knowledge required to design and size consumer gas installation and includes consumer piping, flueing and ventilation.

It covers preparation for the work, determination of gas installation requirements, detailed planning of the layout and completing work.

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

Prerequisite Unit

Nil.

Elements and Performance Criteria

1. Identify system requirements.	<p>1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturer's requirements, Australian standards and jurisdictional requirements.</p> <p>1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.</p> <p>1.3 Select appropriate tools and equipment including personal protective equipment (PPE).</p>
2. Design and size system layout.	<p>2.1 Determine quantity, location and type of take-off points and appliances from plans and specifications.</p> <p>2.2 Produce and size consumer gas installations in accordance with relevant manufacturer's requirements, Australian Standards and jurisdictional requirements.</p> <p>2.3 Use the proposed design to identify and specify optimal materials required.</p> <p>2.4 Produce final system layout plans to relevant drawing design standards.</p>

Foundation skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPCPGS4011C Design and size consumer gas installation.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCPGS4011 Design and size consumer gas installations

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- designing, sizing and documenting the layout of four gas installations for:
 - a caravan installation
 - a marine installation, including the installation of an LPG leak detection system
 - a commercial installation, including:
 - a gas hot-water plant incorporating a common flue design
 - a gas range
 - deep fryer
 - salamander grill
- a domestic installation with a minimum of two dwellings with at least three or more Type A gas appliances in each and incorporating subsidiary gas meters

Each installation must include:

- pipe sizing and pressures up to 200 kPa
- at least one natural gas installation
- at least one liquefied petroleum gas (LPG) installation
- a two-stage system
- an over-pressure protection device
- a minimum of two piping materials
- certified Type A gas appliances

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software
- impact of ventilation on design
- types, characteristics, uses and limitations of gas pipe work and consumer piping materials, including joining techniques and systems
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design and size consumer gas installations
- work health and safety (WHS) requirements for designing and sizing consumer gas installations
- properties of gas, gas safety, combustion principles, pressure and megajoule rates.

Assessment Conditions

Assessors must satisfy the requirements for assessors listed in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

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