Australian Government

CPCPGS3051A Purge consumer piping

Release 1

INDUSTRY
SKILLS
COUNCILS
Creating Australia's Future

CPCPGS3051A Purge consumer piping

Modification History

Prerequisite unit updated
Changes to performance criteria, required skills, range statement and critical aspects
Not equivalent to CPCPGS3021A

Unit Descriptor

This unit of competency specifies the outcomes required to purge consumer gas piping systems.

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 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	Prepare for purging.	1.1	Design drawing and specification are obtained.
		1.2	*Work health and safety* (WHS) and *environmental requirements* associated with purging consumer gas piping systems are adhered to throughout the work.
		1.3	*Quality assurance requirements* for company operations are identified and adhered to.
		1.4	Work is planned in conjunction with others involved in or affected by the work.
		1.5	Appropriate *tools and equipment* for the conduct of *purging*, including personal protective equipment, are identified, selected and checked for serviceability.
		1.6	Work area and *materials* are prepared to support efficient purging of consumer gas piping system.
2	Identify purge requirements.	2.1	Installation is checked to ensure compliance with standards and relevant specifications.
		2.2	Volume of piping system is determined from design drawing and standards, and calculations are recorded in format required by job specification.
		2.3	Method of purging is selected in compliance with standards and authorities' requirements.

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		2.4	Purge medium is selected in compliance with standards, and calculations of the purge medium volume are recorded in format required by job specification.
3	Carry out and test purge operation.	3.1	Outlet point for purge gas is located and purge site is checked for ignition sources.
		3.2	Purge is carried out according to standards or *statutory and regulatory authorities'* requirements and *sustainability principles and concepts*.
		3.3	Completion of purge is verified by test equipment, or by recognised and approved workplace testing procedures.
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 installation requirements.

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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 purging requirements of a consumer gas piping system in terms of volume, method and medium of purge
    - conduct purging and testing for its completeness
- technology skills to:
    - access and understand site-specific instructions in a variety of media
    - use mobile communication technology

Required knowledge

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- characteristics of materials used in the purging process
- effect of heat on the materials used during the purging and testing process
- 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)
- procedures for purging gas piping systems, including isolation processes and procedures
- properties of gas, gas safety, combustion principles, ignition principles, pressure and flow rates
- relevant statutory requirements related to purging gas piping systems
- SI system of measurements
- workplace and equipment safety requirements

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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 for determining requirements, and purging and testing consumer gas piping systems
- applying safety requirements throughout the work sequence, including applying equipotential bonding procedures and using personal protective clothing and equipment; and eliminating possible ignition sources
- given the plans and specifications, purging, testing and recording the purge operations (one to be a fuel to inert purge and the other to be an inert to fuel purge) for a consumer gas piping system of greater than 0.03 cubic metres, which includes a subsidiary meter, ensuring:
    - application of sustainability principles and concepts
    - correct identification of method, medium, calculations and procedures to purge the piping system
    - 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.

Context of and specific resources	This competency is to be assessed using standard and

for assessment	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

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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 - electricity - service lines - surrounding structures and facilities - trip hazards

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- 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) - internal company quality assurance policy and risk management strategy - International Standards Organisation - site safety plan - workplace operations and procedures.
Tools and equipment may include:	- barriers - buckets - gas detector - hand and power tools - ladders - purge stacks - restricted height scaffolding - signs - testing equipment.

Purging:	- may occur before commencing work and on completion of work using either air, fuel gas or an inert gas on pipe volumes up to and exceeding 0.03 cubic metres, to applicable regulatory requirements
	- installation to be purged, calculations, method, medium and conduct of purging is to conform to standards or requirements of local regulatory authority
	- methods of purging are to include:
	  - fuel to inert purge
	  - inert to fuel purge.

Materials for purging may include:	• compressed air • nitrogen • carbon dioxide • fuel gas.
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:
	  • appropriate purging medium that has minimal environmental impact
	  • efficient use of purge medium.

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/or gasfitting authority regulations
	• recognised formulas or tables accepted by the regulatory authority
	• relevant Australian standards
	• safe work procedures relating to purging and testing consumer gas piping systems
	• 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.