



Australian Government

Assessment Requirements for CPCPPS5002 Design gas reticulation systems

Release: 1

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Modification History

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPPS5002B Design gas reticulation systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

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

- evaluating and documenting design parameters for at least two gas reticulation systems, including:
 - preparing and producing a plan for layout of gas reticulation systems using appropriate software.

Knowledge Evidence

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

- common terminology and definitions used in design of gas reticulation systems for all classes of building
- principles of technology used in design of gas reticulation systems
- requirements of state regulatory authorities, Australian Standards and manufacturer specifications, including hazards identified in relation to devices and systems
- work health and safety (WHS) requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - sizing and documenting layout of gas reticulation systems for applications, including residential, commercial and industrial
 - new projects or existing structures being renovated, extended, restored or maintained
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist use applications
- cost-benefit analysis

- statutory and regulatory requirements and Australian and New Zealand Standards:
 - Acts, regulations and local and state government policies, including group and strata titling
 - AS/NZS 1596 The storage and handling of LP gas
 - AS/NZS 5601.1 Gas installations - General installations
 - National Construction Code (NCC)
 - gas utility and supplier information and requirements
 - industry standards
- requirements from manufacturers:
 - material specifications
 - pump tables
 - sizing tables
 - technical and trade manuals
- desktop study including collection and interpretation of existing data for design purposes:
 - architectural and building plans
 - council plans
 - developer plans
 - applications
 - reports as available
- layout of pipework systems:
 - have principles of economy, serviceability, durability and fit for use applied
 - not unduly affect building integrity and aesthetic appeal
- fittings and valves:
 - bends
 - couplings
 - regulators
 - tees
 - unions
- calculations for:
 - energy
 - gas volume
 - pressure
 - sizing
 - storage
- ventilation and flue requirements which must include appliance flue design and ventilation requirements according to standards, regulations and gas authorities' requirements
- specifications of regulators:
 - adjustment procedures of regulators
 - excessive pressure protection types of regulators
 - gas regulation method

- identification, analysis and documentation of regulator faults
- principles of operation
- selection and installation requirements
- sizing of regulators
- types of gas regulators
- specifications of appliances:
 - commercial appliances
 - components
 - construction of the appliance
 - domestic appliance design
 - electronic controls
 - industrial appliances
- design of cylinder and tank systems based on:
 - anticipated use
 - appropriate time period between refilling
 - gas storage requirements calculations
- pipe fixings:
 - anchors
 - bracket spacing
 - corrosion protection
 - cover
 - hanging brackets
 - material requirements
 - saddles
 - wall and ceiling brackets
- materials:
 - copper (Cu)
 - fittings and fixtures
 - galvanised steel
 - polyethylene (PE)
 - unplasticised polyvinyl chloride (uPVC)
- jointing methods:
 - brazing and threading
 - gluing
 - mechanical joints
 - rubber ring
 - solvent cement welding
- installation requirements:
 - clipping, bedding and installation detail

- installation requirements for mobile, marine installation and portable appliances (high and low-pressure)
- jointing requirements
- level of workmanship
- plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - sections
 - isometrics
- schematics which may be produced using:
 - computer generation
 - drawing equipment
- specification:
 - appliances
 - bedding
 - clipping
 - details of specialised components
 - jointing
 - manufacturer requirements
 - materials
 - valves
 - workmanship
- testing for:
 - bubble leak
 - electronic gas leak detection
 - flow
 - inspection checklist
 - pressure
 - quality assurance (QA) audit
- commissioning schedule information:
 - checking for burrs and obstructions
 - commissioning appliances
 - confirming fit for purpose
 - purging system
 - removing contaminants
- information for operation and maintenance manuals:
 - check for blockages
 - leak detection

- regular inspection
- regular maintenance requirements.

Assessment Conditions

Assessors must meet the requirements for assessors contained 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.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>