



Australian Government

Assessment Requirements for CPCPPS5000 Design gas bulk storage systems

Release: 2

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Modification History

- Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.
Element and Performance Criteria 2.9 rewritten for clarity.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPPS5000B Design gas bulk storage 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 a range of gas bulk storage systems
- planning and detailing system components, including:
 - meters
 - pipes
 - regulators
 - valves
 - vaporisers
- designing a deluge system
- designing and sizing gas bulk storage 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 bulk storage systems for all classes of building
- drafting principles
- nature of materials used and effects of performance under various conditions such as:
 - minimum safe operating temperature
 - minimum safe operating pressure
 - maximum safe operating pressure
 - maximum permissible loading on supports
- principles of technology in the design of gas bulk storage systems

- requirements of state regulatory authorities, Australian Standards and manufacturer specifications, including hazards identified in relation to devices and systems used
- workplace safety requirements, including relevant statutory regulations, codes and standards
- scope of work:
 - interpretation of plans and specifications
 - principles of operation of various types of LPG components and fault conditions in LPG components
 - sizing and documenting layout of gas bulk storage installations including fire protection systems such as:
 - chemical injection
 - extinguishers
 - hose reels
 - hydrants
 - monitors
 - portable and fixed types of firefighting equipment
 - spray systems
- design requirements:
 - architectural specifications
 - builder specifications
 - owner requirements
 - specialist gas 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/NZS1596 The storage and handling of LP gas
 - AS/NZS 2430.3 Classification of hazardous areas Examples of area classification - Flammable gases
 - AS/NZS 5601.1 Gas installations - General installations
 - National Construction Code (NCC)
- manufacturer information:
 - pump tables
 - sizing tables
 - specifications
 - technical and trade manuals
- operational and safety requirements established using Australian and New Zealand Standards and local and state authority plans
- layout of pipework system considerations:
 - not unduly affecting building integrity and aesthetic appeal
 - applying principles of economy, serviceability, durability and fit for purpose

- control valves:
 - applications of valves and code requirements for installation
 - emergency shutdown valves
 - excess flow valves
 - hydrostatic relief valves
 - individual valve types
 - over pressure shut off devices
- types of fittings:
 - bends
 - inspection openings
 - junctions
 - meters
 - reflux valves
 - staged regulators
 - traps
 - vaporisers
- pumps and compressors
- meters:
 - mass flow
 - positive displacement
 - turbine
- system calculations:
 - determination of flow and appliance loadings
 - interpretation of design charts and tables
 - pipe sizing calculations
- pipe fixings:
 - anchors
 - bedding
 - bracket spacing
 - concrete support
 - corrosion protection
 - cover
 - hanging brackets
 - material requirements
 - saddles
 - wall and ceiling brackets
- materials:
 - concrete
 - copper
 - fittings and valves

- high density polyethylene (HDPE)
- measures to prevent the spread of fire
- jointing methods:
 - brazing
 - mechanical joints
 - solvent cement welding
 - threading
- installation requirements:
 - bedding
 - clipping
 - concrete support
 - installation details
 - jointing requirements
 - level of workmanship
- types of plans:
 - axonometrics
 - cross-sections
 - details
 - elevations
 - isometrics
 - sections
 - schematics produced using:
 - computer generation
 - drawing equipment
- specification:
 - clipping
 - details of specialised components
 - jointing
 - manufacturer requirements
 - materials
 - valves
 - workmanship
- testing for:
 - flow testing
 - leak check
 - vaporisation rate check
- commissioning schedule requirements:
 - flow testing
 - leak check
 - vaporisation rate check

- inclusions required in operation and maintenance manuals.

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>