

Unit of Competency CPCPWT4011

Design and size heated and cold-water services and systems

Application

This unit specifies the skills and knowledge required to design, size and document the layout of heated, tempered and cold-water services, flushing systems, and hydrant and hose reel systems for residential and commercial multi-floor buildings.

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.	1.1	Access, read and determine system requirements from job specifications, relevant Australian Standards, codes, manufacturers' instructions and jurisdictional requirements.
	1.2	Identify and apply workplace, work health and safety (WHS) and environmental requirements.
	1.3	Determine quantity, location and points of fixture connection.
2. Design and size system layout.	2.1	Design and size system layout in accordance with relevant manufacturers' instructions, Australian Standards and jurisdictional requirements.
	2.2	Use the proposed design to identify and specify optimal material requirements.
	2.3	Produce final system layout plans according to relevant drawing design standards.

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 CPCPWT4011B Design and size heated and cold-water services and systems.

Links

Companion Volume Implementation Guide:

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

Assessment Requirements for CPCPWT4011

Design and size heated and cold-water services and systems

Performance Evidence

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

- designing, sizing and documenting the layout and schematic details for a commercial building with the design incorporating:
 - an approved heated/tempered circulating system and cold-water system to a minimum of seven floor levels. Each floor level must include a hydrant and hose reel system
 - at least five levels with the following fixtures on each floor level:
 - a disabled bathroom incorporating a water closet (WC) and basin
 - male toilet facilities including three WCs, three basins and three individual urinals or an equivalent sized urinal slab incorporating a mains pressure flush valve system
 - female toilet facilities including five WCs and three basins
 - a shower
 - a kitchen sink for tea making purposes
 - one floor level containing a commercial kitchen with food preparation area including at least:
 - a commercial dishwasher
 - a commercial pot wash facility
 - a commercial glasswasher
 - a basin
 - one floor level containing a plant room
- designing, sizing and documenting the layout and schematic details for a residential building with the design incorporating:
 - an approved heated/tempered water system and a drinking and non-drinking cold water system to a minimum of seven floor levels, inclusive of basement, to include fixtures on each floor level (excluding the basement).
 - at least the following fixtures on each floor level:
 - three baths
 - six showers
 - six WCs
 - six basins
 - three kitchen sinks
 - three dishwashers
 - three laundry tubs
 - three clothes washing machines.

Knowledge Evidence

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

- process of designing, sizing and documenting the layout of heated, tempered and cold-water services and systems
- properties of water, including pressure and flow rates
- heated, tempered and cold-water services and flushing systems, and fire hydrant and hose reel systems, including non-drinking water requirements
- mains pressure flushing devices
- selection requirements for installing:
 - thermostatic mixing valves
 - backflow prevention devices
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design software
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design and size heated and cold-water services and systems
- work health and safety (WHS) requirements for designing and sizing heated and cold-water services and systems.

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 Volume Implementation Guide:

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