

Unit of Competency CPCPSN4011

Design and size sanitary plumbing systems

Application

This unit specifies the skills and knowledge required to design, size and document the layout of sanitary plumbing systems for multi-floor residential buildings and commercial 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 sanitary plumbing system requirements.	1.1	Access, read and determine design and size of sanitary plumbing system from plans, 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, fixtures and legal points of discharge.
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 CPCPSN4011B Design and size sanitary plumbing systems.

Links

Companion Volume Implementation Guide:

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

Assessment Requirements for CPCPSN4011

Design and size sanitary plumbing 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 sanitary plumbing system to a minimum of seven floor levels. The design must incorporate the following fixtures on each floor level:
 - a disabled bathroom including a water closet (WC) and basin
 - male toilet facilities including 3 WCs, 3 basins and 3 individual urinals or an equivalent sized urinal slab
 - female toilet facilities including 5 WCs and 3 basins
 - a shower
 - kitchen sink for tea-making purposes
 - one floor level must contain a commercial kitchen with food preparation area including at least:
 - one commercial dishwasher
 - one commercial pot wash facility
 - one commercial glasswasher
 - one bucket trap
 - one basin
 - one floor level must be below the approved point of connection (a basement) and involve an approved trade waste facility
- designing, sizing and documenting the layout and schematic details for a residential building incorporating an approved sanitary plumbing system to a minimum of six floor levels, including a basement and the following fixtures on each floor level, excluding the basement:
 - 3 baths
 - 6 showers
 - 6 WCs
 - 6 basins
 - 3 kitchen sinks
 - 3 dishwashers
 - 3 laundry tubs
 - 3 clothes washing machines.

Knowledge Evidence

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

- relevant manufacturers' instructions, Australian Standards and jurisdictional requirements

- properties of soil and waste discharges, including temperature and corrosive discharges
- approved materials and components, their characteristics and application relating to sanitary plumbing systems
- acoustic treatment of sanitary pipework
- principles of sanitary plumbing systems:
 - o elevated pipework
 - o fully vented modified
 - o reduced velocity aerated stack systems
 - o single stack
 - o other approved systems
- reduced and invert levels
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers and computer-aided design (CAD) software for documentation
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of sanitary drainage systems
- work health and safety (WHS) requirements for designing, sizing and documenting the layout of sanitary drainage systems.

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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