



Australian Government

CPCPCM5011 Design complex cold water 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.
Change to Elements and Performance Criteria 3.6.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5011A Design complex cold water systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design complex cold water distribution systems in commercial and high-rise mixed development building to a minimum of 29 floors inclusive of a basement. The unit requires application of technical skills and knowledge to design and size systems and prepare operational and compliance documentation.

The role may involve interaction with architects, builders, suppliers, clients and relevant planning authorities and requires a sound understanding of applicable legislation, standards and codes.

This unit requirements are typically carried out by a consultant or design engineer.

Application of the unit is relevant to multi-storey residential, commercial and industrial buildings with or without connection to reticulated water supply.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe what needs to be done to demonstrate achievement of the element.

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| 1 Evaluate design parameters. | 1.1 | Identify and establish scope of work from preliminary information and in consultation with associated persons. |
| | 1.2 | Determine design parameters from relevant Australian Standards, codes, plans, specifications, statutory and regulatory requirements and client brief. |
| | 1.3 | Apply sustainability principles and concepts as part of the design process. |
| | 1.4 | Establish performance requirements, considering safety of system users or building occupants. |
| | 1.5 | Determine available pressure and flow rates at site location. |
| | 1.6 | Conduct research, including a desktop study to outline design parameters. |
| | 1.7 | Interpret manufacturer requirements and trade and technical manuals. |
| | 1.8 | Conduct a cost-benefit analysis to compare a range of materials and system designs. |
| 2 Plan and detail system components. | 2.1 | Plan layout of pipework systems, including the type and location of fittings and valves and acoustic performance of the system. |
| | 2.2 | Detail type, location and requirements for backflow prevention devices. |
| | 2.3 | Specify flush valve system types and operation. |
| | 2.4 | Calculate pipe sizes, velocities, flows and residual pressures for a range of applications. |
| | 2.5 | Detail or design cold water system components. |
| | 2.6 | Size and detail pump, pump controls and pump room requirements. |
| | 2.7 | Specify approved materials, jointing methods and installation requirements. |
| 3 Design and size | 3.1 | Design systems for a range of wide-span and high-rise |

- systems. building applications.
- 3.2 Design flush valve distribution systems for sanitary ablutions.
 - 3.3 Design a range of delivery systems.
 - 3.4 Design and size complex cold water distribution systems using computer software packages.
 - 3.5 Design water storage and break tanks.
 - 3.6 Design cold water pressure systems and incorporate into building supply system.
 - 3.7 Design backflow penetration systems associated with cold water systems.
 - 3.8 Calculate pipe sizes, velocities and pressures.
 - 3.9 Calculate system pressures, pressure losses and pressure reduction measures.
- 4 Prepare documentation.
- 4.1 Prepare client brief for the preferred design.
 - 4.2 Prepare plans and specifications for designing complex cold water systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual for maintaining cold water systems.

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 CPCPCM5011A Design complex cold water systems.

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>