



Australian Government

CPCPCM5010 Design complex sanitary plumbing and drainage 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.
Changes to Elements and Performance Criteria 3.1 and 3.5.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
Supersedes and is equivalent to CPCPCM5010A Design complex sanitary plumbing and drainage systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to undertake the hydraulic engineering design of complex sanitary plumbing and drainage installation and to prepare specifications for a range of wide-span and high-rise building applications up to 25 metres, including basement for residential, commercial and industrial buildings.

The unit requires application of technical skills and knowledge to prepare plans, specifications and operating and maintenance manuals.

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 Establish scope of work for complex sanitary plumbing and drainage systems for wide-span and high-rise building projects. |
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| | 1.2 | Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief. |
| | 1.3 | Interpret statutory and regulatory requirements for the design of complex sanitary plumbing and drainage systems. |
| | 1.4 | Analyse and apply Australian Standards and codes for the design of complex sanitary plumbing and drainage systems. |
| | 1.5 | Interpret manufacturer requirements and trade and technical manuals. |
| | 1.6 | Conduct additional research, including a desktop study to outline design parameters. |
| | 1.7 | Conduct a cost–benefit analysis comparing a range of pipe materials and system designs. |
| 2 | Plan and detail system components. | |
| | 2.1 | Plan layout of pipework systems, type and location of fittings and valves. |
| | 2.2 | Assess existing utilities services capacity and sizes. |
| | 2.3 | Calculate pipe sizes, pipe grades and trapping and ventilation requirements for a range of applications. |
| | 2.4 | Plan pipe support for a range of applications. |
| | 2.5 | Size and detail pump well, pump and pump control requirements. |
| | 2.6 | Specify approved materials, jointing methods and installation requirements for complex sanitary plumbing and drainage systems. |
| | 2.7 | Plan and detail acoustic performance of the sanitary plumbing and drainage system within the system design. |
| 3 | Design and size systems. | |
| | 3.1 | Design complex sanitary plumbing and drainage systems for a range of wide-span and high-rise building applications. |
| | 3.2 | Design rising main systems. |

- 3.3 Design and size a fully vented or fully vented modified system.
 - 3.4 Design and size a reduced velocity aerator stack system.
 - 3.5 Design and size complex sanitary plumbing and drainage systems using computer-aided design and drafting packages.
- 4 Prepare documentation.
 - 4.1 Prepare client brief of the preferred design.
 - 4.2 Prepare plans and specifications for a range of complex sanitary plumbing and drainage systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

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 CPCPCM5010A Design complex sanitary plumbing and drainage 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>