



Australian Government

CPCPFS5012 Design fire hydrant and hose reel 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 Foundation Skills. Typographical errors corrected in Elements and Performance Criteria 2.1, 2.2, and 2.7.
- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCPFS5012A Design fire hydrant and hose reel systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design fire hydrant, hose reel and storage systems to Australian and New Zealand standards, the National Construction Code (NCC) and other relevant legislative requirements in order to meet fire protection standards for a range of wide span and high-rise building applications.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

The design of fire hydrants, hose reels and storage systems must comply with Australian and New Zealand standards, the National Construction Code (NCC) and other relevant legislative requirements in order to meet fire protection standards.

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 Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Evaluate design parameters.	1.1 Establish scope of work for fire hydrants, hose reels and distribution systems for wide span and high-rise building projects. 1.2 Determine design requirements from plans, specifications and client brief. 1.3 Conduct cost-benefit analysis comparing a range of pipe materials and system designs. 1.4 Interpret manufacturer requirements and trade, technical and sizing manuals for the design parameters. 1.5 Conduct research to outline design parameters. 1.6 Conduct flow and pressure tests. 1.7 Establish performance requirements.
2 Plan and detail system components.	2.1 Plan layout of pipework and type and location of fittings and valves. 2.2 Detail type, location and requirements for backflow prevention devices. 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications. 2.4 Specify approved materials, jointing methods and installation requirements. 2.5 Detail hydrant booster, standpipe and hose reel assemblies. 2.6 Design thrust blocks and pipe fixings for a range of applications. 2.7 Size and detail pump, pump controls and pump room requirements. 2.8 Design and detailed water storage systems.
3 Design and size systems.	3.1 Design fire hydrant and hose reel systems for a range of wide span and high-rise building applications.

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| | 3.2 | Design combined water supply, fire hydrant, hose reel and sprinkler systems for a range of wide span and high-rise building applications. |
| | 3.3 | Design a range of delivery systems. |
| | 3.4 | Design and size Fire hydrant and hose reel systems using computer software packages. |
| | 3.5 | Apply sustainability principles and concepts when preparing for and undertaking work process. |
| 4 | Prepare documentation. | |
| | 4.1 | Prepare plans for a range of fire hydrant and hose reel systems. |
| | 4.2 | Prepare block plan booster cabinet according to Australian and New Zealand standards. |
| | 4.3 | Prepare specification for a fire hydrant and hose reel system. |
| | 4.4 | Prepare testing and commissioning schedule. |
| | 4.5 | Produce operation and maintenance manual. |

Foundation Skills

A person demonstrating competency in this unit must have the following language, literacy, numeracy and employment skills:

- problem-solving skills to:
 - analyse requirements
 - carry out tests
 - consider options
 - design an appropriate system
 - identify typical faults and action required to rectify problems
- technology skills to:
 - access and understand site-specific instructions in a variety of media
 - use mobile communication technology.

Unit Mapping Information

Supersedes and is equivalent to CPCPFS5012A Design fire hydrant and hose reel 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>