



Australian Government

CPCPFS5011 Design fire sprinkler systems

Release: 2

CPCPFS5011 Design fire sprinkler systems

Modification History

Release 2 This version first released with CPC Construction, Plumbing and Services Training Package Release 6.5.

- Change to first paragraph of the Application.
- Change to Performance Criteria 3.3.

Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

Supersedes and is equivalent to CPCPFS5011A Design fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design and size fire sprinkler systems and prepare operational documentation.

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

This unit's requirements are typically carried out by experienced hydraulic design consultants or fire systems designers on a new or existing domestic or residential structure.

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.

1 Evaluate design parameters.

1.1 Establish scope of work for design of fire sprinkler systems for wide span and high-rise building projects.

- 1.2 Determine design requirements from plans, specifications and client brief.
 - 1.3 Interpret and apply fire department, statutory, regulatory, Australian and New Zealand standards and relevant building code requirements.
 - 1.4 Interpret trade and technical manuals and manufacturer requirements and apply to design.
 - 1.5 Apply sustainability principles and concepts as part of the design process.
 - 1.6 Establish flow and pressure requirements.
 - 1.7 Conduct flow and pressure tests and establish council main flows and pressures.
 - 1.8 Conduct research including a desktop study and establish performance requirements.
 - 1.9 Conduct a cost-benefit analysis to compare a range of pipe materials and system designs.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including type and location of fittings and valves.
 - 2.2 Detail type, location and requirements for backflow prevention devices and alarm and valve assemblies.
 - 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications.
 - 2.4 Specify approved materials, jointing methods and sprinkler heads for fire sprinkler systems.
 - 2.5 Plan and detail smoke alarm systems, booster assemblies, booster relay and jacking pumps.
 - 2.6 Plan pipe fixings for a range of applications.
 - 2.7 Plan and size water storage systems and pump, pump controls and pump room requirements.
 - 2.8 Plan and size test points and associated drainage systems.
 - 2.9 Specify installation requirements.

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| 3 Design and size systems. | 3.1 Design fire sprinkler systems for a range of wide span and high-rise building applications. |
| | 3.2 Design combined water supply, fire hydrant and hose reel and sprinkler systems for a range of wide span and high-rise building applications. |
| | 3.3 Design sprinkler systems for a single and dual water supplies. |
| | 3.4 Design a range of sprinkler system configurations. |
| | 3.5 Design and size fire sprinkler systems using computer software packages. |
| 4 Prepare documentation. | 4.1 Prepare and detail plans for a range of fire sprinkler systems. |
| | 4.2 Prepare specification for a fire sprinkler system. |
| | 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 CPCPFS5011A Design fire sprinkler 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>