



Australian Government

CPCSFS5006 Create detailed designs for fire sprinkler systems

Release: 1

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Modification History

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

Supersedes and is equivalent to CPCSFS5006A Create detailed designs for fire sprinkler systems. Updated to meet the Standards for Training Packages 2012.

Application

This unit of competency specifies the outcomes required to obtain, process and set up drawings for the detailed design of fire sprinkler systems. The unit also involves assessing and selecting component requirements, setting out the locations of components, and creating final notated drawings.

This unit of competency supports the role of fire systems designers with responsibility for creating detailed designs for sprinkler fire suppression systems.

Licensing, legislative, regulatory or certification requirements may apply to this unit and so the varying state or territory requirements should be confirmed with the relevant body.

Pre-requisite Unit

Nil.

Unit Sector

Plumbing and Fire Services

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 Set up fire systems design drawings. | 1.1 Request, receive, name and file relevant project drawings and documentation according to workplace procedures. |
| | 1.2 Clean drawings to leave minimal essential information. |
| | 1.3 Import layers showing designs of other services into clean architectural or structural drawings. |
| | 1.4 Add details from drawings of the floor of the level |

- above, if these affect the design.
- 1.5 Name, file and back up the detailed design drawings according to workplace procedures.
- 2 Calculate preliminary data.
 - 2.1 Develop floor area calculations to determine the number of sprinkler zones.
 - 2.2 Determine the sprinkler occupancy classifications, minimum sprinkler flow and initial fire flow demands based on classifications for the site.
 - 2.3 Determine and analyse the town main water capabilities for the fire services serving the site to identify if fire pumps and fire tanks are required.
 - 2.4 Calculate the proposed fire pump flow and pressure and fire tank sizes.
 - 2.5 Prepare a comparison list of equipment which can be used across the site.
 - 3 Lay out the fire sprinkler system design.
 - 3.1 Determine and notate the exact location of sprinklers on the drawing according to relevant codes and standards.
 - 3.2 Determine and notate the most efficient and workable layout and location of sprinkler system components on the drawing according to regulatory requirements, standards and regulations.
 - 3.3 Design pipework layout and coordinate with building elements and services and identify pipework sizes and elevations across the systems.
 - 3.4 Calculate, check and notate dimensions on the drawing according to regulatory requirements, standards and regulations.
 - 3.5 Undertake hydraulic analysis of the fire systems using both hand calculation procedures and computer modelling programs.
 - 3.6 Validate fire pump and tank sizes with initial estimates.
 - 3.7 Develop detailed designs of pipework for complicated interaction of pipework and building elements and

services.

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| | 3.8 | Develop detailed designs of pipework configurations for fire tanks, fire pumps, brigade booster and suction points and alarm valves, including manifold systems and flow switch arrangements. |
| 4 Submit drawings for approval and finalise design process. | 4.1 | Submit fire sprinkler system design drawings to relevant personnel within the scheduled timeframe. |
| | 4.2 | Make or negotiate required amendments to design drawings as required. |
| | 4.3 | Process and distribute final approved design drawings according to project and regulatory requirements, standards and regulations. |
| | 4.4 | Select fittings and components according to project and regulatory requirements, standards and regulations. |

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 CPCSFS5006A Create detailed designs for 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>