



Australian Government

CPCSFS5017 Create detailed designs for foam suppression systems

Release: 2

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Modification History

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| Release 2 | This version first released with CPC Construction, Plumbing and Services Training Package Release 5.1.

Application reformatted and typographical error in Knowledge Evidence corrected. |
| Release 1 | This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.

New unit. |

Application

This unit of competency specifies the skills and knowledge required to obtain, process and set up drawings for the detailed design of foam suppression 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.

Fire systems designs are limited to those within the deemed-to-satisfy provisions of the Building Code of Australia (BCA) or detailed fire systems designs for alternative solutions designed by fire engineers. This unit does not apply to fire systems for special hazard locations.

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. | <ul style="list-style-type: none">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 Perform preliminary data and calculations. | <ul style="list-style-type: none">2.1 Develop floor area calculations to determine the number of sprinklers zones and required fire hydrant to be considered flowing.2.2 Determine the town main capabilities for the fire services serving the site.2.3 Determine the types of foams applicable for the site.2.4 Determine the minimum hydrant flow for the site.2.5 Determine the initial fire flow demands for the site based on the occupancy classifications.2.6 Analyse the town main water supply capabilities to determine if fire pumps and fire tanks are required.2.7 Calculate the proposed fire pump flows and pressure and fire tanks sizes.2.8 Prepare dimensional drawings for equipment spatial allocations.2.9 Sight fire brigade response point, boosters and tank suction points with stakeholders.2.10 Prepare a comparison list of equipment which can be used across the site. |
| 3 Lay out the foam suppression system | <ul style="list-style-type: none">3.1 Confirm dimensions and assess installation risks and constraints. |

- design.
- 3.2 Determine and notate the exact location of foam nozzles on the drawing according to relevant codes and standards.
 - 3.3 Determine and notate the most efficient and workable layout and location of sprinkler system components on the drawing according to workplace procedures.
 - 3.4 Design pipework layout and coordinate with building elements and services and identify pipework sizes and elevations across the system(s).
 - 3.5 Calculate, check and notate dimensions on the drawing according to workplace procedures.
 - 3.6 Undertake hydraulic analysis of the fire systems using both hand calculation procedures and computer modelling programs.
 - 3.7 Validate fire pump and tanks sizes versus initial estimates.
 - 3.8 Develop detail designs of pipework for complicated interaction of pipework and building elements and services.
 - 3.9 Develop detail designs of pipework configurations for fire tanks, fire pumps, brigade booster and suction points, alarm valves including manifold systems, and flow switch arrangements.
 - 3.10 Develop detail designs of pipework configurations for the foam tanks, foam pumps, injections devices and alarm valves.
- 4 Submit drawings for approval and finalise design process.
- 4.1 Submit foam suppression 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 workplace requirements.
 - 4.4 Select and order fittings and components according to project and workplace requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

No equivalent unit.

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>