

Unit of Competency CPCSFS5003

Develop plans and methodology for fire systems design projects

Application

This unit of competency specifies the outcomes required to ensure a quality result for the detailed design of fire systems through work organisation, planning and methodology.

This unit of competency supports the role of fire systems designers who manage their own work and take responsibility for ensuring that detailed designs of fire systems are produced within required timeframes and to the standards required for approval of such designs.

In some jurisdictions, this unit of competency may form part of accreditation, licensing, legislative, regulatory or certification requirements.

Prerequisite Unit

Nil.

Elements and Performance Criteria

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| 1. Identify and apply procedures for initiating fire systems design projects. | 1.1 | Identify various project file-sharing and communication systems, tools and methods to ensure efficient and effective operation. |
| | 1.2 | Use project and file-naming systems according to workplace and project requirements. |
| | 1.3 | Identify efficient and effective document filing and storage systems according to workplace and project requirements. |
| | 1.4 | Identify systems for efficient tracking and filing of project communications according to workplace and project requirements. |
| | 1.5 | Identify a system for ensuring relevant project documentation is requested, received, named and filed according to workplace procedures. |
| 2. Develop a plan for setting up fire systems design projects. | 2.1 | Develop plan for setting up correct computer-aided design (CAD) backgrounds according to workplace and project requirements. |
| | 2.2 | Develop systematic processes for identifying and importing the correct layer drawings into CAD according to workplace and project requirements. |
| 3. Develop a plan and methodology for designing fire systems. | 3.1 | Develop actions and timeframes in the design process for fire systems according to workplace, project requirements, quality assurance and other regulatory approval, as required. |
| | 3.2 | Determine stages where regulatory or other approval is required for the design and establish procedures to ensure that these are obtained. |
| | 3.3 | Identify applicable fire codes, standards and data sheets from relevant authorities and underwriters. |
| 5. Develop a plan and methodology for finalising fire | 5.1 | Establish actions and timeframes in the fabrication and installation support process according to workplace and project requirements. |
| | 5.2 | Establish final drawing and documentation requirements according to |

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| systems design projects. | workplace and project requirements. |
| 5.3 | Establish timelines for long lead items such as fire tanks, fire pumps and specialist overseas equipment. |

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 CPCSF55003A Develop plans and methodology for fire systems design projects.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>

Assessment Requirements for CPCSFS5003

Develop plans and methodology for fire systems design projects

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria for this unit by:

- developing a project plan and methodology for a minimum of four types of fire systems design projects, including:
 - o commercial building
 - o factory
 - o residential nursing home
 - o high-rise building.

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- workplace design tools and processes
- project documentation:
 - o drawings
 - architectural
 - structural
 - mechanical
 - hydraulic
 - electrical
 - layout
 - section
 - detail
 - final drawings:
 - 'as installed' drawings
 - block plans
 - tactical fire plans
 - commissioning benchmarks
 - operations and maintenance manuals
 - o project schedule or construction program
 - o design brief
 - o design specifications
- compliance and quality requirements for fire systems design projects, including:
 - o low-rise buildings
 - o processing building applications
 - o warehouse buildings under 13.7 m high
 - o warehouse buildings over 13.7 m high

- o medium-rise buildings
 - o high-rise buildings (over 25 metres)
 - o buildings over 50 metres in height
- communication and negotiation processes
- level of accuracy required in detailed design drawings, plans and reports
- fire systems design activities, including installation support and finalisation
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - o word processing
 - o spreadsheet
 - o email
 - o internet
- fire systems technology and components:
 - o water-based systems:
 - wet pipe sprinkler systems
 - deluge and drencher systems
 - dry pipe sprinkler systems
 - pre-action sprinkler systems
 - early suppression fast response (ESFR)
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - o detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
- purpose and operation of fire systems:
 - o special products and hazards
 - o system operation
 - o performance requirements
 - o maintenance standards
 - o system activation and operation
- passive fire safety elements
- identification of passive element:
 - o impact of fire systems design on passive elements
- construction industry terminology
- roles and responsibilities of relevant building project team and personnel, including:
 - o architect
 - o lead contractor
 - o mechanical engineer or contractor
 - o hydraulic engineer or contractor

- o electrical engineer or contractor
 - o client
 - o consulting engineer
 - o civil engineers
 - o fire engineers
 - o building (private) certifier or surveyor
- project management processes, including scheduling, communications and file sharing
- on-site issues that can arise during the construction phase and impose changes to the designs of fire systems and other services
- regulatory or other approval:
 - o building certifier or surveyor
 - o fire brigade
 - o fire engineer.

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

This unit must be assessed in the workplace or a close simulation using realistic workplace conditions, materials, activities, responsibilities, procedures, safety requirements and environmental considerations.

Links

Companion Volume Implementation Guide:

<https://vetnet.education.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>