



Australian Government

Assessment Requirements for CPCSF5008

Create detailed designs for fire detection and warning systems

Release: 1

Assessment Requirements for CPCSF5008 Create detailed designs for fire detection and warning systems

Modification History

- Release 1 This version first released with CPC Construction, Plumbing and Services Training Package Release 5.0.
- Supersedes and is equivalent to CPCSF5008A Create detailed designs for fire detection and warning systems. Updated to meet the Standards for Training Packages 2012.

Performance Evidence

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

- producing fully compliant designs for fire detection and warning systems for the following sites:
 - low-rise building
 - medium-rise building
 - high-rise building (over 25 metres)
 - building over 50 metres in height
 - building classifications in the National Construction Code (NCC).
- processing design drawings using parametric modelling software which include:
 - relevant standards, codes, workplace procedures, regulatory and manufacturer requirements within agreed project timeframes
 - relevant regulatory approval and fire systems design certification processes
 - technical issues impacting on fire detection and occupant warning system designs
 - fire engineer's designs for alternative solutions.

Knowledge Evidence

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

- workplace design tools and processes
- level of accuracy required in detailed design drawings
- naming conventions for design drawings and drawing register
- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet

- parametric modelling software
- BASIC computer programming language
- current legislation, codes and standards:
 - building acts
 - building regulations
 - infrastructure supply regulations
 - Building Code of Australia (BCA)
 - National Construction Code (NCC)
 - Australian standards for fire systems
 - international standards for fire systems
 - jurisdictional authorities in addition to the BCA and NCC
 - other fire system standards commonly required by building insurers
- protection requirements for different buildings
- purpose and operation of fire systems:
 - layout
 - special products and hazards
 - system operation
 - performance requirements
 - maintenance standards
 - system activation and operation
- characteristics and limitations of products and materials used in fire systems and issues relating to material compatibility
- construction industry terminology
- roles and responsibilities of relevant building project personnel:
 - architect
 - lead contractor
 - mechanical engineer
 - hydraulic engineer
 - electrical engineer
- installation methods:
 - access requirements
 - work health and safety (WHS) requirements
- sustainability requirements and ratings relating to:
 - energy conservation
- electrical and electronics theory:
 - units used to measure current (alternating current (AC) and direct current (DC)), power, capacitance, inductance and sound attenuation
 - definition of voltage ratings and requirements applicable to fire detection and warning systems as defined in communication and electrical safety regulations, including extra-low voltage (ELV), low voltage (LV) and hazardous voltages

- basic operation of common electronic and electrical components used in fire detection and warning systems including:
 - basic operation of communication protocols on addressable systems
 - peripheral devices (printers)
 - interfaces to other communication systems to high level or low level
- communication technologies:
 - data transfer
 - networking
 - communication protocols
 - radio frequency technologies
- acoustics and speech intelligibility for occupant warning systems
- financial management:
 - budgeting
 - cost-effectiveness
- contractual processes
- project drawings and documentation:
 - architectural
 - structural
 - mechanical
 - electrical
 - hydraulic
 - water-based fire suppression systems
 - fire engineer's or estimator's specifications
- efficient and workable layout and location relating to:
 - penetrations
 - conflict with other services
 - interfaces with other services
 - WHS risks
 - access constraints
 - installation problems
 - aesthetic requirements
 - efficiencies to facilitate work on site and reduce labour costing
 - selection of cost-effective components and materials
- detection and warning system components:
 - EWIS
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
 - manual call buttons
 - amplifiers

- speakers
- emergency lighting
- fire alarm and control panels:
 - conventional
 - addressable
- detectors:
 - heat
 - smoke
 - flame sensing
 - spot
 - projected beam
 - aspiration type
- power source
- batteries
- cabling
- fireproof cable
- electrical calculations:
 - the voltage drop in a wiring path given the required electrical parameters
 - battery capacity requirements given the required performance parameters
 - power supply and battery charge capacity requirements given the required performance parameters
 - Cable Services Australia (CSA) cable size and cabling medium type given the required electrical performance parameters
 - total power supply consumption requirements of field equipment in normal and active (alarm) state given the required electrical performance parameters of equipment installed
 - the number of points, circuits and zones on a system given the required performance parameters of a wiring path
- negotiations regarding amendments to design drawings arising due to:
 - non-compliance with applicable legislation, codes and standards
 - impact on installation risks and constraints
 - impact on cost-effectiveness.

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 volumes to this training package are available at the VETNet website -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=7e15fa6a-68b8-4097-b099-030a5569b1ad>