



Australian Government

Assessment Requirements for CPCSF5005

Research and evaluate fire system technologies and components

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 CPCSF5005A Research and evaluate fire system technologies and components. 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:

- researching, evaluating and selecting fire detection and suppression systems for four types of fire systems design applications, including:
 - sprinklers
 - water mist
 - deluge/pre-action
 - gas suppression.

Knowledge Evidence

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

- drawings, plans, reports and specifications
- manufacturer specifications and technical performance data for fire detection and suppression technologies and components
- applications for different fire systems design projects:
 - low-rise buildings
 - processing building applications
 - warehouse buildings under 13.7 m high
 - warehouse buildings over 13.7 m high
 - medium-rise buildings
 - high-rise buildings (over 25 metres)
 - buildings over 50 metres in height
- interactions and interfaces between fire detection and suppression systems
- suitability of fire detection and suppression systems technology and components
- performance and cost-effectiveness of different technologies and components
- workplace design tools and processes

- computer software functions and operation:
 - word processing
 - spreadsheet
 - email
 - internet
- relevant current legislation, codes and standards:
 - building Acts
 - building regulations
 - infrastructure supply regulations
 - the 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
- fire systems technology and components:
 - water-based systems:
 - wet pipe sprinkler systems and components
 - deluge and drencher systems
 - dry pipe sprinkler systems and components
 - pre-action sprinkler systems and components
 - early suppression fast response (ESFR) sprinklers and components
 - water spray systems
 - water mist systems
 - wet chemical suppression systems
 - foam suppression systems
 - hydrants, hose reels and monitors
 - water supply tanks
 - fire pump sets
 - fire control panels
 - valves
 - gaseous suppression systems
 - detection and warning systems:
 - occupant warning systems
 - emergency warning and intercommunications systems (EWIS)
 - fire detection and alarm systems
 - smoke control systems
 - emergency lighting systems
 - fire control panels
- purpose and operation of fire systems:

- layout
- high hazard products
- 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:
 - system activation and operation
 - effect of fire, heat and smoke of component materials
 - interaction with other systems and services
- interconnection of fire systems:
 - cause and effect matrix
 - interface with other services
- water supplies:
 - common water sources
 - conservation requirements
 - in-ground reticulation
 - booster configurations
- fluid mechanics and hydraulics relating to:
 - water supply
 - pressure
 - pump selection
 - tank selection
 - pressure vessels
 - pipe range
- sustainability requirements and ratings:
 - energy conservation
 - water 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.

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>