



Australian Government

CPCPPS5027 Design irrigation 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 CPCPPS5027A Design irrigation systems.
Updated to meet the Standards for Training Packages 2012.

Application

This unit specifies the skills and knowledge required to design irrigation systems to relevant Australian Standards, codes, the National Construction Code (NCC) and other relevant legislative requirements to meet occupier needs and industry standards.

This unit covers requirements for work in a consultancy or supervisory capacity in relation to the design of irrigation systems for residential, commercial, industrial, sporting ovals and agricultural properties with or without connection to reticulated supply.

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

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 Evaluate design parameters. | 1.1 Identify and confirm the scope of work for irrigation systems. |
| | 1.2 Determine design requirements from relevant Australian Standards, codes, plans, specifications and client brief. |
| | 1.3 Conduct cost-benefit analysis comparing a range of pipe materials and system designs. |
| | 1.4 Interpret, analyse and apply statutory and regulatory |

- requirements and relevant Australian Standards and codes for the design of irrigation systems.
- 1.5 Obtain trade and technical manuals and interpret manufacturer requirements for irrigation systems.
 - 1.6 Conduct research to outline design parameters.
 - 1.7 Conduct flow and pressure tests for the irrigation systems.
 - 1.8 Establish water sources, volumes and areas to be irrigated.
 - 1.9 Analyse and categorise soil types, documenting the impacts on irrigation systems as per workplace procedures.
- 2 Plan and detail system components.
- 2.1 Plan layout of pipework systems including the type and location of fittings, valves and controls.
 - 2.2 Detail the type, location and requirements for backflow prevention devices.
 - 2.3 Calculate pipe sizes, velocities, flows and pressures for a range of applications.
 - 2.4 Specify the approved materials and jointing methods for irrigation systems.
 - 2.5 Detail sections and components of the irrigation system.
 - 2.6 Design pipe supports for a range of applications.
 - 2.7 Size and detail pump enclosure and control requirements.
 - 2.8 Specify installation requirements for irrigation management system.
 - 2.9 Determine water storage requirements.
 - 2.10 Make allowance for pipe movement.
- 3 Design and size systems
- 3.1 Analyse requirements and consider options available to design irrigation systems.

- 3.2 Design delivery systems and layout.
 - 3.3 Design and size irrigation systems.
 - 3.4 Determine required water application to establish and maintain plant life.
 - 3.5 Apply sustainability principles and concepts throughout the design process.
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- 4 Prepare documentation.
 - 4.1 Prepare and document client brief of the desired design.
 - 4.2 Prepare and document plans and specifications for a range of irrigation systems.
 - 4.3 Prepare testing and commissioning schedule.
 - 4.4 Produce operation and maintenance manual.

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 CPCPPS5027A Design irrigation 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>