

Unit of Competency CPCPIG2021

Design domestic urban irrigation systems

Application

This unit specifies the skills and knowledge required to prepare basic designs and irrigation drawings for domestic irrigation systems.

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

Prerequisite Unit

CPCPCM2043 Carry out WHS requirements

Elements and Performance Criteria

1. Prepare for work.	1.1 Conduct site survey of proposed irrigation area according to client requirements. 1.2 Adhere to work health and safety (WHS) and environmental requirements associated with design of domestic irrigation systems throughout the work. 1.3 Identify and adhere to quality assurance requirements according to workplace requirements. 1.4 Plan and sequence tasks in conjunction with others involved in or affected by the work and statutory and regulatory authorities' requirements. 1.5 Select and check tools and equipment for preparing basic irrigation designs and drawings for serviceability. 1.6 Prepare work area to support efficient design of domestic irrigation systems.
2. Identify drawing requirements.	2.1 Identify areas requiring irrigation and system design components. 2.2 Obtain information on the soil type, ground slope, contours and prevailing wind. 2.3 Locate and note underground services, buildings, paths and other permanent structures. 2.4 Determine and locate water supply and its influence on design requirements. 2.5 Select appropriate emitters to suit function and design requirements.
3. Design irrigation system.	3.1 Draw site plan to include structures, paths and property boundaries. 3.2 Sketch garden areas to include locations of lawns, garden beds, trees, vegetable patches or ferneries. 3.3 Sketch pipe runs and water emitters to design requirements. 3.4 Calculate sizes of pipes using standard data and record information in required format. 3.5 Compile list of materials to include number and type of water emitters, control valves, quantities of pipes, fittings and components. 3.6 Apply sustainability principles and concepts throughout the design process. 3.7 Submit drawing and design for approval.
4. Clean up.	4.1 Clear work area and dispose of reused or recycled materials according to legislation, regulations, codes of practice and job specification. 4.2 Clean, check, maintain and store tools and equipment according to manufacturer recommendations and workplace procedures. 4.3 Complete documentation according to workplace requirements.

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 CPCPIG2021A Design domestic urban irrigation systems

Links

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

Assessment Requirements for CPCPIG2021 Design domestic urban irrigation systems

Performance Evidence

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

- designing and preparing a drawing of the system, incorporating automatic timers and controls, varying sprinkler heads and zones, and indicating the materials required (by number and type), to comply with a site plan and specifications for the irrigation of a 200 square metre garden of lawn, shrubs, trees and flowers.

Knowledge Evidence

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

- processes for accessing information and for calculating material requirements
- properties of water, including pressure and flow rates
- relevant statutory and authority requirements related to drawing and installing irrigation systems
- SI system of measurement
- specifications of the range of irrigation products available
- standards applicable to the installation
- technologies for irrigation measurement and drawings
- various types of irrigation systems, including types of materials and components used
- workplace and equipment safety requirements.

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.

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