

# Unit of Competency CPCPDR4012

## Design and size stormwater drainage systems

### Application

This unit specifies the skills and knowledge required to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge to a residential dwelling (Class 1a), a commercial Class 6 building, and a unit complex comprising at least eight (Class 1a) dwellings.

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

1. Identify system requirements.	<p>1.1 Access, read and determine design requirements from plans, specifications, relevant manufacturers requirements, Australian Standards and jurisdictional requirements.</p> <p>1.2 Identify and apply workplace policies and procedures, work health and safety (WHS) and environmental requirements.</p> <p>1.3 Identify stormwater catchment and flow requirements.</p> <p>1.4 Select stormwater pipe size to conform to regulatory authorities and main or street kerb, including discharge flow and levels to verify grades and cover.</p> <p>1.5 Determine stormwater requirements for retention pit, silt and flotation arrestor pit, rainwater tank and stormwater overflow discharge locations to suit job requirements.</p>
2. Design system layout.	<p>2.1 Develop and size system layout in accordance with manufacturer's requirements, Australian standards and jurisdictional requirements.</p> <p>2.2 Use the proposed design to identify and specify optimal materials required.</p> <p>2.3 Produce final system layout plans to relevant drawing design standards.</p>

### 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 CPCPDR4012B Design and size stormwater drainage systems.

## Links

Companion Volume Implementation Guide:

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

# Assessment Requirements for CPCPDR4012

## Design and size stormwater drainage systems

### Performance Evidence

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

- designing, sizing and documenting the layout details of a surface and sub-soil stormwater drainage system for:
  - a residential design that comprises a dwelling (Class 1a), and
  - a commercial Class 6 building, or
  - a unit complex comprising at least eight (Class 1a) dwellings.

The candidate must:

- include drainage to the legal point of discharge to the external stormwater drainage network
- complete the work according to development plans, specifications, Australian standards, workplace procedures and client specifications.

### Knowledge Evidence

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

- the process of planning, sizing and documenting the layout of stormwater and sub-soil drainage systems
- catchment, rainfall intensity and run-off calculations
- characteristics and application of different pipe systems, including their fittings
- non-gravitational stormwater systems
- onsite stormwater management
- design concepts and performance measures for stormwater and sub-soil drainage systems
- principles of water flow and stormwater and sub-soil drainage
- contour, reduced and invert levels
- drawing instruments and sketching techniques, including the use of conventional symbols
- use of computers for documentation
- computer-aided design (CAD) software
- how to access relevant information, including codes and standards
- tools, materials and equipment used to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge
- work health and safety (WHS) requirements to design, size and document the layout of surface and sub-soil stormwater drainage systems up to legal points of discharge.

## Assessment Conditions

Assessors must satisfy the requirements for assessors listed 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

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