



Australian Government

AHCSAW504 Design control measures and structures

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 6.0.

Application

This unit of competency describes the skills and knowledge required to design erosion and sediment control measures and structures.

The unit applies to individuals who work in soil and water conservation and who analyse information and exercise judgement to complete design and development activities, demonstrating a deep understanding of the technical areas within soil and water conservation. They have accountability for the work of others and analyse, design and communicate solutions to complex problems.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil

Unit Sector

Soil and Water Conservation (SAW)

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Identify measures or structures to be designed	1.1 Review erosion and sediment control plan for technical accuracy and environmental impact 1.2 Confirm adherence to regulations and legislation, and record on works plans 1.3 Confirm budget constraints for project with management or client

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	1.4 Apply design criteria according to industry standards
2. Apply design procedures	2.1 Calculate catchment characteristics to required accuracy 2.2 Determine design specifications for project 2.3 Use a computer aided design (CAD) program to develop draft design according to budgetary constraints and erosion and sediment control plan 2.4 Verify design against plans, budget and industry best practice with stakeholders 2.5 Review and recommend changes to the design to comply with design procedures and accepted industry practices and environmentally sustainable practices
3. Prepare specification schedule	3.1 Prepare documentation and specifications for design 3.2 Verify design and documentation complies with industry standards 3.3 Confirm suitability of design and specifications for the category of work and legislative requirements

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential for performance in this unit of competency but are not explicit in the performance criteria.

Skill	Description
Reading	Organise, assess and critique data and information from legislation and regulations and plans for incorporation into design
Writing	Select appropriate conventions and stylistic devices to express precise meaning in design documentation and specifications
Numeracy	Use highly developed numeracy skills to interpret design criteria from catchment characteristics and costs, and perform calculations to translate into dimensions and structural design of control measure

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCSAW504 Design control measures and structures	AHCSAW501 Design control measures and structures	Minor changes to Application and Performance Criteria for clarity Updated Foundation Skills, Performance Evidence, Knowledge Evidence and Assessment Conditions	Equivalent

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>

Assessment Requirements for AHCSAW504 Design control measures and structures

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Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has produced at least one design for erosion and sediment control measures and structures, and has:

- identified control measures for a specified situation
- applied design procedures and prepared specifications
- costed the project and provided recommendations according to budget
- used computer aided design (CAD) program to create the design
- determined design specifications according to industry standards
- developed design plan to meet planned sediment and erosion control criteria
- verified design with stakeholders and for compliance with sustainability principles.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- erosion control and design principles:
 - soils and soil formation
 - levels and levelling
 - earthmoving principles
 - total catchment issues
 - managing peak water flows
- state and territory legislative requirements for design of control measures, including heritage and cultural regulations
- sub-surface and surface drainage principles and systems
- environmental issues related to the design
- limitations of design aids provided for industry
- CAD software for design.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated for a specified site for erosion and sediment control, or in an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - digital technology with CAD software
- specifications:
 - workplace documents, policies and procedures
 - catchment data for determining the design characteristics
 - legislation and codes of practice for civil design work
- relationships:
 - client/stakeholder
 - senior manager.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

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