



Australian Government

AHCTRF307 Construct turf playing surfaces

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 4.0.

Application

This unit of competency describes the skills and knowledge required to construct the soil profile for the establishment of high-performance sports and recreational turf for new or complete renovation projects in sporting, commercial and public recreational spaces.

The unit applies to individuals who construct turf playing surfaces under general direction and take responsibility for their own work. They use discretion and judgement in the selection, allocation and use of available resources and for solving problems.

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

Pre-requisite Unit

Nil

Unit Sector

Turf (TRF)

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. Plan and prepare for construction activities	1.1 Read and interpret plans and specifications to determine scope of turf construction project 1.2 Collect representative soil samples for the site for testing 1.3 Test soil samples and interpret and record results according to workplace procedures and industry standards 1.4 Locate services and impediments to construction on site, and

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
	report discrepancies from construction plan 1.5 Assess the surrounding area relative to construction site and identify potential impact on construction activities 1.6 Identify workplace health, safety and environmental hazards, assess risks and implement controls according to workplace health, safety and environmental procedures 1.7 Document a working plan for the construction
2. Survey and peg out levels for construction site	2.1 Survey construction site and establish and record existing levels and temporary benchmarks according to turf construction and working plans 2.2 Mark out construction site with new levels and contours according to specifications
3. Prepare for construction work	3.1 Read and interpret plans and specifications to determine measurements relevant to materials and quantities 3.2 Identify type of materials required for the turf construction soil profile from construction specifications 3.3 Compute an estimate of materials and costs required for the project and submit for approval 3.4 Develop a construction logistics program for the construction 3.5 Prepare a schedule of works and obtain approvals
4. Set out site for construction	4.1 Reconcile and verify planned boundaries and features of construction works are within actual site constraints 4.2 Verify finishing levels for site, drainage and irrigation are within nominated construction plan specifications 4.3 Transfer measurements for the construction area using markers, and account for variances from construction plan
5. Excavate the construction site	5.1 Select, check, use and maintain safety and personal protective equipment 5.2 Excavate the site within the marked boundaries, and stockpile excess soil according to working plan 5.3 Grade and consolidate the sub-base to levels specified in the construction plan
6. Install irrigation and	6.1 Excavate trenches in sub-surface to receive irrigation and drainage

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
drainage system	components 6.2 Install irrigation system components according to construction plan 6.3 Install drainage system according to construction plan 6.4 Return disturbed sub-surface to levels specified in construction plan
7. Install soil profile	7.1 Install and consolidate soil profile layers according to construction plans and specifications 7.2 Ensure the interface between profile layers is uniform and unbroken 7.3 Ensure soil profile is level and consolidated within specifications ready for planting
8. Complete soil profile construction works	8.1 Clean, maintain and store tools, equipment and machinery according to workplace procedures 8.2 Collect and store unused materials and dispose of waste 8.3 Record and report work outcomes according to workplace procedures

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	Interpret symbols and text on plans and specifications
Writing	Prepare working plans, drawings and simple procedures for implementing a turf playing surface construction project
Numeracy	Make calculations, including distance, area, volume and ratio, when marking out the construction site and estimating materials for construction works

Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
AHCTRF307 Construct turf playing surfaces	AHCTRF301 Construct turf playing surfaces	Performance criteria clarified Foundation skill added Performance evidence, knowledge evidence and assessment conditions expanded	Equivalent unit

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 AHCTRF307 Construct turf playing surfaces

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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 contributed to the completion of a sports turf construction project of a minimum of 100 square metres, individually or as part of a team, from concept to completion, including:

- developed a working plan and drawings to scale, including:
 - selected root zone materials
 - determined construction method according to industry standards
 - assessed the site layout
 - obtained, read and interpreted site and construction plans and specifications
 - selected the drainage system
 - estimated materials and costs for the project
- planned the construction of a turf profile, including:
 - conducted and interpreted soil tests
 - identified hazards and assessed the risks and implemented controls
 - used surveying equipment and techniques to accurately set out the site
- constructed the turf profile according to plans and specifications, including:
 - excavated to planned levels
 - installed sub-base to specification
 - installed drainage system to specification
 - installed and consolidated soil profile to specified grade and levels
- complied with local environmental requirements
- scheduled and organised construction work tasks according to construction project
- identified hazards and risks, and implemented control measures for personal, environmental and site-specific safety requirements
- operated, cleaned, maintained and stored tools and excavation and load shifting equipment.

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:

- interpretation of plans and specifications for the scope of sports turf construction, including:
 - location of site
 - implication of impediments and services on construction activities, including irrigation pipes, overhead and underground power, drainage, telecommunications, gas, root system of trees
 - dimensions of construction for determining list of materials
- sports turf soil profile construction principles, methods and resources, including:
 - range of construction methods for specific applications (e.g. golf and bowling greens, cricket wickets, sports fields, race tracks, lawn tennis)
 - Australian and international standards for sports turf construction
 - United States Golf Association (USGA) greens construction profiles
 - Californian method
 - local construction methods
 - natural construction
 - push up greens
 - sand over clay
 - working with a perched water table
- drainage installation methods and materials, including:
 - pipes
 - drainage materials
 - root zone layer and uniformity in depth of horizons
- materials, tools, equipment and machinery for construction of soil profiles, including:
 - soil amendments
 - base construction materials
 - turf growing media and quality
- safe operation of machinery and equipment for constructing profiles, including:
 - excavating to known levels, including the cut and fill quantities
 - working to a consistent level and grade from sub-base to final level
 - methods of compacting and testing the compaction of the sub-base
- practical understanding of surveying principles and techniques, including:
 - using survey equipment to establish benchmarks and levels on a construction site
 - interpreting and constructing basic contour drawings
 - transferring and pegging out contours to a construction site
- soil testing techniques and the application of results to the construction process, including:
 - texture (particle size)
 - pH

- electrical conductivity
- infiltration rates
- site constraints and their impact on constructing turf surface, including:
 - aspect
 - site history
 - trees and other vegetation
 - location of services
 - water quality and reclaimed sources of water
- workplace health and safety hazards, risks and control measures when constructing new turf, including:
 - site safety
 - personal safety
 - safe use and operation of tools, equipment and machinery
- planning and scheduling construction works to ensure a logical, timely and effective process
- laying out a construction area from plans and drawings, including:
 - measuring techniques
 - finding and marking levels
 - types of markers, including paint, pegs, stringlines, flags
- calculations relevant to costing and estimating a turf construction project, including:
 - excavation volumes
 - volume of construction materials
 - labour time and costs
- environmental practices and procedures relevant to turf construction sites, including:
 - implications associated with construction and excavation activity
 - waste disposal procedures.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - a sports turf facility or an environment that accurately represents workplace conditions of a minimum of 100 square metres
- resources, equipment and materials:
 - personal protective equipment and other site safety equipment
 - surveying equipment
 - hand tools, excavation and load shifting equipment
 - soil testing equipment for pH, electrical conductivity, texture and infiltration rates
- specifications:
 - workplace procedures and instructions for construction of sports turf playing surfaces

- sports turf project construction drawings, plans and specifications
- workplace safety and environmental procedures related to construction of sports turf playing surfaces.

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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