

<b>Title</b>	<b>Demonstrate knowledge of, and install, drainage in a sports turf area</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>5</b>

<b>Purpose</b>	People credited with this unit standard are able to demonstrate knowledge of the characteristics and causes of, and solutions for, poorly drained sports turf; describe drains, drainage, pipe drains and backfill materials for sports turf; and install a pipe drain for sports turf purposes.
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<b>Classification</b>	Sports Turf > Sports Turf Construction and Drainage
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<b>Available grade</b>	Achieved
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**Guidance Information**

None.

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**Outcomes and performance criteria**

**Outcome 1**

Demonstrate knowledge of the characteristics and causes of, and solutions for, poorly drained sports turf.

**Performance criteria**

1.1 Identify the characteristics of poor drainage in terms of the symptoms.

Range at least four of – black layer, ponding, gleying, mottling, species composition and health, thatch accumulation, smell, absence of earthworms, root distribution, wetness in profile, poor playability.

1.2 Describe poor drainage in terms of the causes.

Range at least four of – water table height, rising water table caused by tides or ground water levels, soil type, impermeable subsoil, springs, seepage, runoff, soil and sand textural changes, overuse, traffic, pans, soil structural changes, tip sites, broken and blocked pipes, poor maintenance practices.

- 1.3 Determine a solution to poor drainage on a sports turf site from an analysis of the symptoms and causes.

Range solutions may include – catchwater, interceptor, water table control, sub-surface profile reconstruction, biological, soil conditioning, physical treatments, outlet, surface shaping; evidence of one is required.

## Outcome 2

Describe drains, drainage, pipe drains, and backfill materials for sports turf.

### Performance criteria

- 2.1 Describe drains in terms of the options available for sports turf areas.

Range at least five of – pipe drains, mole drains, slit drains, strip drains, open drains, soak holes, V-drains, gradient, junctions, gravel bands.

- 2.2 Describe pipe drain materials in terms of their suitability for sports turf areas.

Range at least three of – plastic, clay, concrete, perforated, corrugated, smooth, twin-walled.

- 2.3 Describe pipe drainage in terms of the features of design and installation.

Range at least four of – herringbone, grid, parallel, random, fan, depth of excavation, junctions, gradient.

- 2.4 Describe optimum sports turf drainage backfill material characteristics in terms of their physical properties.

Range at least three of – permeability, stability, size, availability, compatibility.

## Outcome 3

Install a pipe drain for sports turf purposes.

### Performance criteria

- 3.1 Select tools to suit trench specifications.

- 3.2 Lay out trench lines and excavate a clean trench to the specified width and depth for sports turf purposes in accordance with design specifications.

- 3.3 Excavate the trench to a positive outlet with a minimum fall in accordance with the requirements of the specified pipe drainage material and design specifications.

- 3.4 Position excavated material conveniently without interfering with drain-laying.

- 3.5 Lay the pipe on an even gradient in accordance with design specifications.
- 3.6 Install the specified backfill without contamination.
- 3.7 Restore the turf surface without sinkage.

<b>Planned review date</b>	31 December 2025
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#### Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	4 August 1995	31 December 2019
Revision	2	4 August 1995	31 December 2019
Revision	3	16 September 1996	31 December 2019
Revision	4	10 December 1997	31 December 2019
Revision	5	8 June 1999	31 December 2019
Review	6	15 December 2000	31 December 2019
Revision	7	12 January 2006	31 December 2019
Review	8	17 October 2008	31 December 2019
Review	9	25 January 2018	31 December 2023
Review	10	24 June 2021	N/A

<b>Consent and Moderation Requirements (CMR) reference</b>	0052
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

#### Comments on this unit standard

Please contact Primary Industry Training Organisation [standards@primaryito.ac.nz](mailto:standards@primaryito.ac.nz) if you wish to suggest changes to the content of this unit standard.