

Sportsfield Construction Guidelines – Tweed Shire Council

Appendix J to Development Design Specification D14

Purpose:

This document provides guidance for constructing local sportsfields on public land in the Tweed Shire. Occasional site specific matters may require additional considerations.

Subgrade

The slope of the subgrade shall be continuous with no depressions or minor ridges. The subgrade shall be consolidated to no more than 95%MMDD and the use of rollers and heavy machinery is not encouraged. This subgrade must drain, therefore must not be over compacted while achieving a stable and true bed for the subsequent addition of sportsground topsoil. Some differential settlement of the subgrade may occur and cause depressions and ponding at a later date. This is more preferable than a base that will not drain and badly affects the playing fields performance. Depressions can be top dressed out of the playing field surface.

Once the subgrade levels are achieved, the subgrade shall be ripped to 350mm and lightly harrowed to break up large clods. Ripping and harrowing of the consolidated subgrade is necessary to ensure the base will drain. If there have been areas where the base has been over compacted or glazed by the use of heavy machinery, these shall be broken up to allow drainage down through the profile to occur.

The subgrade shall not be worked when it is wet. This is of paramount importance and shall be written into the specifications and supervised to ensure compliance. Large machines such as large bulldozers and large scrapers shall not be used and this shall be included in the specification. It shall also be strictly supervised because if used it will compact the base and this has long term effects on drainage.

Ripping does not adversely affect the initial consolidation if done uniformly over the whole surface. Any minor inconsistencies in the resultant subgrade surface can be adjusted within the sportsground topsoil depth.

Once the subgrade has been ripped, gypsum shall be added at the rate of 500g per square metre. This applies to all subgrades.

Irrigation shall be installed after the subgrade has been ripped. The irrigation shall not be installed until the subgrade has been ripped as this seriously inhibits the proper ripping of the whole subgrade. This process may make it a little more difficult for the irrigation trenching however this sequence of works shall not be compromised.

Topsoil

Sportsfields shall be finished with sportsground topsoil as defined below. Topsoil depth shall be not less than 200mm.

The depth of sportsground topsoil may be reduced in those instances where site soil has been tested and complies with sportsground topsoil as specified. Written approval from Tweed Shire Council is required before varying the sportsground topsoil depth. The depth of sportsground topsoil shall be not less than 200mm.

The sportsground topsoil shall be a sandy loam and must have the following properties:

- i. A drainage rate of 50mm/hr (minimum) to 300mm/hr (maximum);

- ii. A pH of between 6 and 7;
- iii. An even range of friable soil particle size that limits compaction and loss of drainage capabilities and encourages root development;
- iv. An Organic Carbon content of between 2% and 4%;
- v. A Calcium Base Saturation of between 65% and 75%(1100ppm - 1300ppm);
- vi. A Magnesium Base Saturation of between 10% and 16%(150ppm - 180ppm)
- vii. A Potassium Base Saturation of between 3% and 5% (180ppm - 216ppm)
- viii. A Sodium Base Saturation less than 3% (less than 70ppm)

Surface slope

The playing surface should have a slope of between 1:70 and 1:100 over a distance of no more than 70 metres. Surface slope should be parallel to the subgrade slope and be of uniform depth.

Turf Species

The turf species shall be selected for its suitability for a sportsfield in the locality. For coastal fields varieties of Couch are preferred, such as TifSport, Wintergreen, Grand Prix and Oz Tuff Green. For inland fields, particularly football fields, Kikuyu can be an alternative.

Irrigation

An irrigation system is required. The system shall comply with Council's 'Master General Specification for the supply and installation of Landscape and Turf Irrigation Systems' – refer to Appendix I of Development Design Specification D14.

Sports lights

Unless otherwise specified, all sports fields are to be provided with sports lights that meet the requirements for competitive competition – AS2560. Specifications are not available but the selected lighting system must meet TSC approval.

All weather access for machinery to service these lights must be provided, and such access must not be across the playing surface. Such access must be 3 metres wide and comprise of roadbase (150mm thick, minimum CBR 45) covered with 100mm of topsoil and turf and be designed with surface and subsoil drainage provisions.

Additional services

All sportsfields in the Tweed Shire should be supported by sealed carparks and clubhouse/amenity facilities. Formal pedestrian/cycleway access should be provided to all sportsfields unless otherwise advised by Tweed Shire Council.
