

**DEPARTMENT OF INFRASTRUCTURE, ENERGY & RESOURCES, TASMANIA
ROADWORKS SPECIFICATION**

R70 - LANDSCAPING

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R70.1 SCOPE

This specification sets out the requirement for landscaping the road reservation during or after construction.

It covers treatment of redundant road, topsoiling, seeding, planting and maintenance of the new works.

R70.2 QUALITY CONTROL

The Contract Management Plan shall detail the following

- (a) Method of ground preparation.
- (b) Methods for establishment of growth of all plantings.
- (c) Methods for protection of plants against damage from environmental causes.
- (d) Methods for maintenance of all plantings.

All of the above shall be undertaken during the contract period, as well as the Defects Liability Period.

R70.3 MATERIALS**R70.3.1 General**

Unless specified otherwise, all materials (except native seeds) shall be supplied by the Contractor.

Native seeds will be supplied by the Principal.

R70.3.2 Topsoil

Topsoil shall be material as defined in Specification R22. Earthworks.

R70.3.3 Seeds and Application Rates**(a) Re-Seeding of Native Plant Species**

Where native plant species are to regenerate naturally

Sterile Rye Corn 10 g/m².

Where native plant species are to regenerate artificially

Native Seed 0.5 g/m².

Sterile Rye Corn 3 g/m².

(b) Exotic Grass

Seed mixtures and application rates shall be as follows:

TYPE A**STABILISATION MIX FOR REDUNDANT ROADS, SURFACE DRAINS AND PREPARED EMBANKMENT BATTERS**

Sterile Ryecorn	3.0 g/m ²
Ryegrass var Victorian	1.5 g/m ²
Ryecorn var Concorde	1.5 g/m ²
Chewing Fescue	0.5 g/m ²
Hard Fescue	0.5 g/m ²
Sheep Fescue	0.5 g/m ²
White Clover var Huia	1.0 g/m ²
Sub Clover var Trikkala	0.5 g/m ²
Browntop Bent	0.5 g/m ²
Red Creeping Fescue	0.5 g/m ²
TOTAL	<u>10.0 g/m²</u>

TYPE B**TRAFFIC ISLAND AND MEDIANS**

Ryegrass var Victorian	1.0 g/m ²
Chewing Fescue	0.5 g/m ²
Ryegrass var Fine Leaf	1.5 g/m ²
Hard Fescue	0.5 g/m ²
Sheep Fescue	0.5 g/m ²
White Clover var Huia	1.0 g/m ²
Sub Clover var Trikkala	0.5 g/m ²
Red Creeping Fescue	0.5 g/m ²
TOTAL	<u>6.0 g/m²</u>

R70.3.4 Hydromulch

Hydromulch shall consist of a sprayed mixture of seed, fertiliser, cellulose fibre, water and tackifier.

(a) Native Species

(i) Native Seed	0.5 g/m ²
(ii) Fertiliser	25 g/m ²
(iii) Cellulose Fibre	200 g/m ²
(iv) Tackifier	5 g/m ²

(b) Exotic Grass Species

(i)	Type A	10g/m ²
	Type B	6 g/m ²
(ii)	Fertiliser	50 g/m ²
(iii)	Cellulose Fibre	120 g/m ²
(iv)	Tackifier	4.5 g/m ²

The tackifier shall be derived entirely from natural plant sources and shall be non toxic to plant, animal or aquatic life.

R70.3.5 Hydroseed

Hydroseed shall consist of a sprayed mixture of water, fertiliser, seed, and cellulose fibre.

(a) Native Species

(i)	Native Seed	0.5 g/m ²
(ii)	Fertiliser	25 g/m ²
(iii)	Cellulose Fibre	20 g/m ²

(b) Exotic Grass Species

(i)	Type A	10 g/m ²
	Type B	6 g/m ²
(ii)	Fertiliser	50 g/m ²
(iii)	Cellulose Fibre	20 g/m ²

R70.3.6 Fertiliser**(a) Native Species**

N:P:K = 8:4:10 @ 25 g/m²

(b) Exotic Grass Species

N:P:K = 8:4:10 @ 50 g/m²

R70.3.7 Plants

All plants shall be supplied by the Contractor. Plants shall be obtained in pot sizes as described in the plant schedule shown elsewhere.

Native Grass Plants shall be supplied as Virocells.

R70.3.8 Mulch Mats

Individual plants shall have provided a jute weed suppression mat.

R70.4 APPLICATIONS**R70.4.1 General**

Any overspray of materials shall be removed at the Contractor's expense.

R70.4.2 Timing

Seeding and planting shall be undertaken in such a manner and at such a time to minimise the death of seedlings and plants due to lack of water and/or excessive heat or cold. The Contract Management Plan shall include details of the program and processes for seeding, planting and the maintenance of seedlings and plants to minimise deaths of seedlings and plants.

R70.4.3 Treatment of Earth Excavation Batters

Further to Clause R22.6 seed and fertiliser shall be applied either by hydromulching or hand seeding prior to the erosion control fabric placement or by hand seeding or hydroseeding after the fabric placement. Hydromulch shall not be applied over the fabric.

R70.4.4 Hydromulching

The type of seed mix and the areas for Hydromulching shall be shown on the Drawings or as specified elsewhere.

The cellulose fibre shall be mixed at the rate of 4.5% by weight to water.

The tackifier shall be mixed with the other ingredients and applied in accordance with the Manufacturers specification.

R70.4.5 Hydroseeding

The type of seed mix and the areas for Hydroseeding shall be shown on the Drawings or as specified elsewhere.

Hydroseeding shall not be within 1.5 metres of the invert of any drain or fence.

R70.4.6 Planting

The Contractor shall be responsible for the storage and maintenance of the plants until planting, including the transport of the plants to the site.

Plants shall be well established in the relevant size of pot, with roots developed throughout the soil within the pot.

All plants shall be thoroughly watered 24 hours prior to and immediately after planting.

The Superintendent shall have the right to inspect and approve plants before planting.

All plantings shall be kept at least 1.5 m clear of the invert of any drainage channels and fences.

R70.5 MAINTENANCE

R70.5.1 General

Maintenance shall include, but shall not be limited to, the following:

Watering

Re-treatment of Hydromulched or Hydroseeded Areas

Removal of weeds

Pest and disease control

Re-planting.

R70.5.2 Watering

All plants shall be watered to ensure healthy and vigorous growth.

R70.5.3 Re-treatment of hydromulched or hydroseeded areas

Where any of the treated areas are damaged or where grass or growth fails to establish, the areas so affected shall be re-treated in accordance with the relevant Clauses.

R70.5.4 Removal of Weeds ◆

The removal of weeds shall be achieved by either weeding or herbicide spraying in accordance with Specification R76 Roadside Maintenance.

R70.5.5 Pest and Disease Control

All plants shall be maintained free of insect infestation and plant disease.

R70.5.6 Re-planting

In the event of plants dying and where the Superintendent is satisfied that the death of the plants was not a result of negligence on the part of the Contractor, the Superintendent may choose not to replant or to request the Contractor to replant.

In the event of theft, vandalism or any other damage after planting in accordance with the specification, and not as a result of negligence on the part of the Contractor, the Superintendent will direct the Contractor to either to replant or not to replant. If the Superintendent directs the Contractor to replant, then the costs of replanting of the first 10% of the total number of any particular plant species shall be of the Contractor's expense.

Replantings in excess of the first 10% of any particular plant species shall be at the scheduled rate.

R70.6 PAYMENT**Hand seeding**

The rate for hand seeding shall include the cost of supply and placing of all seed, fertiliser and tilth, treatment of seed where necessary, watering and maintenance.

Hydromulching

The rate for hydromulching shall include the cost of supply and spraying of seed, fertiliser, cellulose fibre and tackifier.

Hydroseeding

The rate for hydroseeding shall include the cost of supplying the seed, fertiliser and cellulose fibre, mixing and spraying.

Plantings

Payment for cultivation to mass plantings shall be based on the relevant tendered rate in the Schedule of Rates. Measurement shall be in square metres.

Payment for landscape planting shall be based on the relevant tendered rate in the Schedule of Rates. The unit of measurement shall be the number of plantings made in accordance with the requirements of this Specification.

The rate shall cover the supply of all activities necessary to complete plantings, including but not limited to additional soil to complete the planting hole, staking guards, bags and ties as well as the establishments of growth, removal of weeds. and maintenance up to the Date of Practical Completion.

The rate for individual plantings shall also include the jute mulch mats.

Maintenance

During the Defects Liability Period, payment for the maintenance of plantings shall be on a pro-rata basis over the period as tendered in the Schedule of Rates.

Replacement / Retreatment

Payment for the replacement of plantings beyond the first 10% of any plant species shall be at the relevant tendered rate in the Schedule of Rates.

Payment for the re-treatment of hydromulched or hydroseeded areas, if the Contractor has taken all reasonable precautions against damage and the damage or failure is not due to faulty workmanship or the methods of operations by the Contractor, shall be made for at the appropriate rates in the Schedule of Rates.