

PART L21
DIRECT SEEDING

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1. GENERAL

- .1 This Part specifies the requirements for the supply and application of seed mixture where direct seeding is specified.

2. SUPPLY OF SEED

- .1 The Contractor shall use the following seed supplies:
 - (a) **Non-Native Seed:** Seed shall comply with the requirements shown in the Seed Species Schedule and shall be pre-packed and commercially prepared. Seed bags shall be marked to show species, weight and supplier's name.

A certificate of germination shall be provided (upon request) to the Principal before sowing, identifying seed species and germination viability.

The Contractor shall ensure the seed shall be pre-treated prior to sowing.
 - (b) **Native Seed:** Seed shall comply with the requirements shown in the Seed Species Schedule and shall be packaged in individual sealed bags for each species. Seed bags shall be marked to show species, weight and provenance.

The Contractor shall ensure the seed shall be pre-treated prior to sowing.

The plant materials shall be obtained from local sources, with a general limit of 10 km radius around the project site. The Contractor shall supply written verification of the provenance of all plant materials from the supplier, including map and/or GPS co-ordinates for each species on the Mixture Schedule provided by the Principal.

Plant materials of other sources may only be used if the Contractor can demonstrate that local provenance material is not available, in which case it shall be from the nearest source practicable. The use of non-local provenance material shall be subject to prior approval on a species by species basis.

3. WEED CONTROL

- .1 Before seeding commences, the areas to be seeded shall be eradicated of weeds and any existing vegetative growth (excluding native vegetation) shall be slashed to a height of 150 mm. Trash build-up and cut material shall be removed from the area prior to spraying with a knockdown herbicide (Roundup) incorporating a herbicide marker. Roundup Biactive shall be used around wetlands and waterways. The herbicide shall be used according to the manufacturer's recommended rates and any off-target damage shall be rectified by the Contractor.

4. SETTING OUT

- .1 Prior to work commencing on site, the Contractor shall set out the location of planting areas in accordance with the Drawings. Plants shall be set out in accordance with the DPTI Roadside Clear Zones and Sight Line Guidelines and other Service Authority legislation and regulations.
- .2 The Contractor shall provide notification when setting out has been completed and allow 2 days for inspection of the set out.

5. **METHOD OF SEEDBED PREPARATION AND SEED SOWING**

- .1 The Contractor shall examine the site conditions and recommend preferred methods of seedbed preparation and seed sowing for the specific project conditions and the required project outcomes. Information to be supplied by the Contractor shall include proposed cultivation techniques, seeding methods and machinery to be used.
- .2 The methods shall allow for seed sowing to be undertaken a minimum of 10 days after weed control spraying and ground preparation. Seed shall be uniformly sown over all areas to be planted using the rate, seed mixes and quantities specified.
- .3 In the event that the seed mix is not sown in accordance with this Specification, the seed shall be re-sown. If sowing operations with incorrect seed have been completed, replacement shall be carried out by spraying out the germinating seedlings with Roundup or equivalent (Roundup Biactive shall be used around wetlands and waterways), cultivating the soil and sowing the correct seed.
- .4 The Contractor shall use the following direct seeding methods:
 - (a) **Machine Direct Seeding:** For areas suitable for effective access and operation with seeding machines towed or carried by tractors, four-wheel drive or similar vehicles there are a number of mechanical seeders available. These machines may seed by direct drilling, scraping sod and placing or drilling seed. The equipment used shall be capable of operating effectively in the locations to be seeded, with the types of seed to be seeded and at the density/spacing required. The equipment shall have a seed release mechanism which is effective in the even placement of all species and shall be calibrated for each of the specified species mixes prior to seeding each area.

Equipment includes the 'Burford Tree Seeder', 'Hamilton Tree Seeder', 'Rippa Seeder', 'Eco Tree Seeder', agricultural seeders where conditions and seed types are suitable and purpose-built seeders such as those with a fluid/gel seed suspension and delivery system or other specialised seed release mechanism. Smaller purpose built equipment such as seeding units mounted to four wheel all-terrain vehicles may be used and are particularly suitable for smaller, hard to access and sloping sites.
 - (b) **Hand Direct Seeding:** Various methods of hand direct seeding may be used for hard to access, sloping and weedy areas.

Niche seeding involves the removal of weeds from and cultivation of small seed beds, followed by the hand sowing and bedding in of small quantities of seed in each of the cultivated 'niches'. Seed may be treated to aid germination before sowing and protective guards (tree guards or similar) may be used around niches to protect seedlings from predators and exposure to adverse weather conditions.

Hand direct seeding may be carried out in larger areas where a seedbed has been created through cultivation or topsoiling and seed can be effectively broadcast or hand spread. This method may be most effective where species are involved which are difficult to effectively sow using mechanical methods.

6. **FERTILISER**

- .1 Fertiliser shall be applied in accordance with the manufacturer's instructions and recommended rates.

7. **PRACTICAL COMPLETION**

- .1 Practical Completion means that an even distribution of seed over the whole of the seeded area is achieved by correct application of the prescribed method. The Contractor shall reseed areas which have not been evenly seeded.

8. **NATIVE REVEGETATION AREA SIGN**

- .1 The Contractor shall install Principal supplied "Native Revegetation Area" signs in accordance with Attachment L21A.

9. **HOLD POINTS**

- .1 There are no Hold Points referenced in this Part.

10. **ATTACHMENT L21A – NATIVE REVEGETATION AREA – INSTALLATION DETAIL**

