

CORE TREE ROOT PROTECTION

Method Statement

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Products

Methods for the installation of CORE Tree Root Protection System

CORE Tree Root Protection is a perforated HDPE cellular confinement system that confines loose aggregates used for subbase construction and makes them stronger. This lateral confinement not only allows the depth of subbase to be reduced (Webster, 1986 and Bathurst & Jarrett, 1988) it also reduces compaction of the soils surrounding the tree.



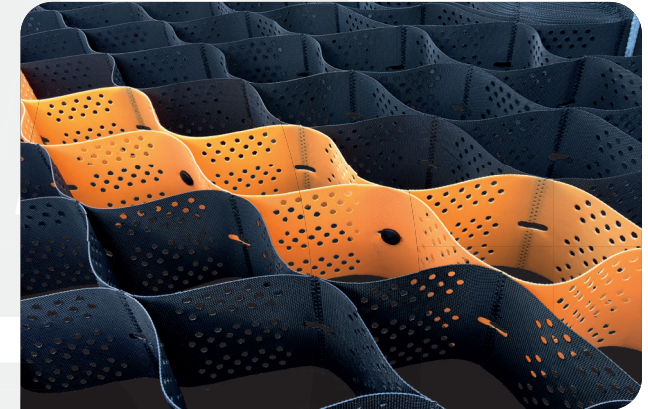
Drs Jarrett and Bathurst discovered that the type of sub base confinement provided by CORE TRP was equivalent in strength to approximately twice that of unreinforced gravel sub bases. In basic terms CORE TRP® can reduce traditional subbase depths by as much as 50%. By creating a laterally confined subbase from clean graded aggregate, it minimises compaction of sub soils created by applied traffic load and allows both nutrient and oxygen exchange throughout the surface, avoiding damage to tree root systems, allowing trees close to trafficked areas to remain healthy.



The CORE Tree Root Protection System is available in 4 depths, the depth of each version has been designed to cope with different traffic loadings. Ideally each individual install requires a site-specific design based on the CBR of the existing ground to ensure the correct depth of product is used. However, in general, unless the existing ground conditions are extremely weak and have a low CBR the following depths can be applied:

- 50mm - Pedestrians, Cycleways and Light Vehicles (1.5tons)
- 100mm - Cars, 4-wheel Drive, Vans etc. (7.5tons)
- 150mm - Fire Engines, Removal Vehicles and Refuse Collection (30tons)
- 200mm - HGVs, Construction Vehicles, Mobile Cranes etc. (44tons)

AGN12 Compliant - No Dig System



Materials List

- CORE TRP Panels - Perforated HDPE 3-Dimensional Cellular Confinement System
- CORE TRP Membrane - Separation / Protection Geotextile Fleece
- CGAGJP - Galvanised Steel 1000mm Staking Pins
- CGACST - HDPE Connection Studs
- Infill - 4/40mm Clean Angular Stone to BS EN 13242 and 12620
- Suitable Edging Detail - CORE EDGE Steel Edging - Tanalised Timber
- Wearing Course - Any Porous Surfacing Material Suitable for the Intended Traffic Load

Method Statement

Step 1 - Existing Ground Preparation

- Remove surface vegetation and treat with suitable herbicide as advised by project Arboriculturalist.
- Fill any hollows that may be in the exposed ground with no fines 4/40mm clean angular stone.
- Place TRP membrane over the works area ensuring laps with a minimum of 250mm.
- Mark out the area and install your chosen perimeter edging detail. For Example: Timber boards/ CORE edge metal edging.

(N.B. If no specific edging has been designed for the surface course, ensure your perimeter edging is of the correct depth to confine all structural layers including your proposed wearing course.)

Step 2 – Laying & Pinning CORE TRP

- Lay the membrane on the ground and roll out 1m, Insert 4 equally spaced steel staking pins through the TRP membrane along the width of the panel then continue to roll out the membrane.
- Expand the panel over the TRP Membrane and position it over the pins, extend to the required length, then pin across the opposite end of the panel through the TRP membrane
- Pin along the length of the panel on each side.
- Using CGACST HDPE connecting studs connect the adjoining panel. CORE TRP panels can be cut to shape if required. Cut cells individually with a utility knife or before expanding the panel using a petrol cut off saw.

(NB. If full panels are not required please ensure the cells used have been fully expanded.)

Stage 3 - Backfill The Cells

- Using a 4/40mm clean angular stone (to BS EN 13242 and 12620) progressively fill the cells from the point of entry to the system.
- Ensure the cells are evenly filled across the width of the area before allowing the delivery vehicle up onto the surface, at this point place a suitable ramp at the point of entry to allow the vehicle unobstructed access up onto the grid.
- Limit the drop height from the vehicle to below 1000mm to avoid cell collapse during infill.
- Overfill by approximately 25mm allowing for settlement of the stone into the cells.

Step 4 - Wearing Couse - Surfacing Detail Options

CORE TRP can be surfaced with any appropriate porous wearing course, a selection of which are listed below.

(NB. In all cases please ensure adequate edge restraint for the chosen wearing course is suitably installed.)

Please see next page for list of surfacing options.

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CORE COMMERCIAL Gravel Grid

- Place CORE TRP separation / protection membrane over the filled CORE TRP panels.
- Lay a 20mm bedding layer of 2-6mm agricultural grit and lightly tamp
- Lay CORE COMMERCIAL porous pavers and fill with a 6-10mm decorative stone

CORE BOUND Resin Bound Stone

- Place CORE TRP separation / protection membrane over the filled CORE TRP panels.
- Lay a 20mm bedding layer of 2-6mm agricultural grit and lightly tamp
- Lay CORE Commercial porous pavers and fill flush with a 6-12mm clean aggregate
- Lay a 15mm (pedestrian) – 25mm (trafficked) porous resin-bound stone wearing course.

Porous Modular Paving

- Place CORE TRP separation / protection membrane over the filled CORE TRP panels.
- Lay a 20mm bedding layer of 2-6mm agricultural grit as per manufacturers guidance
- Lay porous paving to manufacturers guidelines.

Porous Macadam

- Apply light vibrating compaction to filled CORE TRP
- Overfill surface with 20mm 4/20mm clean angular stone
- Lay and compact macadam as per manufacturers guidelines

Areas Outside of the Root Protection Zone

When surfacing in areas outside of a root protection zone the use of a 3-dimensional confinement system such as CORE TRP can reduce sub base depths by as much as 50%. In addition to the above Suitable wearing course options in these areas are as follows:

Concrete Slab

- Place CGS1000 Separation Geotextile over the filled CORE TRP
- Cast the concrete slab over the Geotextile

Standard Non-Porous Macadam

- Apply light vibrating compaction to filled CORE TRP
- Overfill surface with 20mm 4/20mm clean angular stone
- Lay and compact macadam as per manufacturers guidelines

Modular Paving

- Place CORE TRP separation / protection membrane over the filled CORE TRP panels.
- Lay a 50mm bedding layer of sharp sand or screed mix as per manufacturers guidance
- Lay paving to manufacturers guidelines.

Loose Gravel

- Overfill CORE TRP with 30mm of decorative clean angular stone.

