

Tree Root Protection

A guide to the selection and specification of no dig Tree Root Protection systems using ABG Abweb TRP

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Protecting our Trees

Trees are a valuable natural resource that are increasingly under threat from construction in the urban environment. As well as the obvious benefits to the environment of maintaining healthy trees, they also provide aesthetic and resource qualities to any development.

Problems arise when construction takes place in areas around tree root zones; compaction of soils and damage to soil structure from vehicular traffic can prevent valuable water and air from reaching the roots, starving the tree of vital resources and leaving it open to decay. Alternatively, excavation within the root zone can physically damage the root structure, affecting the health and life expectancy of the tree.

The protection of trees during construction is now often written into planning consent for new developments in accordance with BS 5837: Trees in Relation to Construction: Recommendations (2005) which recommends that there be a tree root protection area within which construction should not be permitted.

Arboricultural Practice Note 12: Driveways Close to Trees (APN12) gives guidance on above ground, no dig construction techniques in and around trees and advocates the use of geocellular blanket systems, such as Abweb TRP.

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Abweb TRP Tree Root Protection

Abweb TRP offers a practical alternative to traditional methods of construction of paths, roads and parking areas in and around trees. It is used to protect the root structure of the tree from damage caused by compaction of the local soils as a result of vehicular traffic. Traditional methods of construction tend to be invasive and can affect tree health by damaging the root structure.

The Abweb TRP system is a no dig solution preventing damage to the tree root structure during the installation process. Abweb TRP is quick and easy to install, reduces construction time and in many instances, greatly reduces the depth of imported stone required - saving time and money and reducing the environmental impact of the project.

Abweb TRP is a geocell mattress which is expanded on site and then filled with a clean no-fines stone; the strength of the system comes from the containment of the stone within the structure, although unlike traditional construction, this is achieved without compacting the stone and the subsequent loss of permeability. It is manufactured from strips of high density polyethylene HDPE cross welded to form cells, the strips can be perforated if required to allow the lateral movement of air and water through the structure. The porous surface also ensures water and air can carry essential nutrients to the trees roots.

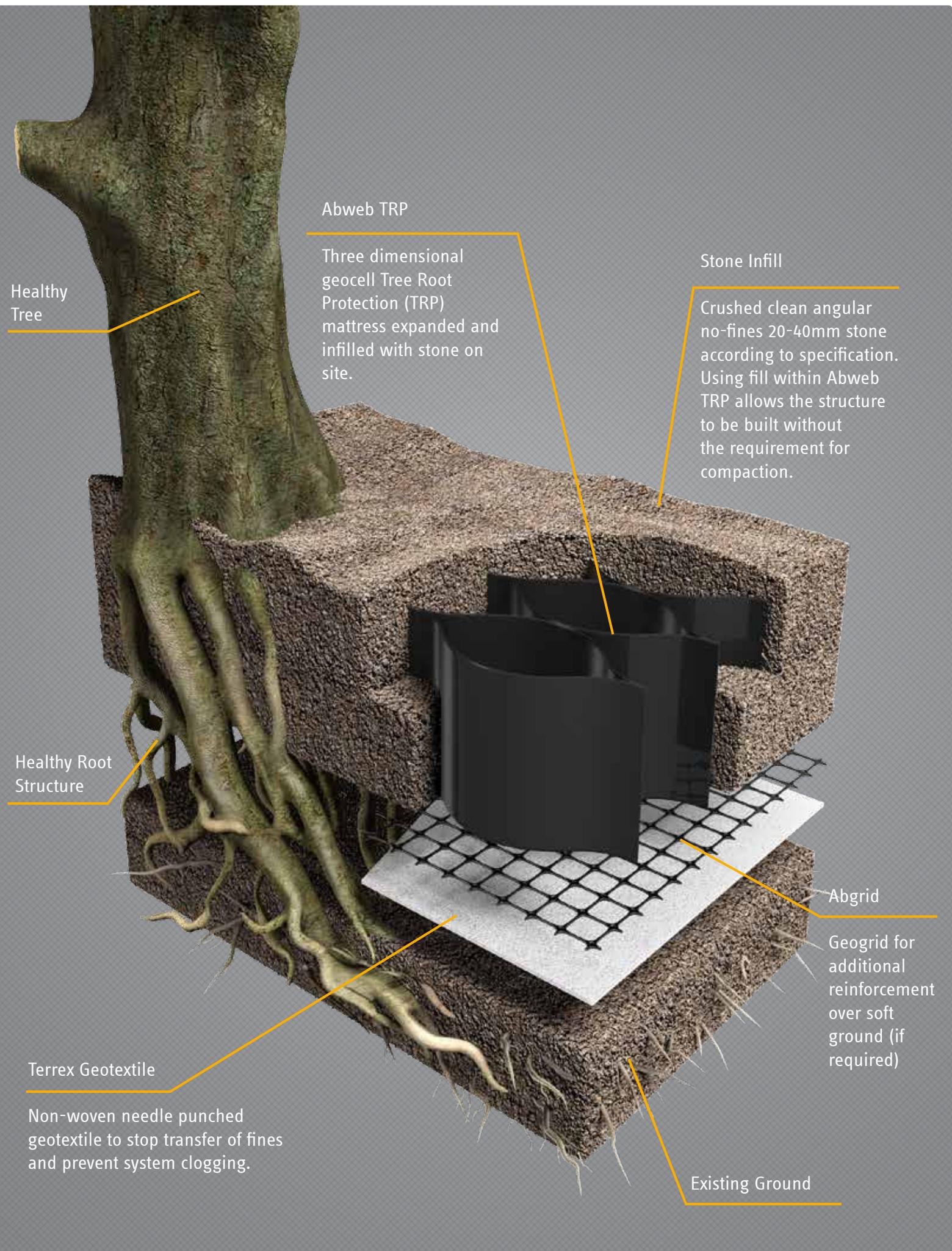
Beneath the Abweb TRP is a non-woven geotextile, positioned to prevent any fines washing through and ultimately clogging the system, thereby preventing the water and air from reaching the roots over the lifetime of the tree.

Many pavement finishes are suitable for use over Abweb TRP, including porous asphalt and porous block paving. In temporary applications there is usually no requirement for a pavement finish, the fill of the Abweb TRP acting as the surface.

Abweb TRP can be used in both permanent and temporary pavement constructions. In temporary constructions, the system can be removed without damaging the roots once operations on site are complete.

Abweb TRP is suitable for:

- Access roads and parking areas
- Driveways and paths
- Permanent woodland trails



Abweb TRP

Three dimensional geocell Tree Root Protection (TRP) mattress expanded and infilled with stone on site.

Stone Infill

Crushed clean angular no-fines 20-40mm stone according to specification. Using fill within Abweb TRP allows the structure to be built without the requirement for compaction.

Healthy Tree

Healthy Root Structure

Abgrid

Geogrid for additional reinforcement over soft ground (if required)

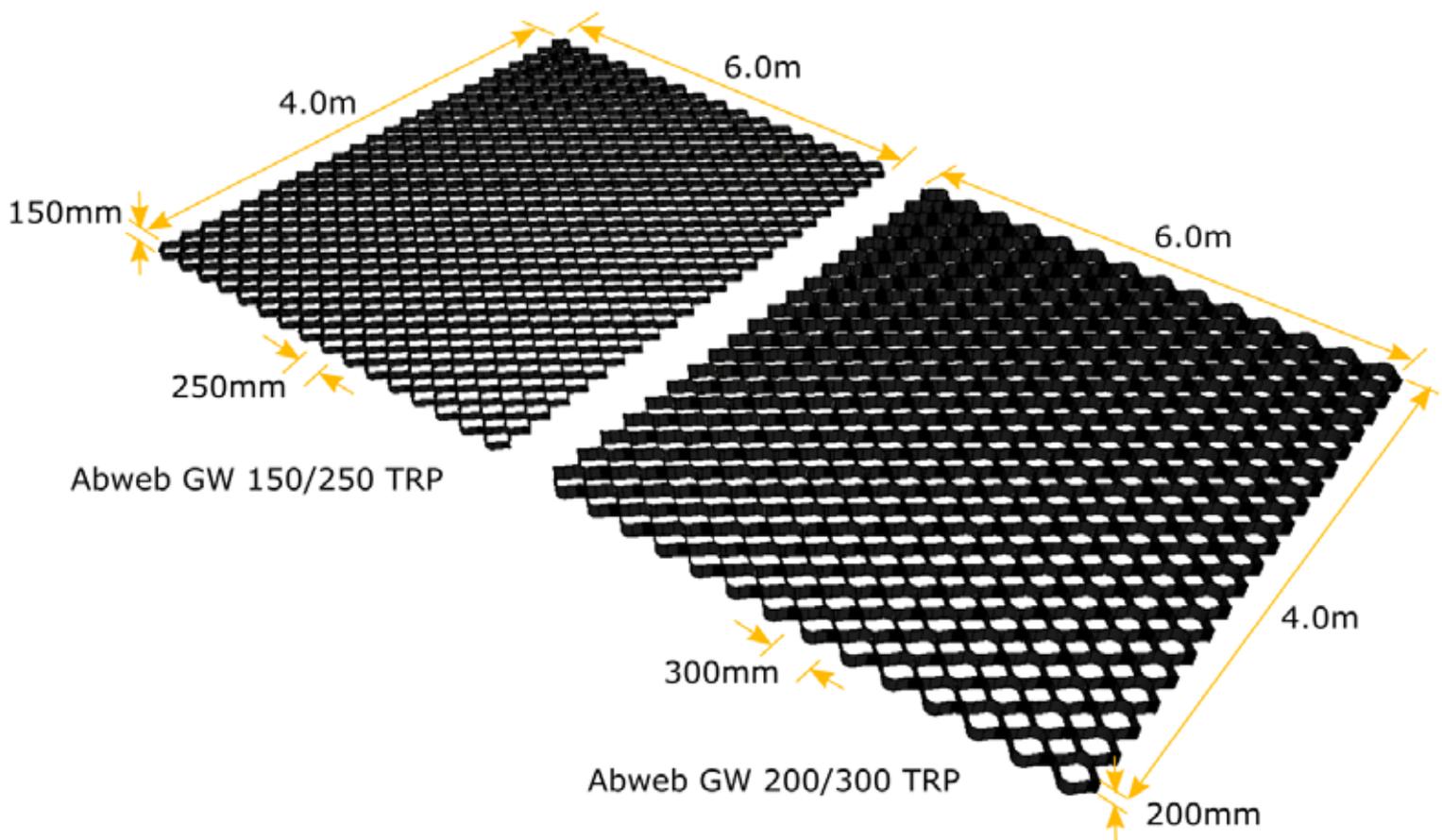
Terrex Geotextile

Non-woven needle punched geotextile to stop transfer of fines and prevent system clogging.

Existing Ground

Technical Information

Abweb TRP comprises the Abweb geocellular containment system to confine fill material within the cell, improving shear strength and bearing capacity. This is laid over the Terrex NW9 needle punched non-woven geotextile which acts as a separation layer, preventing material loss whilst allowing the free flow of water and nutrients to the tree root system.



Further information is available at www.abgltd.com/tree-root-protection

Installing Abweb TRP

Before works commence

1. Ensure approval for use of Abweb TRP in this application from both local planning department and Tree Protection Officer.
 2. Determine the limits of construction and proximity to the tree of the installation.
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Site preparation

3. Remove all debris and areas of hard surfacing. Reduce site levels to permitted reduced dig to meet final levels. Soil compaction and tree root damage should be avoided.
 4. Ensure the site is reasonably level and free from undulations. Level using sharp sand if required. Rolling and compaction is not advised.
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Installation

5. Install approved edge retention system around perimeter of the installation area.
 6. Lay Terrex geotextile across area of installation. Adjacent sheets should be overlapped by a minimum of 150mm.
 7. Open out Abweb TRP, pinning in place between the installed edging. It may be necessary to cut the Abweb TRP to ensure good fit. This can be done using a sharp knife.
 8. Pin the perimeter of the Abweb TRP panels. The pins primary function is to ensure the cell apertures remain open during the filling process. Avoid damaging the tree root structure during the pinning process.
 9. Fill the Abweb TRP working from the outer perimeter of the installation towards the tree. The filled area can be used as a working platform for the filling operation. The laid surface should not be rolled although light compaction can be achieved using a whacker plate.
 10. Install the finishing surface as specified.
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Installation of temporary access roads

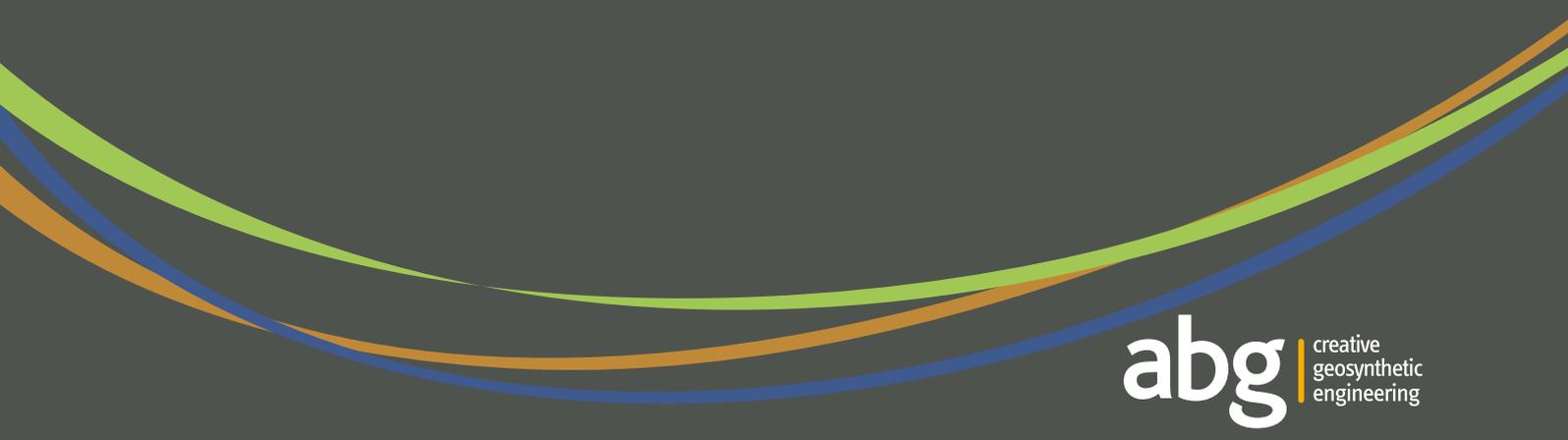
Abweb TRP can be installed to form a temporary access or haul road that can be partially or completely removed once construction works have been completed.

11. Follow steps 1 through to 9 above
 12. Install a second layer of Terrex geotextile above the Abweb TRP. The specification of this is dependent upon the specific site/ traffic conditions and the grade can be advised by ABG Technical Department.
 13. Place 100mm of approved aggregate over the geotextile. Suitable aggregate is again site specific and advice should be sought.
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Removal

14. Once the road is no longer required, remove the top layer of aggregate and replace with the final finishing layer. Alternatively, the entire road construction can be removed taking care not to damage the tree root structure during the removal process.
15. Abweb TRP can be recycled after use. Seek specific local advice on recycling.





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