



Root Barriers

Application:

- Cables
- Pipelines
- Sewers
- Foundations
- Pavements
- Gardens, sports grounds, parks and playgrounds
- Ponds and swimming pools
- The trees themselves



Root Guiding or Root Barrier?

How to choose the right solution

The difference between Root Guiding and Root Barriers.

A Root Barrier has smooth sides and can be made of various materials such as non-woven fabric or HDPE. A tree root will follow along the panel once it has reached the Root Barrier due to a Root Barrier being smooth and having no ribs to guide roots. When a Root Barrier is installed too close to a tree it has a de-stabilizing or 'flower pot' effect. The Root Guiding panel is unique and has no alternatives. The guiding panel is provided with 90° vertical ribs; when the tree root comes into contact with the guiding panel the ribs direct root growth downwards. When the root arrives at the bottom of the panel it can proceed growing along its horizontal or radial path (when the tree pit is correctly prepared). The guiding panel is also provided with ground locks to stop roots lifting up the system as they exit beneath. The panels also have a double upper edge to make sure the roots cannot grow over the top edge and has a simple coupling system that enables the panels to be easily connected.

When to use Root Guiding?

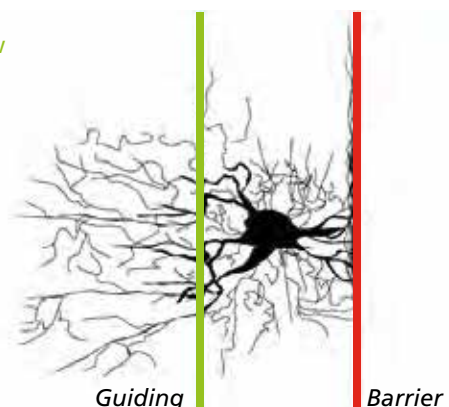
Root Guidance is used at a distance of less than 2m1 from the tree (this is a guideline, it is depending of the trunk flare). It is used as a protection for the road surfacing and to guarantee the necessary stability of the tree.

When to use a Root Barrier?

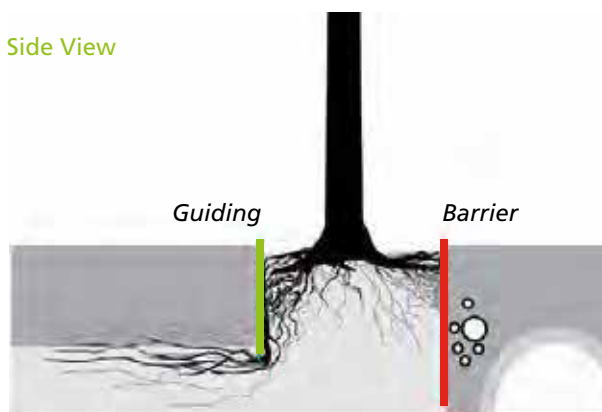
Root Barriers are used to create root-free zones, for example to protect underground utility services against root growth. Root Barriers can only be used if the available rotatable space is sufficient for the tree species. As a rule of thumb, we advise a minimum of 2m1 between the Root Barrier and the tree.

Effect of Root Guiding and Root Barriers

Top View



Side View



Guiding



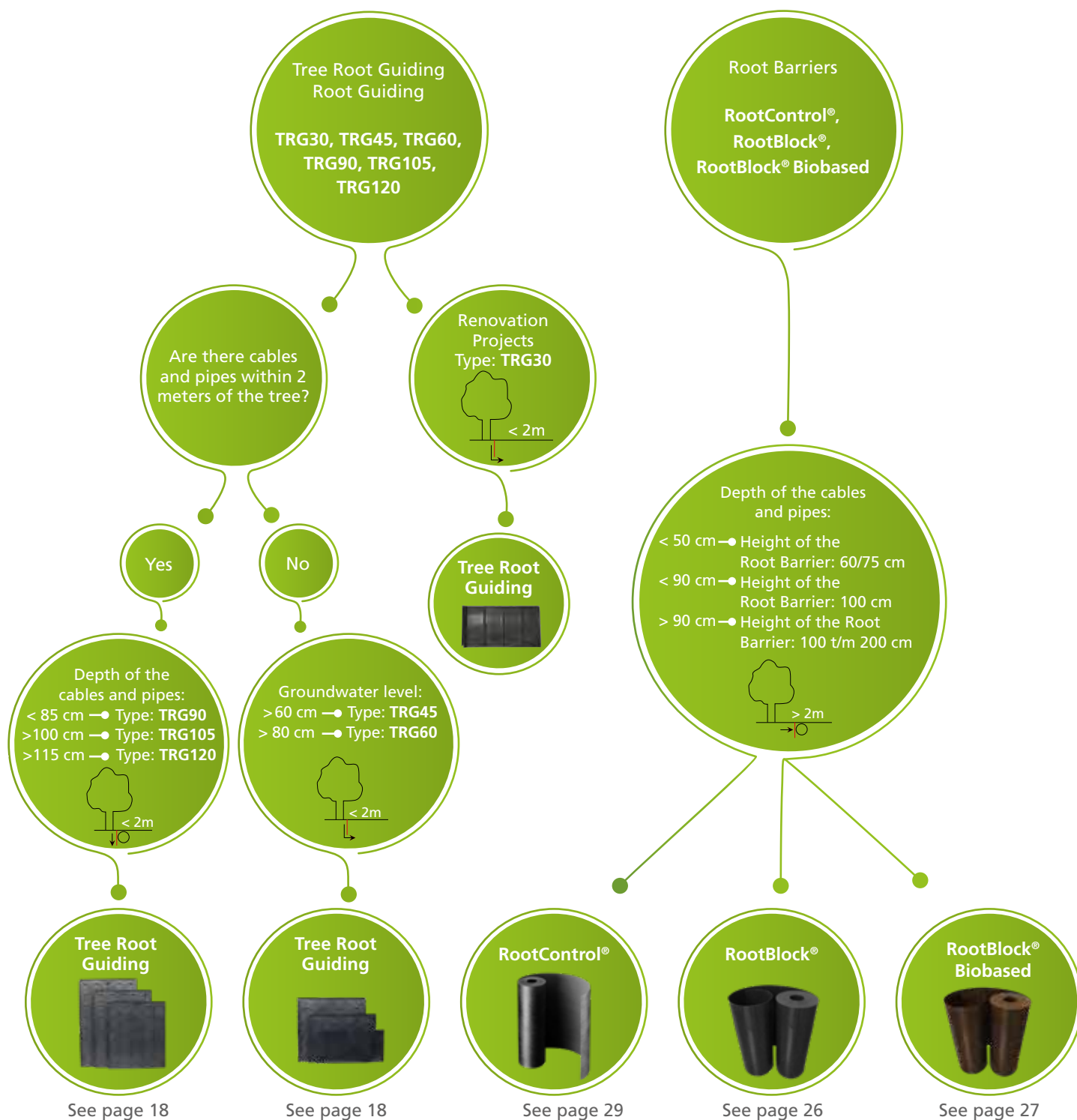
Barrier



Root Guiding or Root Barrier

**System within
2 meters of the tree?**

**System 2 meters
away from the tree?**





Root Guiding

The GreenMax Tree Root Guide was designed to prevent root growth from lifting and damaging paving. Its panels feature special guide ribs which redirect tree roots deeper into the soil. The Root Guide can be used within two metres of the tree. Conventional root barriers do not guide roots and therefore offer no stability and limit the growing space.

Research shows that some right-angled 90 degree guide ribs are effective enough to prevent against rotating roots and guide the roots downwards instead. To prevent roots lifting the panels, horizontal ground anchors fix the panels in place. Our panels meet all requirements of root guidance. In addition, the TRG panels are also equipped with a double top edge. The rim prevents root growth over the panels and prevents cracking entry of the screens.

Root guidance has been in use since 1976, invented by the then founder of DeepRoot. The system has proved itself being in thousands of projects ever since. However, it is still essential to use the product in the correct way, which is very simple.

Material

TRG30, TRG45, TRG60, TRG90, TRG105 and TRG120:

- Recycled PP (100% recycled material)
- Injection moulded copolymer polypropylene
- Manufactured in ISO 9002 certified factories
- 90° ribs guide tree roots downwards
- Reinforced double top rib, resistant to repeated foot traffic and against spring roots to prevent overgrowth
- UV-stabiliser additive to prevent adverse effects of sunlight
- Ground anchors to prevent the panel from being pushed up out of the soil
- Produced in Europe

TRG30, TRG45 and TRG60:

- Panels are 60 cm wide

TRG90, TRG105, and TRG120:

- These panels can be interlinked in order to bridge any cables or piping encountered
- Panels are 75 cm wide



Dimensions panel

Type	Panel height	Width	Thick-ness	Per box	Per m ¹
TRG30/LR30	30 cm	60 cm	2 mm	40 PCS	24 m ¹
TRG45/DR45	45 cm	60 cm	2 mm	26 PCS	15,6 m ¹
TRG60/DR60	60 cm	60 cm	2 mm	20 PCS	12 m ¹
TRG90/LR90	90 cm	75 cm	2 mm	Deliverd by piece	0,75 m ¹
TRG105/LR105	105 cm	75 cm	2 mm	Deliverd by piece	0,75 m ¹
TRG120/LR120	120 cm	75 cm	2 mm	Deliverd by piece	0,75 m ¹



Proven since
1976

**50 years
warranty**





Application of Root Guiding Panels all around installation:

Type TRG45 Angle 90°, TRG60 Angle 90°

Protect the surrounding hard landscaping on all 4 sides of the tree with root guide panels. Use the maximum available space within the tree pit to ensure maximum uncompacted soil and free root space for the tree, and a good quality root guidance. Take enough space for the trunk flair as the tree grows to reach its mature size.



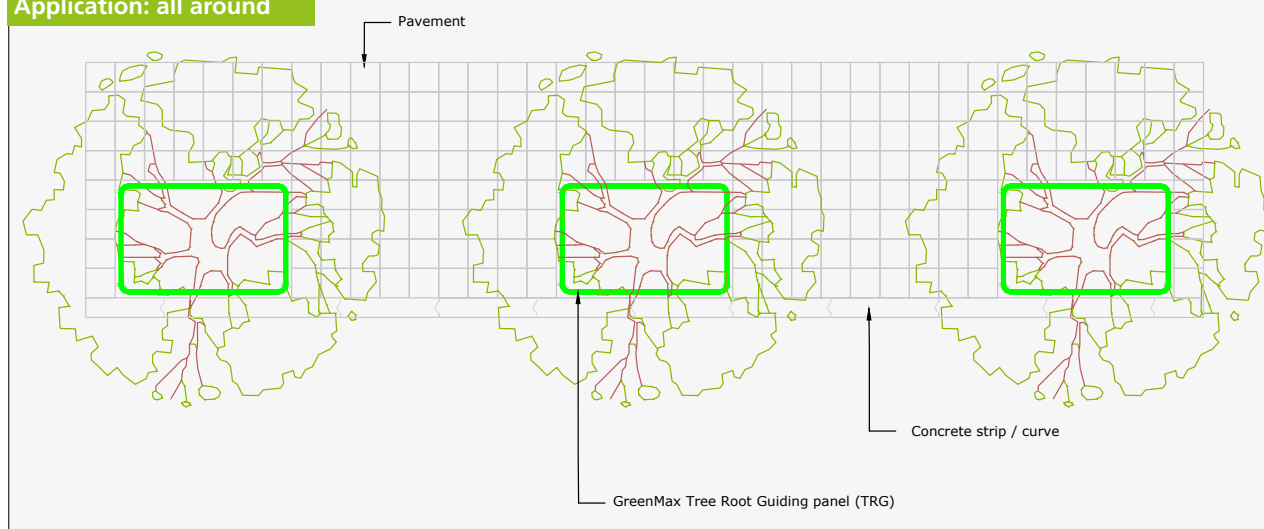
A Tree Root Guiding panel in an angle of 90 degrees. The corner can be pulled in and out and can be connected on both sides to a Tree Root Guiding Panel so it can be used at all projects of any tree pit dimension.



Dimensions panel

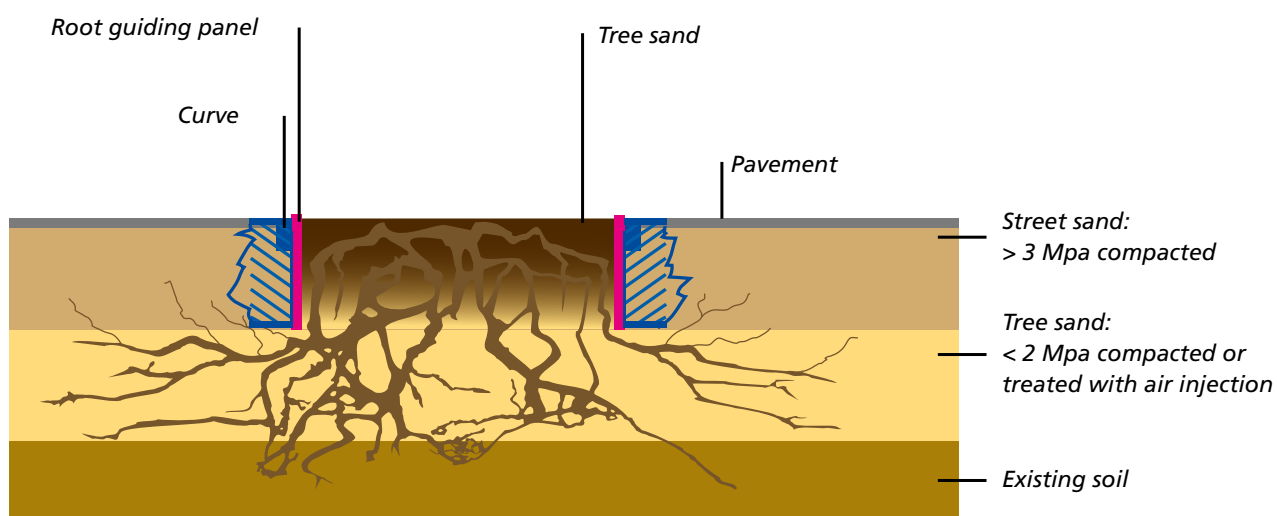
Panel height	Type	Width	Thickness	Per box
45 cm	TRG45 Angle 90°	From 48 till 85 cm	2 mm	8 angles per box (suitable for 2 tree pits)
60 cm	TRG60 Angle 90°	From 48 till 85 cm	2 mm	8 angles per box (suitable for 2 tree pits)

Application: all around





Application of low panels (30, 45 or 60 cm heigh)



Also applicable in tree granulate



Application of Root Guiding Panels linear installation:

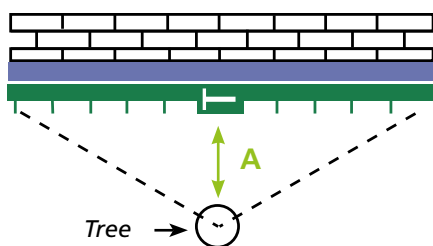
Linear installation (all types)

With Tree Root Guiding you ensure maximum protection of the hard landscaping. By using a linear application you give the tree maximum available root space and stability, therefore improving the health of the tree. To protect the hard landscaping the root guiding can be placed directly alongside of the pavement. For cables and pipes, we use the 90, 105 and 120 cm high panels to prevent tree roots from possibly damaging these cables and / or pipes. These types are therefore applied if the trees are too close to cables and pipes. The Root Guiding panels allow the roots to grow deeper into the soil, giving the tree more stability. The roots will no longer grow under the panel when the high panels (90, 105 and 120 cm) are used, so that the cables and pipes remain well protected.



Tree Root Guide linear installation

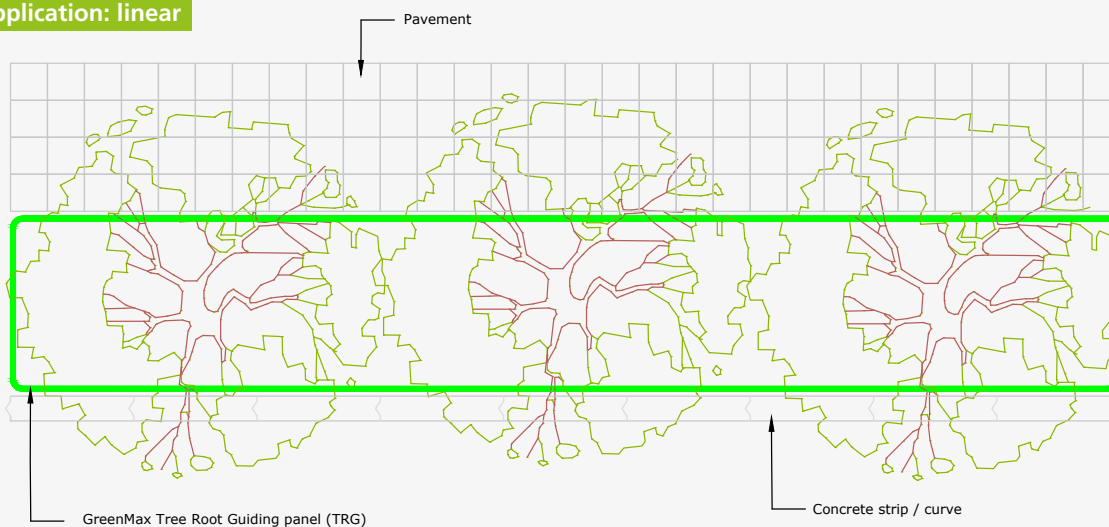
Pavement



Minimum length of panels = $4 \times A$

Linear installation

Application: linear





Applications of high panels (90,105 and 120 cm height)

Other applications root barriers:

Root pruning during renovation work

By some pruning of existing tree roots and the use of a TRG Root Guide you can prevent the tree eventually being removed; reducing the need for future root pruning time after time.

Using a Tree Root Guiding system means future damage to the hard landscaping will be a thing of the past. There may be the requirement for the removal of some roots, leading to a temporary decrease in stability. We recommend to seek the advice of a tree specialist or gardener, if this is necessary.

Special applications

Root Guidance can also be a solution, for protection against root damage at exceptional situations such as tennis courts, slopes, cemeteries, retaining walls etc. Because of the different dimensions GreenMax TRG panels can be used in different areas with different groundwater levels.

RootBlock®

If the wall is positioned more than 2 metres from the tree, you can also opt for a root protection wall to block tree roots. In some cases, it may be more desirable to just block tree roots by means of a root protection screen like RootControl® or RootBlock®, see pages 26-29 in our catalogue for more information.

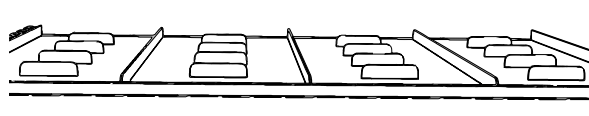


Functional requirements of root guiding panels:

1 Top view of vertical guide ribs on the panel

Only a right-angle with a height of at least 10 mm will prevent roots from continuing their way horizontally along the screen. Vertical 90° guide ribs are perpendicular to the wall at a 90-degree angle. Research has shown that guide ribs at exactly 90 degrees lead the roots downwards; this is not the case with other angles.

Source: James Urban USA 1989



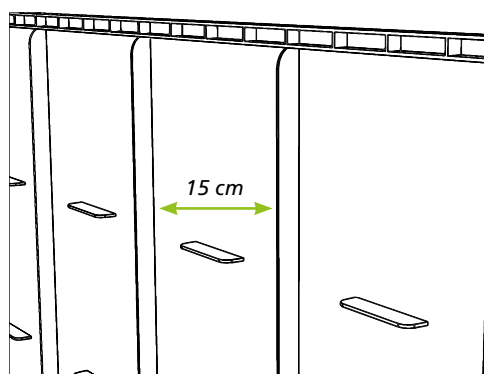
Vertical ribs exactly 90 degrees



Top view: roots will be guided down vertically

2 Horizontal distance between ribs 15 cm at most, uninterrupted downwards

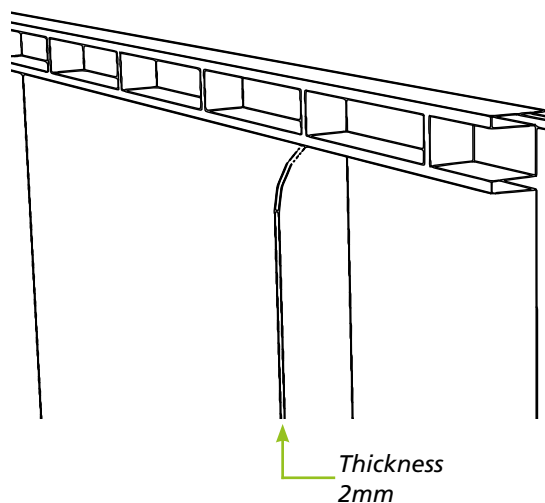
Research has shown that the effect is guaranteed at a distance of approximately 15 cm between the guide ribs; this guarantee has not been proven for other distances. At the end of the ribs, the root continues in its usual way. The ribs must therefore be uninterrupted from top to bottom.



Vertical distance for ribs 15 cm
Uninterrupted ribs from top to bottom

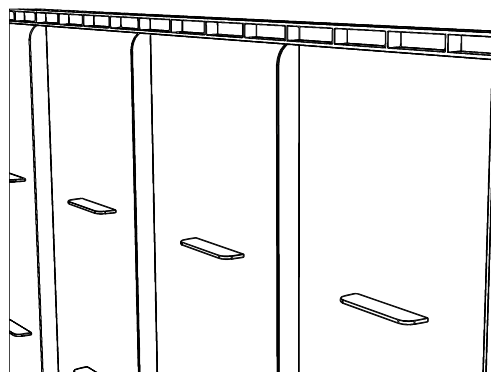
3 Thickness of at least 2 mm

Root guide must be at least 2 mm thick to be guaranteed to withstand root penetration.



4 Ground (root) anchors ensure that the screen is not pushed up

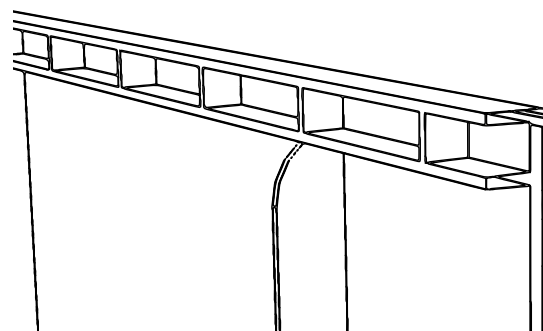
Root growth around the horizontal ribs prevents the guide screen from being pushed upwards. The roots hold the panel, as it were. It is important that these horizontal ribs are perpendicular to the flat surface of the screen and have sufficient surface area, so that the panel does not shoot past the roots when pulled or pushed. The panel, with the side of the guide ribs and root anchors, must always face the tree. It is important for the surface (the surface that prevents it from pushing upwards) of the root anchors to be high enough and distributed across the screen. Multiple smaller anchors have proven to be more effective than a few large anchors.



Root anchors > 40 pieces per m² Total surface area of root anchors > 200 cm² per m² Right angle to the flat surface

5 A double edge at the top side, to prevent root overgrowth

Root guide screens should ensure that the roots push themselves deeper into the profile. It is therefore important that the screens are always placed high enough (just visible above ground level), so that roots cannot grow over them. The panel sticks out above ground level and the sturdy double edge allows for a visually clean and tidy installation. Research (1985 USA) shows that a double edge is most effective. A sufficiently wide edge at the top already gives a reduced chance of the roots overgrowing the screen. This edge also ensures that, when walking on the screens, the edge will not be damaged, broken or cut. A broken screen provides instant escape for the roots, reducing the screen's functionality.



Double top edge at least 10 mm wide and 5 to 10 mm apart



RootBlock®

HDPE Root Barrier

Material

- High-density polyethylene (HDPE)
- Produced from 100 % recycled material
- 100% recyclable
- Color: black
- Long lifespan (min. 100 years)
- Clean and easy to install
- UV-resistant
- Waterproof
- Flexible
- Resistant against chemical elements and micro-organisms
- Impermeable to tree- and bamboo roots (bamboo by RootBlock® 2 mm)



Coupling Profile



The 1 or 2 mm thick RootBlock® is a heavy duty Root Barrier from our range (other thicknesses available upon request).

RootBlock® is suitable for any type of plant root and soil. RootBlock® is cost effective, has a high quality and long lifespan. HDPE is a clean and environmentally friendly material and it will not affect the soil unlike products made from PVC. That is why RootBlock® is 100% recyclable and re-usable

RootBlock® 2 mm is also suitable for aggressive rooting species such as bamboo.

Dimensions

Rolls	1 mm	50 mtr	2 mm	25 mtr
Height	Type		Type	
50 cm	WB/BB 50/1		WB/BB 50/2	
60 cm	WB/BB 60/1		WB/BB 60/2	
75 cm	WB/BB 75/1		WB/BB 75/2	
100 cm	WB/BB 100/1		WB/BB 100/2	
150 cm	WB/BB 150/1		WB/BB 150/2	
200 cm	WB/BB 200/1		WB/BB 200/2	

Extra option: coupling profile

Other strengths / depths of RootBlock® on request





RootBlock® Bio Based

HDPE Root Barrier

Material

- Polyethylene based on residual sugar cane waste
- Produced from 100% recycled material
- 100% recyclable
- Color: brown
- Long lifespan (min. 100 years)
- Clean and easy to install
- UV-resistant
- Waterproof
- Flexible
- Resistant against chemical elements and micro-organisms
- Impermeable to tree- and bamboo roots (bamboo by RootBlock® 2 mm)



RootBlock® is suitable for any type of plant root and soil. The commonly used Root Barrier is made from HDPE (high density polyethylene) but is also now available made from a Bio-Based plastic, which is produced from the waste sugar cane and is also known as 'green polyethylene'.

Re-using the waste from sugar cane has meant a new and sustainable alternative to standard polyethylene can be offered.

RootBlock® Bio-Based is fully recyclable and the green polyethylene material can be mixed with standard HDPE. This ensures that the Bio Based Root Barrier can be recycled in the same process as the PE RootBarriers and is re-usable many times.

The product is awarded the 'I Am Green' Logo. This logo may only be used in products that have the waste of sugar cane as a base material, using green polyethylene helps to reduce greenhouse gasses. In this way we hope to contribute to the development of the sustainable Bio-Based green cities.

Dimensions

Rolls	1 mm	50 mtr	2 mm	25 mtr
Height	Type		Type	
50 cm	WB/BB 50/1 BIO		WB/BB 50/2 BIO	
60 cm	WB/BB 60/1 BIO		WB/BB 60/2 BIO	
75 cm	WB/BB 75/1 BIO		WB/BB 75/2 BIO	
100 cm	WB/BB 100/1 BIO		WB/BB 100/2 BIO	
150 cm	WB/BB 150/1 BIO		WB/BB 150/2 BIO	
200 cm	WB/BB 200/1 BIO		WB/BB 200/2 BIO	

Extra option: coupling profile

Other strengths / depths of RootBlock® on request





Non-Woven Root Barrier

Material

- Polypropylene (PP), non-woven, 360 g/m²
- Double sided coating
- Color: black
- 100% recyclable
- Warranty 30 years
- Clean and easy to install
- Impermeable for tree roots
- Waterproof
- Flexible and strong
- Very easy to use
- Resistant against chemical elements
- UV-resistant



The RootControl® nonwoven root barrier is used as a dividing wall between trees and what needs protection such as paving, sewers, pipelines, etc.

RootControl® is a lightweight and flexible material and has many possible applications.

Placing a Root Barrier of RootControl® has a quick return on investment. Renovation of hard landscapes and the renewal of cables and sewage pipes due to root damage are no longer necessary. Installing RootControl® ensures future damage will not occur.

Dimensions

Rolls		
Height	Length	Type
50 cm	50 m ¹	RCL 50
65 cm	50 m ¹	RCL 65
75 cm	50 m ¹	RCL 75
100 cm	50 m ¹	RCL 100
130 cm	50 m ¹	RCL 130
150 cm	50 m ¹	RCL 150
200 cm	50 m ¹	RCL 200

Extra option: coupling profile

Other depths of RootControl® on request

