

1. Description

CuTex is a geocomposite root barrier system consisting of a copper sheet mechanically encapsulated between a woven polypropylene geotextile and a high strength nonwoven polypropylene geotextile. This provides a tough physical barrier together with a chemical inhibition layer (through the release of copper ions) that will stop any root from growing through the product. It also has a clear advantage against impermeable barriers as it does not affect the normal circulation of water and nutrients in the ecosystem thanks to its permeability. Please follow this guide when installing CuTex.

2. Japanese Knotweed

CuTex will act as a physical & chemical barrier to Japanese Knotweed and other invasive species to segregate contaminated soils from areas that need to be protected.

When CuTex is used as a barrier to prevent the spread of Japanese Knotweed it will often form part of a wider control plan. In such circumstances Geofabrics strongly recommend that professional advice be sought from a PCA or INNSA Accredited Company.

3. Root Barrier Installation

Initial Checks

Ensure that the roll is in good condition and doesn't show any damage due to transit. Prior to laying any sharp objects should be removed from the installation area. Soils placed against and close to the barrier should be free of any sharp objects that could potentially puncture the barrier.

Services breaching root barrier

Where possible, services should not breach the root barrier. When this is unavoidable, this may be a weak point in the installation. Additional material with appropriate adhesive, silicone sealant or similar should be used to bond the barrier to the service pipe. Known weak points should be noted in any completion report.

Joints & Seams

These should be avoided where possible by purchasing the rolls in the correct size for your installation.

Standard Roll Sizes

Width (M)	Length (M)
5.2	50
5.2	25
2.6	50
2.6	25

When joining two pieces of barrier, these should be taped or welded: the overlap between the two pieces must be at least 150mm (lapped joint, fig 1). Where possible, a prayer fold should be used as this is more robust.

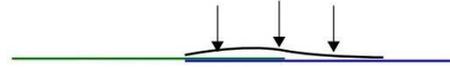
CuTex is suitable for heat welding. A competent person should be employed to carry this out. First form a simple lapped joint 150-300mm, then using a hot air gun heat both sides of the surface to the point at which they can be bonded. A process of heating and then pressing the surface together needs to be developed ensuring that a continuous seal is created. Heating can be completed in two passes starting at the furthest point. Final pass must ensure that the exposed seam is completely sealed.

Please note CuTex has a copper-free 100mm on one side (for 2.6m wide rolls) or both sides (for the 5.2m wide rolls) that is intended to be used in lapping scenarios.

Fig 1: Simple Lapped Joint

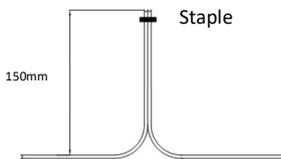


Stage 1: Overlap both sections of the root barrier by at least 150mm.

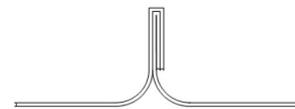


Stage 2: Tape the upper side of the lapped joint with 300mm wide duct tape or similar. The joint must be taped along the whole length of the root barrier.

Fig 2: Prayer fold joint



Stage 1: Position the root barrier sections so that each piece has a 150mm upstand. Material should be then stapled together.



Stage 2: Fold the upstand back on itself so that its height is halved

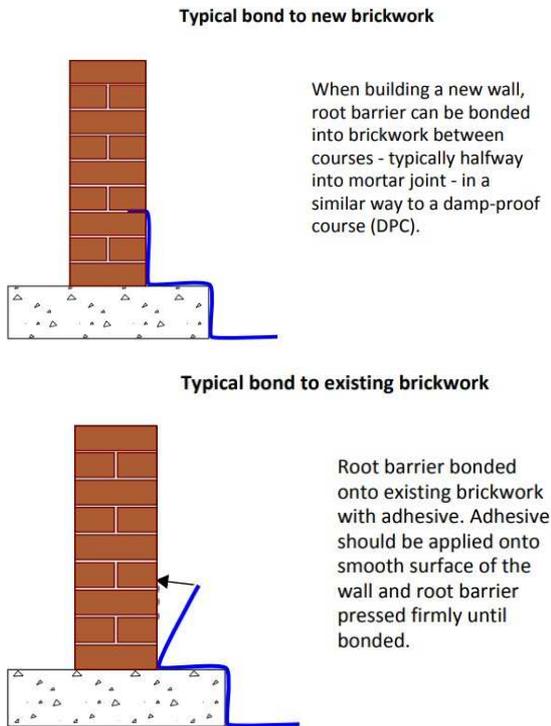


Stage 3: Fold the whole upstand again so that it sits flat on the main barrier and use a suitable tape to secure the fold (300mm wide duct tape recommended)

Bonding CuTex to walls and structures

Where CuTex needs to be attached to a wall or structure it should be sealed with silicone or external use impact adhesive. Where CuTex needs to be fitted to a new structure it can be bonded onto structural concrete or lapped into the brickwork (See Fig 3).

Fig 3: Bonding to walls or structures



CuTex & Foundations

CuTex can be used to protect foundations, expansion joints and joints in foundations and can form part of an overall remediation strategy. Please follow PCA or INNSA guidance for this application.

CuTex as a horizontal barrier with piles and foundations

CuTex can be used to protect foundations, particularly expansion joints and joints in concrete structures. For protection against Japanese knotweed, it is recommended that CuTex extends >3m past the concrete joint. The use of CuTex for this purpose would need to form part of an overall remediation plan where the residual risk of the knotweed has already been reduced by excavation and screening.

Where CuTex is installed as a horizontal barrier around piles and foundations Geofabrics strongly recommends that professional advice be sought from a PCA or INNSA Accredited Company.

4. Vertical Root Barrier: Segregation on Property Boundaries

Where CuTex is used to stop knotweed rhizome from entering an external boundary it is important to ensure that the length and depth of the installation are enough to prevent a breach to the extremities of the barrier. Herbicide treatment will still be required where the knotweed is actively growing, and this should be managed by a PCA or INNSA accredited company.

CuTex recommended depth

Where burrowing animals are present, a 3-metre minimum vertical depth is recommended. As CuTex is permeable, it can be turned out horizontally into the site being protected if the required depth cannot be achieved. The horizontal barrier should cap any rhizome not excavated and extend laterally to a suitable distance to prevent breach.

CuTex recommended length

CuTex should be extended beyond the knotweed rhizome so that it does not have the capacity to breach the barrier. It is recommended that CuTex extends 3m past knotweed rhizome. It is also important that any remaining knotweed is annually treated and kept under control.

5. Capping of land impacted by robust Invasive Plants

When CuTex is used as a capping layer over contaminated land, additional control methods such as excavation and herbicidal treatment must be used to minimise risk.

The minimum depth for a root barrier cap is normally at sub-grade level. Unlike impermeable membranes, CuTex is designed specifically to allow for drainage through the material.

When considering this option, we strongly recommend that advice be sought from a PCA or INNSA Accredited Company.

CuTex may be used to block robust invasive plant species growth, in which case the barrier must extend far enough so that the rhizome exhausts itself prior to reaching the perimeter (see section 4).

Where CuTex is used to deflect robust invasive plants such as Japanese Knotweed and Bamboo, to a predetermined distance, a programme of treatment should be undertaken by a PCA or INNSA accredited company.

6. Invasive Plants Burial Cells

The use of CuTex in an invasive plant burial cell should be undertaken in line with Environment Agency requirements, especially when Japanese Knotweed is involved. Prior to installing CuTex in the burial cell, we strongly recommend that advice and guidance be sought from a PCA or INNSA Accredited Company. The burial of Japanese Knotweed under a building or structures requires consultation with structural engineer to define compaction thresholds and confirm appropriate methodology.

NOTES:

This document covers the general installation of Geofabrics' CuTex composite. Further attention may be required to address site-specific requirements and conditions.

These guidelines are intended to assist the installer and to promote the most efficient and effective installation, whilst maintaining quality, maximising the geocomposites' performance, and without compromising health and safety.

No warranty is made or implied as to the suitability of these guidelines in any application and the contractor must ensure that he always uses appropriate methods.