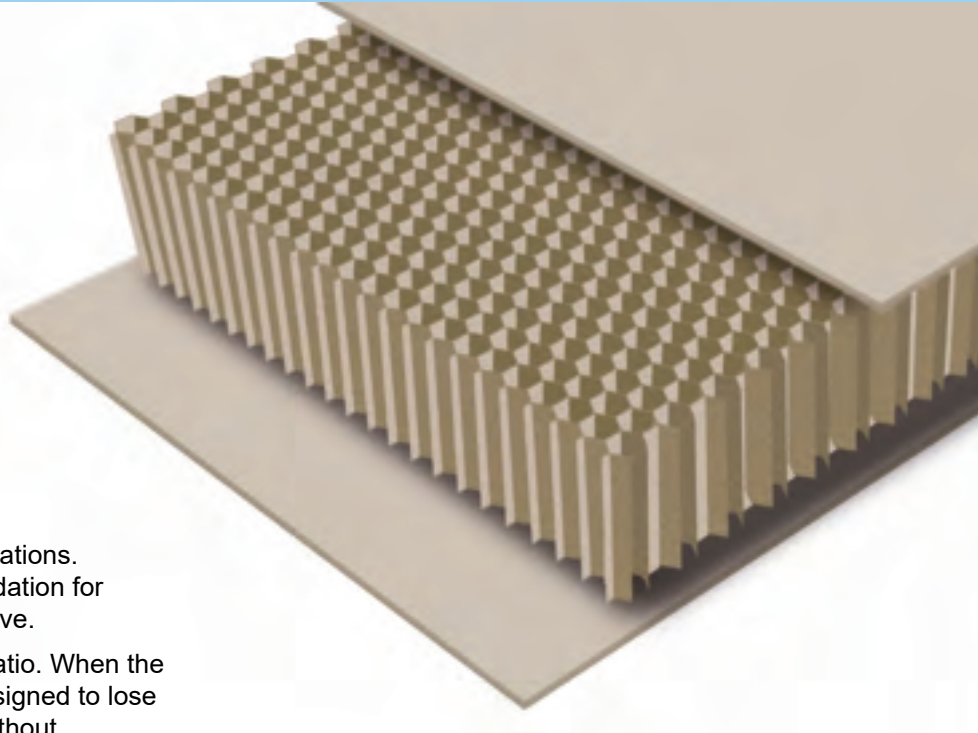




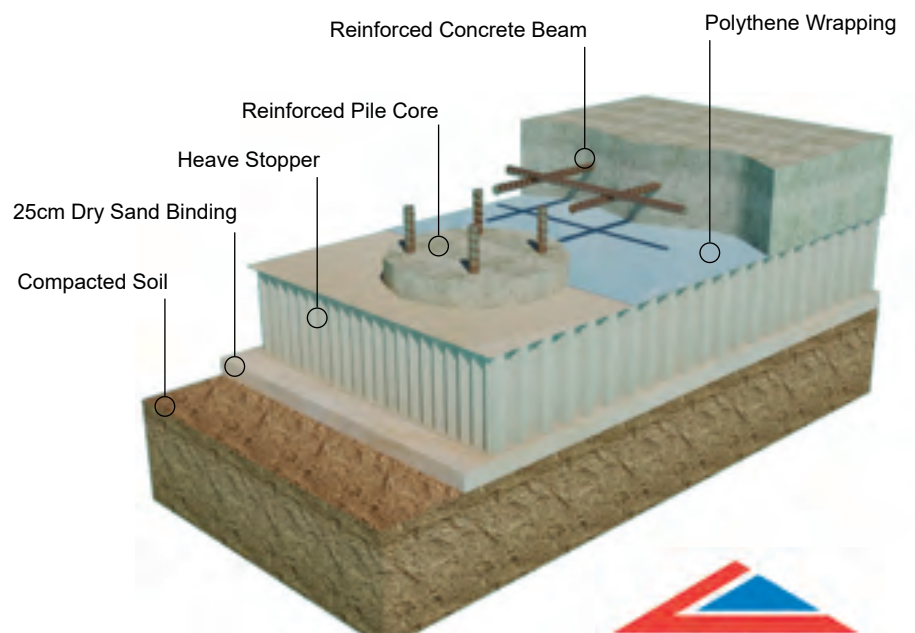
HEAVE STOPPER

Protecting structures against clay heave and ground movement



Heave Stopper is an eco-friendly, recycled construction void former that protects against ground movement whilst laying concrete foundations. It is used to create a void underneath the foundation for ultimate stability in ground liable to ground heave.

Heave Stopper has a high strength to weight ratio. When the honeycomb core is introduced to water it is designed to lose its strength in order to permit ground heave without transmitting pressure to the foundations or structures above.



Fast

Light and easy to use, Heave Stopper can be installed at a rate of 50m² per hour or more, by one person.

Simple

Heave Stopper can be installed either side up. It can be easily cut with hand tools and the joints do not need to be taped together with no requirement to tape the joints.

Practical

The closed cell structure means that Heave Stopper can be trimmed tightly around the pile heads and service ducts without losing the integrity of the panel.



Heave Stopper Benefits

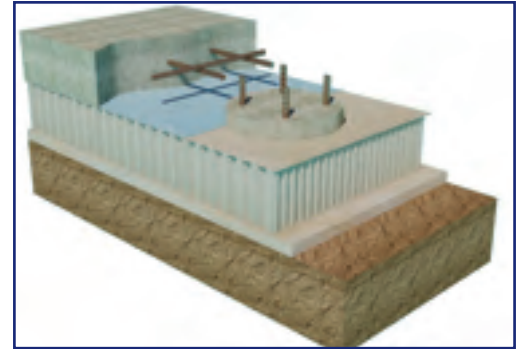
- BBA approved.
- Meets the technical requirements of the NHBC.
- Suitable for Beams and Slabs.
- The slimmest method of void creation means less excavation.
- A perfect solution for contaminated land and brownfield sites.
- Ideal for sites with restricted access.
- Lowest possible forces transmitted to the structure.

Clay Heave & Ground Recovery

Ground beams, slabs and concrete foundations can be subject to cracking as a result of the forces of ground movement when built on areas of shrinkable soil. These areas include clay, expansive shale soils, reclaimed land or ground recovery caused by deep excavations.

The structural damage caused by clay is acknowledged by engineers and designers all over the world. In the U.K the problem is particularly acute in the South East, although climate change is having its effect on soils in other parts of the country.

The solution is to create a void below concrete foundations, allowing unhindered expansion of clay



Heave Stopper - Forming a True Void

Unlike other solutions, Heave Stopper creates a complete void beneath the foundation to offer maximum protection from ground movement.

Heave Stopper is a board material constructed from a cardboard honeycomb core set between water resistant facings.

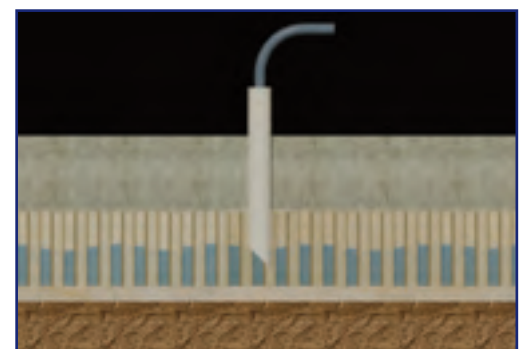
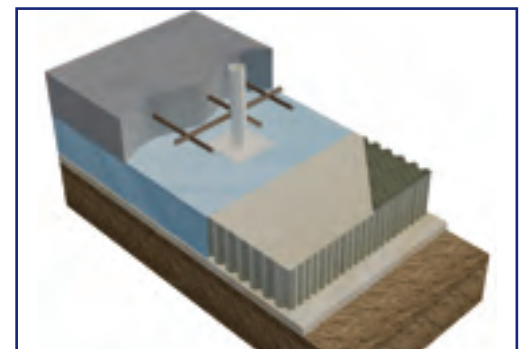
When dry, the boards have a compressive strength that can support concrete and steel up to 1 metre thick without deflection or creep compression. Once the concrete is cured and self supporting, Heave Stopper's job is done.

Water is now introduced to the core, weakening the honeycomb centre and through this allowing Heave Stopper to yield under ground heave without transmitting pressure to the structure. Eventually the board will naturally disappear to leave a permanent 100% void with no residual material to pass on heave stresses.

This can allow engineers to maximise efficiencies designing thinner slabs and beams using less concrete and reinforcement steel.

Heave Stopper can also be used to create a void to protect structures from vibration.

Using Heave Stopper protects your buildings against the forces of ground movement.



Heave Stopper Specifiers Guide

Heave Stopper is straight forward to specify. All Heave Stopper boards will satisfy the requirements for beams, slabs and concrete thickness up to 1 metre.

Simply select the correct thickness to accommodate the heave potential of the ground based on site investigation and soil analysis results.

Further guidance on predicted ground movements in shrinkable soils is given in the NHBC Standards 2018, Chapter 4.2.

The thickness of Heave Stopper should be equal to the required void plus 10mm. See table below.

Heave Stopper - Standard

Product Code	Soil Analysis Result	NHBC Category	Predicted Ground Movement Potential or BRE/NHBC Requirements	Heave Stopper Thickness	Colour Code
	Plasticity Index	Shrinkage Potential	Void		
HS060	10 - 20	Low	50mm	60mm	Red
HS110	20 - 40	Medium	100mm	110mm	Green
HS160	40 - 60	High	150mm	160mm	White

Heave Stopper has a compressive strength of 30kN/m².

When dry, it is designed to have sufficient strength to support wet concrete and steel up to 1 metre thick.

The board's mechanical properties have been independently tested at the BRE Innovation Park. Tests show that the initial saturation procedure leaves just 10mm of material in the void zone.

Ultimately a 100% clear void is created which is in excess of the specified requirements and with zero kN/m² of transmitted force.

Heave Stopper can also be used horizontally and vertically to create a void to protect structures from vibration.

Heave Stopper - Protect

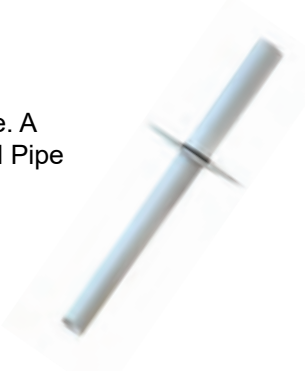
Heave Stopper is also available packaged in a Water Tight 500g Polythene bag to protect the board against natural elements.

Please note that the boards will need to be removed from the Polythene bags prior to the concrete being poured.

Void Pipes

Make provision to introduce water in to the Heave Stopper boards by way of the Void Pipe. A Void Pipe is required every 25m² or for every isolated area of Heave Stopper. Tie the Void Pipe to adjacent reinforcement to hold upright during the concrete pour.

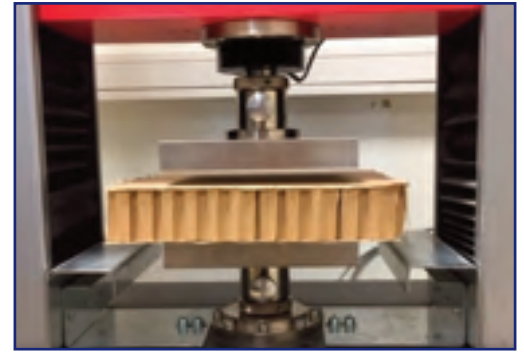
Available in 450mm and 600mm lengths.



The maximum NHBC void from just 160mm board

Heave Stopper is the ultimate reduced dig solution for void creation.

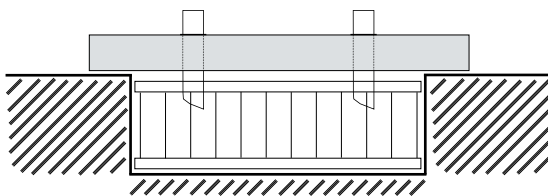
- The slimmest method of void creation.
- A perfect solution for contaminated land and brownfield sites.
- Ideal for sites with restricted access.
- The dense cell structure of the board creates a solid working surface that does not need hardboard or concrete binding.
- Lowest possible forces transmitted to the structure.
- BBA certified
- Complies with NHBC standards chapter 4.2



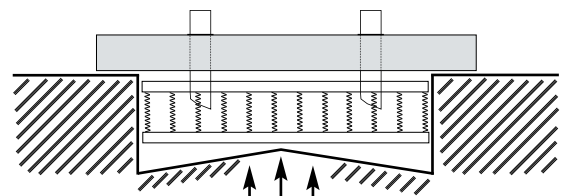
Heave Stopper Board Size

Heave Stopper is supplied in boards 2400mm x 1200mm as standard.

Boards can be cut to your required size prior to delivery, helping save time and costs on site.



Heave Stopper without water



Heave Stopper after water is introduced showing ground heave

Environmental Benefits

The environmental and sustainability credentials of Heave Stopper are second to none.



- The core facings are manufactured from 100% recycled materials.
- Materials are FSC approved.
- Efficiency of void creation means less excavation, muck away, vehicle movements and landfill.
- Easily recycled in normal waste streams.
- No need for collections from site and processing at specialist facilities.
- Naturally biodegradable.
- Design thinner slabs and beams using less concrete and reinforcement.

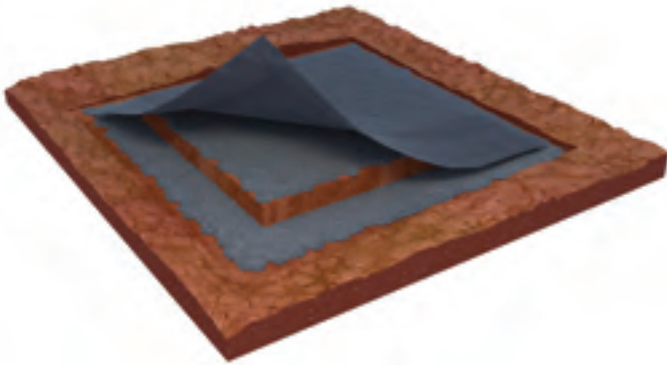
Storage & Installation

1



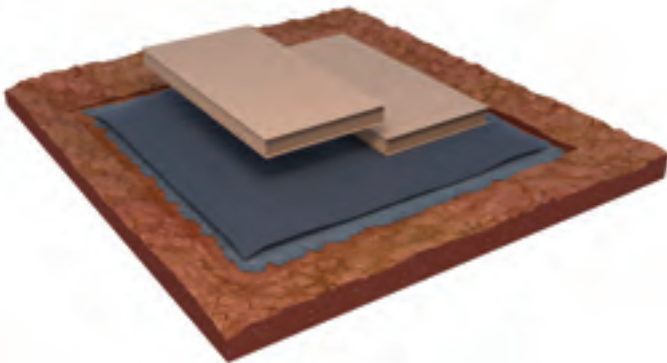
The boards must be kept dry, stored off the ground and on the delivery pallets to prevent any moisture ingress whilst in storage. Stacked pallets must not exceed 2 high. The protective cover must not be removed until ready for use.

2



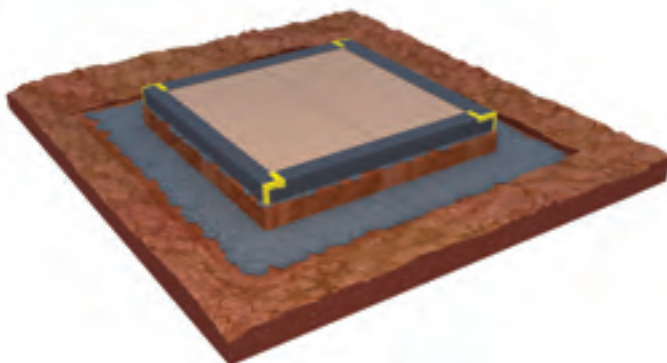
Ensure that the area is free of surface water. Heave Stopper must not be placed in waterlogged ground. Lay a sand, shingle or concrete blinding to provide a level bed for the boards to rest on with no pressure points to the underside.

3



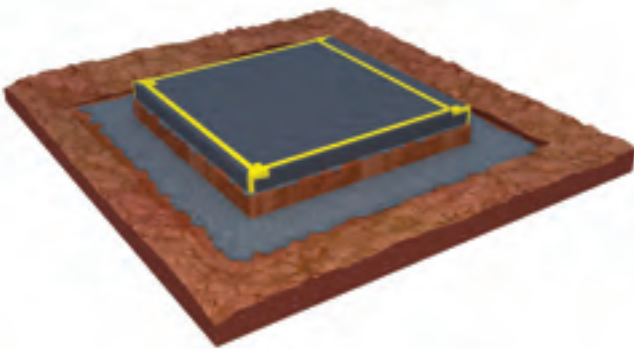
Lay minimum 125mu (500 gauge) polythene the full width of the excavation and tape all joints. Pay attention to detailing around pile penetrations and corners to ensure a watertight seal. Good practice requires that enough polythene is laid to fold over the Heave Stopper boards to lap with the top layer of polythene. Position Heave Stopper boards.

4



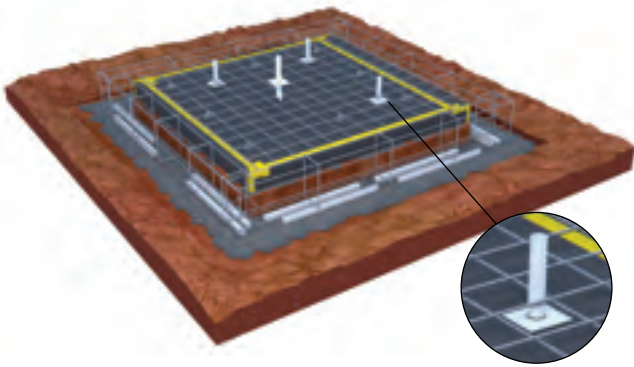
Fold over the polythene from the bottom layer to the top face of the Heave Stopper boards and tape all joints.

5



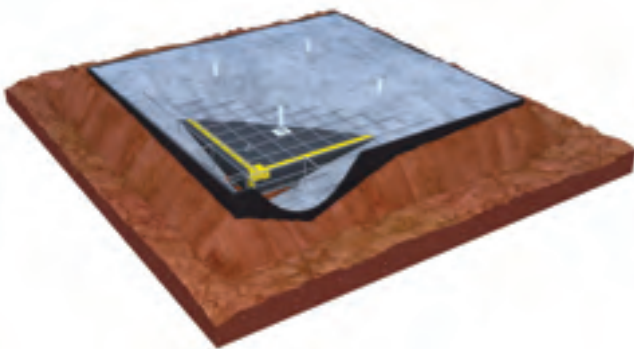
Lay minimum 125mu (500 gauge) polythene over the Heave Stopper boards and tape all joints. Ensure there is a good seal where bottom layer of polythene meets tops layer of polythene.
Fix reinforcement.

6



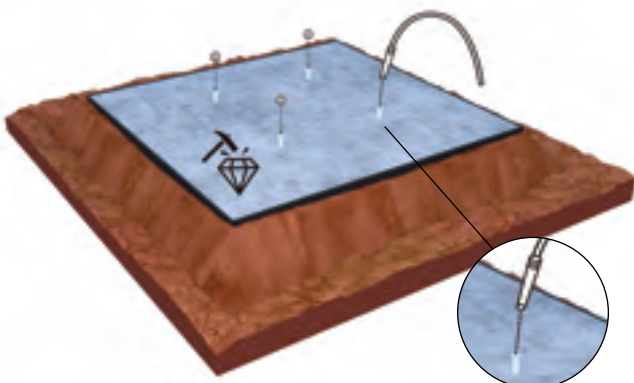
Use enough spacer blocks to avoid load points and lay the reinforcement.
Make provision to introduce water into the Heave Stopper boards by way of the Void Pipe. A Void Pipe is required every 25m² or for every isolated area of Heave Stopper. Tie the Void Pipe to adjacent reinforcement to hold upright during concrete pour.

7



Pour concrete and allow enough time to elapse for the concrete to become self supporting.

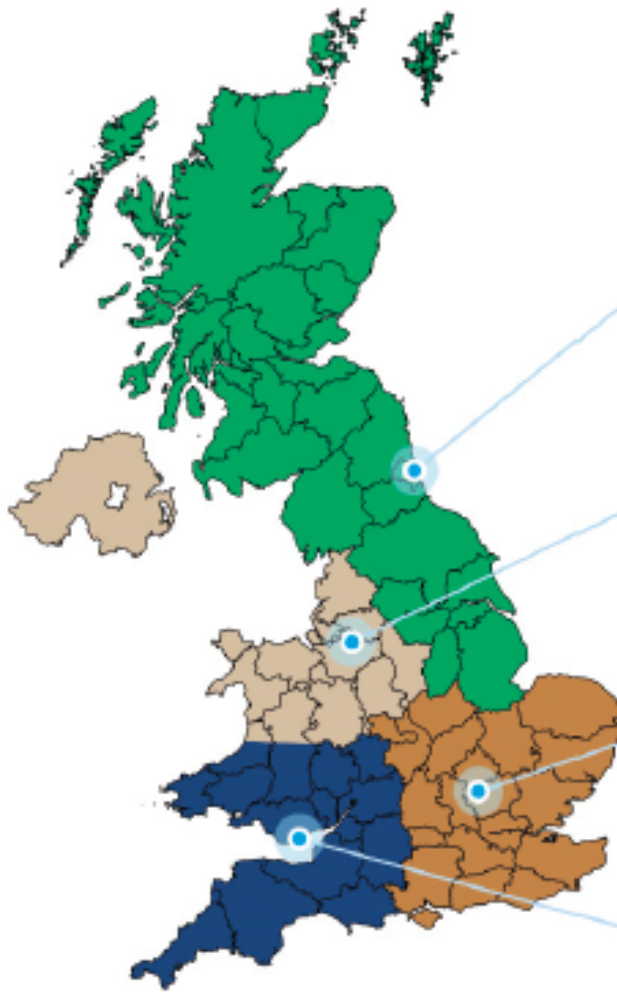
8



Introduce water into the Heave Stopper boards by inserting a hose pipe into the Void Pipe. Flood with enough water to ensure total saturation of the Heave Stopper.
Once the saturation process is complete, strike through the bottom facing and polythene to allow the water to drain.
Pipe sections can now be sealed off with cement or sealant.

Bluebay Distribution Network

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