



# THE REVOLUTIONARY GROUND HEAVE SOLUTION



**VOID-TEK**

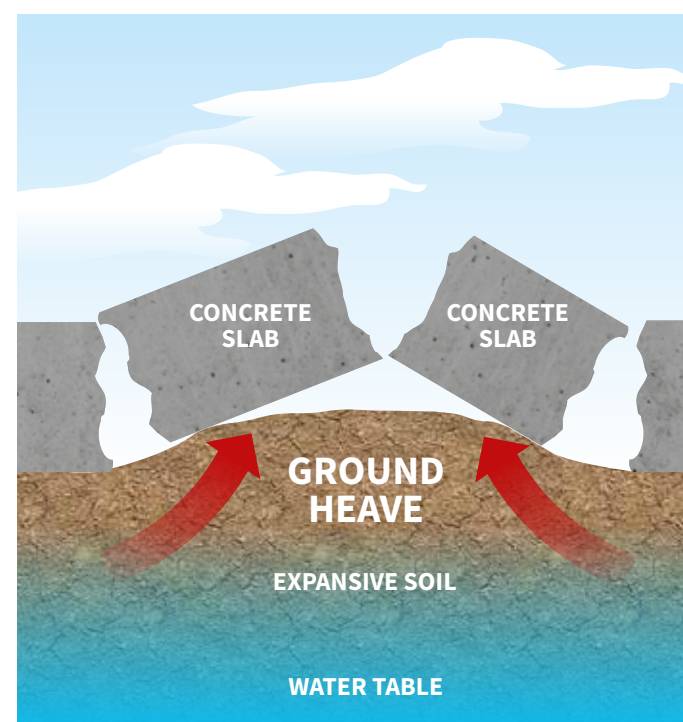
SAVES TIME, SPACE AND COST



# GROUND HEAVE. A MAJOR PROBLEM WHEN BUILDING ON CLAY.

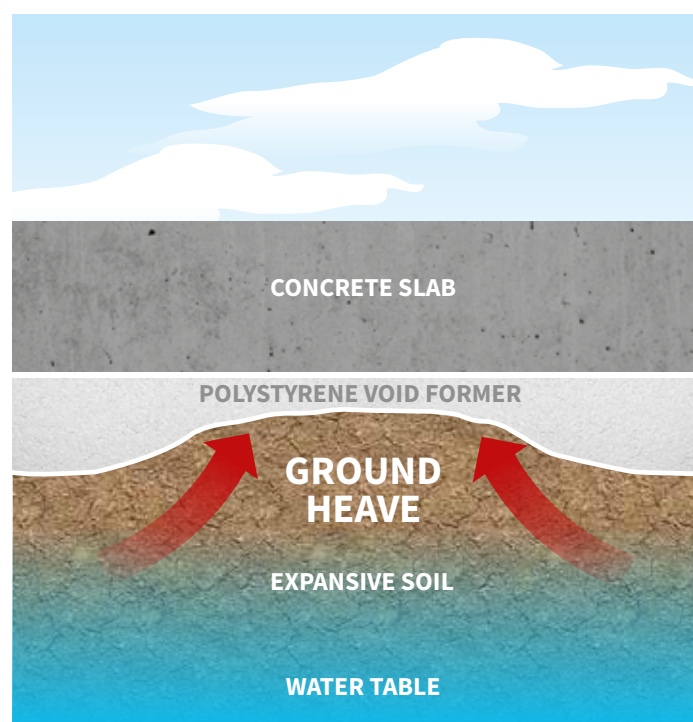
## THE PROBLEM.

Ground heave is the upward movement of the ground surface caused by the expansion of clay soils when they absorb water. It can damage structures and infrastructure if not properly managed.



## THE CONVENTIONAL SOLUTION.

Conventional solutions often include the introduction of a polystyrene cellular structure or void former. These are placed beneath the foundation, creating a void that allows for the upward movement of the ground without affecting the structure above.



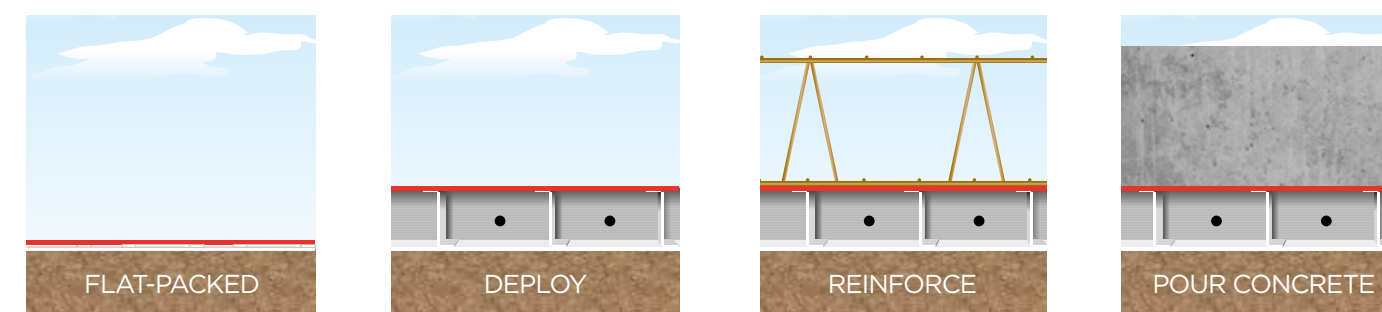
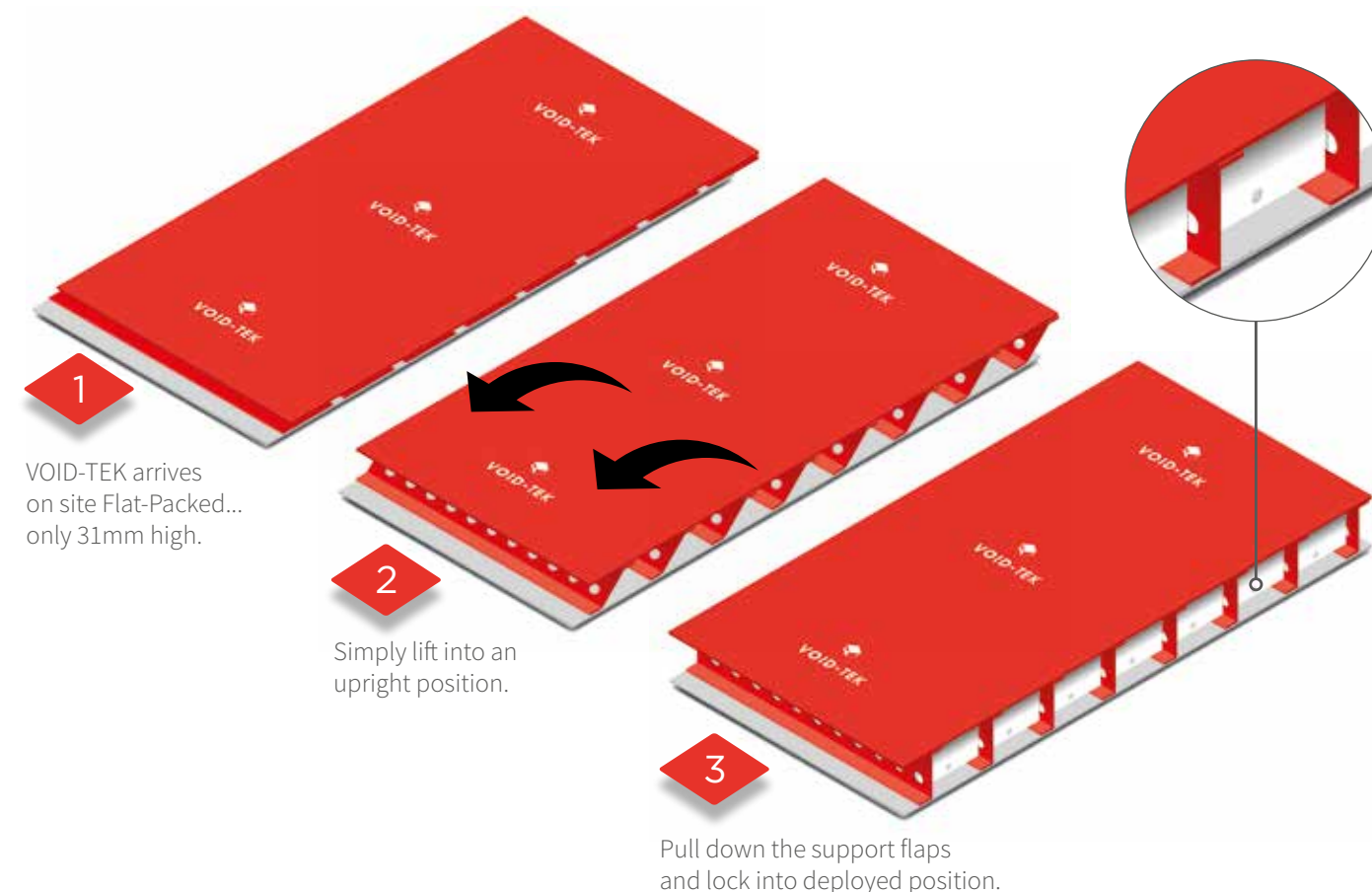
## BUT CLAY ISN'T THE ONLY UPHEAVAL ON YOUR GROUNDWORKS PROJECT... POLYSTYRENE IS ALSO.

- ✗ EXCESSIVE DIG**  
Oversized polystyrene void former due to the inability to compress sufficiently
- ✗ BULKY**  
Leading to excessive transport, handling and storage costs
- ✗ EASY TO DAMAGE + EXCESSIVE WASTE**  
Approximately 10% wastage and expensive disposal costs
- ✗ HARMFUL TO THE ENVIRONMENT**  
Due to its molecular breakdown and static nature

# THE REVOLUTIONARY SPACE SAVING & COST SAVING HEAVE PROTECTION PANEL. **VOID-TEK**



## INTRODUCING VOID-TEK TECHNOLOGY.



- ✓ REDUCES DIG**  
Saving labour & muck away costs
- ✓ FLAT-PACKED ON ARRIVAL**  
Vast reduction in transport costs and less space needed for storage
- ✓ DEPLOYS IN SECONDS**  
Quick to assemble, less breakage and easy to cut with minimal mess
- ✓ POLYSTYRENE FREE & HIGH STRENGTH**  
Made from polypropylene fluted board - no crushing/snapping & better for the environment

TURN  
THE PAGE  
TO SEE THE  
SAVINGS!



IMAGINE THE SAVINGS  
BY MAKING VOID-TEK  
YOUR PREFERRED  
GROUND HEAVE  
SOLUTION.



EXAMPLE PROJECT\*

|                       |          |
|-----------------------|----------|
| Ground area           | 1420 sqm |
| Location              | London   |
| Clay plasticity       | 40-60%   |
| NHBC void requirement | 150mm    |

Savings based on following:

- Dig depth
- Deliveries
- Unloading time
- Storage area
- Speed of install
- Waste allowance
- Skip hire

\* These are estimated quantities and savings based on industry knowledge and each project needs to be assessed in its own right.

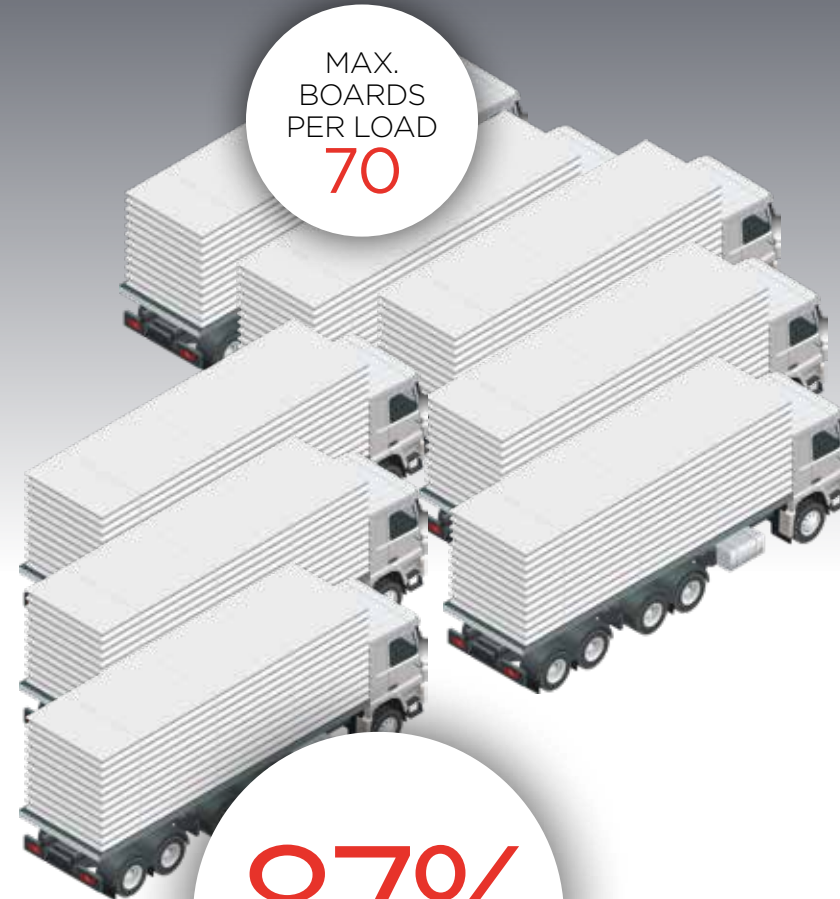
CONVENTIONAL PRODUCT

VOID-TEK SOLUTION

THE MATHS



DIG DEPTH  
**225MM**

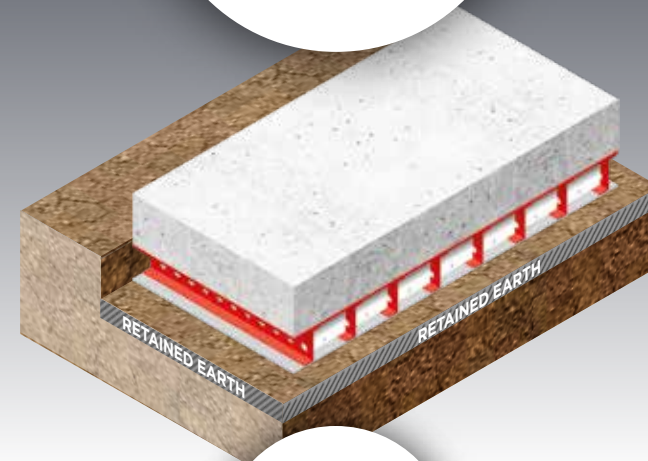


MAX.  
BOARDS  
PER LOAD  
**70**



UNLOAD  
TIME  
**54**  
MAN HRS

MINIMUM  
**13%**  
DIG REDUCTION



DIG DEPTH  
**190MM**

**87%**  
LESS DELIVERIES  
& EMISSIONS



MAX.  
BOARDS  
PER LOAD  
**532**

**96%**  
LESS UNLOADING  
TIME



UNLOAD  
TIME  
**2.3**  
MAN HRS

|                       | Overall height | Predicted ground movement |
|-----------------------|----------------|---------------------------|
| VOID-TEK              | 190mm          | 150mm                     |
| Conventional supplier | 225mm          | 150mm                     |

- ▶ Reduction in labour costs
- ▶ Reduction in plant hire costs
- ▶ Reduction in muck-away costs
- ▶ Approx. cost saving per sqm **£2.78**

|                          | Conventional product | VOID-TEK |
|--------------------------|----------------------|----------|
| Delivered/stored size    | 225mm H              | 31mm H   |
| Installed size           | 225mm H              | 190mm H  |
| Boards per vehicle       | 532                  | 70       |
| No. of vehicles required | 1                    | 8        |

- ▶ Reduction in no. of delivery vehicles
- ▶ Reduction in fuel, emissions & carbon footprint
- ▶ Reduction in on-site management
- ▶ Approx. cost saving per sqm **£2.15**

|                       | No. of vehicles | Total unload time |
|-----------------------|-----------------|-------------------|
| VOID-TEK              | 1               | 2.3 man hours     |
| Conventional product* | 8               | 54 man hours      |

\* hand-balled by 2 man team

- ▶ Reduction in labour/banksman costs
- ▶ Reduction in breakage
- ▶ Reduction in unloading on site
- ▶ Approx. cost saving per sqm **£1.12**

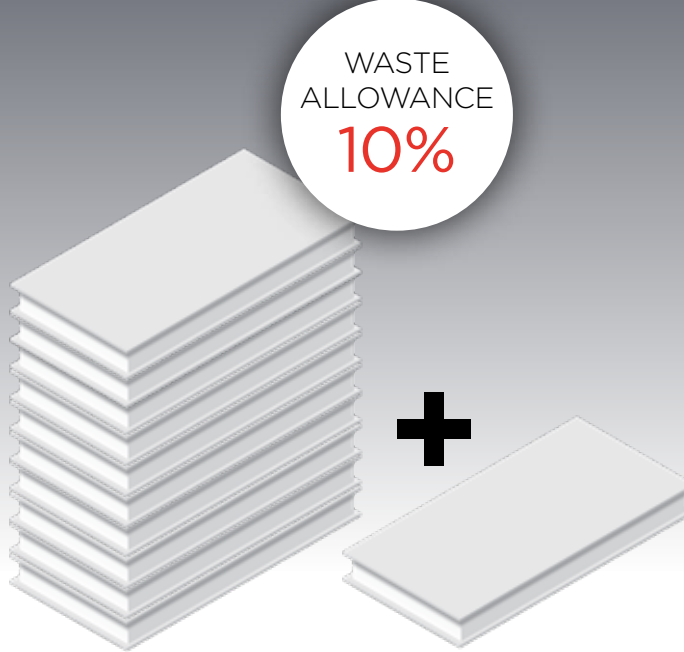




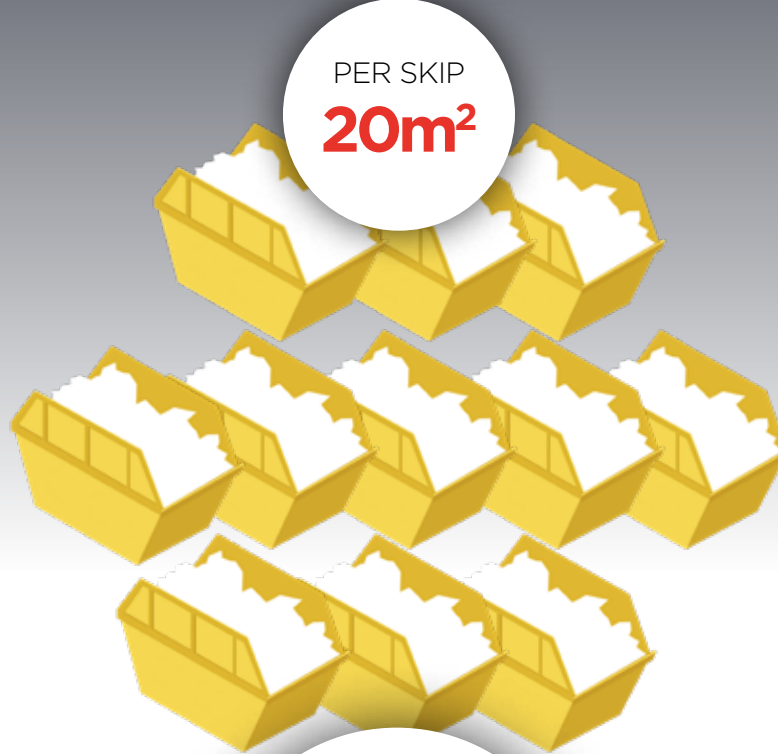
STORAGE  
AREA  
**156M<sup>2</sup>**



BULKY,  
MESSY  
& REQUIRES  
SAW TO CUT



WASTE  
ALLOWANCE  
**10%**



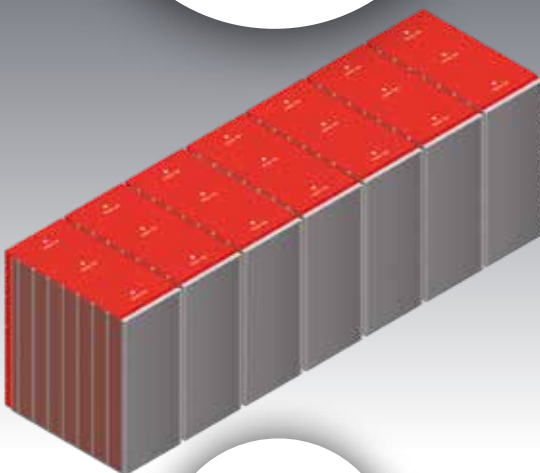
PER SKIP  
**20m<sup>2</sup>**

**87%**  
LESS STORAGE  
ON SITE

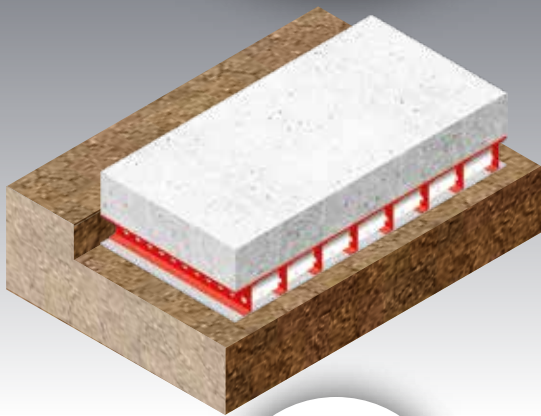
**25%**  
FASTER  
INSTALL

**50%**  
LESS WASTE

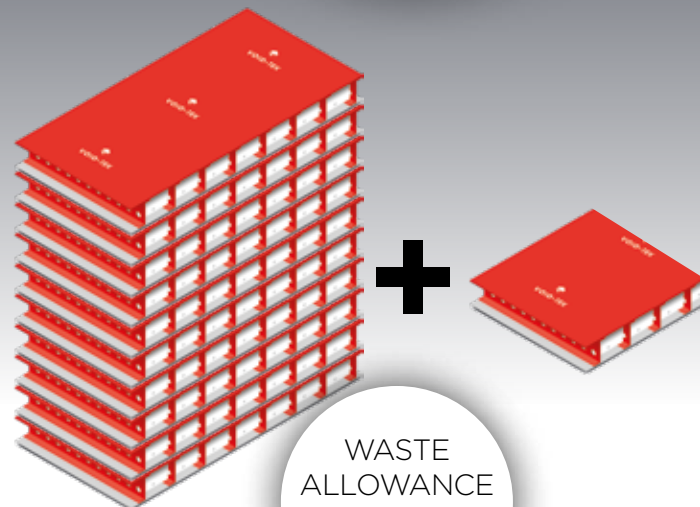
**96%**  
LESS SKIP HIRE  
COST



STORAGE  
AREA  
**20M<sup>2</sup>**



FLATPACKED,  
DEPLOYED  
IN SECONDS  
& REQUIRES  
STANLEY KNIFE  
TO CUT



WASTE  
ALLOWANCE  
**5%**



PER SKIP  
**225m<sup>2</sup>**

|                       | sq m |
|-----------------------|------|
| VOID-TEK*             | 20   |
| Conventional product* | 156  |

\* Assuming stacked 2-3 Metres high

- ▶ Reduction in storage area required
- ▶ Easier accessibility to product
- ▶ Easy to self store
- ▶ Reduction in site logistics of movement
- ▶ Approx. cost saving per sqm **£0.29**

|                      | Install time saved |
|----------------------|--------------------|
| VOID-TEK             | 25%                |
| Conventional product | 0%                 |

- ▶ Reduction in labour costs
- ▶ Reduction in logistics
- ▶ Easier/quicker to cut
- ▶ Approx. cost saving per sqm **£0.72**

|                   | Conventional product | VOID-TEK |
|-------------------|----------------------|----------|
| Wastage allowance | 10%                  | 5%       |

- ▶ Reduction in no. of units damaged
- ▶ Reduction in logistics
- ▶ Reduction in re-ordering
- ▶ Approx. cost saving per sqm **£1.07**

|                      | No. of skips |
|----------------------|--------------|
| VOID-TEK             | 1            |
| Conventional product | 11.25        |

- ▶ Reduction in labour costs
- ▶ Reduction in skip hire
- ▶ Reduction in disposal costs
- ▶ Approx. cost saving per sqm **£2.39**



VOID-TEK

## REVOLUTIONARY STRENGTH & FLEXIBILITY.

VOID-TEK is made entirely from Polypropylene Fluted Board which has high strength and durability.

In contrast, conventional heave protection systems that are constructed with a polystyrene core are easily damaged and are liable to break and crumble, reducing performance, increasing an already unpredictable wastage allowance and ultimately cost.



### STANDS UP TO THE TEST

The high strength and durability of the VOID-TEK flat-packed design, minimises damage wastage. Even when deployed into position, it is very difficult to damage under foot. When minimal waste is generated, there are no messy polystyrene chips to dispose of.



### SHAPING UP FOR THE JOB

VOID-TEK is extremely easy to cut with a compact Stanley knife, due to the hollow and polystyrene free nature of the construction. VOID-TEK can also be ordered and configured to specific size requirements for use beneath reinforced concrete ground beams and pile caps.

**PREMCRETE**

## SUMMARY OF SAVINGS.

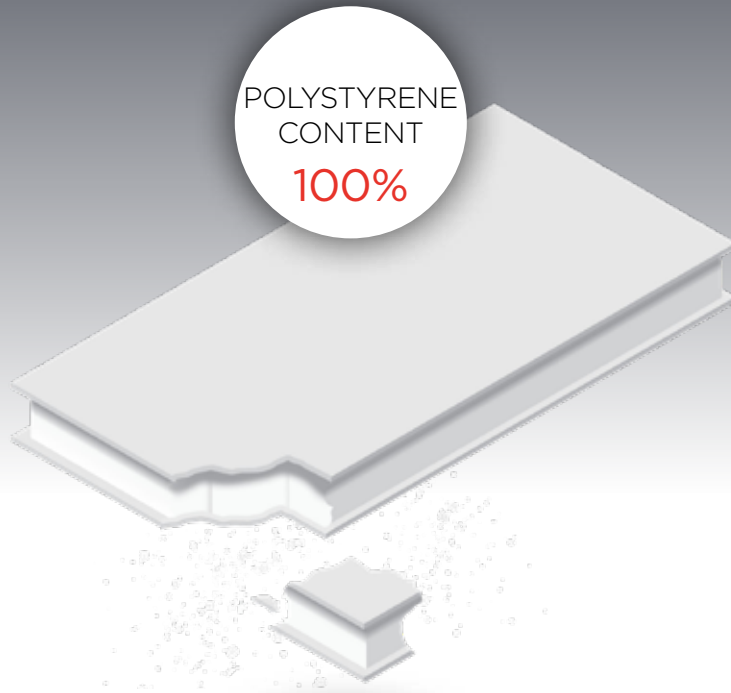
| The saving           | Saving per m <sup>2</sup> |
|----------------------|---------------------------|
| Dig depth            | £2.78                     |
| Delivery vehicles    | £2.15                     |
| Unload time          | £1.12                     |
| Storage area         | £0.29                     |
| Speed of install     | £0.72                     |
| Waste allowance      | £1.07                     |
| Skip hire            | £2.39                     |
| Other savings        | £0.18                     |
| <b>Total savings</b> | <b>£10.70</b>             |

**COST  
SAVING  
£15,194**  
FOR 1420SQM  
PROJECT

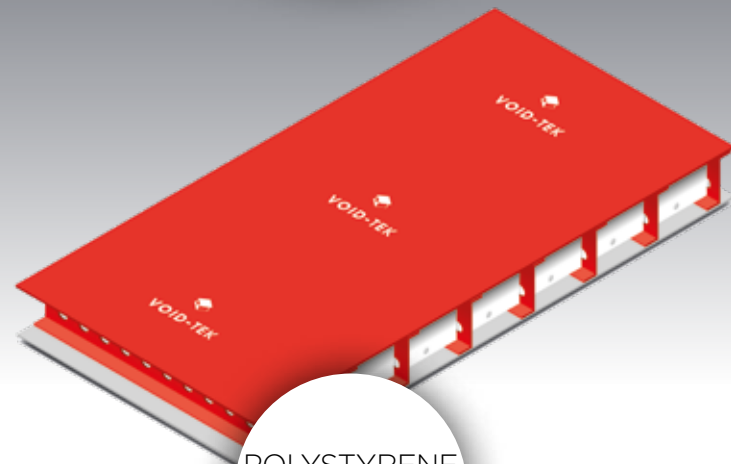


Scan the QR Code and visit our online VOID-TEK calculator and see how much you can save on your next groundworks project.

POLYSTYRENE  
CONTENT  
**100%**



**100%**  
REDUCTION IN  
POLYSTYRENE  
& SITE TIDY



POLYSTYRENE  
CONTENT  
**0%**

Core polystyrene content

|                      |      |
|----------------------|------|
| VOID-TEK             | 0%   |
| Conventional product | 100% |

- ▶ Reduction in messy/static polystyrene
- ▶ Reduction in wastage & disposal
- ▶ Reduction in site tidy labour
- ▶ Approx. cost saving per sqm **£0.18**



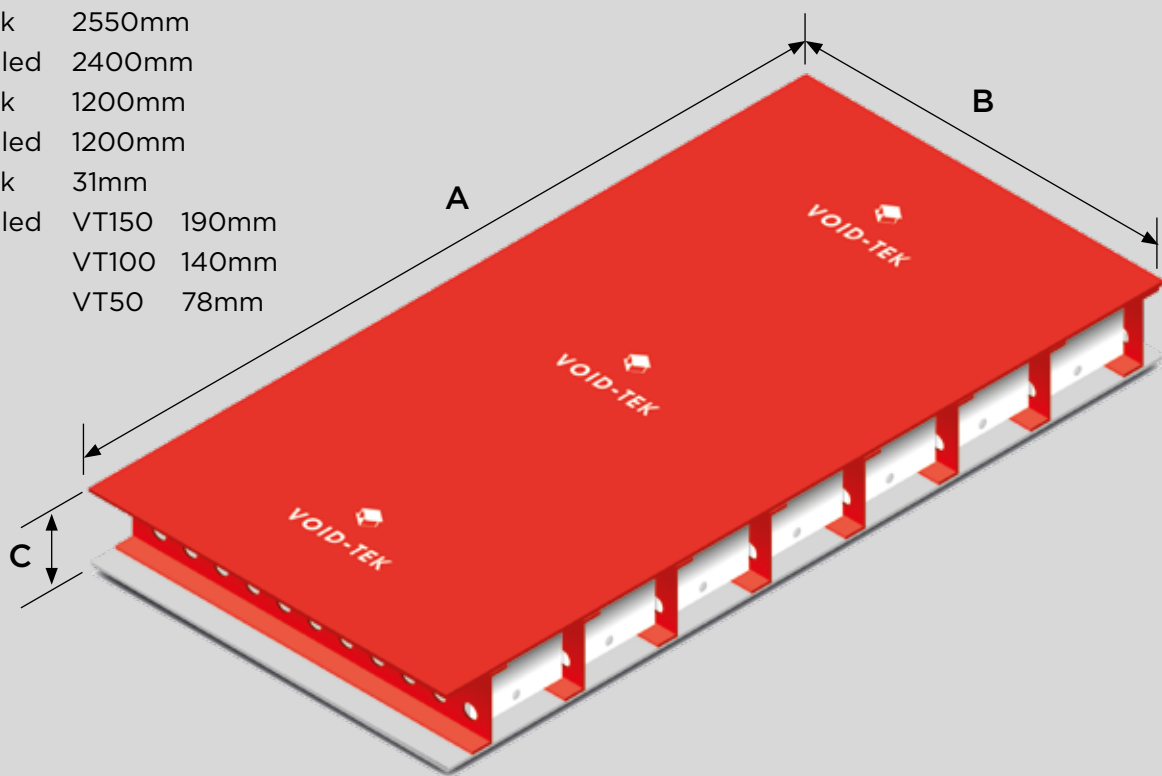
# VOID-TEK SPECIFICATIONS.

### ADVANTAGES

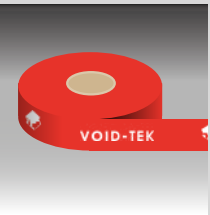
- VOID-TEK Presents some unique advantages over conventional void former systems as follows;
- **Reduces dig** - saving labour & muck away costs.
  - **Flat-packed on arrival** - vast reduction in transport costs and less space needed for storage.
  - **Deploys in seconds** - quick to assemble, less breakage and easy to cut with minimal mess.
  - **Polystyrene free & high strength** - made from polypropylene fluted board - no crushing/snapping & better for the environment.



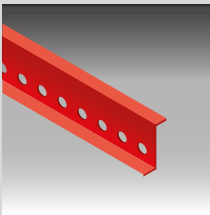
|   |        |           |             |
|---|--------|-----------|-------------|
| A | Length | flat pack | 2550mm      |
|   |        | assembled | 2400mm      |
| B | Width  | flat pack | 1200mm      |
|   |        | assembled | 1200mm      |
| C | Depth  | flat pack | 31mm        |
|   |        | assembled | VT150 190mm |
|   |        |           | VT100 140mm |
|   |        |           | VT50 78mm   |



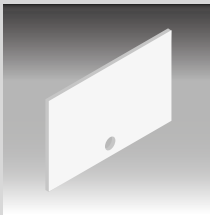
### ANCILLARY PRODUCTS



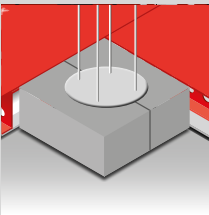
VOID-TEK Tape  
50mm x 50m



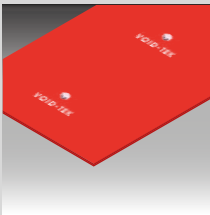
VOID-TEK Central Fin (10Pk)



VOID-TEK Interlock Fin



VOID-TEK Pile Collar



VOID-TEK Vertical Void Former

HEAVE PROTECTION SHEET  
1.2 x 2.4M x 50mm  
1.2 x 2.4M x 75mm

### DESCRIPTION

VOID-TEK is a collapsible void former which is used to protect concrete structures from the effects of ground heave, typically associated with clay soils. It is supplied in a thickness which is suited to accommodate the plasticity range as identified.

The product consists of folding polypropylene sections which are bonded together to produce a robust structure which can withstand a load implied by up to 900mm thickness of concrete. Its unique structure means that it arrives on site just 31mm thick and is deployed in seconds to produce the required Void former.

When the product collapses due to the upward pressure caused by ground heave, the VOID-TEK sheet will compress to a thickness of just 31mm creating the required void.

### USES

VOID-TEK is used beneath suspended structural concrete slabs to create a void which allows ground heave to occur without adversely affecting the integrity of the concrete.

VOID-TEK can also be ordered and configured to specific size requirements for use beneath reinforced concrete ground beams and pile caps.

### SURFACE PREPARATION

The sub-base should be well compacted and flat with no excessive surface undulations.

Lean mix concrete blinding trowelled to a smooth finish provides a perfect substrate.

### APPLICATION

The VOID-TEK sheets can be easily placed by one or two installers.

The void former can then be deployed by lifting the top sheet upwards and ensuring that the interlocking hinged flaps unfold to lock the void former in its deployed position.

VOID-TEK sheets can be easily cut using a Stanley knife to fit the profile of the formwork etc.

VOID-TEK sheets are butted together and taped using VOID-TEK tape to ensure no grout loss occurs during concrete pour.

VOID-TEK sheets should be cut parallel to the long edge and the minimum width should be 500mm. Where the cut of the sheet has removed the hinged interlocking flap, then a pre-taped Central Fin should be inserted at the appropriate location in conjunction with the Interlock Fin to secure the rigidity of the product.

Reinforcement spacer blocks should be laid parallel to the long edge to ensure the point loading is spread along the length of the VOID-TEK sheet.

### STORAGE AND HANDLING

VOID-TEK sheets should be stored securely and suitably restrained to prevent wind-lift. VOID-TEK sheets are easily handled by one or two installers.

TABLE 1

| Results of Soil Analysis Plasticity index | NHBC Category Shrinkage | Predicted Ground Movement or BRE/NHBC requirement Void dimension | Depth of Conventional Polystyrene Void Former required to achieve 'Equivalent Void' | VOID-TEK Product Code | VOID-TEK depth required to achieve 'Equivalent Void' | Reduced Dig for VOID-TEK Versus 'Conventional' |
|-------------------------------------------|-------------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------|------------------------------------------------|
| 10 to 20%                                 | Low                     | 50mm                                                             | 90mm                                                                                | VT50                  | 78 mm                                                | 12mm                                           |
| 20 to 40%                                 | Medium                  | 100 mm                                                           | 160mm                                                                               | VT100                 | 140mm                                                | 20mm                                           |
| 40 to 60%                                 | High                    | 150mm                                                            | 225mm                                                                               | VT150                 | 190mm                                                | 35mm                                           |

TABLE 2

| VOID-TEK Grade | Safe Load (kN/ m <sup>2</sup> ) | Fail Load (kN/ m <sup>2</sup> ) | Maximum Concrete Depth | Deflection under load | Deflection under point load |
|----------------|---------------------------------|---------------------------------|------------------------|-----------------------|-----------------------------|
| 7/10           | 7                               | 10                              | 220mm                  | < 5mm                 | < 5mm                       |
| 9/13           | 9                               | 13                              | 300mm                  | < 5mm                 | < 5mm                       |
| 14/18          | 14                              | 18                              | 500mm                  | < 5mm                 | < 5mm                       |
| 18/24          | 18                              | 24                              | 660mm                  | < 5mm                 | < 5mm                       |
| 24/32          | 24                              | 32                              | 900mm                  | < 5mm                 | < 5mm                       |
| 32/40          | 32                              | 40                              | 1220mm                 | < 5mm                 | < 5mm                       |
| 40/50          | 40                              | 50                              | 1540mm                 | < 5mm                 | < 5mm                       |
| 50/65          | 50                              | 65                              | 1940mm                 | < 5mm                 | < 5mm                       |

### TRIED & TESTED

- ✓ Independently tested by UKAS accredited test house
- ✓ Patented technology - Patent Nr. GB2601425
- ✓ BDA Agrément certificate pending (2023 Q4)



## PREMCRETE - STRUCTURED FOR PEACE OF MIND

By combining extensive experience, technical expertise and a diverse product range, we produce solutions for new and existing construction projects that require below-ground structural waterproofing and gas protection.

We manufacture epoxy and cementitious screeds, resin flooring systems, technical grouts, anchor resins, joint sealants and high-quality concrete repair systems.

Premcrete can offer designs for substructure protection against water and gas ingress, whilst ensuring all related ancillary products are also available within the range to provide compatibility.

**BDA Expert Centre**

Pending (2023 Q4)



### WATCH THE VIDEO

Scan the QR code and link to our comprehensive step by step guide to VOID-TEK.

#### Contact us:

[www.premcrete.com](http://www.premcrete.com) | 02380 276166 | [sales@premcrete.com](mailto:sales@premcrete.com)  
44 Macadam Way, West Portway, Andover, Hampshire SP10 3XW

