GEOCELL® FOAM GLASS GRAVEL
HIGH PERFORMANCE IN EVERY ASPECT

THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS
<table>
<thead>
<tr>
<th>INDEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is GEOCELL? ..................................................</td>
</tr>
<tr>
<td>Construction Details – Conventional vs GEOCELL ..........</td>
</tr>
<tr>
<td>Cost Comparison – Conventional Construction ..............</td>
</tr>
<tr>
<td>Cost Comparison – Ecological Alternative ..................</td>
</tr>
<tr>
<td>Glasscrete ..................................................................</td>
</tr>
<tr>
<td>Design Data – Uses and Design Values ......................</td>
</tr>
<tr>
<td>Design Data – Design Thickness and U Values .............</td>
</tr>
<tr>
<td>Project References ..................................................</td>
</tr>
<tr>
<td>Delivery Options ....................................................</td>
</tr>
</tbody>
</table>
Manufactured from 100% recycled WASTE GLASS

ECOFRIENDLY INSULATION FOR FLOOR CONSTRUCTION AND FOUNDATIONS
INDEPENDENTLY APPROVED THERMAL AND LOAD BEARING PROPERTIES
COST SAVING COMPARED TO CONVENTIONAL FLOOR CONSTRUCTION
MANUFACTURED FROM 100% RECYCLED WASTE GLASS
LOW EMBODIED CARBON – SUSTAINABLE – LIGHTWEIGHT – EASY TO HANDLE
REDUCED CONSTRUCTION TIME AND COSTS
NO MATRIX REQUIRED – NO CURING TIME
DOMESTIC BUILDING – GROUND FLOOR CONSTRUCTION
Conventional Construction (Typical Details)

1:3 CEMENT : SAND SCREED
100mm EPS INSULATION
100mm CONCRETE
SAND BLINDING – Min 50mm
COMPACTED HARDCORE/WELL GRADED SUBBASE (TYPE 1)

1:3 CEMENT : SAND SCREED
100mm EPS INSULATION
PRECAST BEAM AND BLOCK FLOOR
VENTILATED UNDERFLOOR VOID – Min 150mm

THE ECOLOGICAL ALTERNATIVE INCORPORATING GEOCELL

GROUND FLOOR – NEW BUILD
(Or renovation if DPC or Radon barrier is required)

CEMENT/SAND or LIME/SAND SCREED
COMPACTED GEOCELL FOAM GLASS
SUBSOIL

DPM position may vary as required
DPM or Radon GEOTEXTILE
GEOTEXTILE

GROUND FLOOR – RENOVATION
(Breathable GlassCrete system)

1:3 or 1:2 LIME : SAND SCREED
COMPACTED GEOCELL FOAM GLASS
SUBSOIL

GEOTEXTILE

INSULATED FOUNDATION DETAIL
(Domestic)

INSULATED FOUNDATION DETAIL
(Commercial)

THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS
## Supply and Installation of Ground Flooring

### Domestic Building – Ground Floor Construction

**Conventional Construction (Typical Detail)**

### 1:3 Cement : Sand Screed
- **VAPOUR BARRIER**
- **DPM**
- **100mm EPS Insulation**
- **100mm Concrete**
- **Sand Blinding – Min 50mm**
- **Compacted hardcore/well graded subbase (Type 1)**

### Supply and Installation of Ground Flooring

**Conventional Construction**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate (£/m²)</th>
<th>Amount (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply and install compacted well graded granular sub-base as Type 1 150mm thk</td>
<td>0.15</td>
<td>m³</td>
<td>165.00</td>
<td>1237.50</td>
</tr>
<tr>
<td>2</td>
<td>Supply and install sand blinding 50mm thk</td>
<td>0.05</td>
<td>m³</td>
<td>155.00</td>
<td>387.50</td>
</tr>
<tr>
<td>3</td>
<td>Supply and install 1200 gauge dpm</td>
<td>50</td>
<td>m²</td>
<td>2.15</td>
<td>107.50</td>
</tr>
<tr>
<td>4</td>
<td>Supply and install 100mm thk oversite concrete grade GEN 1 or ST2 consistency class S2</td>
<td>0.10</td>
<td>m³</td>
<td>180.00</td>
<td>900.00</td>
</tr>
<tr>
<td>5</td>
<td>Supply and install 100mm EPS/PU Insulation Lambda 0.023 W/mK</td>
<td>50</td>
<td>m²</td>
<td>22.25</td>
<td>1112.50</td>
</tr>
<tr>
<td>6</td>
<td>Supply and install vapour barrier</td>
<td>50</td>
<td>m²</td>
<td>1.60</td>
<td>80.00</td>
</tr>
<tr>
<td>7</td>
<td>Supply and install premixed 1:4 cement: sand screed with micro fibre reinforcement 65mm thk.</td>
<td>50</td>
<td>m²</td>
<td>19.10</td>
<td>955.00</td>
</tr>
<tr>
<td>8</td>
<td>Clean up on completion including the provision of a skip for the disposal of off cuts of EPS Insulation <strong>ANTICIPATED TIME FOR UNDERTAKING THESE WORKS</strong></td>
<td>Item</td>
<td></td>
<td>200.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 days</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Total Cost: £4980.00

### Notes:
- **Figures are for comparison only – Contractor costs may differ**
- **The ecological alternative for all foundations**
DPM position may vary as required

SUPPLY AND INSTALLATION OF GROUND FLOORING
ECOLOGICAL ALTERNATIVE WITH GEOCELL FOAM GLASS GRAVEL

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Rate</th>
<th>Amount £</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply and install GEOCELL foam glass gravel including all compaction, Lambda 0.08 W/mK 350mm thk</td>
<td>0.35</td>
<td>m³</td>
<td>22.75</td>
<td>120.00</td>
</tr>
<tr>
<td>2</td>
<td>Supply and install geotextile</td>
<td>100</td>
<td>m³</td>
<td>1.56</td>
<td>156.00</td>
</tr>
<tr>
<td>3</td>
<td>Supply and install 1200 gauge dpm</td>
<td>50</td>
<td>m³</td>
<td>2.15</td>
<td>107.50</td>
</tr>
<tr>
<td>4</td>
<td>Supply and install premixed 1:4 cement: sand screed with micro fibre reinforcement 65mm thk.</td>
<td>50</td>
<td>m³</td>
<td>19.10</td>
<td>955.00</td>
</tr>
<tr>
<td>5</td>
<td>Clean up on completion</td>
<td>inc.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ANTICIPATED TIME FOR UNDERTAKING THESE WORKS 2 days

3948.50

FIGURES ARE FOR COMPARISON ONLY – CONTRACTOR COSTS MAY DIFFER

THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS
**GROUND FLOOR – RENOVATION**
Breathable GlassCrete system – LABC Registered

![Diagram of GEOCELL® FOAM GLASS GRAVEL system](image)

- **1:3 or 1:2 LIME : SAND SCREED**
- **COMPACTED GEOCELL FOAM GLASS**
- **GEOTEXTILE**
- **SUBSOIL**

- **Cork Perimeter Board**
- **Natural Hydraulic Lime Screed**
- **E’Grid 2020 Biaxial Geogrid for Clipping UFH Pipes**
- **Geotextile Membrane**
- **GEOCELL Foam Glass Aggregate**
- **Geotextile Membrane**

**GLASSCRETE INSULATED FLOOR**

- **Typical build up from top:**
  - Flagstone/floor finish
  - Lime Screed
  - E’Grid 2020 Geogrid (if fixing UFH pipes)
  - Geotextile membrane
  - Geocell Foam Glass Aggregate (compacted)
  - Geotextile membrane

**THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS**
GEOCELL® FOAM GLASS GRAVEL

DESIGN DATA

GEOCELL is an aerated foam glass gravel manufactured from 100% recycled waste glass.

GEOCELL is light weight material having a loose bulk density of approx 150kg/m³.

Uses of GEOCELL include:

- Load bearing thermal insulation beneath floor slabs providing a complete replacement for conventional hardcore, blinding, oversite concrete and expanded polystyrene construction or precast beam and block and polystyrene insulation flooring.
- Load bearing thermal insulation beneath foundations.
- Light weight fill for landscaping including french drains.

GEOCELL is chemically inert and complies with requirements for environmental compatibility.

GEOCELL does not present any hazard to the health and safety of persons involved with its installation or use.

GEOCELL offers: frost resistancance, prevents condensation in the building component, self-draining, diffusible, no gas emission and odor free, anti-capillary against rising water, incombustible class A1, anti-aging, rodent, bacteria, and rot resistantance, long-term stability, no damage to concrete.

Design characteristics of GEOCELL:

<table>
<thead>
<tr>
<th>Nominal value for compressive strength</th>
<th>Nominal value for compressive stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>fc,nom</td>
<td>fcd. = fc,nom/YM · α</td>
</tr>
<tr>
<td>570 kPa</td>
<td>275 kPa</td>
</tr>
<tr>
<td>&gt;570 (kN/m²)</td>
<td>275 (kN/m²)</td>
</tr>
</tbody>
</table>

For full details see GEOCELL Technical Data Sheet.
Design thickness of GEOCELL:
- Minimum compacted thickness of GEOCELL 10/30 is 100mm.
- Minimum compacted thickness of GEOCELL 10/60 is 150mm.
- Maximum compacted single layer thickness 300mm.
- For design thickness greater than 300mm, placing and compaction is to be undertaken in two or three layers.
- Maximum compacted thickness beneath floor slabs and foundations is 900mm.
- Compaction ratio i.e. loose material to compacted state is 1.3 : 1.

U – Values achieved using GEOCELL in situ:
(Example based on design area of 50m² with 25m exposed perimeter and clay subsoil)

<table>
<thead>
<tr>
<th>U – Values (W/m²K)</th>
<th>Loose thickness (mm)</th>
<th>Compacted thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.36</td>
<td>130</td>
<td>100</td>
</tr>
<tr>
<td>0.29</td>
<td>195</td>
<td>150</td>
</tr>
<tr>
<td>0.24</td>
<td>260</td>
<td>200</td>
</tr>
<tr>
<td>0.21</td>
<td>325</td>
<td>250</td>
</tr>
<tr>
<td>0.19</td>
<td>390</td>
<td>300</td>
</tr>
<tr>
<td>0.14</td>
<td>585</td>
<td>450</td>
</tr>
<tr>
<td>0.09</td>
<td>975</td>
<td>750</td>
</tr>
</tbody>
</table>

U – Values of GEOCELL as stand alone material:

<table>
<thead>
<tr>
<th>U – Values (W/m²K)</th>
<th>Loose thickness (mm)</th>
<th>Compacted thickness (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.80</td>
<td>130</td>
<td>100</td>
</tr>
<tr>
<td>0.53</td>
<td>195</td>
<td>150</td>
</tr>
<tr>
<td>0.40</td>
<td>260</td>
<td>200</td>
</tr>
<tr>
<td>0.32</td>
<td>325</td>
<td>250</td>
</tr>
<tr>
<td>0.27</td>
<td>390</td>
<td>300</td>
</tr>
<tr>
<td>0.18</td>
<td>585</td>
<td>450</td>
</tr>
<tr>
<td>0.11</td>
<td>975</td>
<td>750</td>
</tr>
</tbody>
</table>
Basement insulation, under slab as well as backfill, rooftop insulation and road construction: GEOCELL is an all-rounder with many benefits, cutting construction time and costs.

1. Passive house, Bruck/Waasen, Austria
2. Renovation of a historic basement and arch, Stadtkeller Pregarten, Austria
3. Passive house, Auelten, Austria
4. Kindergarten (Passive house standard) Skloah, Hannover, Germany
5. Low-energy supermarket Vienna, Austria
6. Gmunden Castle Renovation, Germany
7. AFG Fussball-Arena, St.Gallen, Switzerland
8. Passive house kindergarten, Robert Koch Strasse, Weels, Austria
9. Highschool, Lappersdorf, Germany
BULK LOOSE MATERIAL – Max 90m³
Walking floor truck – 18m x 2.5m x 4m

Pre-packed Bigbags – Max 66m³
Walking floor truck – 18m x 2.5m x 4m

Pre-packed Bigbags – 16m³ per load
Crane off load – Local delivery only

Pre-packed Bigbags – Qty as required
Pallet distribution network

Bigbags Sizes
BigBag 1 m³ ~ 150 kg
BigBag 2 m³ ~ 300 kg
BigBag 3 m³ ~ 450 kg
Eden Hot Lime Mortar
Manufacturer and retailer of Hot Lime Mortar and Lime Putty

Contact:
Edenholme,
Great Musgrave,
Kirkby Stephen,
Cumbria, CA17 4DP
Tel: 07717 400233
Email: info@edenhotlimemortar.co.uk

THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS