

**GEOCELL® FOAM GLASS GRAVEL**

**HIGH PERFORMANCE IN EVERY ASPECT**





Deutsches  
Institut  
für  
Bautechnik



# GEOCELL® FOAM GLASS GRAVEL

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**GEOCELL® FOAM GLASS GRAVEL**

**WHAT IS GEOCELL?**



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

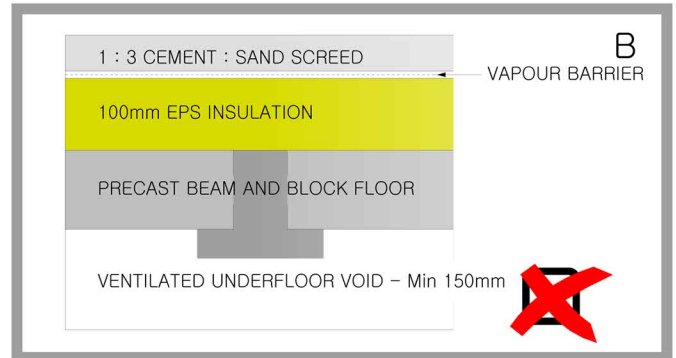
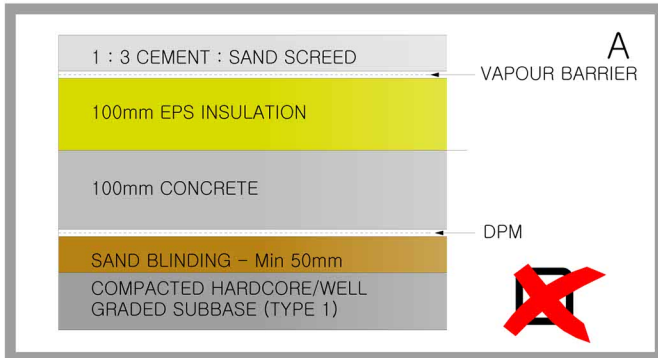
NO MATRIX REQUIRED – NO CURING TIME



**GEOCELL® FOAM GLASS GRAVEL**

**CONSTRUCTION DETAILS**

**DOMESTIC BUILDING – GROUND FLOOR CONSTRUCTION**  
Conventional Construction (Typical Details)



**THE ECOLOGICAL ALTERNATIVE INCORPORATING GEOCELL**

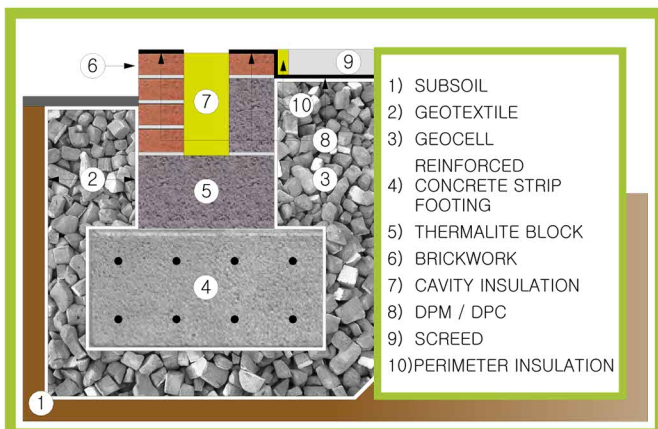
**GROUND FLOOR – NEW BUILD**  
(Or renovation if DPC or Radon barrier is required)



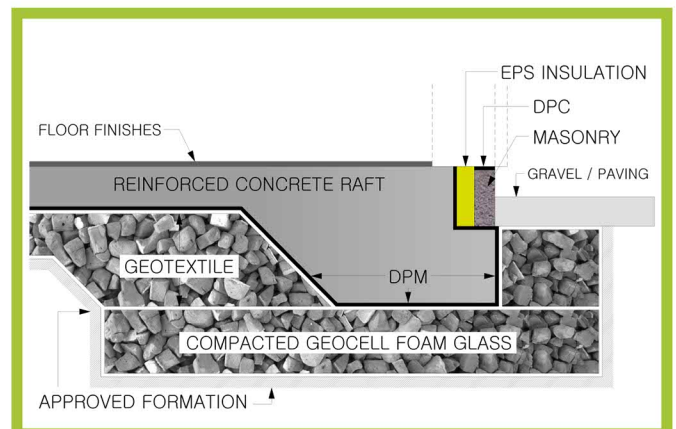
**GROUND FLOOR – RENOVATION**  
(Breathable GlassCrete system)



**INSULATED FOUNDATION DETAIL**  
(Domestic)



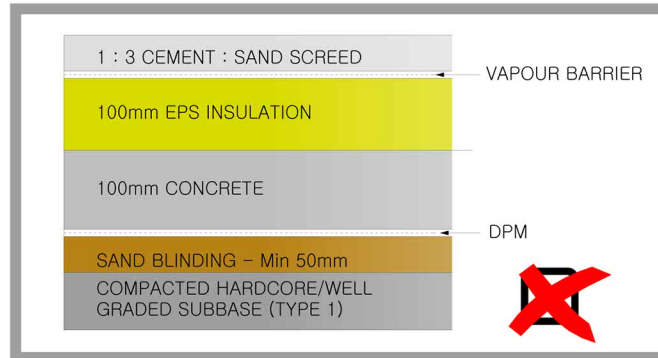
**INSULATED FOUNDATION DETAIL**  
(Commercial)



# GEOCELL® FOAM GLASS GRAVEL

## COST COMPARISON - CONVENTIONAL CONSTRUCTION

### DOMESTIC BUILDING – GROUND FLOOR CONSTRUCTION Conventional Construction (Typical Detail)



#### SUPPLY AND INSTALLATION OF GROUND FLOORING CONVENTIONAL CONSTRUCTION

Item No.	Description	Quantity	Unit	Rate	Amount £
	Costings based upon replacing an existing floor of typical area of	<b>50</b>	m <sup>2</sup>		
1	Supply and install compacted well graded granular sub-base as Type 1 150mm thk	0.15	7.5 m <sup>3</sup>	165.00	1237.50
2	Supply and install sand blinding 50mm thk	0.05	2.5 m <sup>3</sup>	155.00	387.50
3	Supply and install 1200 gauge dpm		50 m <sup>2</sup>	2.15	107.50
4	Supply and install 100mm thk oversite concrete grade GEN 1 or ST2 consistency class S2	0.10	5 m <sup>3</sup>	180.00	900.00
5	Supply and install 100mm EPS/PUR insulation Lambda 0,023 W/mK		50 m <sup>2</sup>	22.25	1112.50
6	Supply and install vapour barrier		50 m <sup>2</sup>	1.60	80.00
7	Supply and install premixed 1:4 cement: sand screed with micro fibre reinforcement 65mm thk.		50 m <sup>2</sup>	19.10	955.00
8	Clean up on completion including the provision of a skip for the disposal of off cuts of EPS insulation		Item		200.00
	ANTICIPATED TIME FOR UNDERTAKING THESE WORKS		4 days		
					<b>4980.00</b>

FIGURES ARE FOR COMPARISON ONLY – CONTRACTOR COSTS MAY DIFFER

# GEOCELL® FOAM GLASS GRAVEL

## COST COMPARISON - ECOLOGICAL ALTERNATIVE

DOMESTIC BUILDING – GROUND FLOOR CONSTRUCTION  
The Ecological Alternative Incorporating GEOCELL



### SUPPLY AND INSTALLATION OF GROUND FLOORING

ECOLOGICAL ALTERNATIVE WITH GEOCELL FOAM GLASS GRAVEL

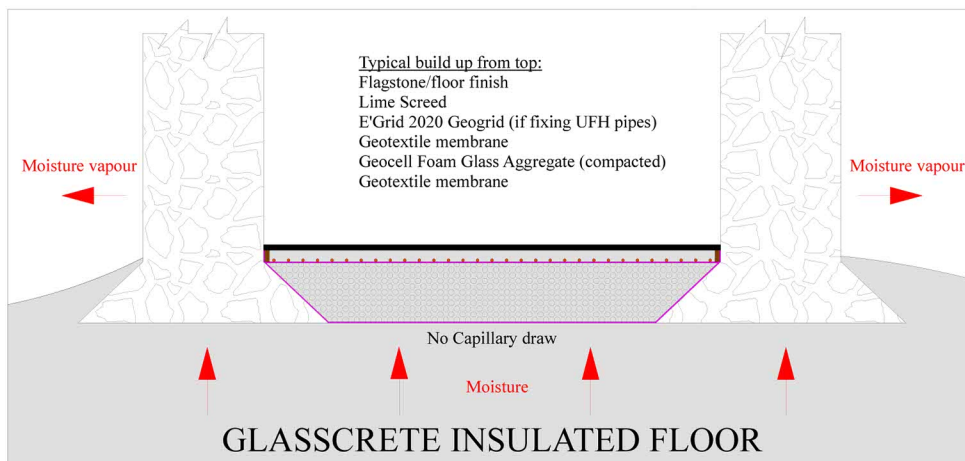
Item No.	Description	Quantity	Unit	Rate	Amount £
	Costings based upon replacing an existing floor of typical area of	50	m <sup>2</sup>		
1	Supply and install GEOCELL foam glass gravel including all compaction, Lambda 0,08 W/mK 350mm thk	0.35	22.75 m <sup>3</sup>	120.00	2730.00
2	Supply and install geotextile	100	m <sup>2</sup>	1.56	156.00
3	Supply and install 1200 gauge dpm	50	m <sup>2</sup>	2.15	107.50
4	Supply and install premixed 1:4 cement: sand screed with micro fibre reinforcement 65mm thk.	50	m <sup>3</sup>	19.10	955.00
5	Clean up on completion			incl.	
	ANTICIPATED TIME FOR UNDERTAKING THESE WORKS	2	days		
					<b>3948.50</b>

FIGURES ARE FOR COMPARISON ONLY – CONTRACTOR COSTS MAY DIFFER

**GEOCELL® FOAM GLASS GRAVEL**

**GLASSCRETE - BREATHABLE FLOOR SYSTEM**

GROUND FLOOR – RENOVATION  
Breathable GlassCrete system – LABC Registered





## 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/m<sup>3</sup>.

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 resistance, 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 resistance, long-term stability, no damage to concrete.

Design characteristics of GEOCELL:

Nominal value for compressive strength $f_{c,nom}$	Nominal value for compressive stress $f_{cd} = f_{c,nom} / \gamma_M \cdot \alpha$
570 kPa	275 kPa
>570 (kN/m <sup>2</sup> )	275 (kN/m <sup>2</sup> )

For full details see GEOCELL Technical Data Sheet



## GEOCELL® FOAM GLASS GRAVEL

### DESIGN DATA

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 50m<sup>2</sup> with 25m exposed perimeter and clay subsoil)

U – Values (W/m <sup>2</sup> K)	Loose thickness (mm)	Compacted thickness (mm)
0.36	130	100
0.29	195	150
0.24	260	200
0.21	325	250
0.19	390	300
0.14	585	450
0.09	975	750

U – Values of GEOCELL as stand alone material :

U – Values (W/m <sup>2</sup> K)	Loose thickness (mm)	Compacted thickness (mm)
0.80	130	100
0.53	195	150
0.40	260	200
0.32	325	250
0.27	390	300
0.18	585	450
0.11	975	750

**GEOCELL® FOAM GLASS GRAVEL**

**PROJECT REFERENCES**

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

THE FUNDAMENTAL ALTERNATIVE FOR MANY APPLICATIONS:



(Foto: Pilsam Architekten)



(Foto: Josef Stropka Bau)



(Foto: Pilsam Architekten)



(Foto: Vorkink Wagnerwerkstätten AG)



(Foto: Spar Supermärkte)



(Foto: Pilsam Architekten)



(Foto: Pilsam Architekten)



(Foto: Pilsam Architekten)



(Foto: Pilsam Architekten)

- 1 Passive house, Bruck/Waasen, Austria
- 2 Renovation of a historic basement and arch, Stadtkeller Pregarten, Austria
- 3 Passive house, Auleiten, Austria
- 4 Kindergarden (Passive house standard) Sloah, Hannover, Germany
- 5 Low-energy supermarket Vienna, Austria
- 6 Glachau Castle Renovation, Germany
- 7 AFG Fußball-Arena, St.Gallen, Switzerland
- 8 Passive house Kindergarden, Robert Koch Strasse, Wels, Austria
- 9 Highschool, Lappersdorf, Germany

**GEOCELL® FOAM GLASS GRAVEL**

**DELIVERY OPTIONS**

**FORMS OF DELIVERY FOR GEOCELL FOAM GLASS GRAVEL**

BULK LOOSE MATERIAL – Max 90m<sup>3</sup>  
Walking floor truck – 18m x 2.5m x 4m



Pre-packed Bigbags – Max 66m<sup>3</sup>  
Walking floor truck – 18m x 2.5m x 4m



Pre-packed Bigbags – 16m<sup>3</sup> per load  
Crane off load – Local delivery only



Pre-packed Bigbags – Qty as required  
Pallet distribution network



**Bigbags Sizes**

- BigBag 1 m<sup>3</sup> ~ 150 kg
- BigBag 2 m<sup>3</sup> ~ 300 kg
- BigBag 3 m<sup>3</sup> ~ 450 kg



**GEOCELL**  
SCHAUMGLAS



## **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](mailto:info@edenhotlimemortar.co.uk)

THE ECOLOGICAL ALTERNATIVE FOR ALL FOUNDATIONS