

# MORE REASONS TO FEEL GOOD

LOOSE FILL THERMAL INSULATION  
BOUND FILLS



A HIGH QUALITY RECYCLING GLASS PRODUCT

**GEOCELL**  
FOAM GLASS BUBBLES



**GEOCELL® FOAM GLASS BUBBLES:  
THERMAL INSULATION CAN BE THAT SIMPLE  
AND VALUABLE**

**GEOCELL FOAM GLASS AGGREGATE** IS A HIGH QUALITY PRODUCT MADE FROM POST-CONSUMER RECYCLED GLASS. IT MEETS THE HIGHEST QUALITY REQUIREMENTS AND PROVIDES OUTSTANDING FEATURES, WHICH HAS NO OTHER PRODUCT IN THIS VARIETY. GEOCELL® IS 100 % MINERAL AND COMBINES LOW DENSITY WITH A HIGH COMPRESSIVE STRENGTH. IN ADDITION TO ITS VERY GOOD THERMAL AND SOUND INSULATING PROPERTIES, IT IS ALSO RESISTANT TO MOISTURE, FIRE, CHEMICALS AND AGING - A TRUE ALL-ROUNDER. THIS COMBINATION OF POSITIVE PROPERTIES IS PROVIDING MANY ADVANTAGES AND MAKING GEOCELL® SUITABLE FOR DIFFERENT INDUSTRIES.

**EXCELLENT THERMAL INSULATING PROPERTIES - NON COMBUSTIBLE - INCREDIBLY STRONG - ENVIRONMENT FRIENDLY:**

**GEOCELL FOAM GLASS AGGREGATE** A SUSTAINABLE REPLACEMENT FOR CONVENTIONAL BUILDING MATERIALS.

■ **EXCELLENT INSULATING VALUES**

the large number of enclosed cells in each bubble, ensures excellent insulation characteristics.  $\lambda = 0,07 \text{ W/mK}$

■ **INCREDIBLY STRONG AND LIGHT-WEIGHT**

Despite the low bulk density (190 - 200 kg/m<sup>3</sup>) GEOCELL® is very pressure resistant due to its spherical structure.

■ **EXCELLENT SOUND ABSORPTION:**

GEOCELL® expanded glass effectively absorbs noise.

■ **RESISTANT**

GEOCELL® is resistant to frost, heat, decay, aging, bacteria, moisture, acids, organic solvents and provides no host for pests, rodents, nor mould growth.

■ **LONG-TERM STABILITY**

GEOCELL® is dimensionally stable even after years (no material shrinkage, no swelling).

■ **100% MINERAL:**

GEOCELL® is non-combustible and releases no harmful gases when heat is applied.

■ **ENVIRONMENT FRIENDLY:**

Using post-consumer recycled glass for the production of GEOCELL® saves natural resources.

## THE FUNDAMENTAL BETTER ALTERNATIVE FOR ALL APPLICATIONS:

Always in good shape: Whether loose or bound fill – GEOCELL foam glass aggregate remains dimensionally stable and guarantees the best insulating performance with simultaneous fire and moisture resistance, even after years.



- 1 GEOCELL foam glass bubbles as loose fill on a wooden ceiling
- 2 Ideal for ecological renovations
- 3 Perfect insulation and fire-resistance: loose fill for a wooden ceiling
- 4 Bound fill: ideal to cover pipelines
- 5 Thermal break: filling the first row of clay blocks
- 6 Ideal for heritage buildings
- 7 Royal Palace Innsbruck, Austria: Thermal renovation with GEOCELL
- 8 Filling of cavities in heritage buildings
- 9 Piping and cable channels disappear under the loose fill insulation

## NEW BUILD AND RENOVATION: LOOSE FILL THERMAL INSULATION

GEOCELL® foam glass aggregate has great free-flowing properties due to its spherical shape and easily fills every void in beamed ceilings, floors and walls for thermal insulation. It is also very easy to cover pipes and cable ducts. Facing form-work for vertical interior insulation can be easily backfilled too. The environmentally friendly GEOCELL® fill is very light, non-combustible, moisture-resistant and provides long-term stability.

The environmentally friendly dry fill is not combustible, moisture resistant and remains permanently in shape.



- 1 Floor covering (carpet, parquet, ...)
- 2 Dry screed elements
- 3 sound insulation board
- 4 GEOCELL® foam glass bubbles, loose fill
- 5 trickle protection (Foil, glass fiber etc.)
- 6 wooden beams
- 7 ceiling

### ADVANTAGES

- **EASY TO HANDLE:** The spherical shape gives GEOCELL® special features like great free-flowing properties. No compaction required
- **LONG-TERM STABILITY**  
GEOCELL® is dimensionally stable even after years
- **NON-COMBUSTIBLE**  
Class A1
- **MOISTURE RESISTANT**  
fast drying, provides no host for pests, rodents, nor mould growth.
- **ENVIRONMENT FRIENDLY:**  
GEOCELL® supports a sustainable building regarding LEED

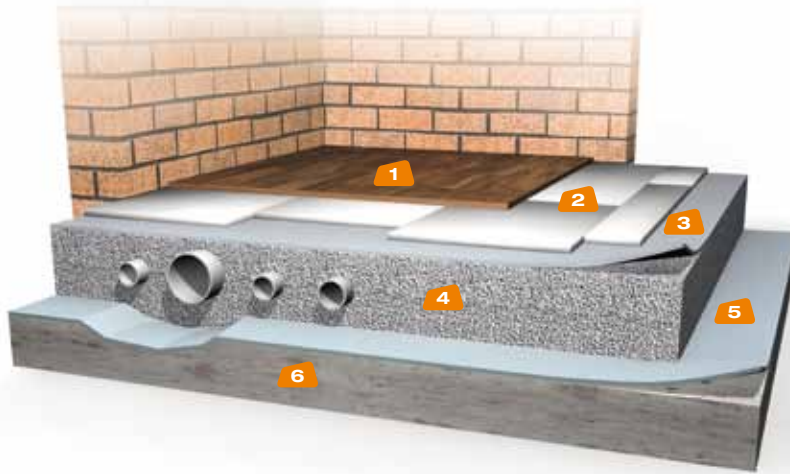


Easy to handle loose fill

## NEW BUILD AND RENOVATION: BOUND FILLS

Bound GEOCELL foam glass aggregate can be used everywhere where a light and insulating floor system is required. The mineral-bound, pressure-resistant packing used for leveling of floors as leveling compound over cables and pipelines. The healthy living material guarantees excellent insulation with the highest fire safety and a fast construction progress. Due to the low moisture content, it is after a day already easily accessible.

Static considerations play an important role in the use of expanded glass GEOCELL for balconies and terraces. Balconies and roof terraces are only limited loads. Since GEOCELL expanded glass a much lighter material than other drainage materials - such as Gravel beds - is, in the insulation of roof structures can be reduced significantly by weight.



- 1 Floor covering (carpet, parquet, ...)
- 2 Dry screed elements
- 3 sound insulation board
- 4 GEOCELL® foam glass bubbles, bound fill
- 5 separation layer (e.g. PE-foil)
- 6 existing floor slab

### ADVANTAGES

- **LIGHT-WEIGHT:** even bound GEOCELL foam glass aggregate has a low density and high compressive strength and therefore helps to manage imposed load on structure
- **EXCELLENT THERMAL INSULATING PROPERTIES:** The multicellular structure of the GEOCELL® spheres provides a very good Lambda value of 0.07 W/(m·K)
- **LONG-TERM STABILITY**  
GEOCELL® is dimensionally stable even after years
- **MOISTURE RESISTANT**  
fast drying, provides no host for pests, rodents, nor mould growth.
- **QUICK DRYING**



GEOCELL foam glass bubbles: bound fill

## FORMULATION: MINERAL BASED BOUND FILL

### FORMULATION FOR HIGH THERMAL INSULATION with GEOCELL BINDER (mineral based)

mixing volume	1 m <sup>3</sup>	200 l	100 l
GEOCELL foam glass bubbles	1000 l (10 bags)	200 l (2 bags)	100 l (1 bag)
GEOCELL mineral binder	65 kg (5 bags)	13 kg (1 bags)	6,25 kg (1/2 bag)
Water	ca. 70 l	ca. 14 l	ca. 7 l

## RECYCLING GLASS IN TOP SHAPE

### TECHNICAL DATA

Building Material Approval DiBt Z-23.11-114

### THERMAL CONDUCTIVITY

thermal conductivity  $\lambda$  (loose fill) 0,070 [W/m·K]  
 thermal conductivity  $\lambda$  (bound fill) 0,070 - 0,09 [W/m·K] depending on formulation

### LOAD CAPACITY BOUND FILL (GEOCELL BINDER)

compressive strength after nach 24h 0,7 N/mm<sup>2</sup>  
 traffic load 700 kN/m<sup>2</sup>  
 walkable after approx. 12h (depending on temperature and humidity)  
 workability at layer thickness < 200 mm 3-4 days (CM 12%)

### GENERAL DATA

Delivery 100 l bags, BigBags oder bulk delivery (silo truck)  
 Granular size 2/4 mm; 4/8 mm; other particel sizes on demand  
 Density (dry bulk, loose fill) ca. 190 kg/m<sup>3</sup>  
 Density (bound fill) 290 kg/m<sup>3</sup>  
 Minimum thickness > 30 mm  
 Building material class A1 gemäß DIN 4102, da rein mineralisch  
 Diffusion properties diffusible,  $\mu < 1$   
 Fire resistance/ gassing with heat incombustible class A1/ no gas emission, odor free  
 Material radiation no radiation or odors  
 Alkali resistance long-term stability, no damage to concrete  
 Environmental impact considered unpolluted excavation.  
 Resistance to environmental influences durable, rodent-, bacteria- and rot-resistant

**GEOCELL® FOAM GLASS BUBBLES**

**THE ECOLOGICAL THERMAL INSULATION**



**APPROVED QUALITY**  
DIBT-APPROVAL Z-23.11-114

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