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 W/mK

INCREDIBLY STRONG AND LIGHT-WEIGHT
Despite the low bulk density (190 - 200 kg/m³) 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.
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
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 formwork 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.

- **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

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
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.

- **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**
### FORMULATION

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

<table>
<thead>
<tr>
<th>mixing volume</th>
<th>1 m³</th>
<th>200 l</th>
<th>100 l</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOCELL foam glass bubbles</td>
<td>1000 l (10 Säcke)</td>
<td>200 l (2 Säcke)</td>
<td>50 l (1 Sack)</td>
</tr>
<tr>
<td>GEOCELL mineral binder</td>
<td>65 kg (5 Sack)</td>
<td>13 kg (1 Sack)</td>
<td>6.25 kg (1/2 Sack)</td>
</tr>
<tr>
<td>Water</td>
<td>ca. 50 l</td>
<td>ca. 10 l</td>
<td>ca. 5 l</td>
</tr>
</tbody>
</table>

### TECHNICAL DATA

| Building Material Approval | DiBt Z-23.11-114 |

### THERMAL CONDUCTIVITY

- thermal conductivity $\lambda$ (loose fill): $0.070 [\text{W/m} \cdot \text{K}]$
- thermal conductivity $\lambda$ (bound fill): $0.070 - 0.09 [\text{W/m} \cdot \text{K}]$ depending on formulation

### LOAD CAPACITY BOUND FILL (GEOCELL BINDER)

- compressive strength after nach 24h: 0.7 N/mm²
- traffic load: 700 kN/m²
- walkable after: approx. 12h (depending on temperature and humidity)
- workability at layer thickness < 200 mm: 3-4 days (CM 12%)

### GENERAL DATA

<table>
<thead>
<tr>
<th>Delivery</th>
<th>100 l bags, BigBags oder bulk delivery (silo truck)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Granular size</td>
<td>2/4 mm; 4/8 mm; other particel sizes on demand</td>
</tr>
<tr>
<td>Density (dry bulk, loose fill)</td>
<td>ca. 190 kg/m³</td>
</tr>
<tr>
<td>Density (bound fill)</td>
<td>290 kg/m³</td>
</tr>
<tr>
<td>Minimum thickness</td>
<td>&gt; 30 mm</td>
</tr>
<tr>
<td>Building material class</td>
<td>A1 gemäß DIN 4102, da rein mineralisch</td>
</tr>
<tr>
<td>Diffusion properties</td>
<td>diffusible, $\mu &lt; 1$</td>
</tr>
<tr>
<td>Fire resistance/ gassing with heat</td>
<td>incombustible class A1/ no gas emission, odor free</td>
</tr>
<tr>
<td>Material radiation</td>
<td>no radiation or odors</td>
</tr>
<tr>
<td>Alkali resistance</td>
<td>long-term stability, no damage to concrete</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>considered unpolluted excavation.</td>
</tr>
<tr>
<td>Resistance to environmental influences</td>
<td>durable, rodent-, bacteria- and rot-resistant</td>
</tr>
</tbody>
</table>
GEOCELL® FOAM GLASS BUBBLES
THE ECOLOGICAL THERMAL INSULATION

APPROVED QUALITY
DIBT-APPROVAL Z-23.11-114
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AUSTRIAN ECOLOGIC LABEL

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