

ENERGOCELL® FOAM GLASS GRANULES GENERAL INSTALLATION GUIDE

The potential of foam glass granules can be best exploited in use by proper installation. In order to achieve a lasting construction, follow exactly the steps described in this guide.

ATTENTION: During the spreading of the foam glass granules dust may be formed in the air, and workers should wear dust masks the whole time, to prevent dust inhalation.

1. Ground preparation:

The building pit shall be prepared as specified in the construction plans. As a next step the infrastructure for service installations is placed. In case of building renovation the floor needs to be removed all the way to the subsoil.

IMPORTANT: Energocell® foam glass granules cannot be used in ground water, capillary zones immediately above ground water, and in groundwater pressure affected soils.



2: ground preparation with rubber-tracked machine



1: floor removed to the subsoil

2. Geotextile fabric laying process

Installation of a geotextile fabric that weighs at least 200g/m² is recommended, with at least 20-cm side-to-side overlaps, and an edge for overlap – eventually for folding back – correspondig to the foam glass that extends beyond the building area (e. g. to separate the fine fractions under the pavement or paving stones). When the geotextile fabric is in place, the drainage pipes are laid. Compaction in the immediate surroundings of the drainage pipes needs to be done carefully, so that the pipes are not damaged. We recommend installing a geotextile layer in building or adobe house renovation projects as well.





2: geotextile laying process



1: geotextile laying process

3. The Energocell® layer structure

The compact foam glass layer structure is built in three phases: the spreading, the levelling, and the compacting of the material. This three-step process can be repeated as needed, until the layer thickness required by the construction plan is achieved.

A. The spreading of the foam glass

There are three options for material delivery to the job site:

- in bulk (max. 90 m³)
- in 3 m³ Big-bag (max. 60 m³)
- in 1 m³ Big-bag (max. 40 m³)

Given the low specific weight of the foam glass, it can be easily unloaded using hand-power (wheelbarrow), but a front loader or a smaller machine can also be useful. The 3 m³ big bags have discharge spouts for pouring the material by a crane directly from the bag. In preparation for effective compaction, the material should be spread in a max. 20-cm thick layer.



3: levelling out the foam glass layer with a small machine



4: big bag with discharge spout



B. The levelling out of the layer

The loose granule layer needs to be levelled until an adequately flat surface is achieved. The easiest way to carry this out is raking over it. In case of large surfaces, like that of halls, the work can be done with rubber-tracked front-end loaders as well. In order to obtain a levelled surface, a levelling instrument should be used.



5: levelling out the foam glass layer with a rake



6: levelling out the foam glass layer with a front-end loader

C. Compaction:

The Energocell® foam glass granules can be compacted with a vibratory plate (75–150 kg) or a vibratory roller (on larger surfaces). Compaction – as part of the three-step process – needs to be carried out on one or more layers, according to the final layer thickness. The recommended compaction rate is 1:1.3.

Compaction tools:

- Vibratory plate (75-150 kg):
 - for achieving a 1:1.3 rate
 - max. 20 cm thickness per layer
 - 2 to 4 passes
- Footpath roller (2-4 tonne):
 - for achieving a 1:1.3 rate
 - max. 25 cm thickness per layer
 - Incorporation:
 - 1 x back and forth smoothing pass
 - 2 x vibratory back and smoothing forth passes



7: incorporation with a vibratory plate



8: incorporation with a 3-tonne footpath roller



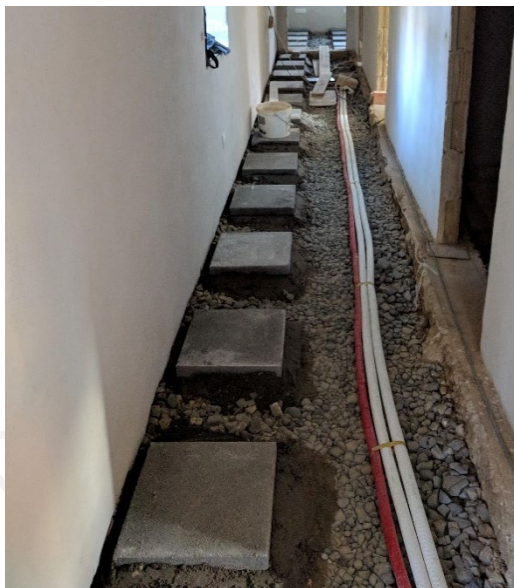
Note:

The foam glass granule layer should be incorporated just before the placing of the concrete. On the surface of the compacted layer occasional circulation with rubber-tracked machinery is possible. In case of regular or any other type of circulation, the surface must be protected!



9: foam glass layer before placing the concrete

For **adobe house renovation** projects thermally insulated, and vapour-permeable stratification can be built. In these situations the **use of vapour-tight membranes should be avoided**, and instead of concrete screed, joists and strip floorboards were placed on the foam glass layer. For joist levelling pavement stones embedded in concrete can be used. To prevent subsequent dust propagation it is recommended to place a geotextile layer between the joists and the strip floorboards.



10: paving stones embedded in concrete, and vapour-permeable layer structure