

# EXPANDED GLASS

GLASS DECORATION / GLASS PROTECTION



## 1. What is it?

Expanded glass is a white inorganic thermal insulating material made from recycled glass, in the form of small porous granules.

Recycled glass is transformed into white granules of various diameters in the process of granulation. Milled glass is mixed with blowing agents and then melt down in extremely high temperature. During manufacture, different granular size glass from 0.045 mm to 16 mm and more are produced, with a bulk density starting from 140 and reaching up to 500 and more kg/m<sup>3</sup>.

Innovation that makes second-hand household glass waste into excellent, exclusively white lightweight aggregate. Expanded glass is unique in its granule structure. Due to its porosity it keeps the air closed inside the granule. This technology is one of the most advanced and contributes to high thermal and acoustic performance indicators. The quality studies show that expanded glass outperforms most products in its market. Compared with other thermal insulation materials, expanded glass has many advantages. Glass granules are easy to transport, prepare for application, and the price meets perfectly with product quality.

## 2. How is expanded glass made?

First, raw material – the glass waste (glass shreds) is delivered to the factory. It is carefully verified to meet high quality standards. The glass is then crushed, ground and mixed with blowing agents. After that the formed granules are melted down in a high temperature. Finally, expanded glass of various grain sizes is packed in preferred sizes and stored in the warehouse.

## 3. Production and ecology

Our company sells the environmentally friendly product containing simply glass. No toxic or noxious substances are emitted in the environment from the manufacturing process. Thus, no harmful effects are created on the environment.

## 4. Properties

- Ecology
- Durability
- Fire resistance
- Low thermal conductivity coefficient
- Moisture resistance
- Chemical and biological stability
- Longevity

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## 5. Benefits

- **Possible construction under abnormal conditions:**

The use of expanded glass allows the construction of structures even in terrains on weak soil, marshy areas and those with extreme changes of weather conditions (cold-hot).

- **30% less heating costs:**

The use of expanded glass can save up to 30% of the heating cost of the building.

- **20% less construction costs:**

The use of the expanded glass in the construction site allows to reduce the cost of the building by about 20%.

- **Fire protection:**

Expanded glass is a non-volatile and non-flammable material. Thus, structures built with glass granules are completely protected against fire-related disasters.

- **Perfect noise insulation:**

Expanded glass absorbs sounds well and provides good soundproofing. The acoustic properties of expanded glass are ideal for structures such as opera houses or museums.

- **2-4 times longer building service life**

The use of expanded glass extends the service life of the building to 50 years, which is 2-4 times longer than other thermal insulation materials (polystyrene foam, rock wool). In addition, there is no need for a major change of aggregates and individual elements.

- **No risk for health**

Structures with expanded glass are ideal for people with allergies or those willing to protect themselves from radiation. Rodents, insects do not breed in such structures, they accumulate no build-up of bacteria, including mold. The building is still breathable and perfectly maintains a constant temperature.

- **Perfect for designing modern thin and non-standard structures**

Expanded glass application for acoustic panels or thermal insulation systems works well for implementation of especially thin and creative architectural solutions.

- **25-35% less heat loss**

The use of dry blends with expanded glass for thermal insulation reduces heat loss through cold bridges by up to 25-35%.

- **40% less load**

The use of dry blends with expanded glass in building structures reduces the load on substrate structures and ceilings by up to 40%.

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## 6. Grain Sizes



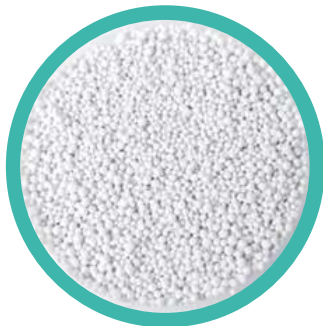
0.1 - 0.3mm



0.25 - 0.5mm



0.5 - 1mm



1 - 2mm



2 - 4mm



4 - 8mm



8 - 16mm