

GLAVEL

FOAMED GLASS AGGREGATE

Technical Data Sheet



About Glavel

Glavel is a Vermont-based manufacturer of foamed glass aggregate with a commitment to low carbon construction solutions. Foamed glass aggregate is a lightweight, insulating aggregate that replaces traditional board insulation assemblies, enabling construction teams to reduce carbon emissions by providing an environmentally-safe alternative to carbon-intensive insulation materials.

Glavel's mission is to decarbonize the built environment by transforming recycled glass into foamed glass aggregate with renewable energy. With North America's first Environmental Product Declaration and Declare Label for foamed glass aggregate, Glavel offers transparent data to support low carbon design and material selection.



How It's Made

Recycled glass is cleaned and milled into a powder, then combined with glycerin and sodium silicate, creating a sandy mixture. The mixture is deposited onto a 6' wide belt before entering the kiln and slowly heating to 1,600°. As the glass powder mixture heats up, it softens and sinters into a solid mass while the glycerin off-gases and creates a network of closed-cell micropores throughout the foamed glass slab.

These micropores are critical to the material's insulating properties, moisture resistance, and compressive strength. The foamed glass slab then exits the kiln and quickly begins fracturing into aggregate due to thermal stress from exiting the kiln.

The resulting foamed glass aggregate is stable, inert, non-combustible, and highly durable; well-suited for a broad range of construction applications, including subslab insulation, green roofs, and other load-bearing fill applications.

Technical Data

Density (Unit Weight)

Uncompacted dry bulk density (ASTM C29).....9 - 10pcf

Estimated Dry Density

1.11 Compression Ratio (10% compaction of each lift).....10 - 11pcf

1.25 Compression Ratio (20% compaction of each lift).....11.25 - 12.5pcf

Compressive Strength (EN 1097-11)

20% compaction.....100-110psi

25% compaction.....115-125psi

Typical Gradation Characteristics (uncompacted) (ASTM C136 / ASTM C117)

Measured in sieve size

4".....100%

2".....85-100%

3/8".....0-15%

Physical Characteristics

Hydraulic conductivity (ASTM D2434-68).....0.086 cm/s

Moisture content

Volumetric.....0.47%

Gravimetric (ASTM C566).....0.62%

Particle Specific Gravity (ASTM C127).....0.54

Soundness

Sodium sulfate (ASTM C88).....4.7% - 5.3% loss

Impurities

Clay lumps (ASTM D4791).....0

Organic impurities (ASTM C40).....0

Chemical Characteristics

Sulfates (AASHTO T 290).....<10ppm

Chlorides (AASHTO T 291).....<10ppm

TCLP (SW 846).....Non-leaching

Foamed Glass Aggregate Advantages

Frost Heave Resistant - Will reduce impacts of freeze and thaw cycles

Produced from Recycled Glass - Categorized as 'clean fill'

Non Combustible - Will not burn, nor propagate fires

Closed Cell - Closed cell structure facilitates drainage

Inert - Prevents rodents, termites, bacteria, and rot

Thermal Insulation - R1.7 per compacted inch

