



4.1.1 Roof - Flat or Tapered Insulation (Hot Adhesive) With Membranes

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Detailed description

Properties:

- Waterproof.
- High compressive strength without deflection or movement.
- Non-combustible.
- Impervious to water and water vapour.
- Sealed cellular structure.
- Dimensionally stable.
- Acid resistant.
- Easily cut to shape.
- Resistant to vermin.
- Recycled content scrap glass: Minimum 60%.
- Ozone Depletion Potential (ODP): <1%.
- Global Warming Potential (GWP): Zero.
- GreenSpec rating, see 'Cellular Glass' or 'Foamed Glass'.
- Green Guide rating, see 'Cellular Glass'.

Advantages:

- Quality: Systems with high quality materials; management by systematic site inspections and professional consulting.
- Cost efficiency: The high durability preserves maximum value and ensures minimal maintenance costs.
- Sustainability: Optimum insulation performance and protection against moisture for future generations. Scrap can be reclaimed and re-cycled to make new Foamglas.
- Insulation performance: Insulation performance is permanent; ageing does not take place. Use above and below ground, unaffected by moisture, humidity and compressive loads. Proven to retain its thermal and vapour control characteristics for > 50 years.
- No thermal bridging: Fully bonded insulation systems, zero fixings prevent thermal bridging, eliminating the risk of fixings corrosion.
- Non-toxic: Foamglas cellular glass contains no toxic substances, does not contaminate water or the ground, in cases of fire, does not develop fumes or toxic gases.
- Sealed structure and non-hydroscopic: Each cell has a glass wall, giving the unique structural strength, vapour tight and non-hydroscopic properties.
- A separate vapour barrier is not required: With its purpose manufactured adhesives, Foamglas is suitable for extreme humidity environments and gives control of the vapour drive in any direction.



FOAMGLAS®
31-35 Kirby Street
Hatton Garden
London
EC1N 8TE

Tel: +44 (0)20 7492 1731

www.foamglas.co.uk
info@foamglas.co.uk



Foamglas is an insulation and vapour barrier in one single material.

- High compressive strength: Capability to withstand high compressive loads without deflection or movement.
- Dimensional stability: Very low rates of thermal movement, mechanical fixings are not required to prevent delamination from the parent structure.
- Reduced weight, on the structure, screed to fall not required.
- Bespoke tapered insulation design service available.

Product guidance - As Standard

Characteristics:

- Thermal performance is permanent and never changes.
- Manufactured from recycled glass (minimum 60%) and natural raw materials which are available in abundant supply - sand.
- The insulation is totally inorganic, contains no ozone depleting propellants (CFCs, HCFCs etc), flame resistant additives or binders; VOC or other volatile substances.
- For substrate quality and suitability, see Technical Guide TG1.

- Foamglas® Slab (F):

- Density (EN 1602, $\pm 10\%$): 165 kg/m³.
- Length (EN 822, ± 5 mm): 600 mm.
- Width (EN 822, ± 2 mm): 450 mm.
- Thermal conductivity (EN ISO 10456): ≤ 0.050 W/m·K.
- Reaction to fire (EN 13501-1): Euroclass A1.
- Compressive strength (EN 826 annexe A): ≥ 1600 kPa.
- Flexural modulus of elasticity (EN12089): 1500 MN/m².
- Bending strength (EN 12089): ≥ 550 kPa.
- Tensile strength (EN 1607): ≥ 150 kPa.
- Thermal expansion coefficient (EN13471): 9×10^{-6} K.
- Impervious to water vapour (EN ISO 10456): $\mu=\infty$ infinity.
- Green Guide rating B.
- Flat: CEN Keymark: 001-BK-516-001-0016-T057.
- Tapered: CEN Keymark: 001-BK-516-001-0019-T057.
- CPR DOP: 100010050 and 140440050.

- Foamglas® Slab (S3):

- Density (EN 1602, $\pm 10\%$): 130 kg/m³.
- Length (EN 822, ± 5 mm): 600 mm.
- Width (EN 822, ± 2 mm): 450 mm.
- Thermal conductivity (EN ISO 10456): ≤ 0.045 W/m·K.
- Reaction to fire (EN 13501-1): Euroclass A1.
- Compressive strength (EN 826 annexe A): ≥ 900 kPa.



- Flexural modulus of elasticity (EN12089): 1200 MN/m².
- Bending strength (EN 12089): ≥ 500 kPa.
- Tensile strength (EN 1607): ≥ 100 kPa.
- Thermal expansion coefficient (EN13471): 9 x 10⁻⁶ K.
- Impervious to water vapour (EN ISO 10456): μ=∞ infinity.
- Green Guide rating A.
- Flat: CEN Keymark: 001-BK-516-001-0012-T00A.
- Tapered: CEN Keymark: 001-BK-516-001-0015-T00A.
- CPR DOP: 100010030 and 140440030.

- Foamglas® Slab (T4+):

- Density (EN 1602, ± 10%): 115 kg/m³.
- Length (EN 822, ± 5 mm): 600 mm
- Width (EN 822, ± 2 mm): 450 mm.
- Thermal conductivity (EN ISO 10456): ≤ 0.041 W/m·K.
- Reaction to fire (EN 13501-1): Euroclass A1.
- Compressive strength (EN 826 annexe A): ≥ 600 kPa.
- Flexural modulus of elasticity (EN12089): 700 MN/m².
- Bending strength (EN 12089): ≥ 450 kPa.
- Tensile strength (EN 1607): ≥ 100 kPa.
- Thermal expansion coefficient (EN13471): 9 x 10⁻⁶ K.
- Impervious to water vapour (EN ISO 10456): μ=∞ infinity.
- Green Guide rating A.
- Flat: CEN Keymark: 001-BK-516-001-0026-T00A.
- Tapered: CEN Keymark: 001-BK-516-001-0032-T00A.
- CPR DOP: 100010015 and 140440015.

Options

Insulation:

- Thickness:

Foamglas insulation, factory produced with a tapered thickness, is available in a wide range of gradients from 0.55% (1:180) to 6.7% (1:15). Contact manufacturer for further information as a bespoke tapered CAD design service is available.

Where required for thickness >180 mm, use double layers of minimum 90 mm per layer. Where required for Slab (F) thickness >160 mm, use double layers of minimum 80 mm per layer.

Product specification

Manufacturer

- Name: FOAMGLAS®



- Web: www.foamglas.co.uk
- Email: info@foamglas.co.uk
- Tel: +44 (0)20 7492 1731
- Fax: +44 (0)20 7492 1730
- Address: 31-35 Kirby Street, Hatton Garden, London EC1N 8TE

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Primer By others, suitable for hot bitumen

Adhesive Hot bitumen, as section J41, clauses 320 or 322

Insulation

- Type Foamglas® Slab (F)
Foamglas® Slab (S3)
Foamglas® Slab (T4+)

- Thickness Tapered - See 'Options' below.
40 mm
50 mm
60 mm
70 mm
80 mm
90 mm
100 mm
110 mm
120 mm
130 mm
140 mm
150 mm
160 mm
170 mm - Not available in Foamglas® Slab (F).
180 mm - Not available in Foamglas® Slab (F).

Top coat Hot bitumen, as section J41, clauses 325 or 327

Top layer Two layers of bituminous waterproofing membranes, top layer UV-resistant, as section J41, clauses 400 or 405