

- 1** For optimum speed of installation on the job site it is recommended that FOAMGLAS® PERINSUL® SL blocks are placed adjacent to the area of work.
- 2** A bed of mortar for the first course of insulation blocks is applied.
- 3** The height position of the PERINSUL® SL block is adjusted.
- 4** PERINSUL® SL blocks are laid with closely butted end joints without mortar. Soft mortar is used above and below the block, using the same technique as for bricks.
- 5** Fully waterproof, PERINSUL® SL forms a capillary break reducing the risk of moisture progressing up the wall.
- 6** Building blocks or bricks are installed on top of the row of PERINSUL® SL as the wall construction progresses.



FOAMGLAS

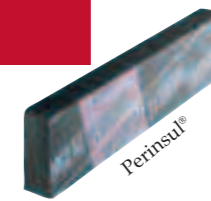
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Designed and Produced by SEL Ltd. Birmingham.



PERIMETER INSULATION TO ELIMINATE THERMAL BRIDGES – NEW BUILD

FOAMGLAS® PERINSUL® SL is an innovative product developed by PITTSBURGH CORNING to eliminate thermal bridges at joints within wall constructions. FOAMGLAS® PERINSUL® SL blocks, manufactured from FOAMGLAS®, are designed to form an effective insulated joint between vertical wall insulation and horizontal floor or roof insulation. Possessing all the thermal properties for which FOAMGLAS® is well proven, together with the exceptionally high compressive strength of FOAMGLAS®, cold bridging is eliminated and structural integrity maintained.

USE OF FOAMGLAS®

FOAMGLAS® cellular glass insulation is guaranteed to maintain all its physical values for the lifetime of the building. It does not deteriorate with age and its thermal properties remain constant. FOAMGLAS® is totally non-combustible and cannot contribute to a fire nor give off toxic fumes or smoke; it is also totally free from HCFC, HFA and pentane.

APPLICATIONS

FOAMGLAS® PERINSUL® SL has a compressive strength of 3000 kN/m² and, when a safety factor of 3 is used, it has a load bearing capacity of 1 N/mm² without compression or deformation. It can therefore be installed at the base of structural walls in the following situations:

- inner walls (block or brick)
- outer walls (block or brick)
- parapets
- access points
- support areas for roof trusses.

PREPARATION AND INSTALLATION

In order to provide its full load capacity FOAMGLAS® PERINSUL® SL is incorporated into the structure, laid into a soft mortar on a flat and level support with vertical joints tightly-butted. To achieve maximum adhesion, the blocks are moved to-and-fro in the mortar so that it is squeezed out on all sides. PERINSUL® SL must be kept horizontal. The first layer of bricks or blocks on top of the FOAMGLAS® PERINSUL® SL must also distribute the load uniformly over their full surface. (Hollow or indented blocks should not be used for this layer unless they are inverted to present a flat face and the cavities are infilled with concrete). Should cutting be required, first remove a narrow strip of the facings with a sharp knife and then use a toughened saw for the PERINSUL® SL.

NB: FOAMGLAS® PERINSUL® SL blocks should not be tapped or struck with any tool.



BUILDING REGULATIONS, Part L & J

All FOAMGLAS® systems meet the requirements of Building Regulations, with regard to air tightness of the building, the avoidance of cold bridging and sustainable construction. FOAMGLAS® systems will continue to fully perform for the lifetime of the building.



www.foamglas.co.uk

FOAMGLAS®
CELLULAR GLASS INSULATION

FOAMGLAS® PERINSUL® SL

DIMENSIONS AND THERMAL PERFORMANCE

FOAMGLAS® PERINSUL® blocks are 450mm long, available in various thicknesses and widths as shown opposite. Blocks are bitumen coated on all faces. FOAMGLAS® PERINSUL® SL has a thermal conductivity of 0.055 W/mK at 10°C. In a single leaf wall, a FOAMGLAS® PERINSUL® SL block 110mm wide will exceed the requirements in Part L & J of UK Building Regulations and provide a U-value of approximately 0.39 W/m²K.

PHYSICAL PROPERTIES

Compressive Strength (minimum ultimate average): 3000 kN/m²
 Load Bearing Capacity (safety factor taken as 3): 1 N/mm²
 Density: 220 kg/m³ (± 10%)
 Coefficient of thermal expansion: 9 x 10⁻⁶ /K
 Thermal Conductivity (± 5%) at 10°C: 0.055

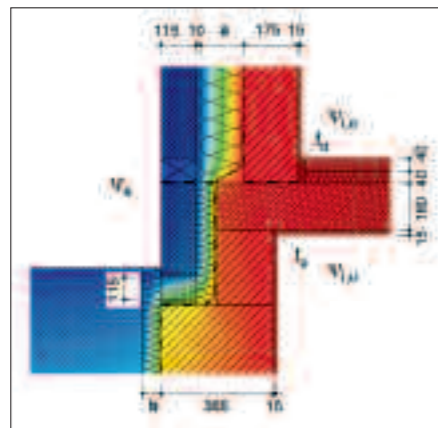
Fire
 Non-combustible, no toxic fumes
Dimensional stability
 Perfect
Resistance to water-vapour transmission
 $\mu = \infty$
 28 dB for 100mm thickness
 A safety factor is used in conjunction with the physical properties of FOAMGLAS®; a factor of 3 is frequently used but our Technical Department will be pleased to meet your design requirements.

Standard sizes available from stock to meet the requirements of both brick and block wall constructions

Width mm	Thickness mm	Length mm
110	65	450
110	100	450
140	100	450
215	100	450

Note: Other sizes, thicknesses and widths available on request.

JUNCTION OF EXTERNAL WALL / GROUND FLOOR BASEMENT



Optimised thermal bridge free construction. The PERINSUL® SL block is fitted under the external wall to stop the cold bridge.

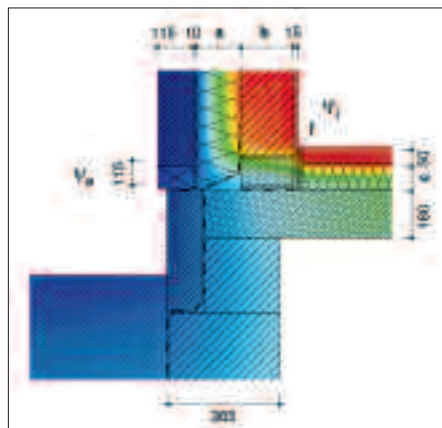
a / b	Ψ_e [W/m·K]	$\Psi_{i,o}$ [W/m·K]	$\Psi_{i,u}$ [W/m·K]	f_o / f_u [-]
100 / 60	0,020	0,034	0,097	0,931
120 / 80	0,062	0,032	0,121	0,899
140 / 100	0,092	0,031	0,138	0,909

Ψ-VALUES

The calculation is based on the building elements; this gives a design value of the Ψ-value (heat loss coefficient for thermal bridge (W/mK) with reference to the length of the element). Using FOAMGLAS®, Ψ-values can be achieved of zero or even negative values. The calculation follows the European regulations for thermal energy saving, taking into consideration the heat loss by thermal bridges in an optimal way.

a / c	Ψ_e [W/m·K]	Ψ_i [W/m·K]	f [-]
b = 175			
100 / 60	-0,055	0,118	0,834
120 / 80	-0,038	0,113	0,847
140 / 100	-0,026	0,110	0,855
b = 240			
100 / 60	-0,067	0,127	0,835
120 / 80	-0,043	0,124	0,847
140 / 100	-0,028	0,122	0,854

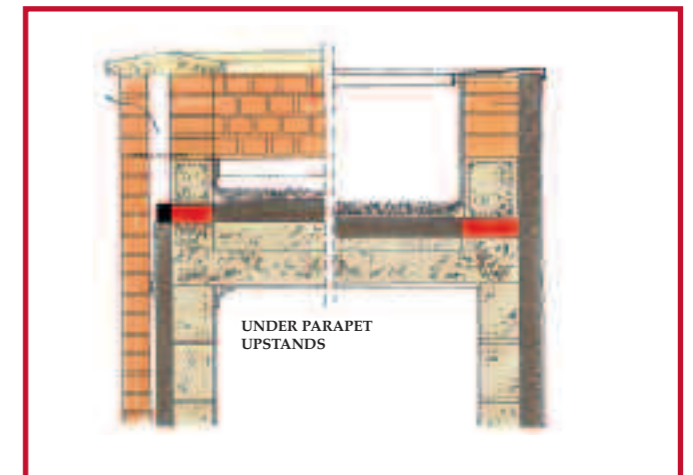
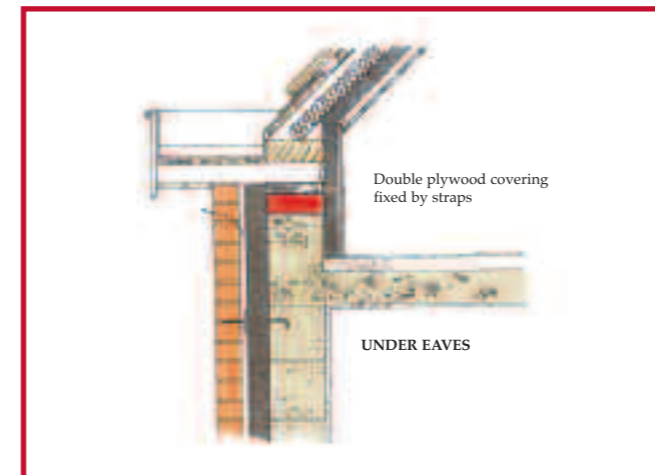
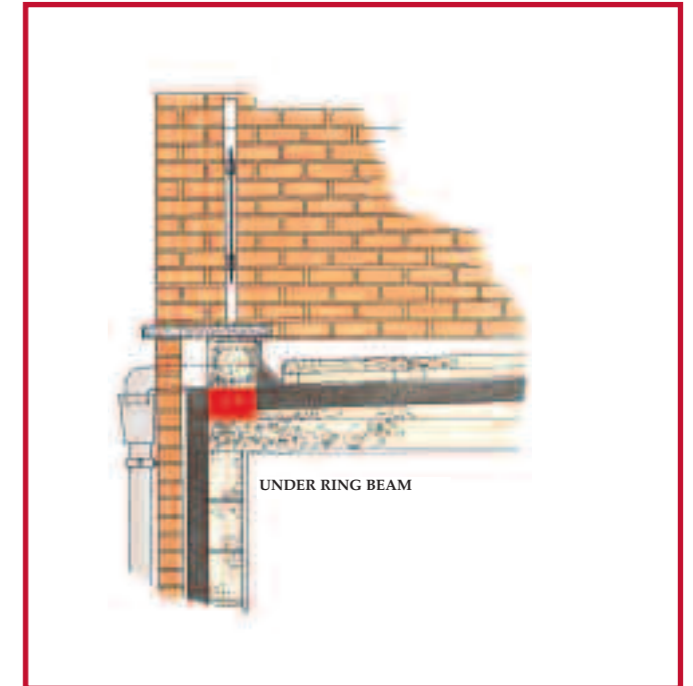
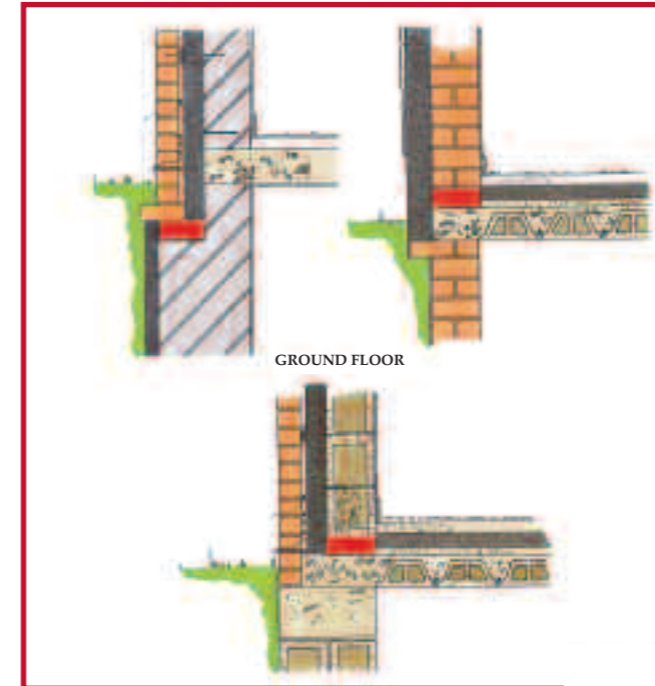
JUNCTION BASEMENT / GROUND FLOOR FLOOR



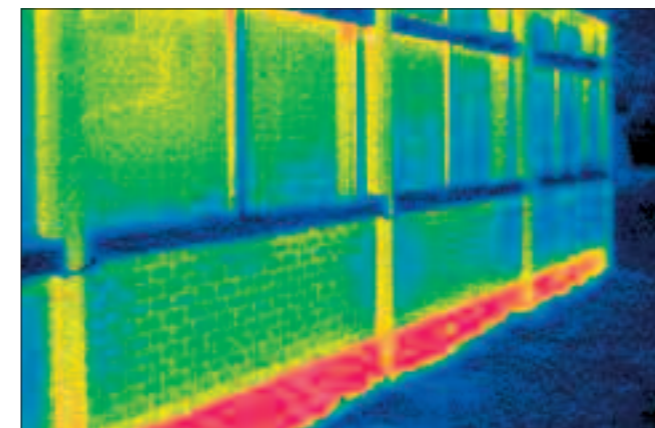
Optimised thermal bridge free construction. The PERINSUL® SL block insulates between the wall and ground floor slab.

Ecologically FOAMGLAS® cellular glass meets the most stringent demands for an environmentally sound material. In manufacturing, 66% post-consumer waste glass is utilised, combined with a manufacturing process which minimises energy. The result is an insulation material which provides high performance throughout the lifetime of the building, through to its eventual disposal as an inert material or its re-use. FOAMGLAS® is totally free from HCFC, HFA and pentane, exceeds the requirements of the Building Regulations and has Agrément Certification.

TYPICAL INSTALLATION DETAILS



THERMAL IMAGING



This thermal image shows the major cold bridge and high thermal loss at the junction between the floor slab and wall construction.

60 MINUTE FIRE RESISTANCE



Fire tests carried out in Germany achieved Class F60, giving 60 minutes fire resistance in a wall construction. This was achieved without additional structural elements being applied to the wall.