

Technical Data Sheet

BEAMSHIELD[®] Top Sheet Suspended Floor Insulation

Beamshield Top Sheet Systems, comprising EPS Beamshield Infill or Beamshield Plus Units, Board Units and EPS Top Sheet, are for use as thermal insulation in suspended pre-stressed concrete T-beam ground floors with an approved structural concrete topping in single-family dwellings, flats and communal areas in blocks of flats within the load criteria and other requirements specified in the Agrément certificate.

The Beamshield Top Sheet system can be supplied in two versions:

Beamshield Top Sheet Infill – Where Beamshield Infill units are used between the concrete T-Beams and a Beamshield Top Sheet above. This version allows the required U values to be achieved by using White EPS or Platinum EPS with different depth Beamshield Top Sheets.

Beamshield Top Sheet Plus – This version combines the original Beamshield Plus units, which insulate between and below the concrete T-beams with an extended EPS toe section, with the Beamshield Top Sheet. This version is typically used when lower U values are required and enables the U values to be achieved with a thinner Beamshield Top Sheet.

Expanded Polystyrene (EPS)

Expanded polystyrene (EPS) is an excellent choice for use as insulation and other applications, consisting of 98% air means only 2% of any product is polystyrene material.

With its outstanding thermal insulation qualities EPS is a first choice material for numerous construction applications. Using EPS can reduce CO₂ emissions by up to 50%, offsetting its small carbon footprint and giving maximum return for minimal resource and can also make a significant contribution to reducing fossil fuel use for heating and cooling of buildings which in turn, helps reduce SO₂ and SO₃ emissions, a major cause of acid rain.

Using less than 0.1% of global oil consumption to manufacture EPS, it can save up to 200 times its own resource in thermal energy saving, bringing considerable energy and resource-saving benefits.



The amount of carbon monoxide and particulates given off by EPS during combustion is a small fraction of that emitted by wood or cardboard.

The manufacture of EPS is safe for the environment as only steam is used during the manufacture process. There is no waste in the process as all off-cuts are re-cycled back into the production process.

EPS uses Pentane as its blowing agent and is HFC, CFC and HCFC free. Pentane has a low Global Warming Potential (GWP) of less than five.

The lightweight nature of EPS helps to minimise environmental impacts and costs associated with the movement of heavier alternative materials.

EPS is recyclable but where this is not possible the inert and non-toxic nature of EPS provides stability in landfill because it does not biodegrade and leach chemicals into the water system or gases into air that could contribute to global warming.

Life-cycle analyses demonstrate that EPS has exceptional qualities as a construction material. It has a Zero Ozone Depletion Potential (ODP) and a low Global Warming Potential (GWP) and achieves the highest possible A-Plus summary rating in the BRE Global Green Guide to Specification.

Excellent Thermal Performance

Using Beamshield EPS units as an alternative to concrete blocks in a suspended floor will reduce ground floor heat loss, and allows a thinner layer of EPS insulation to be used above the concrete beams to meet the required U value compared to when the EPS Floorshield product is used above a traditional beam and block floor.

Platinum Beamshield Infill Unit 150mm thick & Platinum Top Sheet 200mm thick can achieve U Value 0.09 W/m²K depending on the floor layout.

Beamshield Top Sheet Systems can contribute to improvements in linear thermal bridging values (Psi values).

Freedom of Design

The range of units are available in white or Platinum EPS to give improved insulation values where needed and include starter/end, full and half width units in varying thickness and toe lengths (Beamshield Plus unit) to accommodate various beam types and beam layout configurations. The Top Sheet to be used with the Infill units or Beamshield Plus units is also available in various thicknesses.



Technical Data

Beamshield Plus / Infill Units

Type & Class
(BS EN 15037-4)

Thermal Conductivity
(W/mK)

Mechanical Resistance
(kN)

Typical Unit Size
(mm)

Thickness
(mm)

White

R1a

0.038

1.5

Full Unit
Half Unit
Starter / End Units

Platinum

R1a

0.030

1.5

1200 x 540
1200 x 270
1200 x 300

Beamshield Plus units - 200mm minimum
Beamshield Infill units - 150mm minimum

Beamshield Board / Variable Width Board

Type & Class
(BS EN 15037-4)

Thermal Conductivity
(W/mK)

Mechanical Resistance
(kN)

Board Size
(mm)

White

R1a

0.035

1.5

Platinum

R1a

0.030

1.5

Beamshield Board - 1200 x 540 x 98mm
Variable Width Board - 1200 x 350 x 75mm to 100mm

Beamshield Top Sheet

Type & Class
(BS EN 13163)

Thermal Conductivity
(W/mK)

Compressive Strength
at 10% deformation (kPa)

Board Size
(mm)

White

EPS120

0.035

120

White

EPS200

0.033

200

Platinum

EPS120

0.030

120

Beamshield Top Sheet - 2400 x 1200 x 50mm to 600mm

Sustainability

Springvale advocate responsibility to the environment as part of their Environmental policies and Environmental Management System to BS EN ISO 14001 and as members of the British Plastics Federation (BPF), participates in the recycling post-construction EPS scheme.

Highly Durable

A durable, inert, non-toxic, rot proof and 100% recyclable product, the performance of EPS is expected to last at least the life time of the building in which it is used.

Certification

Springvale Beamshield Top Sheet Systems has a third party BBA accreditation certificate 07/4411 Product Sheet 2 and is manufactured to the requirements of BS EN 15037-4 and BS EN 13163, under an ISO 9001 certified quality management system.

www.springvale.com/downloads

Quick & Easy Installation

The lightweight units can be cut using a handsaw and do not require grouting to secure the units into position, helping to reduce manual handling issues and installation time.

The product should be installed in accordance with the BBA certificate and the installation guide. For more details on installation please visit:

www.beamshield.co.uk/beamshield-top-sheet-installation

Beamshield Top Sheet should not come in direct contact with hot water pipes and electrical cables should be enclosed in suitable conduit e.g. rigid PVC

Handling & Storage

The products must be stored flat, off the ground, on a clean level surface, protected from high winds and prolonged exposure to sunlight, either under cover or with opaque, light-coloured polythene. The products must not be exposed to open flame or other ignition sources. Care must be taken to avoid contact with solvents and materials containing organic components.

Want to know more?

See more about our Beamshield products at - www.beamshield.co.uk

Contact Technical or Sales for more information.

Phone - **01457 863 211** or Email - technical@springvale.com

