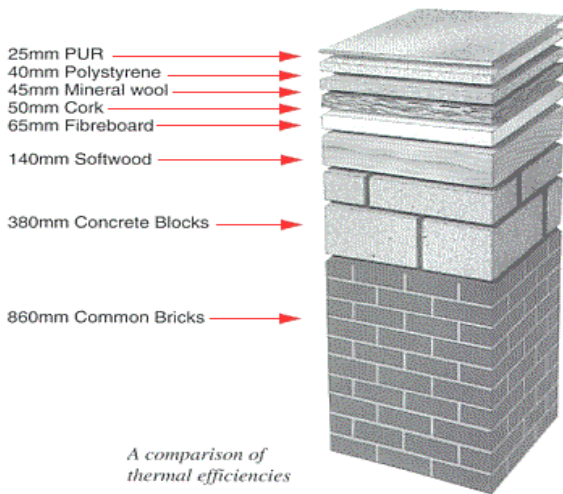


Highly Efficient Thermal Insulation With Elastopor[®] H the right choice for Structural Insulation Panels

Why Insulate with Polyurethane?



Elastopor[®] H - Insulation Foam is a closed cell polyurethane foam used in many applications in the field of heat and cold protection due to its excellent thermal insulation properties.

This “made-to-measure insulant” boasts extremely low thermal conductivity levels matched by no other conventional insulant. Good mechanical properties and excellent adhesion mean the material has a wide range of applications.



Structural Insulated Panels (SIPs) are produced with polyurethane insulation foam sandwiched between Oriented Strand Board (OSB).

U Values of 0.17-0.18 W/m²K are currently achievable using a 150mm thick panel. Lower U values are also possible by increasing the panel thickness.



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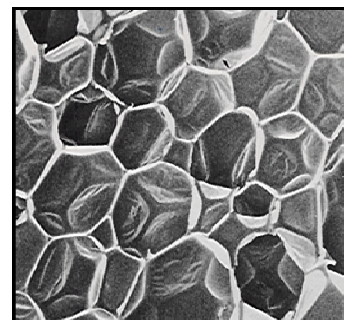
The Elastogran Group is one of the world-wide leaders in polyurethanes (PU). As part of the BASF Group, we have over 40 years experience in the PU industry.

Elastogran is the market and technology leader for polyurethane systems and polyurethane special elastomers, as well as the leading supplier of polyurethane basic products.



Your Manufacturing Route To Structural Insulation Panels

Elastopor insulation foams are produced by reacting a liquid polyol component with a liquid polymeric isocyanate, Methylene Diphenyl di-Isocyanate (MDI), component in the presence of a blowing agent and other additives. The mixed components then react exothermally to form a rigid thermosetting polymer and since the blowing agent evaporates during this exothermic reaction a rigid closed cell low density insulation product is created. Excellent insulation is achieved because the gas trapped within the closed cell structure has a very low thermal conductivity and there is minimal heat conduction through the solid cell walls due to the low density, where approximately 97% of the volume of the foam is trapped gas.



Elastopor insulation foam is produced using specially designed processing equipment capable of accurately metering the liquid components and mixing them together. The output rate of the equipment is adjustable both in terms of the rate and the ratio of the components. The weight of foam dispensed during each foam injection is controlled by a timer. Two basic types of machine are available:

Low Pressure Machines: Whereby the liquid components are pumped at relatively low pressures (less than 20bar) to a dynamic mixer.

High Pressure Machines: Whereby the liquid components are pumped at pressures around 150bar and mixed at high velocity by an impingement method.

SIPS panels are normally produced in a horizontal heated press. The OSB facing material is pre-set into a restraining foaming jig which is then clamped by a press. Foam is then injected into the cavity between the two OSB faces. Injection time depends on a number of variables but is typically between 5 and 30 seconds. Immediately after the injection cycle the foam starts to react and expand flowing through the cavity to reach a complete fill in around 2 minutes. An initial curing period of around 30 minutes (depending on panel thickness) is required before the SIPS panels has sufficient strength to be released from the press. At this stage the panel can be stacked and stored as appropriate in preparation for shipment to site.



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