

EPS THERMAL INSULATION

FOR
BUILDINGS & HVAC INDUSTRY

Styrene Packings started as a progressive industrial unit engaged in the manufacture of Expanded Polystyrene products in the year 1989. In the last 25 years Styrene Packings has grown manifolds with multi product range for industrial and construction segment. Styrene Packings is a team of professionals and experts in their segment to cater all their product range to various sectors. Over a period Styrene Packings has become one of the most trusted and reliable partner in the segments they are dealing in.

Energy Conservation is a very important issue facing us today in the context of rising energy cost, inadequate availability and most importantly global warming. Energy conservation need not be limited to industries and commercial uses but also needs to be followed in homes and offices. Insulation is therefore the need of the day providing physical comfort, financial benefit and environment betterment. In many countries thermal insulation in building homes is mandatory by law.

Styrene Packings offers excellent insulation material such as premolded pipe sections and slabs invented by BASF which is the largest paint company in the world. EPS products offered by Styrene Packings are approved and recommended by leading HVAC consultants and Govt. organizations. List of major customers include BLUE STAR, VOLTAS, ETA, HITACHI, L&T, SUVIDHA etc.

Styrene Packings EPS is made from eps granuals, a close-cell cellular material which is extremely light in weight, poor conductor and thus has remarkable insulations properties. It is non hydroscopic, odorless, rigid EPS containing 98% by volume air entrapped in its closed cells. This is the major reason of its excellent insulation properties round the year.

Styrene Packings EPS is a specially designed Insulation product based on the research work carried out by CBRI Roorkee on EPS Insulation. It not only gives protection to roof against extreme weather conditions because of its low thermal conductivity but also protects the roof from seepage as it has very high water resistant properties. Because of its excellent insulation properties it saves energy while cooling or heating the rooms. Roof insulation is the one of the major field of application for Styrene EPS since maximum energy losses take place through the roof.

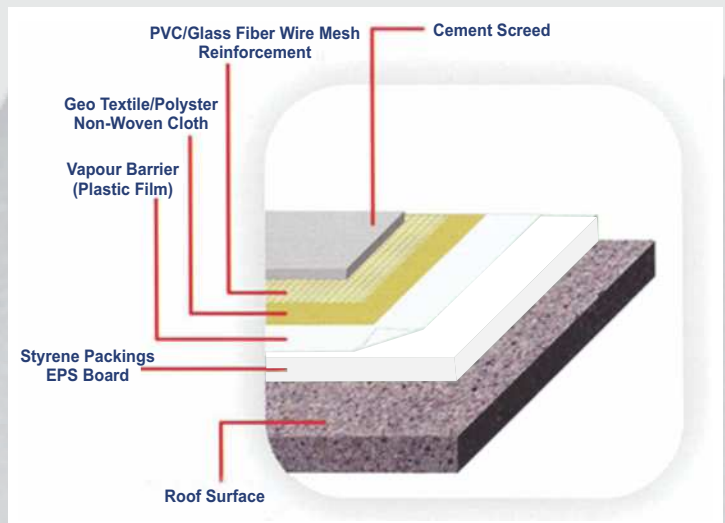
Research conducted by CBRI on the benefit of Styrene Packings EPS Insulation products shows a temperature difference of at least 4 degree Celsius between insulated and non insulated room resulting power saving of the tune 20% over the year.

Styrene Packings has a dedicated fully automatic, state of art manufacturing facility in Gr. Noida with a capacity of around **5 km** of pipe sections and around of **200 cum** of slabs in a single day.

Styrene Packings also offers Extruded Polystyrene (XPS) a new generation Insulation Product with better thermal conductivity and compressive strength. This product is highly recommended for over deck Insulation.

OVER DECK ROOF INSULATION WITH STYRENE PACKINGS EPS BOARDS

- ★ Suitable slope to be provided to the roof surface towards a drain to prevent rain water accumulation.
- ★ Surface preparation (level & clean surface) of the roof to be done.
- ★ Waterproofing to be done to the roof prior to application of thermal insulation.
- ★ Styrene Packings EPS boards 50mm (≥ 50 mm thickness) are placed on the roof connecting the sides. Ensure that the gaps between the boards are filled properly.
- ★ A vapour barrier in the form of a 100~120 gsm plastic film is laid over the boards. A 75 mm overlap is given at the edges



- ★ A 140 gsm geo textile/polyester non-woven cloth is placed on top of the vapour barrier as a separation layer to protect against different expansion among the various layers. A 75 mm overlap is given at the edges.
- ★ A PVC/Glass fiber wire mesh is provided as reinforcement above the polyester non-woven separation layer.
- ★ Fiber-reinforced plasticised cement screed generally with a composition of 1:2:4 of Cement:Sand:Stone aggregate is applied on the PVC wire mesh to cover the surface with the required thickness.
- ★ Cement screed casting should be done in a 1m x 1m panel form with appropriate control joints given to protect against any subsequent thermal expansion-related cracking.
- ★ Tiles can be laid on top of this cement screed surface. This roof is a fully accessible roof.

TYPICAL PROPERTIES OF STYRENE PACKINGS EPS

★ Density range (Regular manufacturing as per IS:4671)	16-32 Kg/cum
★ Thermal Conductivity at 10 ⁰ C mean temperature	0.028 - 0.031 Kcal m/hr.m ² °C
★ Compressive Strength	0.8-1.6 kg/cm ²
★ Cross breaking Strength	1.4-2.0 kg/cm ²
★ Tensile Strength	3-6 kg/cm ²
★ Application Range	-200 C ± 80 ⁰ C
★ Water absorption by % Volume for 7 days in water	0.5%
★ Self ignition point	300 ⁰ C
★ Melting Range	100 - 122 ⁰ C

Styrene Packings offers Expanded polystyrene fully resistant to all concentrated acid except (HNO₃ and H₂SO₄) but it is non resistant to Aliphatic, hydrocarbons, Ketones and Chlorinated hydrocarbons and is affected by ultraviolet rays, It turns yellow and ultimate become brittle if left permanently exposed to sun.

STYRENE PACKINGS (WOOD WORKING DIVISION)

MIRKA

KWH Mirka Ltd. is part of the KWH Group and the biggest manufacturer of coated abrasives in Scandinavia. Through its innovative research and development program, Mirka has become a specialist in flexible abrasives, as well as revolutionary, patented abrasives which allow customers to enjoy a truly dust free surface finishing process.

Mirka has invested heavily in product development and the company has expanded from a leading abrasive producer into a developer and manufacturer of complete sanding systems.

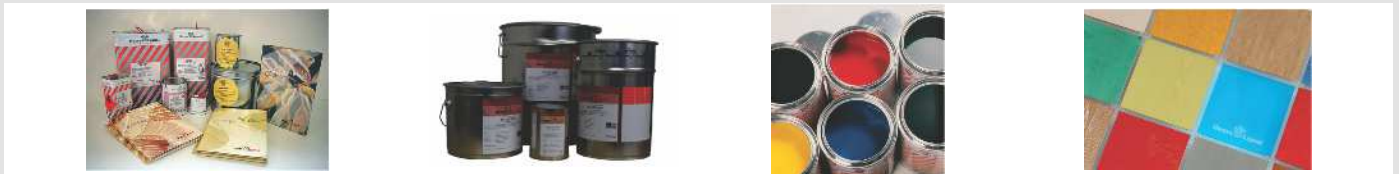
Mirka Power Tools unit develops and manufactures advanced sanding and polishing machines providing outstanding benefits to users. These innovatively designed tools combined with a range of effective, high quality accessories, give Mirka customers unmatched access to a complete sanding solution to meet their needs.



Since our Foundation in the year 1910 it is our aim to be an optimum partner for the wood working trade. For this, we have the know-how of many years of experience.

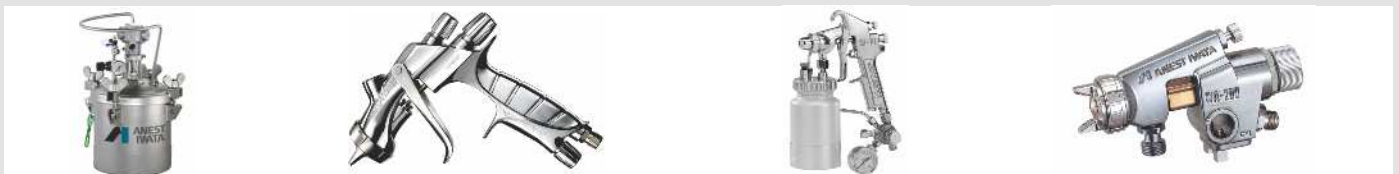
From this developed our forward-looking and innovative enterprise with the extensive Hesse lacquers and stains range, which specially fulfills the needs of joiners and carpenters. So Hesse offers the complete range of high-quality lacquers and stains. Hesse products are manufactured according to most modern formulations and combine standardized quality with easy and secure processing. Here, the needs and wishes of our customers, like e.g. the topic "environmental care", mean a lot to us.

Waterbased lacquers, our Proterra range and the consequent control of all conventional lacquer systems concerning the reduction of solvents, are valuably contributing to the environmental care.



ANEST IWATA Corporation is a manufacturer specializing in Coating equipment, Coating systems, and small- and medium-size air compressors and vacuum pump. Since the foundation of the company, we have exactly satisfied the most advanced needs of customers around the world with the motto of creating innovative and state-of-the-art products.

"Active & Newest Technology" - our corporate name, ANEST IWATA, represents our aspiration to be a company that is always vigorous and a development-oriented organization with cutting-edge technologies.



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