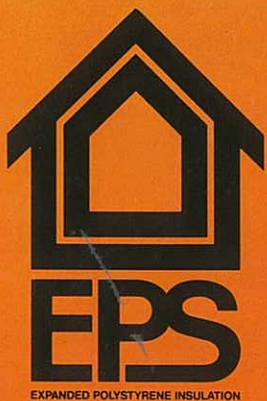
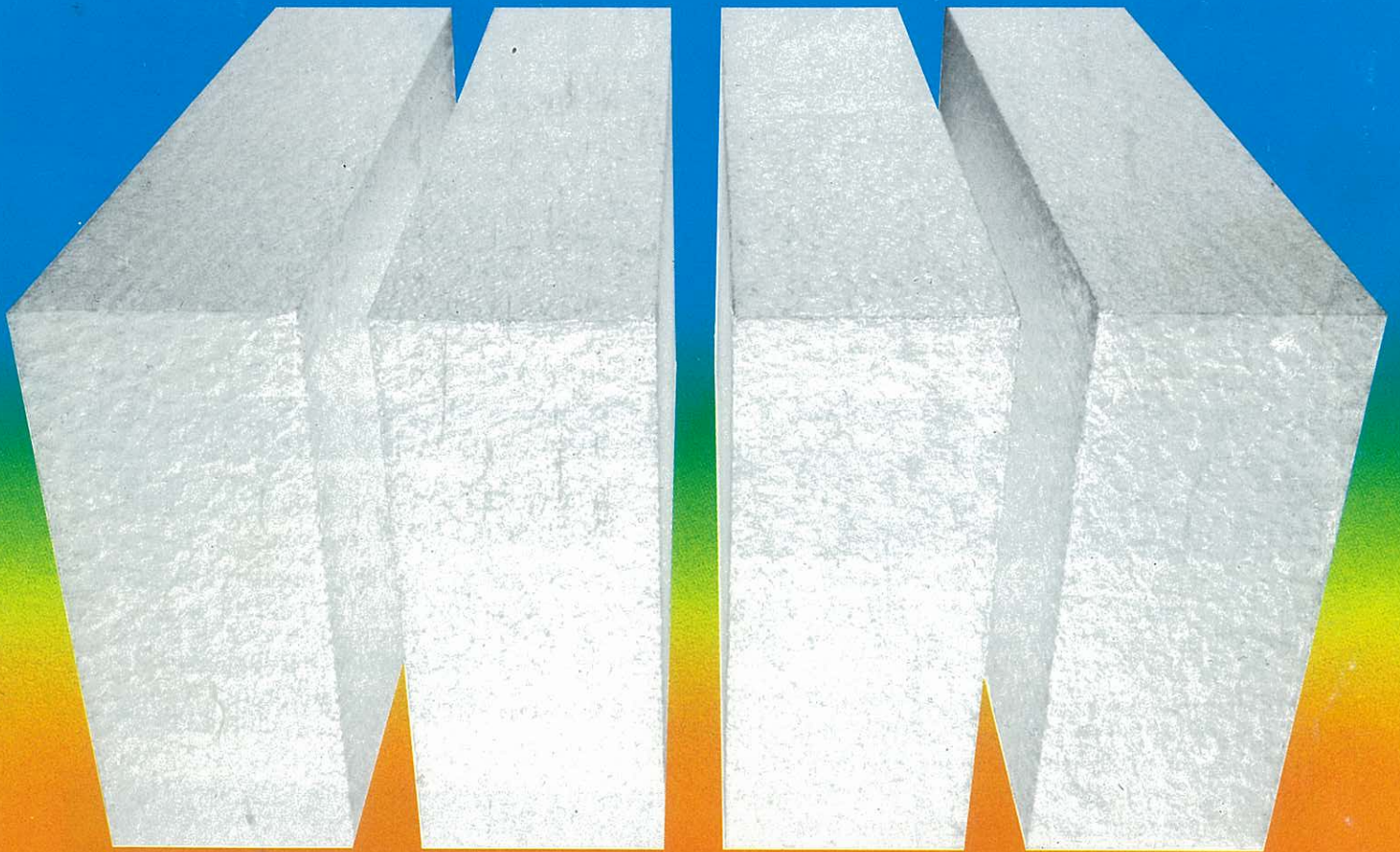


Introducing EPS Thermal Insulation



The Ultimate Insulation

EPS (expanded polystyrene) is the only insulation material that in practical, economic and efficiency terms can be applied to *all* areas of building construction – ceilings, roofs, walls, floors and underslab – to provide superior standards of thermal insulation. That's why EPS is the Ultimate Insulation.

The importance of EPS in the '80s.

Energy resources, their management, conservation and, of course, their cost, dominate world headlines. When you consider the year 2000 is less than twenty years away the importance of coming to grips with these problems cannot be overstated.

In this context one of the important challenges is the construction of buildings in an energy-saving manner. EPS meets this challenge with a product that is compatible with all building materials, yet provides the versatility, design and cost advantages that other materials cannot offer.

EPS is not some idealistic product for the future, it has a record proven over 30 years... EPS works.

The Energy Balance – what does it mean?

Efficient use of energy resources is not just a question of insulation of home or factory, or more effective refrigeration or heating, it is one of total energy balance.

As a simple comparison think of a wall of EPS and a brick wall. The EPS wall need only be 1/20 the thickness of a brick wall to provide equivalent insulation. However, the brick wall is 2,000 times as heavy, and requires 600 times as much energy to produce!

We are not suggesting that homes built from expanded polystyrene will begin mushrooming in the suburbs. What we are saying is, that EPS, used in conjunction with traditional materials, can provide more cost efficient building methods.

The creative architect, engineer or builder has a remarkable material with unlimited potential to develop a safe and practical means for more thermally efficient buildings, and a way to help maintain the energy balance.

The properties of EPS.

EPS is produced from polystyrene beads, which, when expanded and moulded under controlled conditions, form a lightweight block of the required properties.

A simplified list of these properties of EPS shows that the description 'remarkable' is no exaggeration.

- ☐ EPS has exceptional insulating properties with a thermal resistance (R factor) of 0.61-0.74 per 25 mm thickness for the six classes as laid down by the SAA, EPS Standard (1366, Part 3 – 1982)*.
- ☐ It is light and easy to handle.
- ☐ It is self-supporting.
- ☐ It has an excellent strength-to-weight ratio – its cellular structure is its strength.
- ☐ It is easily bonded to most materials using suitable adhesives.
- ☐ It is also inert, odourless, non-irritant, and does not support insect or pest life.
- ☐ It has low water absorption properties.
- ☐ It breathes and does not form vapour dams.

The many applications of EPS.

Insulation for ceilings, roofs, walls and floors, prefabricated panels and building elements.

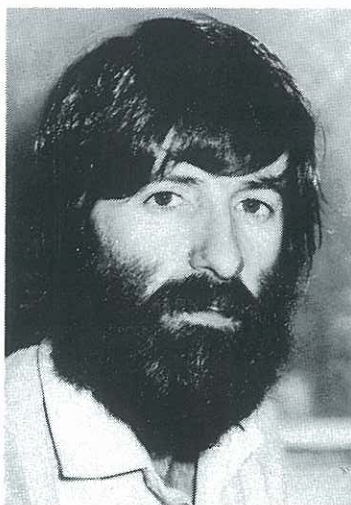
Voids as reusable or in-situ formwork for concrete structures.

Lightweight aggregate for concrete and insulating renderings, and in the production of lightweight clay bricks.

In the area of refrigeration EPS is used exclusively for cold stores, and extensively for deep freeze rooms, pipe insulation and ducting.

Insulation – a comment from John L. Cuthbert FR.M.I.T., A.R.A.I.A.

Architect, lecturer and writer on the subject.



"We might approach the subject by firstly asking, why do we need to insulate? For most people the reason would be related to the idea of maintaining conditions of comfort within a building.

The human body is fairly sensitive to climatic change and definition of comfort will vary from person to person.

However, the variations are relatively small depending on the type of climate and the activity undertaken at the time. Factors which define a comfortable condition include the type of climate – activity – clothing – sex and age – diet and bodyweight.

A common legacy readily adopted today is to mechanically condition buildings to achieve the desired comfort level.

The foreseen needs of today and the future have modified this approach. Our own questioning of the availability of resources and increasing costs of fuel has redirected attention to the appropriate climatic design of buildings displayed by many traditional cultures.

The aim of the climatic design of buildings is to provide comfort conditions that will minimise the need for energy-consuming mechanical plant.

It is in this context that the role of effective and appropriate insulation in buildings is vitally and increasingly important.

Particularly, if we can appreciate that the reported amount of energy used in maintaining satisfactory climatic conditions within buildings is in the vicinity of 25% of Victoria's annual secondary energy consumption.

It encourages design of new buildings with improved thermal performance and promotes the need for rational action on upgrading the performance of existing buildings.

Effective insulation is not just an investment for investment's sake, but might very well be an investment in the future."

The Ultimate Insulation.

The following is a preview of some of the information published in a series of leaflets to support the claim that EPS is the Ultimate Insulation.

- ☐ The manufacturing process and technical properties of EPS, including the new SAA Standard. Flammability and toxicity considerations.
- ☐ The importance of insulation when designing new buildings and how you can plan for the future.
- ☐ Dispelling the misunderstandings of insulation and discussing terminology such as the R factor in detail.
- ☐ Innovative applications of EPS in building and construction.
- ☐ The world-wide acceptance of EPS as a safe and thermally effective building material.
- ☐ Some enlightening results of a head-to-head comparison with other insulating materials.

EPS industry activities in Australia and New Zealand.

The EPS industry has been established in both countries for over 25 years and has experienced rapid growth. However, the general feeling in the industry has been that the potential of this remarkable and proven product has yet to be realised.

To this end, PIA and PINZ have formed EPS Divisions drawn from all major raw material manufacturers, processors and converters. They will actively promote the benefits of EPS, with special emphasis on insulation.

Specifically, the divisions will present detailed product information to decision makers in the building industry to foster greater understanding and acceptance of EPS and its outstanding properties.

Above all else the EPS industry wants to provide an open line to the building sector. If you have any ideas or queries on the application of EPS, please contact the EPS Division of either the Plastics Institute of Australia, or the Plastics Institute of New Zealand.

The EPS symbol.

A significant feature of the activities of the EPS Divisions is the application of the international EPS logo. It will achieve two major objectives. First, it will develop increased awareness for this outstanding insulation material. Second, as only approved processors and converters are permitted to use this symbol, it is a confirmation to the building industry that EPS insulation is a quality product.

The information in this bulletin represents the views of the EPS Divisions of The Plastics Institute of Australia Inc. and the Plastics Institute of New Zealand and does not necessarily reflect the opinions of all members of these bodies. The information is to the best of our knowledge true and accurate but all instructions or suggestions are made without guarantee. Since the conditions of use are beyond their control the EPS Divisions of The Plastics Institute of Australia and the Plastics Institute of New Zealand disclaim any liability for loss or damage suffered from use of these data or suggestions. Furthermore no liability is accepted if use of any product in accordance with these data or suggestions infringes any patent.

*New Zealand Adoption applied for.

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