



The original ALL-IN-ONE insulation system

THERMOBREAK™
Thermal Insulation

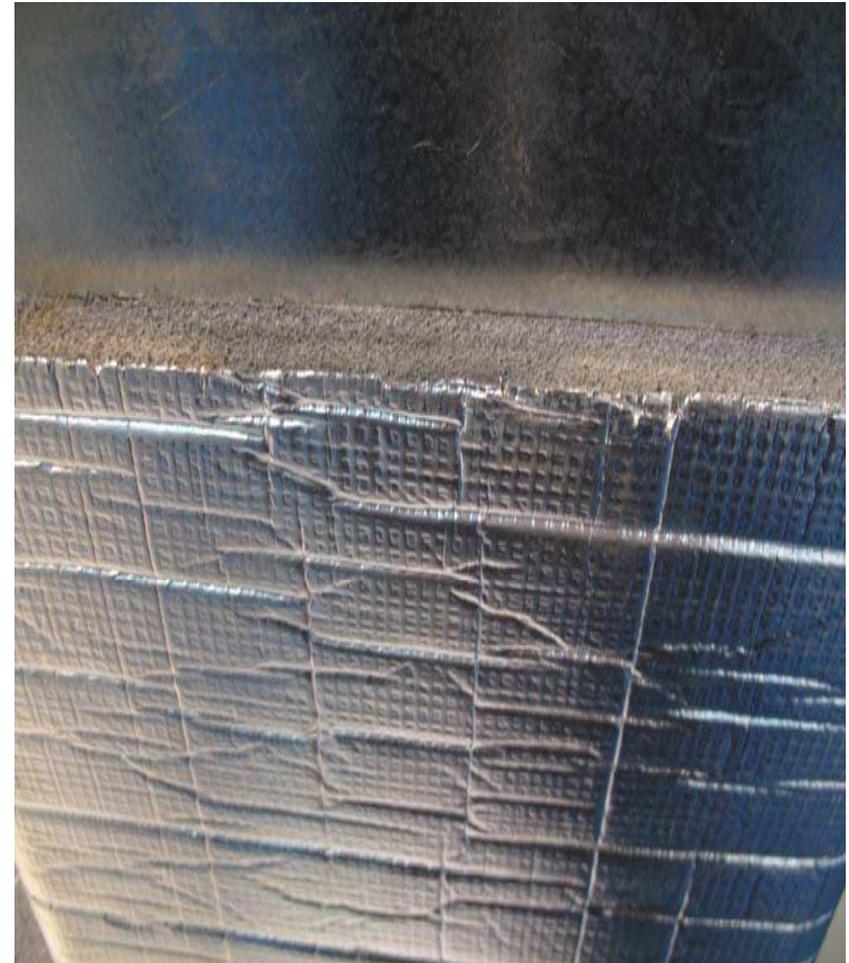
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THERMOBREAK™
ECO TUBE
Pipe Insulation



What is Thermobreak ?

- ❖ Thermobreak is a flexible ALL- IN -ONE insulation material .
- ❖ Made from Electron Beam Crosslinked, closed cell polyolefin foam. It is flame fused to high grade, reinforced, 9um pure aluminium foil and factory applied acrylic adhesive.
- ❖ Engineered cell size for optimum insulation performance.
- ❖ The special crosslinking process , as well as its completely closed cell structure result in insulating properties that are superior to fibreglass, rubber based or chemically crosslinked foams.
- ❖ Year of introduction : 1987 (Australia)
- ❖ Made in Australia.
- ❖ Exported worldwide





Advantages as a glance

- ❖ Physically Crosslinked foam.
- ❖ Best insulation of any flexible insulation materials (0.032 W/mK) @ 23 Deg C
- ❖ Better vapour permeability resistance than any other flexible insulation material (0.0002 perm-inch)
- ❖ Fastest installation than any other flexible insulation material
- ❖ Engineered cell size for optimum insulation performance.
- ❖ Certified to international Fire and Smoke standards
- ❖ Supported by ThermaCalc® computer selection program.
- ❖ Made in Australia to ISO9000 standards.





Major Applications

- ❖ Duct
- ❖ Pipe
- ❖ Raised floor
- ❖ Roofing
- ❖ Underslab



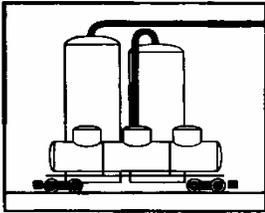
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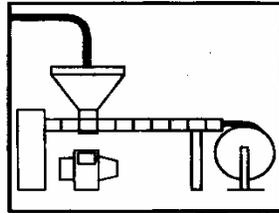


The Thermobreak process.



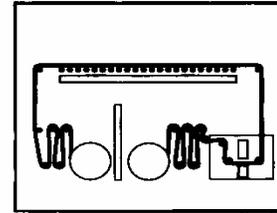
RAW MATERIALS

Only materials meeting Pilon's exacting specifications are used.



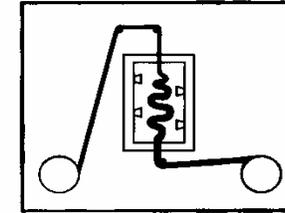
EXTRUSION

Resin and foaming agent and other additives are mixed together and Extruded as a solid plastic sheet.



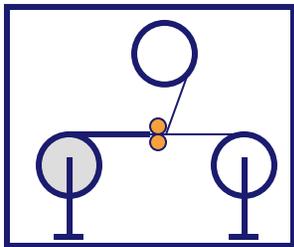
IRRADIATION

Crosslinking is precisely controlled to meet the rigorous quality specifications



FOAMING

Precisely controlled vertical foaming provides consistent properties, a fine closed cell structure and a smooth sealed surface.



FOIL LAMINATION

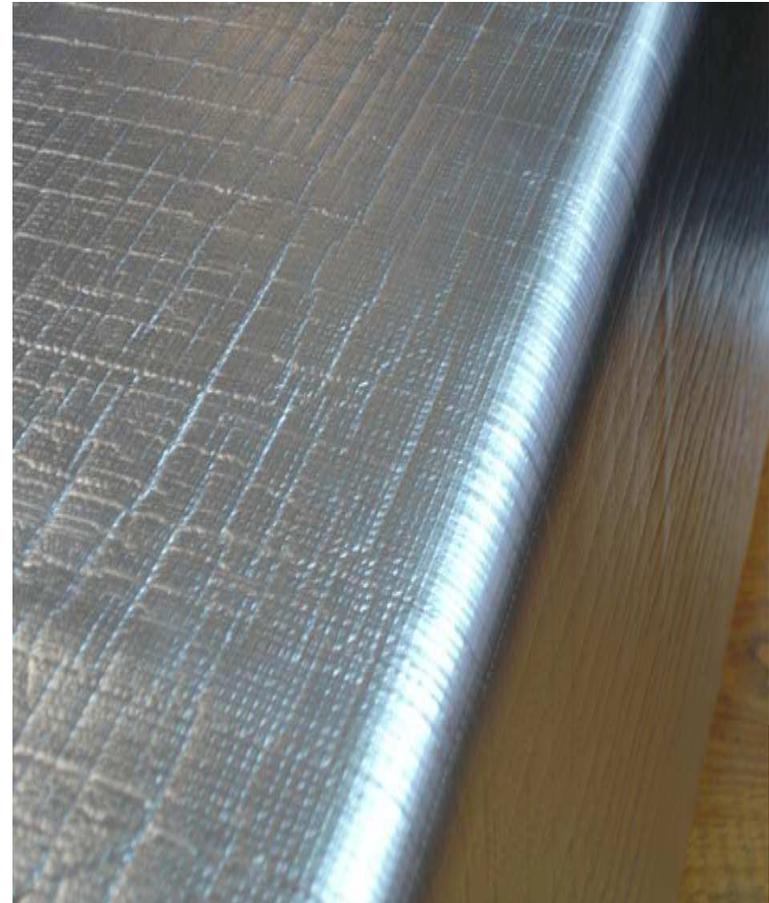
The foam and aluminium foil are fused together using FUSION process. The result is a permanent bond.





Features

- ❖ Superior insulation capacity due to very low Thermal Conductivity (k) value of 0.032 W/mK (23 C, 65-70 % R.H.)
- ❖ Almost zero vapor permeability (0.0002 perm-inch, $\mu > 15,000$)
- ❖ Insulation performance remains unchanged during the life of the project.
- ❖ Wide temperature range (-80 C to +100 C)
- ❖ Will not absorb or allow the spread of water vapour thus preventing formation & spread of condensation. No additional vapour barrier required.
- ❖ NO compression around corners due to closed cell structure.





Critical Insulation factors

❖ Thermal Conductivity (k value)

- Thermal Conductivity defines how good an insulating material is. The lower the K value the better the performance per unit thickness.

Thermobreak	0.032	W/mK
Fibreglass (32Kg)	0.036 – 0.038	W/mK
Elastomeric	0.036	W/mK

❖ Vapour Permeability

- Perhaps the most critical factor in service. Due to differing vapour pressures on the cold and hot side of the insulation, vapour permeates through the insulation . The result is condensation . Open cell materials will allow the spread of condensation , thus significantly reducing insulation performance. Closed cell materials exhibit variable rates
- Thermobreak : 0.0002 perm-inch, Fibreglass : 75 perm-inch, Elastomeric : 0.02 perm-inch

❖ Water absorption

- Any insulation material absorbing water will reduce its insulation performance considerably, leading to higher energy costs.
- eg. If fibreglass absorbs 1-1.5% moisture, its insulation performance is reduced by 36% (HVAC manual – 10.6 McGraw Hill)



Condensation prevention

CONDENSATION IS A MAJOR PROBLEM CAUSING EXTENSIVE PROPERTY DAMAGE AND COSTLY REPAIRS.

Main reasons for condensation

1. Inadequate insulation used (*thickness selection*)
2. Insulation material with high vapour permeability
3. Poor installation technique.



Condensation

Fibrous /open cell materials will absorb water formed from condensation and allow it to spread throughout the ducting system. Wet Insulation will no longer be able to insulate properly.

Closed cell materials WILL NOT ALLOW THE SPREAD OF CONDENSATION