

THERMOBREAK[®] Ls

Thermal Insulation



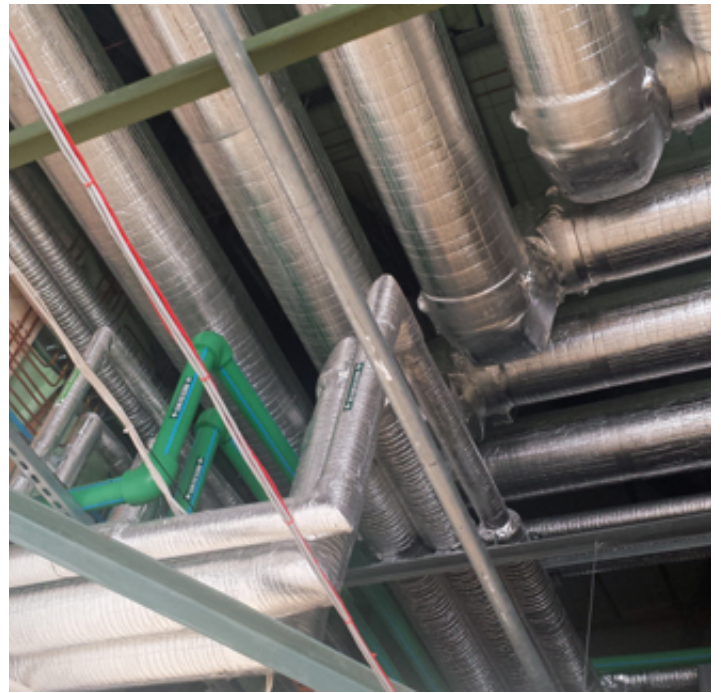
Physically Crosslinked closed cell polyolefin foam insulation for ducts and pipes.

SEKISUI

FOAM
INTERNATIONAL
Global Foam Solutions

PHYSICALLY
CROSSLINKED
SEKISUI TECHNOLOGY





Setting the Standard

Thermobreak® is the leading and most innovative polyolefin foam thermal insulation available to the HVAC and Building industry worldwide. Thermobreak's performance is unsurpassed.

Developed in Australia over 25 years ago, Thermobreak® is manufactured using our proprietary physically crosslinked polyolefin foam technology, invented and commercialised by the Sekisui Chemical group in Japan.



Thermobreak®LS offers the same features and benefits as our standard product the added benefit of FM approval, thus meeting the highest fire ratings available today for duct and pipe insulation. Factory Mutual (FM) is the worldwide leader in fire safety and loss prevention.

FM 4924 Standard for duct and pipe insulation is a large scale fire test. The product and factory fall are under the FM third party supervision system.

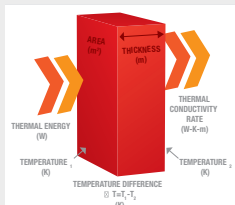
Compliance to International Fire & Smoke Standards

In addition to FM 4924 Approval, Thermobreak® LS meets and complies with major international fire and smoke Standards

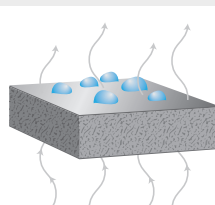
- > BRITISH (BS 476 Class 0, BS 6853)
- > AUSTRALIAN (AS 1530.3)
- > ASTM E84 (25/50)
- > ISO and European Standards (EN 45545-2)
- > Thermobreak LS has UAE Civil Defence Certificate of Compliance.

Technically Superior

Our unique physically crosslinked technology results in a smaller and more evenly distributed cell structure. Cell structure directly affects thermal conductivity and vapour permeability. Both are key factors in insulation performance.



Thermal Conductivity:
0.032 W/mK (23°C) is the lowest of any flexible insulation material. On equivalent thickness basis, **Thermobreak®** provides up to 18% insulation than elastomeric and chemically crosslinked foams.



Vapour Permeability of almost zero ensures our thermal conductivity remains relatively constant for a period of 10 years thus significantly contributing to building sustainability and energy cost reduction.

Vapour Permeability = 2.3×10^{-15} Kg/Pa.s.m
 Permeability Resistance Factor: $\mu > 80,000$



The Address Sky Views, Dubai UAE
M&E Consultant: NORR Consulting Engineers



Fountain Views, Dubai UAE
M&E Consultant: Deewan/WME Consulting Engineers

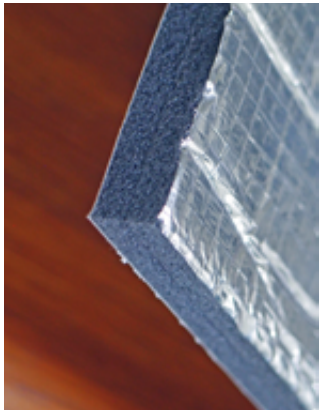


University of Technology, Sydney AUS



Westfield Plaza, Sydney Australia
M&E Consultant: Norman Disney Young

Quality Materials Engineered to Last



Thermobreak® is supplied with factory applied reinforced aluminium foil facing and repositionable acrylic tissue adhesive system.

Our materials are of the highest quality.

Our **aluminium foil facing is reinforced** providing additional physical protection to the insulation and at the same time reducing heat flow.

Thermobreak® is the only material that uses **tissue interlayer based adhesive system**. Unlike conventional direct coated adhesives, our system ensures that the adhesive provides 100% coverage on the duct surface and on the foam insulation.



This feature also provides the additional benefit of repositionability, an essential requirement during installation. The insulation can be lifted off the duct numerous times during alignment without tearing the insulation.

Building Sustainability

Building Sustainability, Energy Efficiency, Indoor Air Quality and Health & Safety, are all key elements embodied in the Green Building concept.

Thermobreak® insulation is manufactured to support and comply with such initiatives and enables credit point accumulation through various building accreditation systems such as LEED and Estidama.

- Green Star Compliant (VOC)
- No CFCs or HCFCs
- Zero Ozone Depletion Potential (Montreal Protocol)
- Low GWP
- Zero PVC, Zero Formaldehyde
- Dubai GBR approved
- Compliance to RoHS Directive
- Compliance to REACH Directive
- Resistance to Mould Growth



THERMOBREAK[®] Ls

TECHNICAL SPECIFICATIONS

Physical Properties

| | |
|---|--|
| Material: | Physically (irradiation) crosslinked closed cell polyolefin foam with factory applied reinforced aluminium foil and acrylic adhesive backing |
| Density: | 25 kg/m ³ (foam core only) |
| Thermal Conductivity: (ASTM C518) | 0.032 W/mK (@ 23°C mean temp.) 0.036 W/mK (@ 36°C mean temp.) |
| Water Vapour Permeability: (ASTM E96) | 2.3 x 10 ⁻¹⁵ kg/Pa.s.m |
| Water Vapour Permeance: 12mm thickness | 0.000195 µg/N.s |
| Water absorption by volume: (JIS K6767) | <0.1% v/v (0.00038 g/cm ²) |
| Permeability Resistance Factor: | µ > 80,000 |
| Resistance to fungi: (ASTM G21) | Zero Growth |
| Ozone Resistance: | Excellent |
| UV Resistance: | Excellent |
| Noise Reduction Coefficient: (AS 1045) | 0.20 (12mm foam thickness) 0.30 (25mm foam thickness) |
| Operating Temperature Range: | -80 °C ~ +100 °C (no adhesive) |
| GreenStar Rating: (ASTM D5116) | Low VOC Emitting |
| Physical Property Requirements: (ASTM C1427) | COMPLIES (Type II - Sheet) |
| REACH Directives: (1907/2006/EC) | COMPLIES |

Product Certification may be plant specific. Please consult with your local representative.

Distributed by

Fire and Smoke Behaviour

| | | |
|--------------------|--|------------------------|
| BS476 Parts 6 & 7: | | CLASS 0 |
| ASTM E84 | COMPLIES (NFPA 90A & B) Flame Spread Index: <25 Smoke Developed Index: <50 | |
| AS1530 Part 3 | Ignitability Index: 0 Spread of Flame Index: 0 Heat Evolved Index: 0 Smoke Developed Index: 0-1 | |
| FM 4924 | Pipe Up to 8" IPS (219 mm) Up to 50 mm wall thickness Sheet: Up to 25mm thickness | FM Approved |
| EN ISO 11925 | Reaction to Fire | Complies (Euroclass E) |
| EN 45545-2 | Smoke Toxicity | Complies (HL3) |
| EN 45545-2 | Smoke Density | Complies (HL3) |

Size Availability

Preformed tube:

| Wall thickness (mm) | Min ID (mm) | Max ID (mm) | IPS (inches) |
|---------------------|-------------|-------------|--------------|
| 15mm | 7.0 | 273.0 | 10" |
| 20mm | 7.0 | 273.0 | 10" |
| 25mm | 7.0 | 273.0 | 10" |
| 30mm / 35mm | 9.5 | 254.0 | 8" |
| 40mm / 50mm / 55mm | 12.7 | 219.2 | 8" |

Tube length: 2 metres
(Other lengths available on request)

Sheet:

- 8mm: 50m x 1200mm rolls
- 10mm: 20m x 1200mm rolls
- 12mm: 20m x 1200mm rolls
- 15mm: 20m x 1200mm rolls
- 20mm: 20m x 1200mm rolls
- 25-50mm: 2300mm x 1200mm sheets

Other sizes available on request

Thermobreak[®] is a registered trademark of Sekisui Chemical Co. Ltd. or its subsidiaries.

SEKISUI **FOAM**
INTERNATIONAL
Global Foam Solutions



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