



THERMOBREAK[®]
Thermal Insulation
Themobreak Roof Insulation

SOFTLON[®]
INSULATED SHEET METAL



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.
- **Thermobreak**[®] thermal insulation is an all-in-one closed cell physically crosslinked polyolefin foam that is manufactured in compliance to ASTM C1427 Standard. It is factory bonded to pure reinforced aluminium foil.
- **Thermobreak**[®] is manufactured using our proprietary physically crosslinked polyolefin foam technology, invented and commercialised by the Sekisui Chemical group in Japan. The technology allows crosslinking of the polyolefin without the use of chemical agents. Instead the Sekisui process utilises clean and precise crosslinking through irradiation (physical) means.

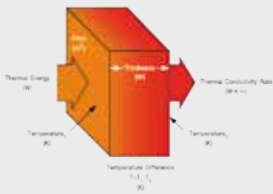
SEKISUI

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Sekisui has been manufacturing crosslinked polyolefin foams since 1967. Today Sekisui Foam division is the largest and leading crosslinked polyolefin foam manufacturer in the world.

Superior Thermal Performance for energy savings

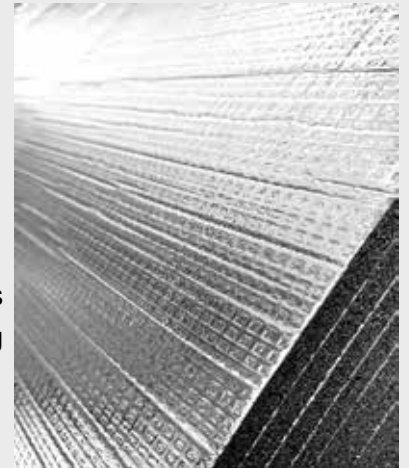
Our unique physically crosslinked technology results in a smaller and more evenly distributed cell structure. Cell structure directly affects thermal conductivity and vapour permeability. Both are key factors in insulation performance.



Thermal Conductivity: 0.032 W/mK (23 °C)

The lowest of any flexible insulation material. On equivalent thickness basis, Thermobreak provides up to 20% better insulation than chemically crosslinked foams and bubble based materials

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.



Compliance to International Fire & Smoke Standards

Thermobreak has been tested and complies to International Fire and Smoke Standards including



- BRITISH (BS 476 Class 0)
- ASTM (ASTM E-84)
- AUSTRALIAN (AS 1530.3)
- ISO and European Standards (EN)
- UL 94 (HF-1)

Building Sustainability



- Green Star Compliant (VOC)
- No CFCs or HCFCs
- Zero Ozone Depletion Potential
- Low GWP
- Compliance to RoHS Directive
- Compliance to REACH Directive
- Resistance to Mould Growth
- Non-Allergenic Properties

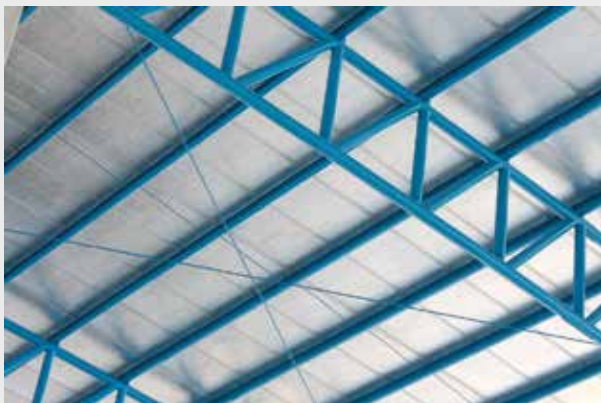


TYPICAL APPLICATIONS



Technical Specifications-Thermobreak Sheet (roofing)

Material :	Physically (irradiation) crosslinked closed cell polyolefin with factory applied reinforced 9 micron aluminium foil
Density :	25 kg/m ³ (foam core only)
Thermal conductivity : (ASTM C518)	0.032 W/m ² K (@ 23 °C mean temperature)
Water Vapour Permeability (ASTM E96)	8.19x10 ⁻¹⁵ kg/Pa.s.m. (0.029 mg.m/N.h)
Water Vapour Permeance :	3.3 x 10 ⁻⁴ g/MN.s
Water absorption by volume : (JIS K6767)	<0.1% v/v (0.00038 g/cm ²)
Permeability Resistance Factor :	μ > 20,000
Resistance to fungi : (ASTM G21)	Zero Growth
Ozone Resistance :	Excellent
UV Resistance :	Excellent
Noise Reduction Coefficient : (ISO 354)	0.20 (12mm foam thickness) 0.30 (25mm foam thickness)
Operating Temperature Range :	-80 °C ~+ 100 °C (no adhesive)



FIRE AND SMOKE BEHAVIOUR

ASTM C411 :		COMPLIES (NFPA 90A & B)
ASTM E84 :	Flame Spread Index : Smoke Developed Index :	<25 <50
ASTM E162 :		COMPLIES (NFPA 130)
ASTM E662 :		COMPLIES (NFPA 130)
AS1530 Part 3	Ignitability Index : Spread of Flame Index : Heat Evolved Index : Smoke Developed Index :	0 0 0 0-1
AS 3837	BCA Group Number : Smoke Index :	1 ≤250
BS476 Parts 6 & 7		CLASS 0
BS 6853 Annex B	Smoke Toxicity	COMPLIES (R<1.0)
IMO MSC 61(67) Part 2	Smoke Toxicity	COMPLIES
ISO 5659 Part 2	Smoke Density	COMPLIES (IMO MSC 61(67) Part 2) D _m < 200 Satisfies max allowable concentrations For the following combustion gases : CO, HCl, HBr, HF, HCN, NO _x , SO ₂
UL 94	Horizontal Burn	UL APPROVED (HF-1)

Range and availability

5mmT	x	1.2mW	x	50mL
8mmT	x	1.2mW	x	50mL
10mmT	x	1.2mW	x	20mL
12mmT	x	1.2mW	x	20mL
15mmT	x	1.2mW	x	20mL
20mmT	x	1.2mW	x	20mL
25mmT	x	1.2mW	x	15mL



SOFTLON Sheet metal roof insulation is designed for direct lamination and roll forming roof systems. It is manufactured by laminating surface treated steel sheet and Softlon insulating material.

The combination provides the sheet with enhanced performance characteristics such as heat insulation, condensation prevention and noise proofing while maintain the aesthetic features of the sheet metal.

Benefits

- Improved comfort level inside the building
- Reduced cooling greatly contributes to energy efficiency
- Cost and time saving of installation
- Noise reduction effects through dampening of external noise
- Improved aesthetics
- Lightweight
- Excellent chemical resistance



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INSULATED SHEET METAL

Technical specification

Property	Typical Value	Test Method
Density	25 kg/m ³ (nominal)	Internal
Tensile Strength	3.1 kg/cm ² MD 1.7 kg/cm ² CD	JIS K6767
Elongation	215% MD 144% CD	JIS K6767
Tear Strength	1.7 kg/cm MD 0.9 kg/cm CD	JIS K6767
Compressive Hardness	0.29 kg/cm ²	JIS K6767
Compression Strength	0.30 kg/cm ² @ 25% 0.85 kg/cm ² @ 50% 2.61 kg/cm ² @ 75%	Internal
Compression Set	7.5% @ 25%	JIS K6767
Dimensional Change Heat	-1.40% MD -0.90% CD	70 °C, 22hr
Operating Temperature Range	-80 °C - +100 °C	
Thermal Conductivity	0.032 W/m/°K (@ 23 °C mean temperature)	ASTM C518
Flammability Properties	Pass	UL94 (HF-1)
Water Absorption	0.10 mg/cm ²	JIS K6767
Water Vapour Permeability	8.3x10 ⁻¹⁴ kg/m/s/Pa	JIS Z0208



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