

# THERMOBREAK™

Thermal Insulation

Physically Crosslinked Foam Insulation



**SEKISUI**

**FOAM**  
**INTERNATIONAL**  
Global Foam Solutions

Thermobreak™ is the original "All in One" flexible thermal insulation made from physically crosslinked closed cell polyolefin foam, factory fused to a reinforced 9um aluminium foil and backed with a specially developed acrylic tissue interlayer adhesive system.

Designed for value and proven to perform, Thermobreak™ products offer outstanding thermal insulation properties and effective condensation control.



## PHYSICALLY Crosslinked – Engineered cell size and density for outstanding thermal performance.

Thermal Conductivity – 0.032 W/mK (@23° C meant temp, 50-70% R.H)

Physical ( irradiation) crosslinking utilises an electron beam process that is clean and precise. Developed by the Sekisui company, the process results in a very fine and even cell structure. Cell size affects thermal conductivity and hence thermal performance. Thermobreak™ insulation provides much better thermal as well as physical properties than chemically crosslinked and elastomeric foams.



## Almost zero vapour permeability for effective condensation control.

Permeance :  $3.3 \times 10^{-4}$  g/M.N.s

Permeability :  $8.19 \times 10^{-15}$  Kg/Pa.s.m (0.029 mg.m/N.h)

Permeability Resistance Factor :  $\mu \geq 20,000$

Vapour diffusion into the insulation material is one of the major causes of condensation. The subsequent spreading of water after condensation can reduce the insulation capacity of a material by as much as 50% .

Thermobreak™ is a Class 1 Vapour Retarder as defined in ASHRAE 2009, and classified as a Vapour barrier for Chilled Water systems under BS 5422. Thermobreak™ also complies with ASTM C755-03 as a vapour retarder for Thermal insulation.

This ensures effective condensation prevention , often associated with vapour permeability through the insulation. The closed cell structure prevents absorption and stops the spread of water.



## Extensive Fire and Smoke testing.

All fire and smoke tests are certified by independent accredited laboratories.

Thermobreak™ insulation has been extensively tested to major national and international standards, including Australian, British, UL, American, European, and ISO Standards.

Thermobreak™ products are also approved and listed by several national bodies such as PSB ( Singapore), HK Fire Services Bureau, as well as BOMBA ( Malaysia), Dubai Municipality, Qatar Civil Defence and Bahrain Civil Defence.

Thermobreak meets the NFPA 90A and NFPA 90B standards.



## Reinforced pure aluminium foil facing

Thermobreak™ is supplied with factory applied reinforced aluminium foil facing. The 9um foil with the strong reinforcement weave offers superior physical protection to the insulation. No additional coatings or protection is required. The closed cell structure and foil facings ensure almost zero vapour permeability.



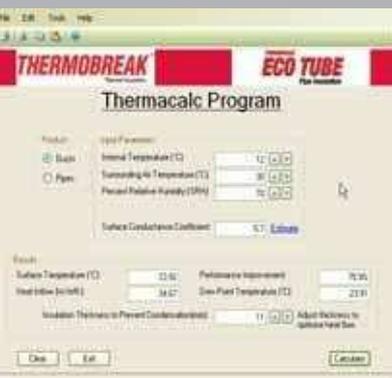
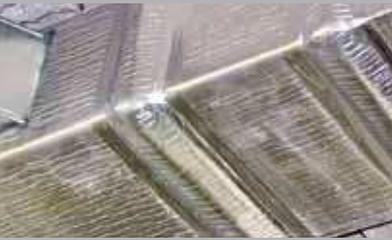
## Acrylic tissue adhesive system

The acrylic tissue interlayer adhesive system is designed to perform in a variety of extreme conditions.

The tissue interlayer system is specially developed to ensure foolproof application. It is designed to be re-positionable at the installation stage before permanently curing to the steel duct. Unlike direct coated systems, this ensures proper installation without damage to the insulation caused by repeated alignment of the insulation to the duct.

## Faster installation

The "All-in-One" system enables fast and easy installation thus providing significant installation cost savings and a superior job finish. No additional vapour barriers, coatings or mechanical fasteners are required.



## Extensive Technical Support

Thermobreak™ is supported by an experienced line of professionals as well as an extensive support system to assist you in its specification and use.

- Our dedicated ThermoCalc® computer selection program enables the specifiers and users to swiftly select the most suitable thickness based on the design climatic conditions of the region.
- A complete list of Technical Bulletins covering all aspects of insulation topics.
- A comprehensive "Infokit" with installation instructions, copies of certificates and tests, as well as reference project lists.



## Other Features

- Certified Green Star Product (VOC)
- Anti-Microbial to ASTM G21
- Fibre free - does not emit fibres in installation or service
- Acoustic Dampening - Thermobreak™ offers excellent vibration dampening. Due to the closed cell structure, Thermobreak™ will reduce the transmission of structural borne noise and vibration. It also acts as a barrier reducing the transmission of noise from the source
- Excellent chemical and ozone resistance.
- Wide temperature range
- CFC and HCFC free



Governor Phillip Tower, Sydney



6T Project, Abu Dhabi



ADNOC HQ, Abu Dhabi



Wyeth Pharmaceutical, Singapore



Roshana Tower, Dubai





## Applications

- Duct Insulation
- Raised floor insulation
- Tank insulation
- Underslab insulation
- Wall and roof insulation
- Pipe insulation (Thermobreak™ Tube)



## Sizes and Availability



Thickness	Size
8-mm	50m X 1200 mm rolls
10-mm	20m X 1200 mm rolls
12-mm	20m X 1200 mm rolls
15-mm	20m X 1200 mm rolls
20-mm	20m X 1200 mm rolls
25-mm	15m X 1200 mm rolls or 2300 mm X 1200 mm sheet



## Wide Distribution Network

Thermobreak™ is available worldwide through a wide distribution network. For your nearest dealer please visit our website [www.sekisuipilon.com.au](http://www.sekisuipilon.com.au)



Sharjah Expo Centre, Sharjah



Healthcare City, Dubai



Khalifa Stadium, Qatar



Gargash Tower, Dubai



Cultural Village, Qatar





Governor Phillip Tower, Sydney

6T Project, Abu Dhabi

SSMC Semiconductor, Singapore

Madinat Jumeirah, Dubai

Cyberport, Hong Kong



# Technical Specifications

Material (Duct insulation sheet) :	Irradiation (physically) crosslinked polyolefin foam with factory applied reinforced 9 um aluminium foil and acrylic adhesive backing.
Thermal Conductivity: (ASTM C518)	0.032 W/mK (@ 23° C mean temperature)
Density :	25 Kg / m3 (foam core only)
Water Vapour Permeability : ( ASTM E96)	8.19 X 10 <sup>-15</sup> Kg/Pa.s.m ( 0.029 mg.m/N.h)
Water Vapour Permeance:	3.3 X 10 <sup>-4</sup> g/M.N.s
Permeability Resistance Factor:	μ ≥ 20,000
Water absorption by volume : (DIN 53428)	After 28 days < 0.8%
Operating Temperature :	- 80° C ~ 100° C
Tensile Strength :	MD 263 N/50mm CD 270 N/50mm
Resistance to fungi: (ASTM G21)	Zero Growth
Ozone Resistance:	Excellent
Noise Reduction Coefficient: (NRC)	0.20 (12 mm) 0.30 (25 mm)

## FIRE AND SMOKE BEHAVIOUR

BS 476 part 6 & 7 Class 0

ISO 5659-2 (1994)

Smoke Density and Toxicity (with gas analysis)

Smoke Density	Dm < 200
Smoke Toxicity	Satisfies max allowable concentrations for the following combustion gases : CO, HCL,HBr,HF, HCN,NOx,SO2

ASTM E84\* Complies 25/50 maximum

NFPA 90A, NFPA 90B Complies with requirements

AS1530.3 (1999) Spread of flame index 0

Australian Standard Heat Evolved Index 0

Ignability Index 0

Smoke Develop Index 0-1

UL 94: HF-1 (UL listed product)

BS 6853 R= 0.66 (satisfies smoke density & toxicity requirements of BS 6853)

(Smoke density & toxicity)

Distributor:

# SEKISUI

# FOAM INTERNATIONAL

Global Foam Solutions

Australian Plant:  
1-5 Parraweena Rd, Taren Point NSW 2229 Australia  
PO BOX 2898, Taren Point NSW 2229 Australia  
Web Address: [www.sekisuiipilon.com.au](http://www.sekisuiipilon.com.au)  
Tel: +61 2 9525 9880  
Fax: +61 2 9525 8004

Thailand Plant:  
700/329 Moo 6, Amata Nakorn Industrial Estate,  
Tumbol Donhua-Ioh, Amphur Muang Chonburi 20000  
Thailand  
Tel: +66 3821 3219 ~ 26  
Fax: +66 3821 3281

