

# **THERMOBREAK<sup>®</sup>**

Thermal Insulation

Closed Cell Physically crosslinked  
polyolefin foam insulation

**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.

Thermobreak® was developed in Australia and has sold worldwide for over 25 years. The revolutionary insulation product has a factory applied reinforced foil facing and adhesive backing. Thermobreak® enables much faster installation and eliminates many errors and limitations encountered when using older insulation technology.

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 has been manufacturing crosslinked polyolefin foams since 1967. Today Sekisui Foam division is the largest and leading crosslinked polyolefin foam manufacturer in the world operating 10 foam factories located in Europe, USA, Thailand, Japan, Korea, and Australia.

Our commitment to quality, safety and the protection of the environment is embodied by our operations all being certified to the ISO9001 Quality Management, ISO 14001 Environmental Management and OHSAS 18001 Occupational Health and Safety Management standards.

**SEKISUI**

**PHYSICALLY  
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SEKISUI TECHNOLOGY



**Menara Astra** Jakarta, Indonesia  
M&E Consultant Meinhardt Indonesia



**Sama** Beirut, Lebanon  
M&E Consultant ERGA Group

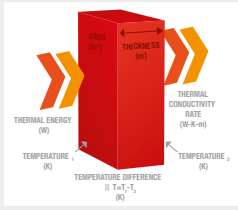


**Marina 106** Dubai, UAE  
M&E Consultant  
BHNS Engineering  
Consultants

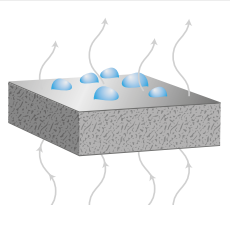


# Technically Superior

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

## Third Party Certification & Testing

Thermobreak® is third party certified ensuring that important technical specifications and test results are third party verified through factory assessment or market surveillance. There are published online for customer verification and updated as per the certifying body regulations.



## Compliance to International Fire & Smoke Standards for duct and pipe insulation

- > British Standards BS 476 ( Parts 6 and 7)
- > National Fire Protection Association (NFPA) – NFPA 90A and 90B
- > American Standards ASTM E84, ASTM C411
- > Australian/New Zealand Standard AS 1530.3
- > European Standards EN 14313
- > International Standards ISO 5659, ISO 9705

Our testing regime includes various thicknesses in the range to ensure safety across all thickness used in projects.

## Proven Reliability for Over 25 Years

With Thermobreak® installed in over 600 projects worldwide, our experience and results speak for themselves.

Tested and proven and in a variety of climatic conditions Thermobreak® has established an enviable reputation as a quality, reliable, closed cell insulation performing flawlessly and delivering significant energy savings to building owners and operators

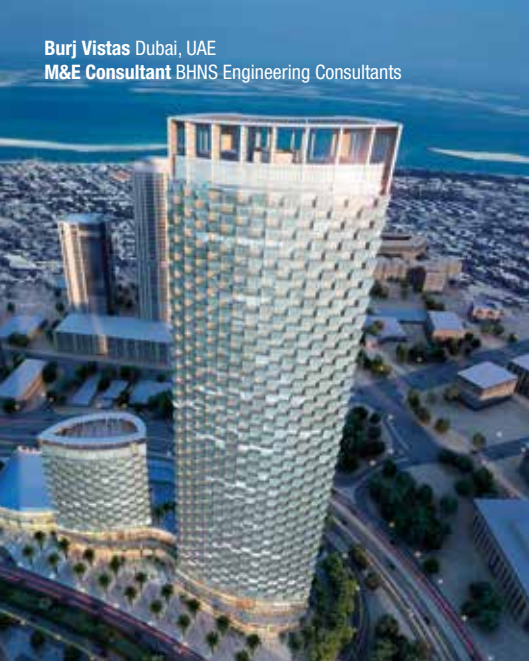
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Bay Sands MBR Manila, Philippines



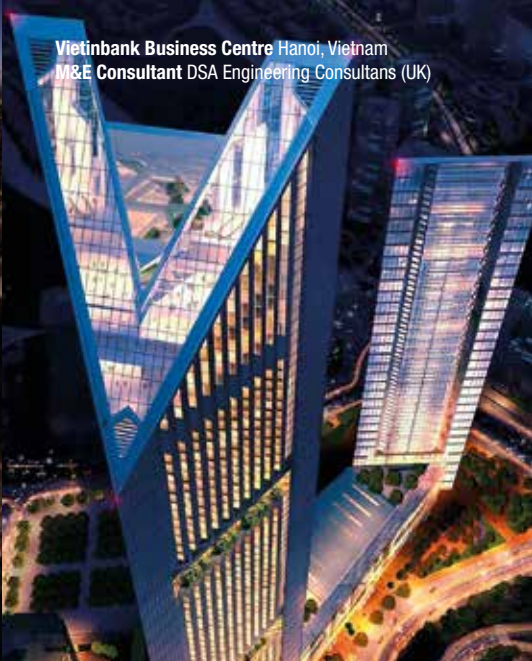
Burj Vistas Dubai, UAE  
M&E Consultant BHNS Engineering Consultants



St Regis Hotel & Residences Amman, Jordan



Vietinbank Business Centre Hanoi, Vietnam  
M&E Consultant DSA Engineering Consultants (UK)



**Khalidia Plaza View Abu Dhabi, UAE**  
M&E Consultants Bayat Architects



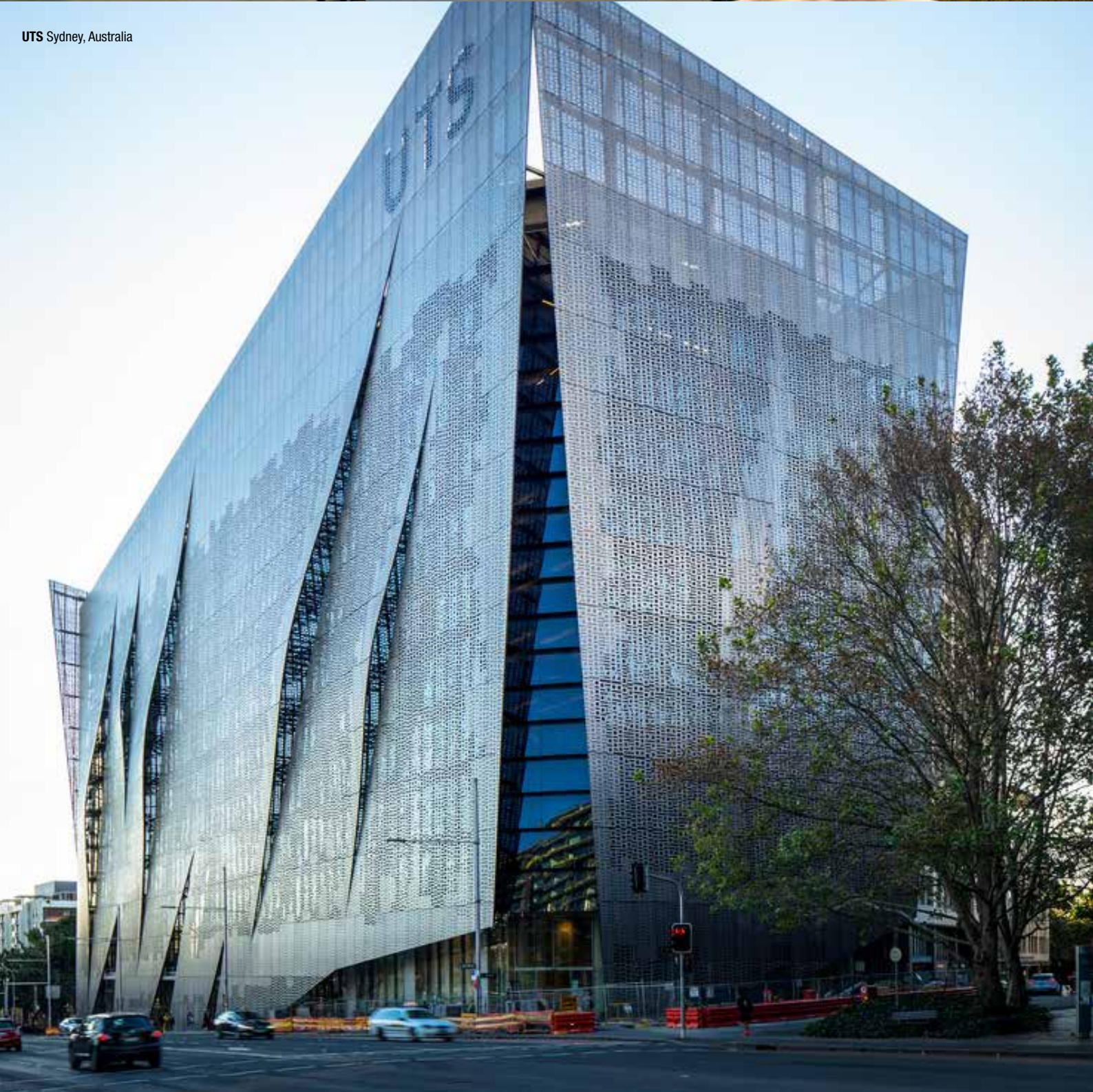
**Royal Adelaide Hospital Adelaide, South Australia**  
M&E Consultant Lehr Consultants Intl.



**BIOCON Banagalore, India**



**UTS Sydney, Australia**



# Energy Efficiency & Building Sustainability



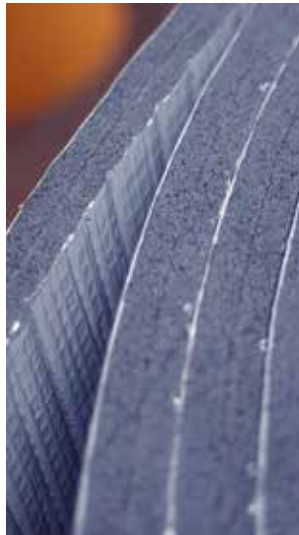
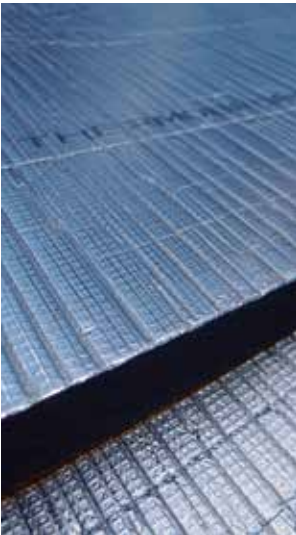
*Building Sustainability, Energy Efficiency, Indoor Air Quality and Health & Safety*, are all key elements embodied in the Green Building concept.

Green buildings are designed to reduce the overall impact of the built environment on human health and the natural environment through energy efficiency, protecting occupant health, improving employee productivity, and reducing waste, pollution and environmental degradation.

Central to the green building concept is thermal insulation. 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
- > Superior thermal insulation
- > Relatively constant thermal conductivity over a 10 year period
- > Zero PVC, Zero Formaldehyde
- > Compliance to REACH Directive
- > Resistance to Mould Growth
- > Non-Allergenic Properties
- > Dubai Central Laboratories (DCL) GBR certified

## 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.

In keeping with current green building trends and demands such as indoor air quality, our adhesive system is low VOC (Green Star) compliant and offers credit points for building ratings systems such as LEED and Estidama.

## Technical Support & Distribution Network

Backed by the technical expertise of Sekisui, a global multinational, our commitment and technical support to our customers is unrivalled. Our office locations throughout Asia Pacific, India and the Middle East provide technical support to our customers and distributors.

This includes our ThermaCalc® thickness selection software, heat flow and temperature profile analysis software, a series of Technical Information Bulletins for M&E professionals, detailed Installation Instructions and full set of third party certificates.

Our extensive distribution network ensures that materials are locally available at all times.

For your nearest distributor please consult our website.

## Complete Range for your HVAC Insulation Needs

Thermobreak® is available in a complete range to cover typical HVAC requirements:

- > Thermobreak® Sheet and Tube (duct, pipe, vessel, raised floor and soffit insulation)
- > Thermobreak® No Clad - Insulation for external applications, heavy duty traffic areas, and pipework requiring FM Approval
- > Thermobreak® 9705 - Sheet and Tube insulation classified in accordance with ISO 9705 Full Scale Room Fire Test
- > Thermobreak® LS - FM approved insulation products (sheet and tube)
- > Thermobreak® AcoustiPlus - Fibre free acoustic liner with factory applied acrylic adhesive
- > Thermaloc® - Pipe supports for cold and hot systems

# THERMOBREAK®

## 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 <sup>3</sup> (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 <sup>-15</sup> 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 <sup>2</sup> )
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



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### Fire and Smoke Behaviour

BS476 Parts 6 & 7:		CLASS 0
AS1530 Part 3	Ignitability Index: Spread of Flame Index: Heat Evolved Index: Smoke Developed Index:	0 0 0 0-1
ASTM E84:	COMPLIES (NFPA 90A & B) Flame Spread Index: Smoke Developed Index:	<25 <50
ASTM C411:	COMPLIES (NFPA 90A & B)	
EN ISO 11925	Reaction to Fire	Complies (Euroclass E)
AS 3837:	BCA Group Number: Smoke Index:	1 ≤250
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 <sub>m</sub> < 200 Satisfies max allowable concentrations for the following combustion gases: CO, HCl, HBr, HF, HCN, NO <sub>x</sub> , SO <sub>2</sub>
UL 94	Horizontal Burn	APPROVED (HF-1) (E193277)
FM 4924 (130546)	Approved (up to 8" IPS & 50mm wall thickness) Thermobreak® LS and No Clad	

### Size Availability

- 5mm: 50m x 1200mm rolls
- 10mm: 25m x 1200mm rolls
- 12mm: 20m x 1200mm rolls
- 15mm: 20m x 1200mm rolls
- 20mm: 15m x 1200mm rolls
- 25mm: 15m x 1200mm rolls
- 25-60mm: 2400mm x 1200mm sheets

Other sizes available on request

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

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INTERNATIONAL  
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