

# **THERMOBREAK<sup>®</sup> LS**

Thermal Insulation



**Physically Crosslinked closed cell  
polyolefin foam insulation for ducts**

**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 commercialized by the Sekisui Chemical group in Japan. The technology allows crosslinking of the polyolefin without the use of chemical agents. Instead, the Sekisui process utilizes 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 and the protection of the environment is embodied by our operations all being certified to ISO 9001 Quality Assurance, ISO 14001 Environmental and ISO 18001 OHS Standards.

**SEKISUI**

**PHYSICALLY**  
CROSSLINKED  
SEKISUI TECHNOLOGY



Menara Astra Jakarta, Indonesia  
M&E Consultant Meinhardt Indonesia



Sama Beirut, Lebanon  
M&E Consultant ERGA Group

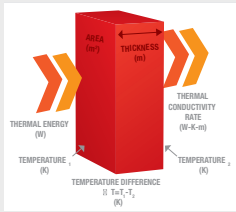


The Address Sky View Dubai, UAE  
Norr Consulting Engineers



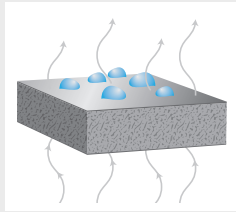
# Technically Superior

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



## Thermal Conductivity:

**0.22 BTU.in/h.ft² (73° F)** 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.



**Vapor 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.

Vapor Permeability = 0.002 perm-inch  
Permeability Resistance Factor:  $\mu > 80,000$

## Third Party Certification & Testing



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 standards 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

- > ASTM E84
- > BRITISH (BS 476 Class 0, BS 6853)
- > AUSTRALIAN (AS 1530.3)
- > ISO and European Standards EN 13823 (SBI)
- > Thermobreak LS has UAE Civil Defence Certificate of Compliance.

## 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.

**Etihad Museum Dubai UAE**  
M&E Consultant CH2M Consulting Engineers



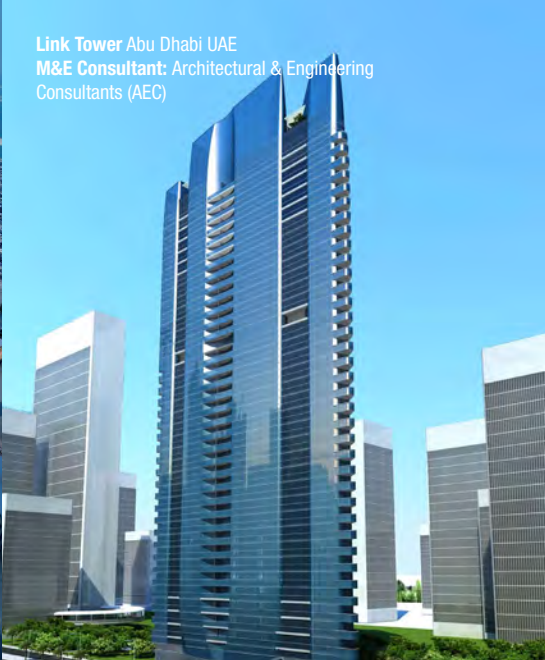
**Bay Sands MBR Manila, Philippines**  
M&E Consultant Meinhardt Philippines



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



**Link Tower Abu Dhabi UAE**  
M&E Consultant: Architectural & Engineering  
Consultants (AEC)



**Vietin Bank Centre Hanoi, Vietnam**  
M&E Consultant DSA Engineering



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



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



BIOCON Banagalore, India



Mall of Qatar Doha, Qatar  
M&E Consultant KEO International



Siam Toyota Manufacturing facility Thailand



# Energy Efficiency & Building Sustainability



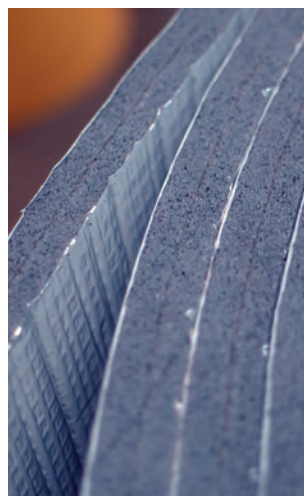
*Building Sustainability, Energy Efficiency, Indoor Air Quality and Health & Safety*, are all key elements embodied in the Green Building concept.

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 RoHS Directive
- > Compliance to REACH Directive
- > Resistance to Mold 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, the Middle East and USA 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.



# THERMOBREAK<sup>®</sup> Ls

## TECHNICAL SPECIFICATIONS

### Physical Properties

Material:	Physically (irradiation) crosslinked closed cell polyolefin foam with factory applied reinforced aluminium foil and acrylic adhesive backing
Density:	1.5 lb/f <sup>3</sup> (foam core only)
Thermal Conductivity: (ASTM C518)	0.22 BTU.in/h.ft <sup>2</sup> (73° F)
Water Vapor Permeability: (ASTM E96)	0.002 perm-inch
Water Vapor Permeance: 1/2" thickness	0.0034 perm
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
Operating Temperature Range:	-112°F ~ 212°F (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.

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### Fire and Smoke Behavior

ASTM E84	COMPLIES (NFPA 90A & B Flame Spread Index: ≤ 25 Smoke Developed Index: ≤ 50)
BS476 Parts 6 & 7:	CLASS 0
AS1530 Part 3	Ignitability Index: 0 Spread of Flame Index: 0 Heat Evolved Index: 0 Smoke Developed Index: 0-1
FM 4924	Sheet: FM Approved Up to 1" thickness

### Size Availability

#### Sheets/Rolls:

- 3/8" 164' X 47" (50m X 1200mm) rolls
- 1/2" 65' X 47" (20m X 1200mm) rolls
- 5/8" 65' X 47" (20m X 1200mm) rolls
- 3/4" 65' X 47" (20m X 1200mm) rolls
- 1"~2" 90' X 47" (2300mm X 1200mm) sheets

Other sizes available on request

**SEKISUI**



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