

THERMOBREAK[®]

Thermal Insulation

RAISED FLOOR INSULATION



Hkex Data Centre - Hong Kong

SEKISUI

FOAM
INTERNATIONAL
Global Foam Solutions

PHYSICALLY
CROSSLINKED
SEKISUI TECHNOLOGY



Setting the Standard for Over 30 Years



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

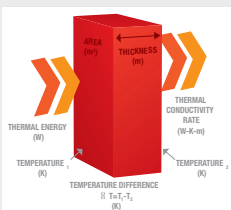
Developed in Australia over 30 years ago, Thermobreak® is manufactured using our proprietary physically crosslinked closed cell polyolefin foam technology, invented and commercialised by the Sekisui Chemical group in Japan. Laminated with reinforced foil and adhesive backing, Thermobreak® is widely recognised as the global leader in polyolefin insulation.

Thermobreak® insulation is manufactured to ASTM C1427 Standard.

Superior Performance

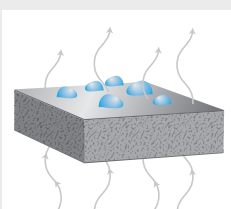
Thermobreak® LS is a physically (irradiation) crosslinked, closed cell polyolefin foam with factory applied reinforced aluminium foil.

- Thermobreak® LS thermal insulation has been widely used in the prevention of condensation in raised floor systems. Manufactured with our unique physically crosslinked technology, Thermobreak® offers market leading thermal performance, durability and fire and smoke safety.
- Thermobreak® provides excellent insulation performance that remains unchanged for the life of the project resulting in significant energy savings. Being a completely closed cell material, it does not absorb any moisture and eliminates any vapour permeability that leads to condensation.
- No additional vapour barriers, or protection is required. Thermobreak® comes with a factory applied reinforced aluminum foil that is tough and durable. It can be walked upon after installation without permanent deformation.



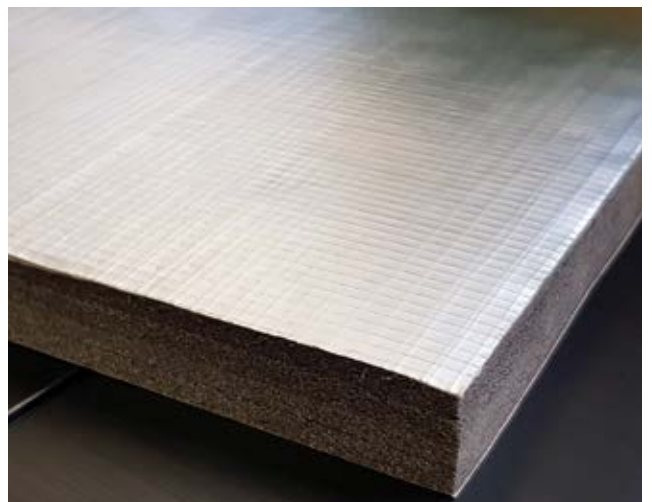
Thermal Conductivity:

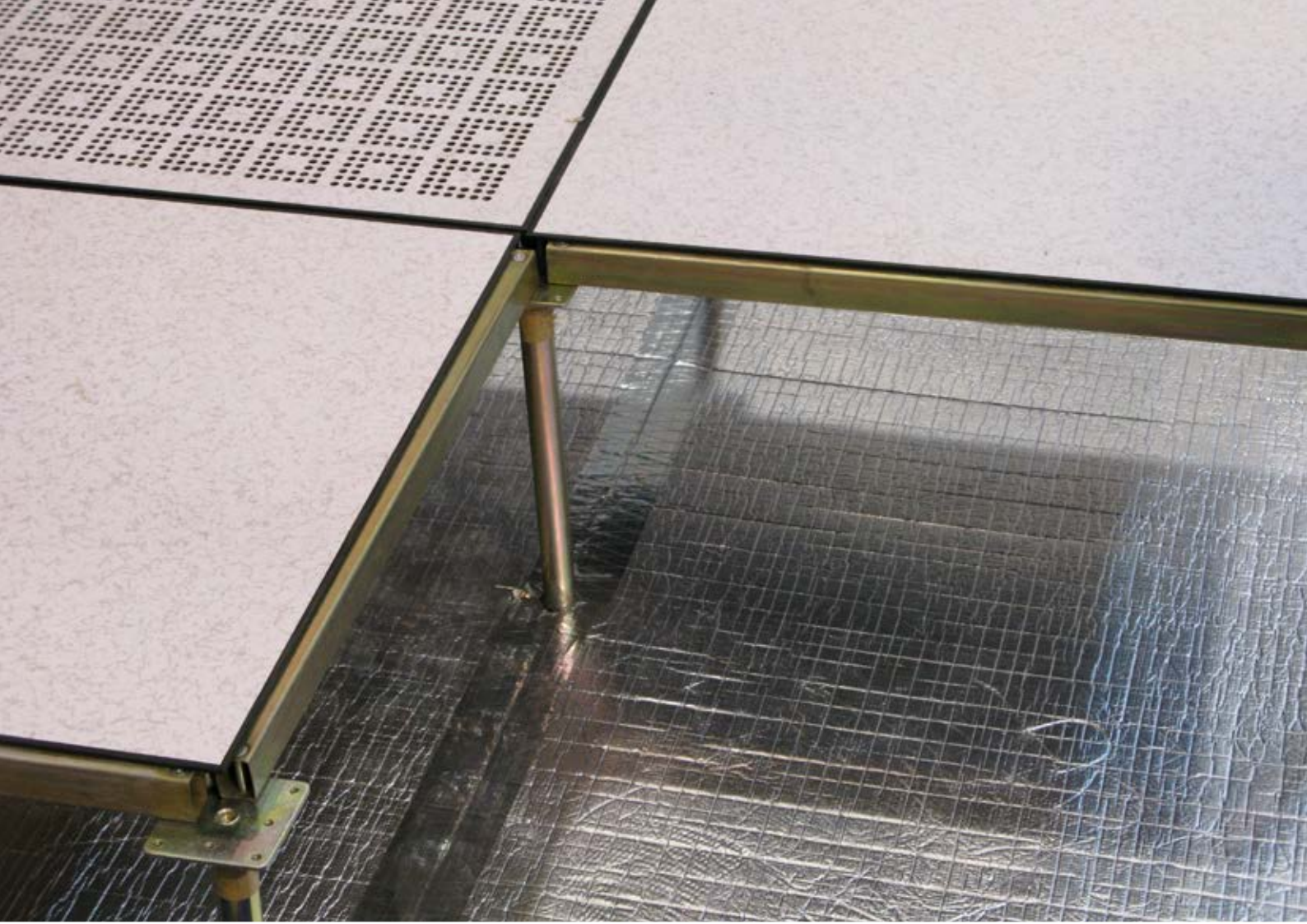
0.032 W/mK (23°C) is the lowest of any flexible insulation material. On equivalent thickness basis, **Thermobreak®** provides up to 18% better insulation than elastomeric and chemically crosslinked foams.



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







Superior Fire & Smoke Performance

Thermobreak® LS thermal insulation meets and complies with major international fire and smoke standards as well as providing the benefit of third party certifications from TÜV SÜD PSB and FM Approvals.

Thermobreak® thermal insulation meets and complies with

- British (BS 476 Class 0, BS 6853)
- ASTM E84
- European Standard EN 13823 (SBI)
- Australian (AS 1530.3)
- ISO Standard (ISO 5659-2)



Ease of Installation

Available in pre-cut sheets of 1200mm X 600mm, Thermobreak® raised floor insulation fits tightly between the raised floor pedestals thus ensuring super fast installation without any cutting on site. Thermobreak® does not release any fibres or dust during installation or service. It provides a clean environment, which is particularly important in systems where the raised floor is used as the plenum for cool air supply to the data room.

Environmental Benefits

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) | • Low GWP | • Compliance to RoHS Directive |
| • No CFCs or HCFCs | • Zero PVC, Zero Formaldehyde | • Compliance to REACH Directive |
| • Zero Ozone Depletion Potential | • DUBAI GBR Approved | • Resistance to Mould Growth |



China Unicom Global Centre, Hong Kong



NCS, Singapore



ST Telemedia, Singapore



ST Microelectronics, Singapore



Globe Telecom, Philippines



Hkex Data Centre, Hong Kong



RAISED FLOOR INSULATION

Physical Properties

Material: Thermobreak® LS Physically (irradiation) crosslinked closed cell polyolefin foam with factory applied reinforced aluminium foil.

Density:	25 kg/m ³ (foam core only)
Thermal Conductivity: (ASTM C518)	0.032 W/mK (@ 23°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: (ASTM C1763, Procedure B, 24h)	<0.2% v/v
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.

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Fire and Smoke Performance

ASTM E84	COMPLIES (NFPA 90A & B) Flame Spread Index: ≤25 Smoke Developed Index: ≤50
BS 476 Parts 6 & 7:	CLASS 0
EN 13823 (Sheet)	Single Burning Item COMPLIES (EUROCLASS B - s2, d0 RATING)
ISO 11925 Part 2 (Sheet)	Ignitability: COMPLIES (EUROCLASS B - s2, d0 RATING)
FM 4924 (Sheet)	Up to 25mm thickness FM Approved
ISO 5659 Part 2	Smoke Density: COMPLIES (EN 45545-2, R1 HL3 Rating) Smoke Toxicity: COMPLIES (EN 45545-2, R1 HL3 Rating)
AS1530 Part 3	Ignitability Index: 0 Spread of Flame Index: 0 Heat Evolved Index: 0 Smoke Developed Index: 0-1

Size Availability

Thickness	Sheet Size (mm)
10mm	1200 x 600
15mm	1200 x 600
20mm	1200 x 600
25mm	1200 x 600

Other sizes available on request.

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