

THERMOBREAK[®] LS-F Tube

Thermal Insulation



**Physically Crosslinked
polyolefin foam pipe insulation**

SEKISUI

**FOAM
INTERNATIONAL**
Global Foam Solutions

**PHYSICALLY
CROSSLINKED**
SEKISUI TECHNOLOGY



The New Standard in Polyolefin Insulation



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 Fire & Smoke Performance

Third Party Certifications

Thermobreak® LS-F offers the same thermal performance and properties as our standard product with the added benefit of third party certifications including Factory Mutual (FM) and TUV-PSB.

FM 4924 is widely regarded as the most severe and realistic fire test for duct and pipe insulation.

Thermobreak® is currently the only polyolefin based product to have FM approval to FM 4924 Pipe insulation.



Regulations and Compliancy

- > UAE Civil Defence Certificate of Compliancy
- > DCL Product Conformity
- > CE Certification



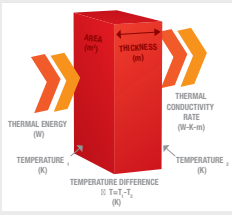
FM 4924 Fire Pipe test

Engineered to Perform

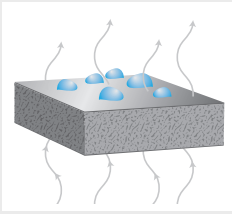
Market leading performance

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.

Thermobreak®'s thermal performance remains relatively unchanged over a 10 year period.



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: $\mu > 80,000$



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TECHNICAL SPECIFICATIONS

Physical Properties

Material:	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:	1.95 x 10 ⁻⁴ g/MN.s
Water absorption by volume: (ASTM C1763, Procedure B, 24h)	<0.2% v/v
Permeability Resistance Factor:	μ > 80,000
Resistance to fungi: (ASTM G21)	Zero Growth
Leachable Chlorides: (ASTM C871)	< 12 ppm (< 0.0012% w/w)
Ozone Resistance:	Excellent
UV Resistance:	Excellent
Operating Temperature Range:	-80 °C ~ +100 °C
GreenStar Rating: (ASTM D5116)	Low VOC Emitting
Physical Property Requirements: (ASTM C1427)	COMPLIES (Type I - Tube)
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 90 & B)	Flame Spread Index: ≤ 25	Smoke Developed Index: ≤ 50
AS1530 Part 3	Ignitability Index: 0	Spread of Flame Index: 0	Heat Evolved Index: 0
		Smoke Developed Index: 0-1	
FM 4924	Up to 8" IPS (219mm)	FM Approved	Up to 50mm wall thickness
BS 476 Parts 6 & 7:		CLASS 0	
ISO 5659 Part 2	Smoke Density: COMPLIES (EN 45545:2 R1, HL3 Rating)	Smoke Toxicity: COMPLIES (EN 45545:2 R1, HL3 Rating)	

Size Availability

Wall Thickness	Min ID (mm)	Max ID (mm)	IPS Max (in)
15mm	7.0	273.0	10"
20mm	7.0	273.0	10"
25mm	7.0	273.0	10"
30mm / 35mm	9.5	254.0	8"
40mm / 50mm	12.7	219.2	8"

Tube length: 2m
Other sizes available on request



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