

MFLEX FOIL TUBES

MFlex Foils are made from closed cell cross linked polyolefin foam with excellent properties in terms of condensation control, long term thermal block and sound absorption. The polyethylene tubes have thicknesses and the diameters, which match most of the usual pipe sizes up to 40" and can be coated with foil or can be plain.

The MFlex Foil tubes have a very good dimensional stability, showing a "memory effect" (they tend to come to their original shape after being compressed).

The tubes represent no hazard to the human health, being used no CFC or HCFC in their production and having a very low VOC level. They are considered environmental friendly products (with low Ozone Depletion Potential – ODP – and Global Warming Potential – GWP) and comply with the LEED requirements, helping buildings to get more LEED points.



PRODUCT

Material:closed cell cross linked polyolefin (Polyethylene) foam with alupet foilDensity: 30 kg/m^3 Thickness:5 mm, 10 mm, 12 mm, 15 mm, 20 mm, 25 mm, 30 mm, 40 mm, 50 mmDiameter: $\frac{1}{2}$ " - 40"Length:1 m, 1.2 m, 1.5 mColor:grey with silver foil



APPLICATIONS

- Chilled water pipe insulation
- Hot water pipes insulation

To install **MFLEX FOIL TUBES** in a professional manner, please consult the **Installation Handbook**.

PROPERTIES

- Fire rated "CLASS O" as per BS 476 Parts 6 & 7;
- Very low water vapor permeance (0 perms);
- Water tight due to the preapplied alupet foil;
- Very low water absorption rate (0.3% by volume);
- High thermal efficiency (λ_{24°} c = 0.034 W/mK; λ46° c = 0.036W/mK);
- Wide temperature range (from -50° C to +105° C);
- Chemical resistance resistant of tubing to most chemicals (sodium, silica, fluoride, chloride, etc.);
- Antibacterial & antifungal;
- Environmental friendly ODP = 0 and GWP < 5;
- Very low VOC emission level (< 4 μg/m2/hr in 24 hours);
- Good mechanical resistance;
- Sound absorption properties;
- Perfect fit to most of the pipe sizes;
- Easy and fast to install;
- Aesthetical look.

SIZE CHART FOR TUBES

Pipe Size		Thickness								
Inch	mm	10mm	12mm	15mm	20mm	25mm	30mm	40mm	50mm	
	16	16x 10	16x12	16x15	16x20	16x25	16x30	16x40		
	19	19x 10	19x12	19x15	19x20	19x25	19x30	19x40		
	20	20x10	20x12	20x15	20x 20	20x25	20x 30	20x40		
1/2"	22	22x10	22x12	22x15	22x20	22x25	22x30	22x40		
	25	25x10	25x12	25x15	25x20	25x25	25x30	25x40		
3/4"	28	28x 10	28x12	28x15	28x20	28x25	28x30	28x40		
	32	32x10	32x12	32x15	32x20	32x25	32x30	32x40	32x50	
1"	35	35x10	35x12	35x15	35x20	35x25	35x30	35x40	35x50	
	40	40x 10	40x12	40x15	40x 20	40x25	40x 30	40x40	40x 50	
11/4"	43	43x 10	43x12	43x15	43x20	43x25	43x30	43x40	43x.50	
11/2"	50	50x10	50x12	50x15	50x20	50x25	50x 30	50x40	50x 50	
2"	60	60x10	60x12	60x15	60x20	60x25	60x30	60x40	60x 50	
	75	75x 10	75x12	75x15	75x20	75x25	75x30	75x40	75x50	
2	112 • 77	77x10	77x12	77x15	77x20	77x25	77x30	77x40	77x50	
3"	90	90x10	90x12	90x15	90x20	90x25	90x30	90x40	90x50	
	110	110x10	110x12	110x15	110x20	110x25	110x30	110x40	110x50	
4"	115	115x10	115x12	115x15	115x20	115x25	115x30	115x40	115x50	
	125	125x10	125x12	125x15	125x20	125x25	125x30	125x40	125x50	
5"	140				140x20	140x25	140x30	140x40	140x50	
	160				160x20	160x25	160x30	160x40	160x50	
6"	166				166x20	166x25	166x30	166x40	166x50	
8"	220				220x20	220x25	220x30	220x40	220x50	
10"	273				273x20	273x25	273x30	273x40	273x50	
12"	323				323x20	323x25	323x30	323x40	323x50	
14"	356				356x20	356x25	356x30	356x40	356x50	
16"	406				406x20	406x25	406x30	406x40	406x50	
18"	457				457x20	457x25	457x30	457x40	457x50	



TEST DATA

Hira Industries LLC performs regularly tests according to the most important **standards**. Our products are tested in different laboratories around the world (ex.: Tuv Singapore, Exova, Thomson Research Assoc., CETEC, etc.).

- 1. Thermal Conductivity (ASTM C518) available for 3 different temperatures
- 2. Water Absorption (BS EN 12087)
- 3. Water Vapor Permeability (ASTM E96)
- 4. Water Vapor Diffusion Factor (BS EN 12086)
- 5. Smoke & Toxicity (IMO MSC 61(67) Annex 1, Part 2)
- 6. Smoke emission (BS 6853)
- 7. Fire Propagation (BS 476 Part 6)
- 8. Surface Spread of Flame (BS 476 Part 7)
- 9. Temperature Range (DIN EN 14706)
- 10. Antifungal Resistance (ASTM G21)
- 11. Antibacterial Resistance (ISO 22196)
- 12. Volatile Organic Compound emission level (ASTM D5116)
- 13. Sound Absorption (ISO 354)
- 14. Salt Spray Testing (ASTM B117)
- 15. UV Resistance Test (ASTM G155)
- 16. Chlorine Content CFC Free
- 17. Ozone Depletion Potential & Global Warming Potential Values ODP = 0; GWP < 5



MFLEX FOIL SHEETS







The Foil Sheetsthermal insulation is an all-in-one closed cell *physically crosslinked polyolefin* foam that is manufactured in compliance to ASTM C1427 Standard.

The Foil Sheets was developed in Australia and has sold worldwide for over 20 years. The revolutionary insulation product has a factory applied reinforced foil facing and adhesive backing.

The Foil Sheets are 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 and the protection of the environment is embodied by our operations all being certified to both the ISO 9001 Quality Assurance and ISO 14001 Environmental standards.

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. **Foil Sheet** 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 Mould Growth
- > Non-Allergenic Properties

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Technical Specifications

Physical	
Material:	Physically (irradiation) crosslinked closed cell polyolefin foam with factory applied reinforced aluminium foil and acrylic adhesive backing
Density:	25 kg/m3 (foam core only)
Thermal Conductivity: temp.) (ASTM C518) temp.)	0.032 W/m/°K (@ 23°C mean 0.036 W/m/°K (@ 36°C mean
Water Vapour Permeability: kg/Pa.s.m (ASTM E96)	2.3 x 10 ⁻¹⁵
Water Vapour Permeance: µg/N.s 12mm thickness	0.000195
Water absorption by volume: (JIS K6767)	<0.1% v/v (0.00038 g/cm ²)
Permeability Resistance Factor:	μ > 80,000
Resistance to fungi: Growth (ASTM G21)	Zero

Ozone Resistance:	Excellent
UV Resistance:	Excellent
Noise Reduction Coefficient: thickness) (AS 1045)	0.20 (12mm foam 0.30 (25mm foam
thickness) Operating Temperature Range:	-80 °C ~ +100 °C (no
adhesive)	
GreenStar Rating: (ASTM D5116)	Low VOC Emitting
Physical Property Requirements: Sheet) (ASTM C1427)	COMPLIES (Type II -

Product Certification may be plant specific. Please consult with your local representative.

Distributed by

ire and Smoke	Behaviour		
BS476 Parts 6 8	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 & Flame Spread Index:	B)	
	5 Smoke Developed Inde	<z X:</z 	
	0	<5	
ASTMC411:	COMPLIES (NFPA 90A 8	àВ)	
FM 4924:	Thermobreak Sheet Up to 25mm thickness	APPROVED(143961)	
EN ISO 11925	Reaction to Fire	Complies (Euroclass E)	
AS 3837:	BCA Group	1	
	Number: Smoke Index:	≤250	
BS 6853 Annex E	3: Smoke Toxicity	COMPLIES ($R < 1.0$)	
IMO MSC 61(67)	Part 2: Smoke Toxicity	COMPLIES	
ISO 5659 Part 2	Smoke Density COMPLIE	S (IMO MSC 61(67) Part 2)	
	D _m < 20 Satisfies concentra following o CO, HCI, H	0 max allowable ations for the combustion gases: 1Br, HF, HCN, NOx, SO2	
UL 94	Horizontal Burr	APPROVED (HF-1) (E193277)	
 5mm:50m 10mm: 25 12mm: 20 15mm: 20 20mm: 15 25mm: 15 25-60mm Other sizes availation 	n x 1200mm rolls 5m x 1200mm rolls 0m x 1200mm rolls 0m x 1200mm rolls 5m x 1200mm rolls 5m x 1200mm rolls n: 2400mm x 1200r	nm sheets	