MAXFLEX®

ฉนวนยางคุณภาพระดับสากล FR

FM APPROVED

MAXFLEX FR

MAXFLEX FR is available as tube insulation, pre-cut sheet, standard flat sheet and sheet roll. MAXFLEX FR is made from light weight elastomeric material, EPDM (ETHYLENE PROPYLENE RUBBER) design for thermal insulation usage which is CFCs free, HFCs Free, and O.D.P. Zero.

MAXFLEX FR is an ideal thermal insulation to prevent condensation problems on chilled water pipes, air duct systems, refrigerant lines and also to against frost formation.

MAXFLEX FR is non-fibrous, non-asbestos, non-formaldehyde contents and odorless. It is superior for air duct systems. It has been favored over the fibrous insulation material because of the possible health hazards and dangers caused by the loose particles of fibrous materials into air vents.

In addition to the well-known performance of **MAXFLEX FR**, the result is a product of high quality, energy saving, long lasting protection, condensation control and which helps minimize mold growth.

MAXFLEX FR can be used for both as interior or exterior insulating materials of air duct systems. MAXFLEX FR can be safely used without causing skin irritation and its flexibility makes installation work easy and neat. MAXFLEX FR is merchandized in ready-to-use Pressure Sensitive Adhesive and Aluminum foil surfaces.

Better Temperature Control & Energy Conservation: Molecular structure of MAXFLEX FR is characterized by a large number of fine cross-linked closed cells which provides effective reduction of heat loss from indoor and outdoor air ducting systems. It also reduces waste of energy by higher heat gain into the cooling systems.

Prevent Condensation Problems: Excellent moisture and vapor resistance due to its dense surface and the closed cell structure.

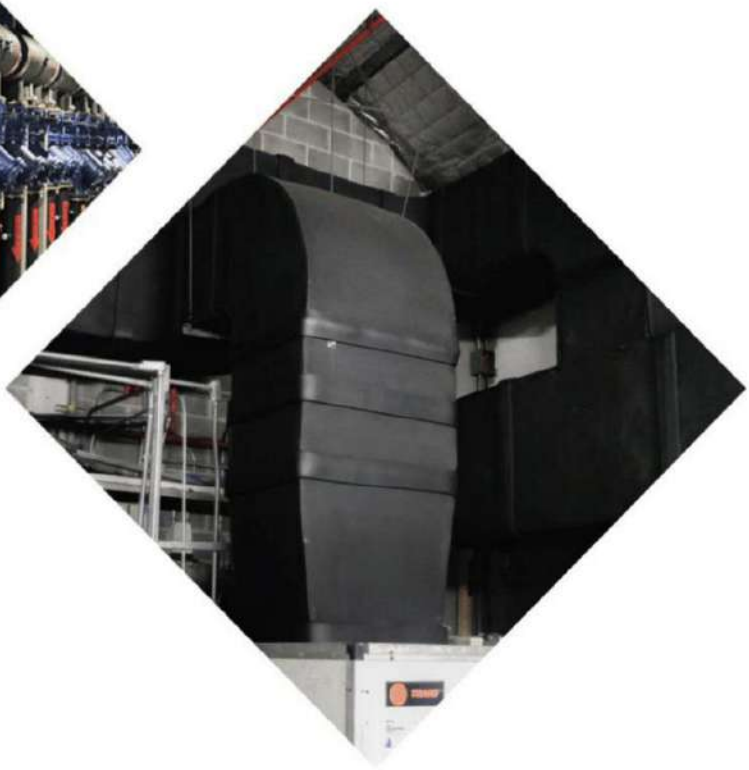
Durable: Outstanding Ozone/UV and Weather resistance attributes provide superior resistance against moisture, fungus growth, vermin and rodent pest.

Excellent Sound Absorption and Noise Reduction: Acting as a vibration damper and serve as outer shield, MAXFLEX FR greatly reduces noise from mechanical equipment, as well as noise from cross-talk and air movement.

Excellent and Safety Fire Performance (Fire retardant): MAXFLEX FR is complied with most international smoke and flammability standards.

Easy to install: Outstanding flexibility for quick and easy installation gives the finished insulation a neat aesthetic appearance. No coating is needed on most indoor usage.

Long year service of stable and low thermal conductivity value (K-Value).



MAXFLEX® FR SPECIFICATION

Physical Properties		Maxflex® FR <FM Approved>								Test Method
Material		EPDM Blend with additive								TGA / DSC
Cell Structure / Flexibility		Closed Cell / Excellent								-
Density		3-6 lbs/ft³ (48-96 kg/m³)								ASTM D1667
Thermal Conductivity	**Mean Temp.**	-40°F (-40°C)	-22°F (-30°C)	-4°F (-20°C)	32°F (0°C)	75°F (24°C)	90°F (32°C)	104°F (40°C)	122°F (50°C)	ASTM C177 ASTM C518
BTU.In/ft².hr.°F	**K Value**	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	DIN 52613
(W/m.K)		0.029	0.030	0.031	0.033	0.035	0.037	0.038	0.039	EN ISO 8497
Service Temperature *		-57°C to 125°C								Maxflex become hard at -57°C
		-70°F to 257°F								but can be use even at -200°C
- Maximum service Temperature		can withstand temperature as high as 125 °C								ASTM C411
Ozone Resistance		No Crack								ASTM D1171
UV Resistance		No Crack								ASTM G154
Water Absorption		≤ 1.5% by Weight								ASTM D1056
		≤ 0.05% by Volume								ASTM C209
Water Vapor Diffusion Resistance (μ Value)		$\mu \geq 12,000$								DIN 52615
Water Vapor Permeability ** (g/Pa.s.m)		≤ 0.10 perm-in (0.94×10^{-10})								ASTM E96
Anti Microbial, Fungus Resistance		Compliance with requirement								ASTM E2180, ASTM G21
Heat Stability (% Shrinkage) at 200°F (7 Days)		≤ 3.5 % Respectively								ASTM C534
Fire Performance (Fire Retardant)		Class V0								UL 94
		FM Approved								FM Approval Standard 4924
		Self-Extinguishing								ASTM D635
		B2								DIN 4102
		0, 0, 0, 5								AS 1530.3
		Compliance with requirement								NFPA 90A & NFPA 90B
- Flame spread / Smoke Developed		25/50								ASTM E84
- Reaction to Fire		Compliance with Euro Class E								EN ISO 11925
- Fire Index		Index 5.3								EMPA SWISSI
Surface spread of flame		Class M1								FRANCE AFNOR NF P92 501
		Class 1								BS 476 Part 7
Fire Propagation		Class 0								BS 476 Part 6
- Total Index of Performance (I)		Less than 12								
- Sub Index (i)		Less than 6								
Smoke Toxicity		Satisfies max allowable concerntration for the following combustion gases CO, HCl, HF, HBr, HCN, NO_x, SO_2								ISO 5659-2:2017
- Smoke Density		$D_m \leq 100$								
		Compliance with requirement								International Marine Organization (IMO)
RoHs Test		Compliance with requirement								Certain Hazardous Substances in Electrical and Electronic Equipment.2011/65/EU and its amendment Directive (EU)2015/863
Nitrosamine Content		Not detected								BS EN 12868
Ozone Depleting Substances(ODS) - CFCs, HCFCs		Not detected								USEPA5021A/8260C
Formaldehyde Content		Not detected								ISO 17226-1
Asbestos / Dust & Fiber		Not detected								EPA600/R
Odour Test at 23°C, 40°C		Grade1.5, Grade2.0								FLTM BO 131-03
Corrosion of Copper and Stainless Steel		Non Corrosive								DIN 1988
Noise Reduction		Max. 36.3 dB(A)								DIN 52219 (19 mm. Thickness)

Note: * *For applications at a temperature lower than -57°C, MAXFLEX FR becomes hard but it does not affect thermal conductivity nor water vapor permeability. For heating applications, MAXFLEX FR can withstand up to +125°C heat continuously. Outdoor applications should be cladded with metal sheets, aluminum, and stainless sheet, etc, or painted with 2-3 layers of Maxcoat.*

** *Water Vapor Permeability test was done under test method ASTM E96 dehydration test at 37.8°C and average value is 0.94×10^{-10} g/Pa.s.m.*

Sound Absorption Coefficient at Frequency							
Thickness	**125 Hz**	**250 Hz**	**500 Hz**	**1000 Hz**	**2000 Hz**	**4000 Hz**	**NRC**
1"(25mm)	**0.06**	**0.14**	**0.66**	**0.90**	**0.91**	**0.90**	**0.65**

MAXFLEX FR

For Hot Water Piping and Solar Energy Heating Systems

MAXFLEX FR is very effective in reducing heat loss from indoor and outdoor hot water piping systems. Due to it is outstanding ozone/UV and weather resistance property, it proves to be the best insulation for outdoor pipe line of the solar energy heating system. MAXFLEX FR contains no asbestos, no dust and fiber free. So, it is safe when being installed in places where hygiene is vital. This is one among many reasons why this product is widely selected and accepted as a replacement for the fibrous insulation material for hot water piping systems in hotels, hospitals, residential and industrial applications. It is also highly efficient in safe guarding against frost formation inside the water pipes as the information dramatically delays the time water cool down and reach freezing temperature while shut-off the heating systems. MAXFLEX FR is the ideal insulation material for hot water pipes due to the following characteristics.

- It can be use applicable continuously at 125°C (275°F for standard) and high temperature to 170°C (338°F in Hi-temp)
- Good Ozone, UV and weather resistance when being used outdoor.
- Stable and low thermal conductivity value throughout the service life.
- Very low water absorption and water vapor transmission.
- Flexibility, easy installation. Do not need any jacketing or protection even being used to insulate the piping.

Thickness Recommendation for Hot Water Piping, Storage and Solar Heating System.

PIPE SIZE		Condition: Ambient 35°C, Surface Temperature 40°C, Still air, Bare insulation.														
		Operating Temperature (°C)														
mm.	inch	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125
		Thickness recommend (mm)														
6	1/4	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
9	3/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
13	1/2	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
16	5/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
19	3/4	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
22	7/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
25	1	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
28	1-1/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
32	1-1/4	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
35	1-3/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
38	1-1/2	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
42	1-5/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
45	1-3/4	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
48	1-7/8	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
51	2	9	13	19	19	25	25	25	32	32	32	38	38	38	50	50	50
54	2-1/8	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
57	2-1/4	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
60	2-3/8	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
64	2-1/2	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
67	2-5/8	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
73	2-7/8	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
76	3	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	50
80	3-1/8	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	59
83	3-1/4	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	59
90	3-1/2	9	13	19	19	25	25	25	32	32	32	38	38	50	50	50	59
92	3-5/8	9	13	19	19	25	25	32	32	32	32	38	38	50	50	50	59
98	3-7/8	9	13	19	19	25	25	32	32	32	32	38	38	50	50	50	59
102	4	9	13	19	19	25	25	32	32	32	32	38	38	50	50	50	59
105	4-1/8	9	13	19	19	25	25	32	32	32	38	38	50	50	50	50	59
115	4-1/2	9	13	19	19	25	25	32	32	32	38	38	50	50	50	50	59
130	5-1/8	9	13	19	19	25	25	32	32	32	38	38	50	50	50	50	59
140	5-1/2	9	13	19	19	25	25	32	32	32	38	38	50	50	50	50	59
165	6-1/2	9	13	19	19	25	25	32	32	32	38	38	50	50	50	50	59
Storage Tank		13	19	19	25	25	32	32	32	38	38	50	50	50	50	59	63

Maxflex FR standard for operating temperature ≤ 100°C and Maxflex <FM Approved> for operating temperature >100°C.

MAXFLEX FR Insulation Tube : 2meter Length/Piece (Quantility : Meters/Carton)

ID of MAXFLEX FR Tube		Pipe Size : mm. (inch)				Products Code							
mm.	inch	Copper	Iron	PPR	PVC	6 mm.wall (1/4")	9 mm.wall (3/8")	13 mm.wall (1/2")	19 mm.wall (3/4")	25 mm.wall (1")	32 mm.wall(1-1/4")	38 mm.wall(1-1/2")	50 mm.wall (2")
6	1/4"	6				MF06x06FR (496)	MF09x06FR (352)	MF13x06FR (200)	MF19x06FR (112)	MF25x06FR (60)			
9	3/8"	9				MF06x09FR (364)	MF09x09FR (266)	MF13x09FR (172)	MF19x09FR (98)	MF25x09FR (60)			
13	1/2"	13	1/4"IPS		1/4"	MF06x13FR (316)	MF09x13FR (234)	MF13x13FR (162)	MF19x13FR (88)	MF25x13FR (54)			
16	5/8"	16	3/8"IPS		3/8"	MF06x16FR (266)	MF09x16FR (192)	MF13x16FR (136)	MF19x16FR (78)	MF25x16FR (52)	MF32x16FR (34)	MF38x16FR (24)	
19	3/4"	19				MF06x19FR (220)	MF09x19FR (166)	MF13x19FR (118)	MF19x19FR (72)	MF25x19FR (50)	MF32x19FR (32)	MF38x19FR (22)	MF50x19FR (12)
22	7/8"	22	1/2"IPS	20(1/2")	1/2"	MF06x22FR (180)	MF09x22FR (136)	MF13x22FR (98)	MF19x22FR (64)	MF25x22FR (42)	MF32x22FR (32)	MF38x22FR (20)	MF50x22FR (12)
25	1"		3/4"IPS	25(3/4")	3/4"		MF09x25FR (108)	MF13x25FR (80)	MF19x25FR (50)	MF25x25FR (40)	MF32x25FR (30)	MF38x25FR (18)	MF50x25FR (12)
28	1-1/8"	28					MF09x28FR (98)	MF13x28FR (78)	MF19x28FR (48)	MF25x28FR (40)	MF32x28FR (24)	MF38x28FR (18)	MF50x28FR (12)
32	1-1/4"			32(1")			MF09x32FR (92)	MF13x32FR (64)	MF19x32FR (38)	MF25x32FR (28)	MF32x32FR (24)	MF38x32FR (16)	MF50x32FR (10)
35	1-3/8"		1"IPS		1"		MF09x35FR (84)	MF13x35FR (58)	MF19x35FR (36)	MF25x35FR (24)	MF32x35FR (22)	MF38x35FR (16)	MF50x35FR (10)
38	1-1/2"						MF09x38FR (78)	MF13x38FR (52)	MF19x38FR (34)	MF25x38FR (22)	MF32x38FR (16)	MF38x38FR (14)	MF50x38FR (10)
42	1-5/8"	42	1-1/4"IPS	40 (1-1/4")	1-1/4"		MF09x42FR (60)	MF13x42FR (48)	MF19x42FR (32)	MF25x42FR (22)	MF32x42FR (16)	MF38x42FR (12)	MF50x42FR (10)
45	1-3/4"						MF09x45FR (54)	MF13x45FR (42)	MF19x45FR (26)	MF25x45FR (20)	MF32x45FR (14)	MF38x45FR (12)	MF50x45FR (8)
48	1-7/8"		1-1/2"IPS		1-1/2"		MF09x48FR (50)	MF13x48FR (40)	MF19x48FR (24)	MF25x48FR (18)	MF32x48FR (14)	MF38x48FR (12)	MF50x48FR (8)
51	2"			50 (1-1/2")			MF09x51FR (48)	MF13x51FR (36)	MF19x51FR (24)	MF25x51FR (16)	MF32x51FR (12)	MF38x51FR (10)	MF50x51FR (8)
54	2-1/8"	54					MF09x54FR (46)	MF13x54FR (34)	MF19x54FR (24)	MF25x54FR (16)	MF32x54FR (12)	MF38x54FR (10)	MF50x54FR (8)
57	2-1/4"						MF09x57FR (46)	MF13x57FR (32)	MF19x57FR (22)	MF25x57FR (14)	MF32x57FR (10)	MF38x57FR (10)	MF50x57FR (8)
60	2-3/8"		2"IPS		2"		MF09x60FR (46)	MF13x60FR (32)	MF19x60FR (22)	MF25x60FR (12)	MF32x60FR (10)	MF38x60FR (10)	MF50x60FR (6)
64	2-1/2"			63 (2")				MF13x64FR (30)	MF19x64FR (18)	MF25x64FR (12)	MF32x64FR (10)	MF38x64FR (10)	MF50x64FR (6)
67	2-5/8"	67						MF13x67FR (26)	MF19x67FR (18)	MF25x67FR (12)	MF32x67FR (8)	MF38x67FR (8)	MF50x67FR (6)
73	2-7/8"		2-1/2"IPS		2-1/2"			MF13x73FR (26)	MF19x73FR (18)	MF25x73FR (10)	MF32x73FR (8)	MF38x73FR (8)	MF50x73FR (6)
76	3"	76		75 (2-1/2")				MF13x76FR (26)	MF19x76FR (18)	MF25x76FR (10)	MF32x76FR (8)	MF38x76FR (8)	MF50x76FR (6)
80	3-1/8"	80						MF13x80FR (24)	MF19x80FR (14)	MF25x80FR (8)	MF32x80FR (8)	MF38x80FR (8)	MF50x80FR (6)
83	3-1/4"							MF13x83FR (22)	MF19x83FR (14)	MF25x83FR (8)	MF32x83FR (8)	MF38x83FR (8)	MF50x83FR (6)
90	3-1/2"		3"IPS	90 (3")	3"			MF13x90FR (22)	MF19x90FR (14)	MF25x90FR (8)	MF32x90FR (8)	MF38x90FR (6)	MF50x90FR (4)
92	3-5/8"	92						MF13x92FR (20)	MF19x92FR (14)	MF25x92FR (8)	MF32x92FR (6)	MF38x92FR (6)	MF50x92FR (4)
98	3-7/8"							MF13x98FR (18)	MF19x98FR (14)	MF25x98FR (6)	MF32x98FR (6)	MF38x98FR (6)	MF50x98FR (4)
102	4"		3-1/2"IPS		3-1/2"			MF13x102FR (16)	MF19x102FR (14)	MF25x102FR (6)	MF32x102FR (6)	MF38x102FR (4)	MF50x102FR (4)
105	4-1/8"	105						MF13x105FR (16)	MF19x105FR (12)	MF25x105FR (6)	MF32x105FR (6)	MF38x105FR (4)	MF50x105FR (4)
115	4-1/2"		4"IPS	110 (4")	4"			MF13x115FR (16)	MF19x115FR (12)	MF25x115FR (6)	MF32x115FR (6)	MF38x115FR (4)	MF50x115FR (4)
130	5-1/8"	130		125 (5")				MF13x130FR (12)	MF19x130FR (8)	MF25x130FR (4)	MF32x130FR (4)	MF38x130FR (4)	MF50x130FR (4)
140	5-1/2"		5"IPS		5"			MF13x140FR (12)	MF19x140FR (8)	MF25x140FR (4)	MF32x140FR (4)	MF38x140FR (4)	MF50x140FR (4)
165	6-1/2"		6"IPS	160 (6")	6"				MF19x165FR (6)	MF25x165FR (4)	MF32x165FR (4)	MF38x165FR (4)	MF50x165FR (2)

MAXFLEX FR Standard Sheet Insulation and Continuous Sheet Roll

MAXFLEX FR Standard Sheet and Continuous Sheet Roll	Products Code (Size, Length, Quantity per Carton)									
	3mm. Thick (1/8")	6mm. Thick (1/4")	9mm. Thick (3/8")	13mm. Thick (1/2")	16mm. Thick (5/8")	19mm. Thick (3/4")	25mm. Thick (1")	32mm. Thick (1-1/4")	38mm. Thick (1-1/2")	50mm. Thick (2")
Standard Flat Sheet Size 1.2m. x 0.9m.	MSF03FR (48pcs./ctn.)	MSF06FR (24pcs./ctn.)	MSF09FR (16pcs./ctn.)	MSF13FR (12pcs./ctn.)	MSF16FR (10pcs./ctn.)	MSF19FR (8pcs./ctn.)	MSF25FR (6pcs./ctn.)	MSF32FR (5pcs./ctn.)	MSF38FR (4pcs./ctn.)	MSF50FR (3pcs./ctn.)
Sheet Roll Width 1.2m. Continuous Length	MSR03FR (L=15.0m.) (18.3m^2 / ctn)	MSR06FR (L=21.9m.) (26.7m^2 / ctn)	MSR09FR (L=15.2m.) (18.5m^2 / ctn)	MSR13FR (L=11.0m.) (13.4m^2 / ctn)	MSR16FR (L=9.7m.) (11.8m^2 / ctn)	MSR19FR (L=7.0m.) (8.5m^2 / ctn)	MSR25FR (L=5.5m.) (6.7m^2 / ctn)	MSR32FR (L=4.0m.) (4.8m^2 / ctn)	MSR38FR (L=3.0m.) (3.7m^2 / ctn)	MSR50FR (L=2.4m.) (2.9m^2 / ctn)

Note: Insulation thickness 3mm. and 6mm. shall be supplied with one side skin

MAXFLEX FR Pre-Cut Sheet Insulation (1.2 meter Length/Sheet)

Chilled Water Pipe Iron Pipe Size	Sheet Size : Length x Width		13mm. wall (1/2")		19mm. wall (3/4")		25mm. wall (1")	
ID (inch)	(mm.)	(inch)	Product Code	Pcs/ctn	Product Code	Pcs/ctn	Product Code	Pcs/ctn
6" IPS	1.2 x 0.61	48" x 24"	MCS1312061FR	12	MCS1912061FR	8	MCS2512061FR	6
8" IPS	1.2 x 0.76	48" x 30"	MCS1312076FR	12	MCS1912076FR	8	MCS2512076FR	6
10" IPS	1.2 x 0.91	48" x 36"	MCS1312091FR	12	MCS1912091FR	8	MCS2512091FR	6
12" IPS	1.2 x 1.12	48" x 44"	MCS1312112FR	12	MCS1912112FR	8	MCS2512112FR	6
14" IPS	1.2 x 1.22	48" x 48"	MCS1312122FR	12	MCS1912122FR	8	MCS2512122FR	6
16" IPS	1.2 x 1.37	48" x 54"	MCS1312137FR		MCS1912137FR		MCS2512137FR	
18" IPS	1.2 x 1.52	48" x 60"	MCS1312152FR		MCS1912152FR		MCS2512152FR	
Chilled Water Pipe Iron Pipe Size	**Sheet Size : Length x Width**		**32mm. wall (1-1/4")**		**38mm. wall (1-1/2")**		**50mm. wall (2")**	
ID (inch)	**(mm.)**	**(inch)**	**Product Code**	**Pcs/ctn**	**Product Code**	**Pcs/ctn**	**Product Code**	**Pcs/ctn**
6" IPS	1.2 x 0.61	48" x 24"	MCS3212061FR	5	MCS3812061FR	4	MCS5012061FR	3
8" IPS	1.2 x 0.76	48" x 30"	MCS3212076FR	5	MCS3812076FR	4	MCS5012076FR	3
10" IPS	1.2 x 0.91	48" x 36"	MCS3212091FR	5	MCS3812091FR	4	MCS5012091FR	3
12" IPS	1.2 x 1.12	48" x 44"	MCS3212112FR	5	MCS3812112FR	4	MCS5012112FR	3
14" IPS	1.2 x 1.22	48" x 48"	MCS3212122FR	5	MCS3812122FR	4	MCS5012122FR	3
16" IPS	1.2 x 1.37	48" x 54"	MCS3212137FR		MCS3812137FR		MCS5012137FR	
18" IPS	1.2 x 1.52	48" x 60"	MCS3212152FR		MCS3812152FR		MCS5012152FR	

Note: The above sheet size is for 1" wall thickness. For other thickness pre cut sheet size will vary to cover circumference.

DIMENSION OF PACKAGING			
	Width (cm.)	Length (cm.)	Height (cm.)
TUBE 2 meter	39	207	33
STANDARD FLAT SHEET	102	130	19
0.9m. X 1.2m.	Carton box or Plastic Wrap		
SHEET ROLL	46	130	46
	Carton box or Rolled in Plastic Wrap		
	Width (cm.)	Length (cm.)	Height (cm.)
PRE-CUT SHEET			
6" IPS - 8" IPS	86	130	19
10" IPS	102	130	19
12" IPS	130	130	19
>12" IPS	Carton box or Rolled in Plastic Wrap		

Being dust and fiber free, MAXFELX FR is an ideal thermal insulation for air ducting system. It has been favored over the fibrous insulating material because of the possible health hazards and dangers caused by the loose particles of fibrous materials in to air vents. MAXFLEX FR can be safely handled without causing skin irritation. The products also have superior resistance against moisture, fungus growth, vermin and rodent attack. The dense surface skin laminate with aluminum foil eliminates the need for another layer of vapor barrier or further coating. Physical Strengths of the specially modified elastomeric material ensures long year service life with stable and low thermal conductivity value. MAXFLEX FR has been widely used in Air Ducting Systems due to the following superior characteristics.

- Strength contracture of elastomer and close cell that can be use long year service life of duct (Low K- value)
- Excellent moisture and vapor resistance due to its dense surface skin and closed cell structure.
- Outstanding ozone/UV and weather resistance.
- Flexible, makes instruction work easy and neat.
- Protecting Moisture resistance without fungi ants termites and mice
- MAXFLEX FR type of roll and sheet able to use insulation inside and outside supply of ductwork

Thickness Recommendation for Air Ducing Systems

Condition: Surface temperature is above dew point ~1oC to avoid condensation without cladding (Bare Insulation)

Ambient Condition	Dew Point	Operating Temperature (Cool Air Temperature)					
		+17 °C (+62.6 °F)	+15 °C (+59 °F)	+13 °C (+55.4 °F)	+10 °C (+50.0 °F)	+7 °C (+44.6 °F)	+5 °C (+41 °F)
27 °C (80.6 °F), 50% RH	16 °C	6 mm.	6 mm.	6 mm.	9 mm.	9 mm.	9 mm.
27 °C (80.6 °F), 70% RH	21 °C	6 mm.	6 mm.	9 mm.	9 mm.	13 mm.	13 mm.
30 °C (86.0 °F), 70% RH	24 °C	9 mm.	9 mm.	9 mm.	9 mm.	13 mm.	16 mm.
30 °C (86.0 °F), 75% RH	25 °C	9 mm.	9 mm.	13 mm.	13 mm.	19 mm.	19 mm.
32 °C (89.6 °F), 80% RH	28 °C	16 mm.	16 mm.	25 mm.	25 mm.	25 mm.	32 mm.
34 °C (93.2 °F), 85% RH	31 °C	19 mm.	25 mm.	25 mm.	32 mm.	32 mm.	38 mm.
35 °C (95 °F), 85% RH	32 °C	25 mm.	25 mm.	32 mm.	38 mm.	50 mm.	50 mm.
35 °C (95 °F), 90% RH	33 °C	32 mm.	32 mm.	38 mm.	50 mm.	56 mm.	56 mm.

In areas of low relative humidity, insulation thickness 6mm. will be sufficient for condensation control purpose. However, we would recommend a minimum thickness of 9mm. In order to significantly reduce the heat gain from outer sources.

MAXFLEX ACCESSORIES

MAXTAPE

MAXGLUE

MAXFIX, MAXFIX STAND

MAXFLEX FR

For Chilled Water Piping & Refrigerating Systems

MAXFLEX FR is applied onto the chilled water pipes and refrigerating systems not simply to control condensation problems, but also to reduce waste of energy by higher heat gain into the cooling systems. MAXFLEX FR has been widely used in refrigerating and central cooling systems due to the following superior characteristics.

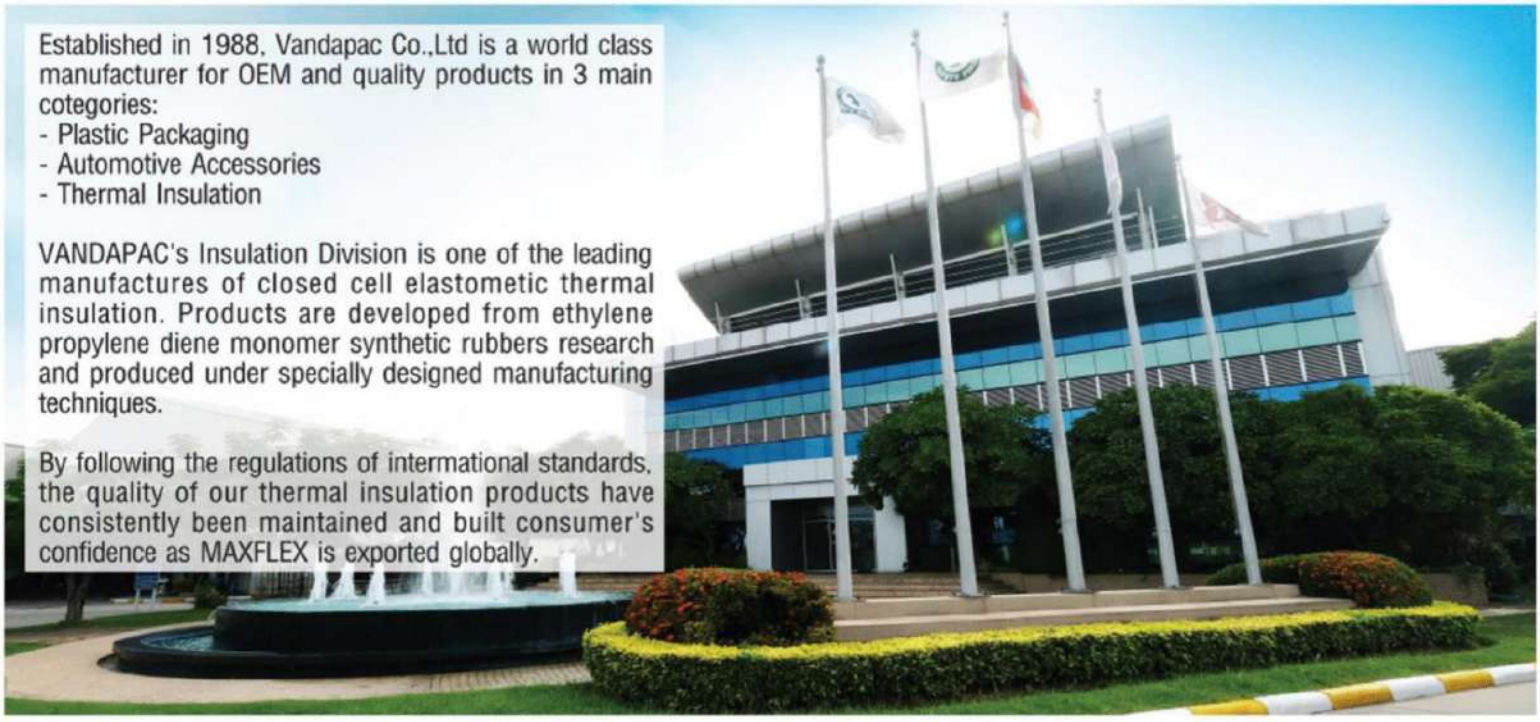
- Low and stable thermal conductivity value.
- Very low water absorption and high moisture resistance.
- Complies with most international Smoke and Flammability Standards.
- FM approvals are the independent testing standards of international insurance carrier, FM Global. MAXFLEX FR products conform to the highest standards for safety and property loss prevention.
- Having UV and Ozone resistance due to Non-polar Close Cell Polymer Base.
- Outstanding flexibility for quick and easy installation. Gives the finished insulation a neat aesthetic appearance.

Thickness Recommendation for Chilled Water Piping and Refrigeration.

Condition: Surface temperature is above dew point ~1°C to avoid condensation without cladding (Bare Insulation).

Outside Diameter (OD.) of Steel Pipe	Pipe Line Temperature				
	+15°C (59°F)	+7°C (44.6°F)	+2°C (35.6°F)	-10°C (14°F)	-18°C (-0.4°F)
Maximun Ambient Temperature 28°C (82.4°F), 75%RH, Dew Point 23.26°C					
Pipe up to 1" IPS (35mm.)	9	13	19	25	32
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	9	19	19	32	38
3"IPS-6"IPS (89-168mm.)	9	19	25	32	38
Pipe ≥8"IPS (219mm.)	13	19	25	32	38
Maximum Ambient Temperature 32°C (86°F), 75%RH, Dew Point 27.16°C					
Pipe up to 1" IPS (35mm.)	13	19	19	25	32
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	13	19	25	32	38
3"IPS-6"IPS (89-168mm.)	13	19	25	32	38
Pipe ≥8"IPS (219mm.)	13	25	25	38	50
Maximum Ambient Temperature 35°C (95°F), 80%RH, Dew Point 31.2°C					
Pipe up to 1" IPS (35mm.)	19	25	32	38	50
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	19	32	32	38	50
3"IPS-6"IPS (89-168mm.)	25	32	38	50	56
Pipe ≥8"IPS (219mm.)	25	38	38	50	59
Maximum Ambient Temperature 35°C (95°F), 85%RH, Dew Point 31.7°C					
Pipe up to 1" IPS (35mm.)	25	25	32	38	50
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	25	32	38	50	53
3"IPS-6"IPS (89-168mm.)	25	38	50	56	63
Pipe ≥8"IPS (219mm.)	32	50	50	63	75
Maximum Ambient Temperature 35°C (95°F), 90%RH, Dew Point 32.2°C					
Pipe up to 1" IPS (35mm.)	25	38	38	56	59
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	32	50	50	63	69
3"IPS-6"IPS (89-168mm.)	38	53	53	75	84
Pipe ≥8"IPS (219mm.)	38	56	59	88	100
Maximum Ambient Temperature 38°C (100.4°F), 90%RH, Dew Point 35.8°C					
Pipe up to 1" IPS (35mm.)	50	50	59	75	94
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	50	59	69	88	100
3"IPS-6"IPS (89-168mm.)	56	69	84	100	125
Pipe ≥8"IPS (219mm.)	63	84	100	125	138
Maximum Ambient Temperature 45°C (114°F), 90%RH, Dew Point 43.0°C					
Pipe up to 1" IPS (35mm.)	50	56	63	75	100
1 1/4"IPS- 2 1/2"IPS (42-76mm.)	56	63	69	88	125
3"IPS-6"IPS (89-168mm.)	63	75	84	100	138
Pipe ≥8"IPS (219mm.)	69	84	100	125	150

MAXFLEX®
By MAXLINER



Established in 1988, Vandapac Co.,Ltd is a world class manufacturer for OEM and quality products in 3 main cotegories:
- Plastic Packaging
- Automotive Accessories
- Thermal Insulation

VANDAPAC's Insulation Division is one of the leading manufactures of closed cell elastometic thermal insulation. Products are developed from ethylene propylene diene monomer synthetic rubbers research and produced under specially designed manufacturing techniques.

By following the regulations of international standards, the quality of our thermal insulation products have consistently been maintained and built consumer's confidence as MAXFLEX is exported globally.

Green Industry
BSi British Standards
ASTM INTERNATIONAL
NFPA
UL
RoHS COMPLIANT
EUROPEAN STANDARDS
BUREAU VERITAS Certification
UKAS
FM APPROVED
Australian Standard

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