AEROFLEX

AEROFLEX®

Closed Cell Elastomeric Thermal Insulation
(made from E.P.D.M. - Ethylene Propylene Diene Monomer)

Aeroflex Tube and Sheet Insulation is a flexible, closed cell and lightweight elastomeric material designed for insulating cooling and heating lines. The closed cell structure of Aeroflex provides many advantages over most rigid insulations for cooling and heating lines such as:

- Moisture & vapour resistance without using additional vapour barriers.
- Stable thermal conductivity (K. value) during service due to its dense surface skins and closed cell characteristics.
- Flexible which makes installation work easy and neat.
- Outstanding ultraviolet and weather resistance.

Aeroflex prevents heat gain and condensation problems on chilled water and refrigerant pipelines and also prevents heat loss from hot water plumbing, liquid and dual temperature piping. It is also an ideal insulation for frost control on cold water plumbing.

Aeroflex Tube Insulation

Aeroflex Closed Cell Tube Insulation is easily installed to pipe or tubing. The factory-applied coating of talcum powder on the thick and smooth inner skin helps facilitate and speed up pre-assembly lines. When applied to existing lines, tubing should be slit length-wise and snapped into place. Slitting can be done on the job easily with razors, blades, knives or shears. Cut edges and joints can be sealed with Aeroseal Adhesive (neoprene base contact cement)

Aeroflex Standard Sheet

The standard sheet is available in sizes of 0.91m x 1.2m with the wall thickness from 6mm upto 25mm. It prevents heat loss and condensation on large pipelines, tanks, chillers, air ducts and other irregular shaped vessels.

Aeroflex Continuous Sheet Roll

Aeroflex sheet insulations are also available in continuous roll form. Continuous sheet rolls are available from 10mm to 50mm thickness at 1 metre wide and 3 to 30 metres long. All insulation sheets are made from the same materials as Aeroflex tubing.

Temperature Range

Aeroflex tubes and sheet insulate and prevent condensation when used in operating temperatures down to –57 ^{o}C and insulate against heat loss upto 125 ^{o}C. The thermal efficiency and water vapour permeability of Aeroflex will not be affected within these recommended operating temperature ranges.

Moisture Resistance

The Closed Cell Structure protects against moisture and eliminates the need for a vapour barrier in most applications. However, under severe conditions of high humidity (90% RH and above), high temperature (32 ^{o}C and above) and low ventilation such as underground piping, “Aerocoat” (Acrylic Emulsion Paint) is recommended for use as an additional vapour barrier coating.

Thermal Efficiency

Aeroflex Insulation is made from high quality synthetic elastomers, has low density and a closed cell structure. The products, therefore have a stable low K Factor of 0.034 – 0.040 (-20 to +40 ^{o}C mean temperature) which can save energy consumption on any heating and cooling lines.

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Fire Rating

Aeroflex to Australian Standard AS1530.3 - 1999
Ignitability Index - 0 (range 0 – 20)
Spread of Flame Index - 0 (range 0 – 10)
Heat Evolved Index - 0 (range 0 – 10)
Smoke Developed Index - 3 (range 0 – 10)
To be read in conjunction with the Building Code of Australia.

Anti Vibration and Resonance

The high elasticity of Aeroflex insulation minimizes the vibrations and resonance of chilled water and hot water pipelines during operation.

Neat Appearance

The flexibility and smooth surface of Aeroflex offers a neat-finished appearance even at joints, tees and elbows. No decorative or protective coating is required for either indoor or outdoor installations.

Flexibility and Space Saving

The flexibility of Aeroflex enables quick and easy installation on bent or irregular piping. Due to its low and stable thermal conductivity, Aeroflex requires a thinner wall than other rigid insulations. Therefore, less space is needed for Aeroflex.

Other Advantages

Aeroflex can be safely handled without causing skin irritations or health hazard. It has superior resistance to fungus growth, vermin or rodent attack and other chemicals such as acids or alkalis. This makes Aeroflex ideal for protecting piping from corrosion caused by atmospheric agents and industrial ambience. Aeroflex is cured through a special vulcanisation process that will prevent any corrosion to metals. This means stainless & copper pipes will not become discoloured or brittle.

Specifications

Average Physical Properties *		Aeroflex Insulation						Test Method **
Cell Structure		Closed Cell						-
Density (gm/cm^3)		0.06 - 0.10 ***						ASTM D 1667
Thermal Conductivity		Temp (^{o}C)	-20	0	24	32	40	ASTM C 177 JIS A 1412 – 1989 DIN 52613
		K Value (W/m.K)	0.034	0.035	0.038	0.039	0.040	
Service Temperature Limit ****		-57 ^{o}C to 125 ^{o}C						
Water Vapour Permeability (Kg/m.s.Pa)		0.15 perm – in. (0.22 x 10^{-12})						ASTM C 355, E 96 *****
		$\mu \geq$ 4,000						DIN 52615
Water Absorption (% by Weight)		3						ASTM D 1056
Ozone Resistance		Excellent						ASTM D 1171, D 1149
Thermal Stability (% shrinkage)	7 days 93 ^{o}C	5						ASTM C 534
	7 days 104 ^{o}C	6						
Flammability and Smoke Density ******		Self-extinguishing						ASTM D 635
		Class V 0						UL – 94
		Class 5.3						EMPA *******
		Non-Flammable						JIS K 6911
Weather and Ultraviolet Resistance		Good						-
Copper Corrosion		Negligible						-
Odour		Negligible						-
Flexibility		Excellent						-
Elongation		Excellent						-

Note: * The physical properties of Aeroflex Closed Cell Insulation represent typical average values obtained in accordance with accepted test methods.

** Also tested by other standards: DIN, JIS, SISIR and others.

*** For thicknesses ranging from 25mm and above, density 0.05 – 0.08 gm/cm$^{3.}$

**** At –57 ^{o}C Aeroflex Closed Cell Insulation becomes harder and as temperature drops below –57 ^{o}C it becomes increasingly brittle. However this hardening characteristic does not affect thermal efficiency and water vapour permeability. On the heating cycle, Aeroflex Closed Cell Insulation will withstand temperatures up to 125 ^{o}C. For butt joint and seams contacted with Aeroseal Adhesive, the limited temperature is up to 100 ^{o}C.

***** Water vapour permeability of Aeroflex insulation is tested according to ASTM E 96 procedure E-Desiccant method at 37.8 ^{o}C.

****** Aeroflex Closed Cell Insulation is made of specially compounded elastomeric materials for self-extinguishing. The flammability of this insulation has been tested by exposing samples of 6" x 2" x ½" thickness to the procedures of ASTM D 635 test method entitled "Flammability of Plastics and Cellular Plastics". During this test, the sample is positioned horizontally. And for the procedure of UL – 94 the sample size of ½" x ½" x 5" is positioned vertically. This test method is not intended as a criterion of fire hazard. It can be of considerable value in comparing flammability to different materials.

******* EMPA: Swiss Federal Laboratories for Materials Testing and Research.

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Closed Cell Pipe Insulation

6mm & 9mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M06006	6	6	180	$2.89
M06008		8	160	$3.08
M06010		10	140	$3.22
M06013		13	110	$4.52
M06016		16	80	$5.24
M06019		19	70	$5.61
M06022		22	70	$5.92
M06025		25	60	P.O.A.
M06028		28	50	P.O.A.
M09006	9	6	132	$3.08
M09010		10	110	$3.45
M09013		13	84	$4.54
M09016		16	70	$4.95
M09019		19	60	$5.54
M09022		22	54	$6.24
M09025		25	44	$6.53
M09028		28	36	$7.05
M09032		32	34	$8.75
M09035		35	32	$9.20
M09038		38	30	$10.75
M09042		42	28	$11.56
M09045		45	24	$12.40
M09048		48	20	$13.86
M09051		51	18	$14.25
M09054		54	18	$14.52
M09060		60	16	$16.53
M09064		64	16	$17.41
M09067		67	14	$18.17
M09073		73	10	P.O.A.
M09076		76	10	$20.02
M09080		80	10	$20.39
M09083		83	10	$20.56

13mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M13006	13	6	80	$5.70
M13010		10	70	$5.80
M13013		13	60	$6.05
M13016		16	50	$6.40
M13019		19	40	$6.70
M13022		22	32	$6.95
M13025		25	30	$7.90
M13028		28	28	$8.05
M13032		32	24	$12.60
M13035		35	20	$13.20
M13038		38	18	$15.85
M13042		42	18	$17.70
M13045		45	18	$19.15
M13048		48	16	$20.80
M13051		51	14	$21.45
M13054		54	14	$22.05
M13060		60	12	$23.30
M13064		64	10	$24.95
M13067		67	10	$26.50
M13073		73	10	$29.58
M13076		76	8	$32.20
M13080		80	8	$32.75
M13083		83	8	$32.43
M13090		90	8	$36.60
M13092		92	8	$36.55
M13098		98	6	$37.42
M13102		102	6	$40.90
M13105		105	6	$44.10
M13115		115	6	$45.30
M13127		127	4	$45.35
M13130		130	4	$47.39
M13140		140	4	$48.36

19mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M19006	19	6	32	$10.20
M19010		10	32	$11.45
M19013		13	32	$12.00
M19016		16	28	$13.75
M19019		19	24	$14.30
M19022		22	20	$16.55
M19025		25	18	$17.70
M19028		28	18	$18.20
M19032		32	18	$20.80
M19035		35	16	$22.70
M19038		38	12	$24.76
M19042		42	12	$27.60
M19045		45	10	$29.30
M19048		48	8	$31.15
M19051		51	8	$32.95
M19054		54	8	$33.60
M19060		60	8	$35.90
M19064		64	8	$37.80
M19067		67	8	$39.55
M19073		73	6	$47.19
M19076		76	6	$49.80
M19080		80	6	$51.55
M19083		83	6	$52.53
M19090		90	6	$55.05
M19092		92	6	$58.96
M19098		98	4	$63.77
M19102		102	4	$65.30
M19105		105	4	$65.90
M19115		115	4	$82.10
M19127		127	4	$84.50
M19130		130	4	$84.69
M19140		140	4	$88.47

Fire Rating: Aeroflex Insulation is tested to Australian Standards 1530.3 - 1999
Ignitability: 0 Spread of Flame: 0 Heat Evolved: 0 Smoke Developed: 3

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Closed Cell Pipe Insulation

25mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M25006	25	6	24	$15.60
M25010		10	20	$16.15
M25013		13	18	$16.85
M25016		16	18	$18.05
M25019		19	18	$20.45
M25022		22	16	$22.85
M25025		25	12	$24.55
M25028		28	12	$26.45
M25032		32	12	$27.60
M25035		35	10	$29.35
M25038		38	10	$31.25
M25042		42	8	$36.65
M25045		45	8	$37.36
M25048		48	8	$43.35
M25051		51	8	$45.05
M25054		54	8	$48.05
M25060		60	6	$50.50
M25064		64	6	$52.20
M25067		67	6	$54.05
M25073		73	6	$60.05
M25076		76	6	$63.10
M25080		80	6	$66.00
M25083		83	6	$64.59
M25086		86	4	$66.01
M25090		90	4	$67.40
M25092		92	4	$72.99
M25098		98	4	$75.80
M25102		102	4	$82.70
M25105		105	4	$78.61
M25115		115	4	$96.05
M25127		127	4	$109.55
M25130		130	2	$101.09
M25140		140	2	$113.10
M25152		152	2	$117.65

32mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M32010	32	10	14	$23.75
M32013		13	14	$24.90
M32016		16	14	$26.45
M32019		19	14	$28.80
M32022		22	12	$31.25
M32025		25	10	$34.80
M32028		28	8	$37.25
M32032		32	8	$40.20
M32035		35	8	$43.25
M32038		38	8	$43.20
M32042		42	8	$49.30
M32051		51	6	$57.83
M32054		54	6	$61.78
M32060		60	4	$67.40
M32064		64	4	$70.18
M32067		67	4	$72.99
M32073		73	4	$78.61
M32076		76	4	$81.70
M32080		80	4	$84.23
M32083		83	4	$87.02
M32090		90	4	$89.87
M32092		92	4	$92.66
M32098		98	2	$97.91
M32102		102	2	$99.50
M32105		105	2	$101.08
M32115		115	2	$112.31
M32127		127	2	$115.28
M32130		130	2	$119.35
M32140		140	2	$123.56
M32165		165	2	$127.56

38mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M38010	38	10	8	$32.50
M38013		13	8	$33.70
M38016		16	8	$33.95
M38019		19	8	$37.95
M38022		22	8	$47.90
M38025		25	8	$54.05
M38028		28	8	$60.05
M38032		32	8	$63.40
M38035		35	6	$69.10
M38038		38	6	$73.60
M38042		42	6	$78.05
M38045		45	6	$80.90
M38048		48	6	$84.05
M38051		51	4	$96.05
M38054		54	4	$102.05
M38060		60	4	$108.10
M38064		64	4	$111.10
M38067		67	4	$114.05
M38073		73	3	$112.31
M38076		76	3	$126.05
M38080		80	3	$132.05
M38083		83	3	$126.31
M38090		90	3	$129.16
M38092		92	3	$134.77
M38098		98	3	$138.47
M38102		102	2	$161.70
M38105		105	2	$146.03
M38115		115	2	$157.23
M38127		127	2	$159.31
M38130		130	2	$162.77
M38140		140	2	$168.48
M38165		165	2	$174.90

Fire Rating: Aeroflex Insulation is tested to Australian Standards 1530.3 - 1999
Ignitability: 0 Spread of Flame: 0 Heat Evolved: 0 Smoke Developed: 3

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Closed Cell Pipe Insulation

50mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M50022	50	22	4	$97.78
M50025		25	4	$102.12
M50028		28	4	$106.99
M50032		32	4	$109.59
M50035		35	4	$111.79
M50038		38	4	$114.00
M50042		42	4	$116.67
M50045		45	4	$125.61
M50048		48	3	$131.35
M50051		51	3	$139.22
M50054		54	3	$147.75
M50060		60	3	$158.48
M50064		64	3	$160.82
M50067		67	3	$163.02
M50073		73	2	$177.56
M50076		76	2	$183.95
M50080		80	2	$198.70
M50083		83	2	$205.98
M50090		90	2	$219.78
M50092		92	2	$223.59
M50098		98	2	$227.99
M50102		102	2	$232.39
M50105		105	2	$242.74
M50115		115	2	$265.74
M50127		127	2	$273.81
M50130		130	2	$277.28
M50140		140	2	$283.15
M50153		153	2	$288.49
M50165		165	1	$293.82

63mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M63016	63	16	3	$102.15
M63019		19	3	$103.35
M63022		22	3	$110.85
M63025		25	3	$115.80
M63028		28	3	$121.30
M63032		32	3	$124.25
M63035		35	3	$126.75
M63038		38	3	$129.25
M63042		42	2	$158.70
M63045		45	2	$170.90
M63048		48	2	$148.90
M63051		51	2	$157.85
M63054		54	2	$180.00
M63057		57	2	$172.35
M63060		60	2	$179.70
M63063		63	2	$182.35
M63067		67	2	$184.85

75mm Wall

Airefrig Part Number	Wall mm	ID mm	Lengths per Carton	List Price Ex GST
M75016	75	16	2	$130.75
M75019		19	2	$132.30
M75022		22	2	$141.90
M75025		25	2	$148.20
M75028		28	2	$155.25
M75032		32	2	$159.05
M75035		35	2	$162.25
M75038		38	2	$165.45
M75042		42	2	$167.30
M75045		45	2	$182.25
M75048		48	2	$190.60
M75051		51	2	$202.00
M75054		54	2	$214.40
M75057		57	2	$220.60
M75060		60	2	$230.00
M75063		63	2	$233.40
M75067		67	2	$236.60

Fire Rating

Aeroflex Insulation is tested to
Australian Standards 1530.3 - 1999

Ignitability: 0

Spread of Flame: 0

Heat Evolved: 0

Smoke Developed: 3

Dimension Tolerances

ID Size	Wall 6mm	Wall 9mm	Wall 13mm	Wall 19mm	Wall 25mm	Wall 32mm	Wall 38mm	Wall 50mm
9 to 28 mm	6 ± 1 mm	9.6 ± 1 mm	12.6 ± 1 mm	19 ± 1 mm	25 ± 1 mm	32 ± 2 mm	38 ± 2 mm	38 ± 2 mm
32 to 83 mm	-	10.6 ± 1 mm	13.6 ± 1 mm	20 ± 1 mm	26 ± 1 mm	33 ± 2 mm	39 ± 2 mm	39 ± 2 mm
90 to 140 mm	-	11.5 ± 1 mm	14.5 ± 1 mm	21 ± 1 mm	27 ± 1 mm	34 ± 2 mm	40 ± 2 mm	40 ± 2 mm