



Made from E.P.D.M. - Ethylene Propylene Diene Monomer

## Closed Cell Elastomeric Thermal Insulation

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  $-57^{\circ}\text{C}$  and insulate against heat loss upto  $125^{\circ}\text{C}$ . 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 ( $32^{\circ}\text{C}$  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 0.25 – 0.27 (at  $10 - 32^{\circ}\text{C}$  mean temperature) which can save energy consumption on any heating and cooling lines.



# AUSTRALIAN SUN ENERGY

## 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 <sup>3</sup> )	0.06 - 0.10 ***					ASTM D 1667	
Thermal Conductivity	Temp (°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 °C to 125 °C						
Water Vapour Permeability (Kg/m.s.Pa)	0.15 perm – in. (0.22 x 10 <sup>-12</sup> )					ASTM C 355, E 96 *****	
	? ? 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 °C	5				ASTM C 534	
	7 days 104 °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<sup>3</sup>.

\*\*\*\* At –57 °C Aeroflex Closed Cell Insulation becomes harder and as temperature drops below –57 °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 °C. For butt joint and seams contacted with Aeroseal Adhesive, the limited temperature is up to 100 °C.

\*\*\*\*\* Water vapour permeability of Aeroflex insulation is tested according to ASTM E 96 procedure E-Desiccant method at 37.8 °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.

# AUSTRALIAN SUN ENERGY

## Accessories

### Aeroseal

Aeroseal is a Modified Neoprene Contact Adhesive specially formulated for bonding Aeroflex Insulation Materials firmly together. Also ideal for use with other materials such as Metal (painted or unpainted), Cork Board, Polyurethane Foam, Rigid PVC Sheet, Formica, Melamine Board or Rubber Sheet.

The high water vapour resistance and good weathering resistance of Aeroseal can prevent water or moisture from penetrating the joints. Aeroseal forms a strong, firm and permanent bond between the applied materials providing long lasting service.



### Aerotape

Aerotape is a flexible and self-adhesive insulation foam tape, which is made from the same elastomeric material as Aeroflex Closed Cell Insulation. Ideal for wrapping hot or cold piping and fittings. Energy efficient and very easy to use. Excellent for preventing condensation problems. Designed specially for retarding heat loss in hot piping and preventing heat gain or frost formation on cold, chilled water piping or refrigeration lines. Adheres firmly to all metals. No problem of delamination. Aerotape is specially coated with primer on the non-adhesive side for a long service life.



### Airtape

Airtape Insulation Cork Tape is specially designed for all types of climates. It insulates cold pipes for all kinds of air conditioners used in cars and homes, freezers and refrigerators. Helps stop condensation problems. Ideal for retarding heat gained in cold pipes and preventing heat loss in hot pipes. Airtape Insulation Tape is an effective sound dampening material and can also be used for gasketing purposes. Airtape Insulation Tape sticks to all kinds of dry metals. It seals tightly without drying. It is flexible and will not shrink or melt within the service temperature of -29 oC to 93 oC.



### Aerocoat

Aerocoat is a water-based paint formulated with selected pure acrylic emulsion mixed with other special chemicals. Excellent for coating onto Aeroflex insulation surfaces giving greater protection against ultraviolet rays or other adverse weather conditions. Available in shades of white, blue, green, yellow, red and black. Aerocoat can also be painted onto pipe insulation surfaces for easy identification of the different pipe functions.



### Protape

Protape is an EPDM-based self-adhesive tape, specially made for adhering the joints of Aeroflex tubes and sheets. Protape provides extra holding strength to the joints and serves as a vapour barrier to prevent atmospheric moisture to penetrate the seams. It is flexible, easy to wrap or patch tightly to the insulation surface.



### Aerofix

Aerofix is a polymeric rigid foam Pipe Hanger with a foam tape inner lining, that absorbs vibration of operating pipes. The outer covering consists of a special rubber tape that seals the hanger completely after installation to prevent moisture penetration. Its strong closed cell structure is ideal for insulating hangers especially for cooling pipes to prevent condensation and save energy.



### Aerostand

Aerostand is made from natural rubber blended with EPDM synthetic rubber and is a load support specifically designed for air-conditioning units. This stand possesses both high compressive strength and good weathering resistance. It is very effective in reducing vibration and noise levels.

Aerostand can withstand loads of upto 50kgs per piece.  
Aerostand Specifications

**Tensile Strength :** Minimum 6.5 MPa

**Elongation :** Minimum 250%

**Hardness :** 70 ± 5 Shore A

**Compression Strength @ 10%**

**Deflection :** Minimum 0.75 N/mm<sup>2</sup>      **Maximum Compression**

**Strength :** Minimum 5.0 N/mm<sup>2</sup>

**Tear Strength :** Minimum 15 kgf/cm



# AUSTRALIAN SUN ENERGY

## Closed Cell Pipe Insulation

### 6mm & 9mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M06006	6	6	180
M06008		8	160
M06010		10	140
M06013		13	110
M06016		16	80
M06019		19	70
M06022		22	70
M06025		25	60
M06028		28	50
M09006		9	6
M09010	10		110
M09013	13		84
M09016	16		70
M09019	19		60
M09022	22		54
M09025	25		44
M09028	28		36
M09032	32		34
M09035	35		32
M09038	38		30
M09042	42		28
M09045	45		24
M09048	48		20
M09051	51		18
M09054	54		18
M09060	60		16
M09064	64		16
M09067	67		14
M09073	73		10
M09076	76	10	
M09080	80	10	
M09083	83	10	

### 13mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M13006	13	6	80
M13010		10	70
M13013		13	60
M13016		16	50
M13019		19	40
M13022		22	32
M13025		25	30
M13028		28	28
M13032		32	24
M13035		35	20
M13038		38	18
M13042		42	18
M13045		45	18
M13048	48	16	
M13051	51	14	
M13054	54	14	
M13060	60	12	
M13064	64	10	
M13067	67	10	
M13073	73	10	
M13076	76	8	
M13080	80	8	
M13083	83	8	
M13090	90	8	
M13092	92	8	
M13098	98	6	
M13102	102	6	
M13105	105	6	
M13115	115	6	
M13127	127	4	
M13130	130	4	
M13140	140	4	

### 19mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M19006	19	6	32
M19010		10	32
M19013		13	32
M19016		16	28
M19019		19	24
M19022		22	20
M19025		25	18
M19028		28	18
M19032		32	18
M19035		35	16
M19038		38	12
M19042		42	12
M19045		45	10
M19048		48	8
M19051	51	8	
M19054	54	8	
M19060	60	8	
M19064	64	8	
M19067	67	8	
M19073	73	6	
M19076	76	6	
M19080	80	6	
M19083	83	6	
M19090	90	6	
M19092	92	6	
M19098	98	4	
M19102	102	4	
M19105	105	4	
M19115	115	4	
M19127	127	4	
M19130	130	4	
M19140	140	4	

**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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# AUSTRALIAN SUN ENERGY

## Closed Cell Pipe Insulation

### 25mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M25006	25	6	24
M25010		10	20
M25013		13	18
M25016		16	18
M25019		19	18
M25022		22	16
M25025		25	12
M25028		28	12
M25032		32	10
M25035		35	10
M25038		38	8
M25042		42	8
M25045		45	8
M25048		48	8
M25051		51	8
M25054		54	8
M25060		60	6
M25064		64	6
M25067		67	6
M25073		73	6
M25076		76	6
M25080		80	6
M25083		83	6
M25086		86	4
M25090		90	4
M25092		92	4
M25098		98	4
M25102		102	4
M25105	105	4	
M25115	115	4	
M25127	127	4	
M25130	130	2	
M25140	140	2	
M25152	152	2	

### 32mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M32016	32	16	14
M32019		19	14
M32022		22	12
M32025		25	10
M32028		28	8
M32032		32	8
M32035		35	8
M32038		38	8
M32042		42	8
M32045		45	8
M32048		48	6
M32051		51	6
M32054		54	6
M32060		60	4
M32064		64	4
M32067		67	4
M32073		73	4
M32076		76	4
M32080		80	4
M32083		83	4
M32090		90	4
M32092		92	4
M32098		98	2
M32102		102	2
M32105		105	2
M32115		115	2
M32127		127	2
M32130		130	2
M32140	140	2	
M32165	165	2	

### 38mm Wall

Part Number	Wall mm	ID mm	Lengths per Carton
M38013	38	13	8
M38016		16	8
M38019		19	8
M38022		22	8
M38025		25	8
M38028		28	8
M38032		32	8
M38035		35	6
M38038		38	6
M38042		42	6
M38045		45	6
M38048		48	6
M38051		51	4
M38054		54	4
M38060		60	4
M38064		64	4
M38067		67	4
M38073		73	3
M38076		76	3
M38080		80	3
M38083		83	3
M38090		90	3
M38092		92	3
M38098		98	3
M38102		102	2
M38105		105	2
M38115		115	2
M38127		127	2
M38130	130	2	
M38140	140	2	
M38165	165	2	

**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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# AUSTRALIAN SUN ENERGY

## Closed Cell Pipe & Sheet Insulation

### 50mm Wall

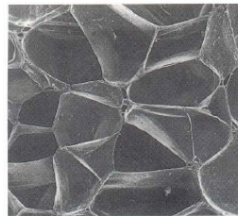
Part Number	Wall mm	ID mm	Lengths per Carton
M50022	50	22	4
M50025		25	4
M50028		28	4
M50032		32	4
M50035		35	4
M50038		38	4
M50042		42	4
M50045		45	4
M50048		48	3
M50051		51	3
M50054		54	3
M50060		60	3
M50064		64	3
M50067		67	3
M50073		73	2
M50076		76	2
M50080		80	2
M50083		83	2
M50090		90	2
M50092		92	2
M50098	98	2	
M50102	102	2	
M50105	105	2	
M50115	115	2	
M50127	127	2	
M50130	130	2	
M50140	140	2	
M50153	153	2	
M50165	165	1	

### Flat Sheet

Part Number	Thickness mm	Sheets per Carton
P5802	1.2mtr x .91mtr x 6mm	24
P5803	1.2mtr x .91mtr x 9mm	16
P5804	1.2mtr x .91mtr x 13mm	12
P5806	1.2mtr x .91mtr x 20mm	8
P5808	1.2mtr x .91mtr x 25mm	6

### Sheet Rolls

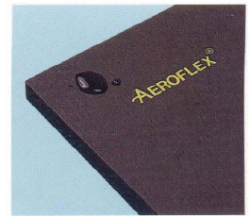
Part Number	Thickness mm	Roll Sizes Metres
MSR10	10	1 x 15
MSR13	13	1 x 11
MSR20	20	1 x 7
MSR25	25	1 x 5
MSR32	32	1 x 4
MSR50	50	1 x 2



The magnified picture shows the completely closed cell structure of Aeroflex which allows the lowest water absorption and water vapor permeability.



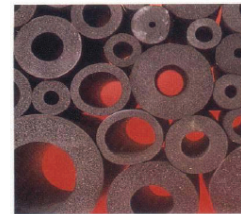
Aeroflex tube insulation has smooth and dense skin internally and externally acting as an additional protection against moisture and water.



Aeroflex sheet insulation with very dense skin on both side can prevent water absorption



The high flexibility of Aeroflex provides very easy installation to pipes that may be bent to any shape.



The picture shows Aeroflex having the most varied sizes starting from 1/8" (3 mm.) ID to 8" (150 mm.) ID and thickness ranging from 1/8" (3 mm.) to 2-1/2" (65 mm.)



Aeroflex is also available in continuous sheet roll to suit different needs and installation purposes.

### 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

**Fire Rating:** Aeroflex Insulation is tested to Australian Standards 1530.3 - 1999

Ignitability: - 0

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# AUSTRALIAN SUN ENERGY

## Tapes – Paints – Anti-Vibration

### Tapes

Part Number	Description
AEROTAPE	Aerotape Foam Tape 50mm x 9.0 Mtr
AIRTAPE	Everseal Cork Tape 50mm x 9.0 Mtr
PROTAPE25MM	Tape 25mm x 0.6mm x 25 Mtr
PROTAPE50MM	Tape 50mm x 0.6mm x 25 Mtr
ALUTAPE63	Foil Tape 63mm x 45 Mtr
ALUTAPE75	Foil Tape 75mm x 45 Mtr
VAPASTOP	Ali Reinforced Tape 72mm x 50 Mtr



### Adhesive and Paints

Part Number	Description
AA2M	Aeroseal Adhesive & Brush 200 MI
AA7M	Aeroseal Adhesive 700 MI
AEROCOAT4L	Aerocoat Plastic Paint Black 3.8 Ltr
AEROCOATBLK	Aerocoat Plastic Paint Black 950 MI
AEROCOATBLU	Aerocoat Plastic Paint Blue 950 MI
AEROCOATGRN	Aerocoat Plastic Paint Green 950 MI
AEROCOATRED	Aerocoat Plastic Paint Red 950 MI
AEROCOATWHT	Aerocoat Plastic Paint White 950 MI
AEROCOATYEL	Aerocoat Plastic Paint Yellow 950 MI



### Anti-Vibration

Part Number	Description
AEROPAD10	Anti Vibration Pad 1000mm x 100mm x 10mm
AEROPAD15	Anti Vibration Pad 1000mm x 100mm x 15mm
AEROSTAND075	Machinery Mount 75mm High Max Load 50Kg per stand (set of 4)
TDRAMS201520	Stud Mount 20x15x20mm M8 (set of 4)



TDRAMS201520



AEROPAD



AEROSTAND075

## CHILLED WATER PIPING

In areas with high humidity, condensation problems often occur in chilled water pipelines of central cooling systems. The condensation does not only damage ceiling, carpet and other furniture, but also waste energy by higher heat gain to the chilled water pipes.

Aeroflex Closed Cell Insulation has been widely used in chilled water pipelines due to the following superior characteristics :

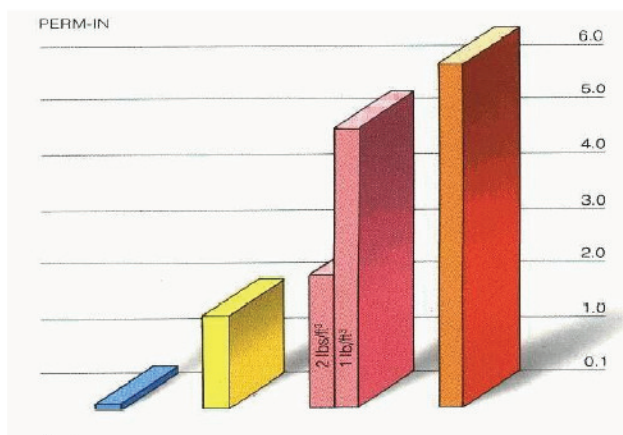
- Very low water absorption
- Low and very stable thermal conductivity (k.value)
- Non-polar polymer base: high water and moisture resistance.
- Universal Smoke and Flammability Proof Standards.
- Flexibility: quick and easy installation.
- Neat appearance.



Low thermal conductivity, great resistance to vapor penetration and water absorption, Aeroflex is widely used in chilled water cooling systems



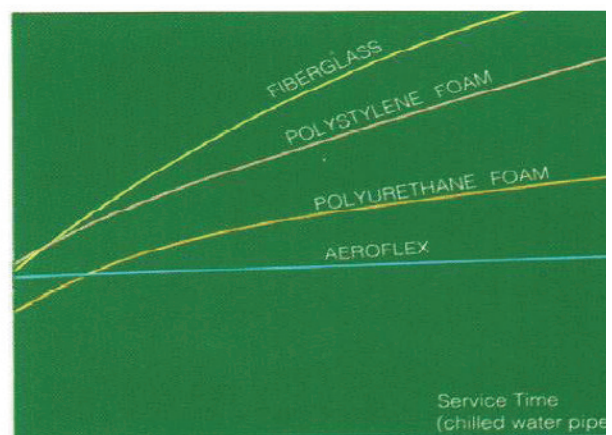
Flame resistance, flexibility and easy installation makes Aeroflex a very economical insulation material for high standard buildings.



NOTE :

This average water vapor permeability data is based on products without vapor barrier.

- Aeroflex: The closed cell structure density 3-6 lbs./ft<sup>3</sup>
- Polyurethane Foam: The semi closed cell structure density 2-4 lbs./ft<sup>3</sup>
- Polystyrene Foam: The interconnecting cell structure density 1-2 lbs./ft<sup>3</sup>
- Fiberglass: The open cell structure density 2-4 lbs./ft<sup>3</sup>



- Service Time (chilled water pipe) -

NOTE :

Service Time largely depends on humidity, temperature and workmanship. Under high humidity of tropical area, the low water vapor transmission is a very important factor for thermal insulation in chilled water pipeline to maintain stable thermal conductivity (k.value) during service. Condensation problem will occur when the k.value of the insulation increases and the surface temperature of insulation drops below DEW POINT. This happens in insulations with high water vapor transmission. (average k.value of water vapor is approx. 4BTU. in/ft<sup>2</sup> hr°F)