

# AEROFLEX-HF<sup>®</sup>

**Halogen-free closed cell  
elastomeric thermal  
insulation for HVAC & R**



- Halogen-free
- Nitrosamine-free
- Dioxin-free
- CFC's-free
- PVC-free



**AEROFLEX-HF<sup>®</sup>** The fire-rated halogen-free thermal insulation for the safety standards of the 21<sup>st</sup> century



# AEROFLEX<sup>®</sup>-HF

## The fire rated insulation material for the safety standards of the 21st century.

**AEROFLEX-HF** includes all the features and provide additional benefits which we have been providing with our standard AEROFLEX material for last 2-1/2 decades.

### This includes

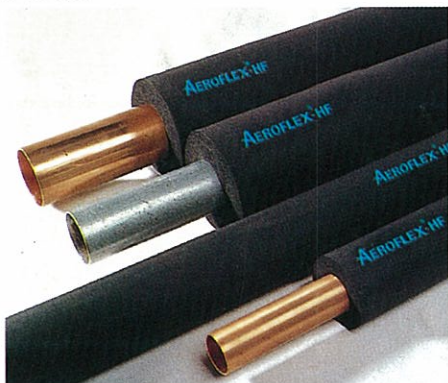
- Low and Stable Thermal Conductivity
- Low water absorption
- Low Flame Spread
- Low Toxicity
- Low Smoke Density
- High Weather & UV resistance
- High Flexibility for fast & easy installation
- High resistance to moisture
- Wide range of service temperature from -60°C (-76°F) to + 125°C (+257°F)
- Does not corrode copper, carbon or stainless steel



**AEROFLEX-HF** has been especially designed for the application where low flame spread, low smoke and low toxicity is required. It is manufactured without the use of controversially high toxic flame retardant chemicals containing Chlorine or Bromine base.

In case of accidental fire, AEROFLEX-HF does not support flame spread or emits dense smoke or toxic gases.

### TUBES\*



### SHEET

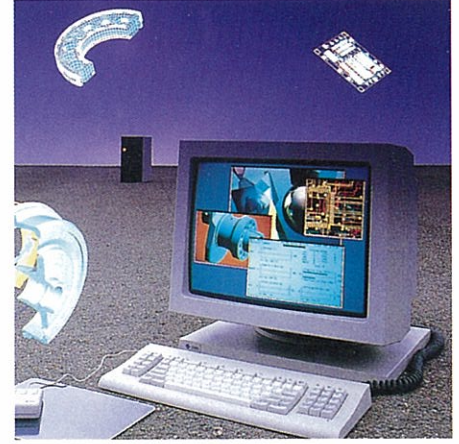
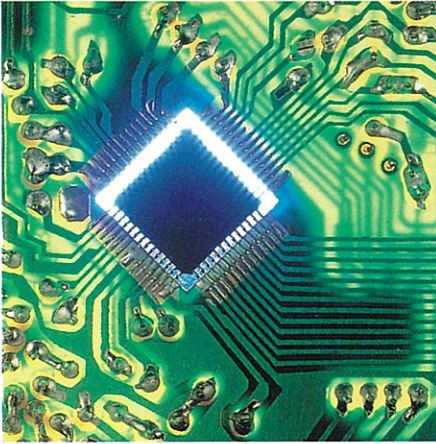
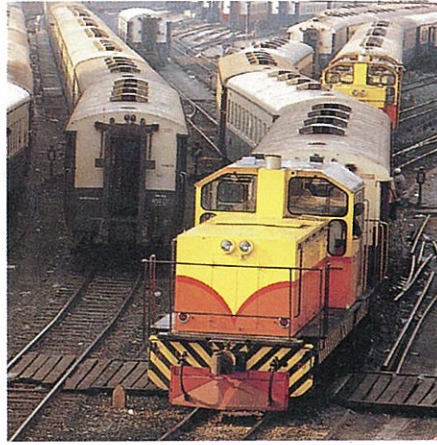


### SHEET ROLLS



\* Tubes are also available as slit version with self-adhesive tapes.





**Application :** Insulation for liquid cooling and heating pipe lines, storage tanks or containers, air ducts. It is especially used in critical areas where chlorine or bromine free materials are required.

This includes ships, aviation, computer and electronics industry where halogen-free environment is required for safety of life and equipment.

## Excellent Technical Performance...

- $\lambda = 0.038 \text{ W/m.K at } 0^\circ\text{C}$
- $\mu \geq 5,000$
- $-60^\circ\text{C} (-76^\circ\text{F}) \text{ to } +125^\circ\text{C} (+257^\circ\text{F})$
- Weather & UV resistance
- Fire Rated

## Environmental Concern...

- Halogen-Free
- Nitrosamine Free
- Dioxin Free
- CFC's Free
- PVC Free

## in Perfect Harmony...





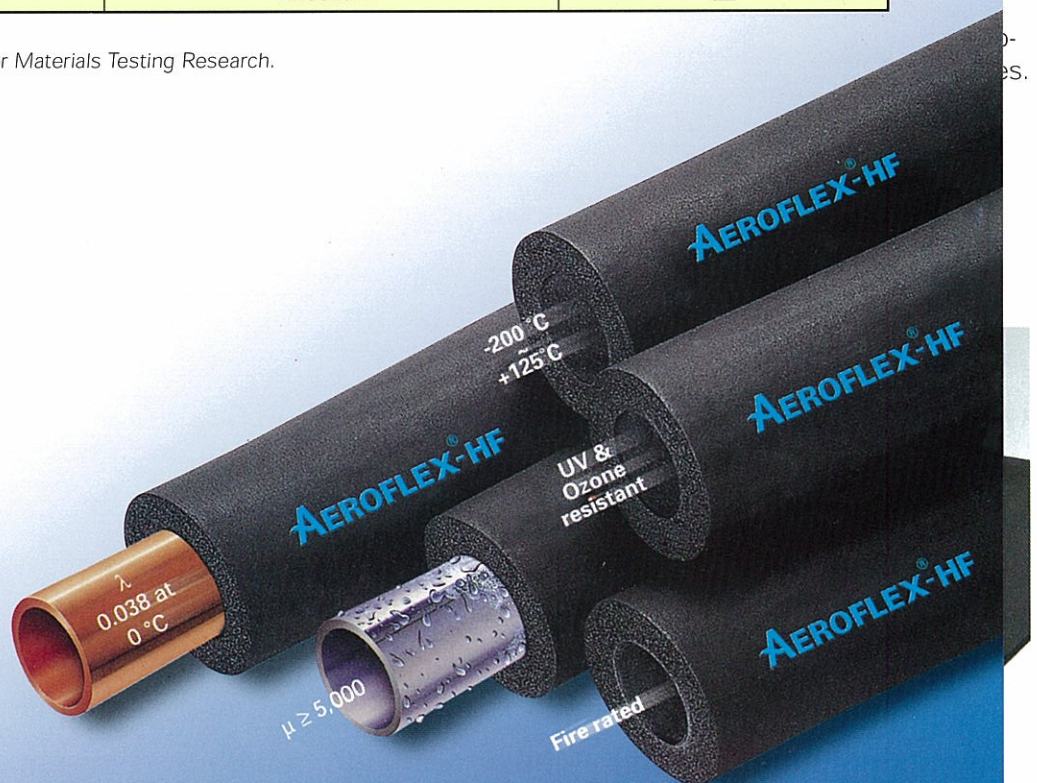
# SPECIFICATION

## AEROFLEX<sup>®</sup>-HF Closed Cell Elastomeric Thermal Insulation

AVERAGE PHYSICAL PROPERTIES		AEROFLEX-HF INSULATION					TEST METHOD
Cell Structure		Closed cell					—
Density lb./ft. <sup>3</sup> ( gm/cm <sup>3</sup> )		2.5-5.0 (0.040~0.080)					ASTM D 1667
Thermal Conductivity W/mK (BTU.in/ft. <sup>2</sup> hr. °F)	mean temp.	-40 °C (-40 °F)	-20 °C (-4 °F)	0 °C (32 °F)	10 °C (50 °F)	20 °C (68 °F)	ASTM C 177 DIN 52613
	K-Value	0.035 (0.243)	0.037 (0.256)	0.038 (0.263)	0.039 (0.271)	0.040 (0.277)	
Service Temperature		-60 °C ~ +125 °C (-76 °F ~ +257 °F)					can be applicable down to -200°C
Water Vapor Permeability (perm-in)		0.10					ASTM E96
		$\mu \geq 5,000$					DIN 52615
Water Absorption (% by weight)		< 5%					ASTM D 1056
Ozone Resistance		Good					ASTM D 1171
Flammability & Smoke Developed		Self - extinguishing					ASTM D 635
		Class 5.3					EMPA*
		B-2					DIN 4102
		S4					DIN 5510
		Pass					IMO Resolution A.635 (16) Part 5 & part 2
Certificates & Approvals		Type Approval Certificate					Llyods DNV (DET NORSKE VERITAS)
		EC Type Certificate					Llyods DNV (DET NORSKE VERITAS)
		Product Design Assessment					ABS (American Bureau of Shipping)
Weather and Ultraviolet Resistance		Good					—
Stainless Steel & Copper Corrosion		Negligible					—
Nitrosamines Content		Non-Detected					US-FDA
Flexibility at Low Temperature		Excellent					—
Elongation		Excellent					—

Specification Compliance : ASTM 534

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





# STANDARD PACKING

## AEROFLEX<sup>®</sup>-HF Insulation Tube : 2 Meter Length/Piece

Thickness Inner Diameter mm. Inch	I.P.S.	Wall 6.5 mm.		Wall 9 mm.		Wall 13 mm.		Wall 19 mm.		Wall 25 mm.		Wall 32 mm.		Wall 38 mm.		Wall 50 mm.	
		1/4" Code	Packing Pcs/Ctn	3/8" Code	Packing Pcs/Ctn	1/2" Code	Packing Pcs/Ctn	3/4" Code	Packing Pcs/Ctn	1" Code	Packing Pcs/Ctn	1.1/4" Code	Packing Pcs/Ctn	1.1/2" Code	Packing Pcs/Ctn	2" Code	Packing Pcs/Ctn
6	1/4"	-	-	HF 06006	180	HF 09006	132	HF 13006	80	HF 19006	32	HF 25006	24	-	-	-	-
8	-	-	-	HF 06008	160	HF 09008	110	HF 13008	70	HF 19008	32	HF 25008	24	-	-	-	-
10	3/8"	-	-	HF 06010	140	HF 09010	110	HF 13010	70	HF 19010	32	HF 25010	24	-	-	-	-
13	1/2"	1/4"	-	HF 06013	110	HF 09013	84	HF 13013	60	HF 19013	32	HF 25013	20 J	HF 32013	14 J	-	-
16	5/8"	3/8"	-	HF 06016	80	HF 09016	70	HF 13016	50	HF 19016	28	HF 25016	18	HF 32016	14 J	HF 38016	8
19	3/4"	-	-	HF 06019	70	HF 09019	60	HF 13019	40	HF 19019	24	HF 25019	16 J	HF 32019	12 J	HF 38019	8
22	7/8"	1/2"	-	HF 06022	70	HF 09022	54	HF 13022	32	HF 19022	20	HF 25022	12	HF 32022	12 J	HF 38022	8
25	1"	-	-	HF 06025	60	HF 09025	44	HF 13025	30	HF 19025	18	HF 25025	12	HF 32025	10 J	HF 38025	8
27	-	3/4"	-	HF 06027	60	HF 09027	44	HF 13027	30	HF 19027	18	HF 25027	12 J	HF 32027	10 J	HF 38027	8
28	1 1/8"	-	-	HF 06028	50	HF 09028	36	HF 13028	28	HF 19028	18	HF 25028	12	HF 32028	8	HF 38028	8
32	1 1/4"	-	-	HF 06032	40	HF 09032	34	HF 13032	24	HF 19032	18	HF 25032	10	HF 32032	8	HF 38032	8 J
35	1 3/8"	1"	-	HF 06035	40	HF 09035	32	HF 13035	20	HF 19035	16	HF 25035	10	HF 32035	8	HF 38035	6 J
38	1 1/2"	-	-	HF 06038	32	HF 09038	30	HF 13038	18	HF 19038	12	HF 25038	8	HF 32038	8	HF 38038	6 J
42	1 5/8"	1 1/4"	-	HF 06042	30	HF 09042	28	HF 13042	18	HF 19042	12	HF 25042	8	HF 32042	8	HF 38042	6 J
45	1 3/4"	-	-	HF 06045	28	HF 09045	24	HF 13045	18	HF 19045	10	HF 25045	8	HF 32045	8	HF 38045	6 J
48	1 7/8"	1 1/2"	-	HF 06048	24	HF 09048	20	HF 13048	16	HF 19048	10	HF 25048	8	HF 32048	6	HF 38048	6 J
51	2"	-	-	-	-	HF 09051	18	HF 13051	14	HF 19051	8	HF 25051	8	HF 32051	6 J	HF 38051	4 J
54	2 1/8"	-	-	-	-	HF 09054	18	HF 13054	14	HF 19054	8	HF 25054	8	HF 32054	6 J	HF 38054	4 J
57	2 1/4"	-	-	-	-	HF 09057	18	HF 13057	14	HF 19057	8	HF 25057	8 J	HF 32057	6 J	HF 38057	4 J
60	2 3/8"	2"	-	-	-	HF 09060	18	HF 13060	12	HF 19060	8	HF 25060	6 J	HF 32060	4	HF 38060	4 J
64	2 1/2"	-	-	-	-	HF 09064	16	HF 13064	10	HF 19064	8	HF 25064	6 J	HF 32064	4 J	HF 38064	4 J
67	2 5/8"	-	-	-	-	HF 09067	14	HF 13067	10	HF 19067	8	HF 25067	6 J	HF 32067	4 J	HF 38067	4 J
73	2 7/8"	2 1/2"	-	-	-	HF 09073	10	HF 13073	10	HF 19073	6	HF 25073	8 SJ	HF 32073	6 SJ	HF 38073	3
76	3"	-	-	-	-	HF 09076	10	HF 13076	8	HF 19076	6	HF 25076	8 SJ	HF 32076	6 SJ	HF 38076	3
80	3 1/8"	-	-	-	-	HF 09080	10	HF 13080	8	HF 19080	6	HF 25080	8 SJ	HF 32080	6 SJ	HF 38080	6 SJ
83	3 1/4"	-	-	-	-	HF 09083	10	HF 13083	8	HF 19083	6	HF 25083	8 SJ	HF 32083	6 SJ	HF 38083	6 SJ
90	3 1/2"	3"	-	-	-	HF 09090	8	HF 13090	8	HF 19090	6	HF 25090	6 SJ	HF 32090	6 SJ	HF 38090	5 SJ
92	3 5/8"	-	-	-	-	HF 09092	8	HF 13092	8	HF 19092	6	HF 25092	6 SJ	HF 32092	6 SJ	HF 38092	5 SJ
98	3 7/8"	-	-	-	-	HF 09098	8	HF 13098	8	HF 19098	4	HF 25098	6 SJ	HF 32098	2	HF 38098	4 SJ
102	4"	-	-	-	-	HF 09102	8	HF 13102	8	HF 19102	4	HF 25102	6 SJ	HF 32102	2	HF 38102	2
105	4 1/8"	-	-	-	-	HF 09105	6	HF 13105	6	HF 19105	4	HF 25105	6 SJ	HF 32105	2	HF 38105	2
109	4 1/4"	-	-	-	-	HF 09109	6	HF 13109	6	HF 19109	4	HF 25109	6 SJ	HF 32109	2	HF 38109	3 SJ
115	4 1/2"	4"	-	-	-	HF 09115	6	HF 13115	6	HF 19115	4	HF 25115	5 SJ	HF 32115	2	HF 38115	3 SJ
125	-	-	-	-	-	HF 09125	6	HF 13125	4	HF 19125	4	HF 25125	4 SJ	HF 32125	3 SJ	HF 38125	2
127	5"	-	-	-	-	HF 09127	6	HF 13127	4	HF 19127	4	HF 25127	4 SJ	HF 32127	3 SJ	HF 38127	2
130	5 1/8"	-	-	-	-	HF 09130	4	HF 13130	4	HF 19130	4	HF 25130	4 SJ	HF 32130	3 SJ	HF 38130	2
140	5 1/2"	5"	-	-	-	HF 09140	4	HF 13140	4	HF 19140	4	HF 25140	4 SJ	HF 32140	3 SJ	HF 38140	2
165	6 1/2"	6"	-	-	-	HF 09165	4	HF 13165	4	HF 19165	2	HF 25165	3 SJ	HF 32165	3 SJ	HF 38165	2 SJ

Note : The above are standard sizes always kept in stock. Other I.D. and wall thicknesses are available upon request.

Carton sizes : standard size ; 23 cm x 45 cm x 207 cm  
" J " size ; 26 cm x 45 cm x 207 cm  
" SJ " size ; 29 cm x 58 cm x 207 cm

## AEROFLEX<sup>®</sup>-HF Standard Sheet Insulation

Sheet Size	Code Number (Quantity : M <sup>2</sup> Per Carton)									
	3 mm wall	6 mm wall	9 mm wall	13 mm wall	16 mm wall	19 mm wall	25 mm wall	32 mm wall	38 mm wall	50 mm wall
0.5m x 2.0m (1m <sup>2</sup> /sheet)	HFS1-03 (48)	HFS1-06 (24)	HFS1-09 (16)	HFS1-13 (12)	HFS1-16 (10)	HFS1-19 (8)	HFS1-25 (6)	HFS1-32 (5)	HFS1-38 (4)	HFS1-50 (3)
1.0m x 2.0m (2m <sup>2</sup> /sheet)	HFS2-03 (96)	HFS2-06 (48)	HFS2-09 (32)	HFS2-13 (24)	HFS2-16 (20)	HFS2-19 (16)	HFS2-25 (12)	HFS2-32 (10)	HFS2-38 (8)	HFS2-50 (6)

## AEROFLEX<sup>®</sup>-HF Continuous Sheet Roll (1 Meter Width Roll)

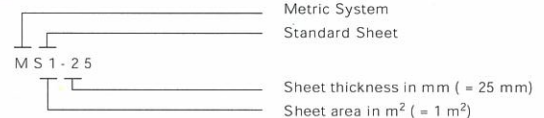
Code	Size			
	Thickness (mm)	Width (m)	Length (m)	Area/Roll (m <sup>2</sup> )
HFSR 03*	3	1.0	45	45
HFSR 06*	6	1.0	22	22
HFSR 10*	9	1.0	15	15
HFSR 13	13	1.0	11	11
HFSR 16	16	1.0	10	10
HFSR 20	19	1.0	7	7
HFSR 25	25	1.0	5	5
HFSR 32	32	1.0	4	4
HFSR 38	38	1.0	3	3
HFSR 50	50	1.0	2	2

### Decoding of Aeroflex-HF Insulations (Metric Unit) :

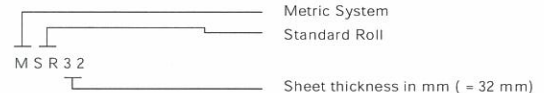
#### Aeroflex-HF Insulations Tube :



#### Aeroflex-HF Sheet Insulations :



#### Aeroflex-HF Sheet Roll :



Note : Packing may be subjected to change without prior notice.  
\*3, 6 and 10 mm. thick sheet have one side skin.

## AEROFLEX<sup>®</sup>-HF Average Nominal Wall Thickness Insulation Tube

I.D. SIZE	nominal wall 1/4" (6mm.)	nominal wall 3/8" (9mm.)	nominal wall 1/2" (13mm.)	nominal wall 3/4" (19mm.)	nominal wall 1" (25mm.)	nominal wall 1-1/4" (32mm.)	nominal wall 1-1/2" (38mm.)	nominal wall 2" (50mm.)
9 mm. to 28 mm	6 ± 1 mm.	9.5 ± 1	12.5 ± 1	19 ± 1	25 ± 1	32 ± 2	38 ± 2	50 ± 2
32 mm. to 80 mm	7 ± 1 mm.	10.5 ± 1	13.5 ± 1	20 ± 1	26 ± 1	33 ± 2	39 ± 2	51 ± 2
90 mm. to 140 mm	-	11.5 ± 1	14.5 ± 1	21 ± 1	27 ± 1	34 ± 2	40 ± 2	52 ± 2

Remark : I.D. size 9 mm. to 28 mm... + approx. 1.5 mm. I.D. size 35 mm. to 80 mm... + approx. 2.0 mm.

I.D. size 90 mm. to 140 mm... + approx. 3.0 mm. Aeroflex-HF 6 feet length... 183 ± 3 cm. Aeroflex-HF 2 meter length... 200 ± 3 cm.



# AEROFLEX<sup>®</sup>-HF INTERNATIONAL DISTRIBUTION



## AEROFLEX<sup>®</sup>-HF is distributed in following areas:

### ASIA :

China, Japan, Korea, Taiwan, Hong Kong, Philippines, Thailand, Malaysia, Indonesia, Brunei, Singapore, Myanmar, Pakistan, Sri Lanka, Bangladesh, Maldives, India, Vietnam, Nepal, Laos, Cambodia.

### MIDDLE EAST :

Kuwait, U.A.E., Qatar, Oman, Bahrain, Jordan, Saudi Arabia, Egypt, Iran, Syria, Lebanon.

### AUSTRALIA & OCEANIA :

Australia, New Zealand, Fiji, Papua New Guinea, Caledonia.

### AFRICA :

Mauritius, Tanzania, South Africa, Ghana, Ethiopia, Nigeria, Kenya, Swaziland.

### EUROPE :

Finland, Sweden, Norway, Denmark, Germany, France, Benelux, Poland, Switzerland, Bulgaria, Portugal, Hungary, Turkey, Cyprus, Slovakia, Croatia, Slovenia, Romania, Estonia, Lithuania, Latvia, Russia, Spain, Czech Republic, Greece, U.K., Austria, Israel, Malta, Italy.

### NORTH AMERICA :

U.S.A., Canada.

### SOUTH AMERICA :

Peru, Chili, Argentina, Cuba, Dominican, Panama, Trinidad, Uruguay, Venezuela.

**OVERSEAS PLANTS :** AEROFLEX INSULATION SHANGHAI CO.,LTD. (China).  
AEROFLEX U.S.A, INC. Tennessee (U.S.A.).



Eastern Polymer Industry Co.,Ltd./Aeroflex International Co.,Ltd.  
Total area 1,000,000 m<sup>2</sup> (10.8 million ft<sup>2</sup>)

Sole agent



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