

# افيكو AFICO

الشركة العربية للمواد العازلة من الفايبرجلاس المحدودة  
Arabian Fiberglass Insulation Company Ltd.

شراكة استراتيجية بين مجموعة العزل الخليجية (إحدى قطاعات الزامل للصناعة) وشركة أوينز كورنينج  
J.V. of Gulf Insulation Group (A Zamil Industrial Subsidiary) & Owens Corning Corp.

## AFICO Heavy Density Pipe Insulation (PI)

### DESCRIPTION

**AFICO Heavy Density Pipe Insulation** is a heavy density, preformed insulation composed of fine, stable and uniformly textured inorganic glass fibers bonded together by a non-water soluble and fire- retardant thermosetting and heat resistant resin. It is free from coarse fibers and shot due to its mineral composition, molded in one-piece sections and made with a single seam. **AFICO Heavy Density Pipe Insulation** are damage resistant, easy to handle and spread open to receive the pipe and snaps closed after placement.

### STANDARD AVAILABLE SIZES

**AFICO Heavy Density Pipe Insulation** is made in standard 1.2m lengths and is available in nominal iron pipe sizes from 12.7 mm (½ in) through 810 mm (32 in) and in nominal copper tube sizes from 15 mm (⅝ in) through 156 mm (6 ⅛ in). Nominal wall thickness ranges from 13 mm (½ in) to 100 mm (4 in), with 13 mm (½ in), 25 mm (1 in), 38 mm (1 ½ in), 50 mm (2 in), 64 mm (2 ½ in), 75 mm (3 in) and 100 mm (4 in) as standard.

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### FACING

**AFICO Heavy Density Pipe Insulation** is supplied plain or with a factory-applied jacket for applications requiring an integral vapor barrier. Standard jacketing materials include Aluminum Foil Reinforced Kraft Paper Laminate (FRK), the White All Service Jacket (ASJ) and the Aluminum Foil Woven Fiberglass Jacket (AWF). All jackets are provided with a nominal 50mm lap to facilitate closure and vapor sealing of the longitudinal joint. Outdoor or direct bury applications require additional protection from the elements.

### NORMAL DENSITY

KG/m <sup>3</sup>	lbs/ft <sup>3</sup>
64	4
72	4.5
80	5
96	6
120	7.5

### APPLICATION

**AFICO Heavy Density Pipe Insulation** is intended for use in commercial, institutional, industrial and residential construction and in power and process plants as thermal and acoustic insulation for hot or cold, concealed or exposed steel, copper and plastic piping where temperatures are between -18°C and +450°C (0 to 850°F).

### NOMINAL WALL THICKNESS

mm	inch
13	½
25	1
38	1 ½
50	2
64	2 ½
75	3
100	4

### NOMINAL THERMAL CONDUCTIVITY

W/m<sup>2</sup>·K or Btu-in/hr-ft<sup>2</sup>·°F (ASTM C 518)  
"K" or "°F" value at mean temperatures

Type	W/m <sup>2</sup> ·K or Btu-in/hr-ft <sup>2</sup> ·°F (ASTM C 518)															
	0°C	32°F	10°C	50°F	24°C	75°F	50°C	122°F	75°C	167°F	100°C	212°F	150°C	302°F	260°C	500°F
640	0.029	0.21	0.029	0.20	0.030	0.21	0.032	0.22	0.036	0.27	0.040	0.27	0.050	0.34	0.079	0.55
720	0.030	0.21	0.030	0.21	0.032	0.22	0.033	0.23	0.037	0.26	0.039	0.27	0.047	0.33	0.065	0.45
800	0.030	0.21	0.030	0.21	0.032	0.22	0.033	0.23	0.037	0.26	0.039	0.27	0.047	0.33	0.065	0.45
960	0.030	0.21	0.030	0.21	0.032	0.22	0.035	0.24	0.036	0.25	0.038	0.26	0.044	0.31	0.057	0.40



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## Performance & Physical Characteristics

SIZE IN (INCHES)	Cooper Tube (INCHES)	SIZE IN MM
	5/8	16
1/2	7/8	22
3/4	1 1/8	28
1	1 3/8	35
1 1/4	1 5/8	42
1 1/2		48
	2 1/8	54
2		60
	2 5/8	67
2 1/2		76
	3 1/8	79
3		89
	3 5/8	92
	4 1/8	105
4		114
	5 1/8	130
5		141
	6 1/8	156
6		168
8		223
10		272
12		326
14		355
16		406
18		457
20		508
22		559
24		610
26		660
30		762
32		812

### Surface Burning Characteristics (ASTM E 84, UL 723)

Base glass fiber is non-combustible when tested to ASTM E 84.

Facing	Flame Spread	Smoke Developed	Fuel Contributed
Unfaced	10	0	0
FRK	25	10	0
ASJ	20	10	0
AWF	10	0	0

### Specification Compliance

**AFICO Heavy Density Pipe Insulation** complies with the property requirements of the following specifications:  
DCL : ASTM C 547

### Vapor Permeability (ASTM E 96 A)

FRK : 0.020 PERM  
ASJ : 0.020 PERM  
AWF : 0.018 PERM

### Fire Properties

B.S. 476 PART 4 : Non Combustible  
B.S. 476 PART 5 : Ignitability  
B.S. 476 PART 6 : Fire Propagation  
B.S. 476 PART 7 : Surface Spread of Flame  
Class '0' fire rating to the building regulations sections E15

### Puncture Resistance (ASTM D 781)

FRK : 25 Units  
ASJ : 50 Units  
AWF : 10 Units (270 Psi)

### Thermal Resistance "R" Value (Excluding Facings) (ASTM C 167)

It is a measure of the resistance to heat flow of a material of any given thickness, calculated as follows:

$$R = \frac{L}{K} \quad \text{where "L" = Equivalent thickness of the insulation}$$

"K" = Thermal Conductivity

$$L = r_2 \ln(r_2/r_1) \quad \text{Where } r_1 = \text{inner radius of insulation}$$

$r_2 = \text{outer radius of insulation}$   
 $\ln = \text{log to the base e (natural log)}$

### Linear Shrinkage (ASTM C 356)

Will not crack or shrink while permitting expansion and contraction of the pipe.

### Working Temperature Limitations (ASTM C 411)

Operating temperature -18°C to 450°C At excessive temperatures, limited migration of binder may occur in the insulation in contact with the surface. This in no way impairs the performance of the insulation.

### Mold Growth (ASTM D 2020, UL 181)

Does not breed or sustain mold, fungus, bacteria or rodents

### Alkalinity

pH 9





## Performance & Physical Characteristics

### Economic Thickness

Guide Specifications

Piping System Types	Fluid Temperature Range °C	Pipe Sizes (mm)					
		Runouts Up to 50	25 & Under	32-50	64-100	125-150	200 and Over
		Minimum Insulation (mm) for Pipes sizes					
<b>Heating Systems</b>							
Steam and Hot Water High Pressure/ Temperature	152 - 238	40	64	64	75	89	89
Medium Pressure/ Temperature	122 - 151	40	50	64	64	75	75
Low Pressure/ Temperature	94 - 121	25	40	40	50	50	50
Low Temperature	49 - 93	13	25	25	40	40	40
Steam Condensate for feed water	Any	25	25	40	50	50	50
<b>Cooling systems</b>							
Chilled water	4.5- 13	13	13	25	25	25	25
Refrigerant, or Brine	Below 4.5	25	25	40	40	40	40

The Economic Thickness chart is taken directly from ASHRAE Standard 90A-80 and reflects minimum Pipe Insulation thickness recommended for commercial or residential applications.

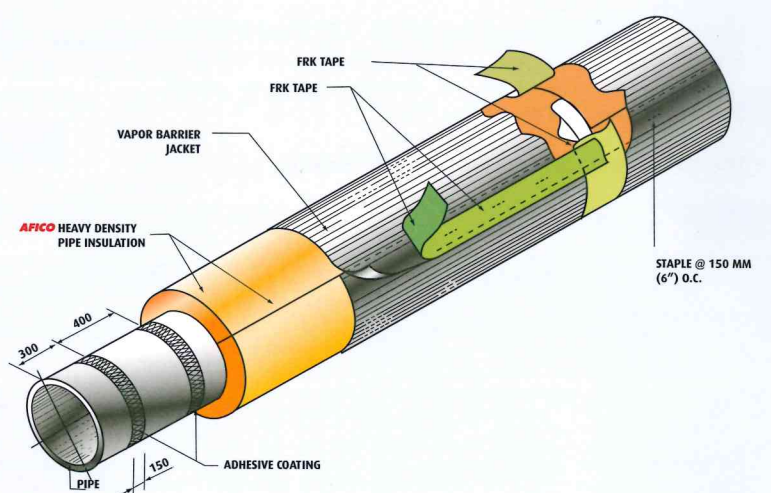
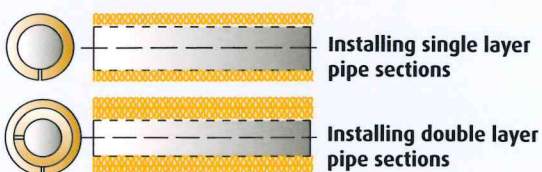
### Installation Recommendation

**AFICO Heavy Density Pipe Insulation** products are easily installed. The one piece sections are snapped in place on the pipe to be insulated. Longitudinal and butt joints are vapor sealed by application of ASJ, AWF or FRK pressure-sensitive tape, or the use of mastics (both supplied separately).

Note: Outdoor applications require additional weather protection for FRK and ASJ Facing.

- **AFICO Heavy Density Pipe Insulation** for Exposed Pipe section faced with Aluminum Woven Glass (AWF) Facing will provide:
  - A substitute for conventional thermal insulation products that requires a costly & labour intensive work at site e.g. protection of pipe insulation by additional weather proofing.
  - An ideal substitute for conventional thermal insulation practices.
  - AWF facing provides factory applied thermal sealing system.
- **AFICO Heavy Density Pipe Insulation** Coverings is faced with factory applied AWF facing.
  - AWF is aluminum foil laminated with glass fabric.
  - It has extremely high Bursting strength of 270 psi i.e. 3-4 times higher than that of conventional facings.
  - It has extremely high Tensile strength of 14.5 KN/m i.e. 3-4 times higher than that of conventional facings.
  - AWF is having high mechanical strength, durability and dimensional stability.
  - AWF will achieve water vapor permeance of 0.018 perm better than the conventional facings.
  - AWF can withstand temperature up to 500 deg C while other conventional facing are suitable to 100 deg C.
- **AFICO Heavy Density Pipe Insulation** Coverings faced with AWF can be used with no additional requirement of handling and weather protection such as application of canvas + vapor barrier.
- **AFICO Heavy Density Pipe Insulation** Coverings faced with AWF are proof, resist the effects of moisture and will not decompose through continual exposure to the elements.
- **AFICO Heavy Density Pipe Insulation** faced with AWF will maintain their thermal properties through the life time of the construction.
- Insulation contractors will be benefited as they can save on installation cost because of protection of pipe insulation by applying canvas + vapor barrier will not be needed.

If two layers of pipe sections are to be installed on one another, the longitudinal cut should not be on the same line. For single layer applications, the longitudinal cut should be placed to the under side of the pipe section.



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## MAINTENANCE

No maintenance is required. **AFICO** Heavy Density Pipe Insulation have a high resistance to accidental damage from knocks and handling during installation and maintenance. Dimensionally stable under varying conditions of temperature and humidity, rot proof, odorless, non-hygroscopic and will not sustain vermin or fungus due to its inorganic and mineral compositions.

The product will maintain its thermal properties throughout the lifetime of the construction and will not age. **AFICO** fiberglass is non toxic and not hazardous to health.

## STORAGE

To avoid moisture in the building construction, **AFICO** insulation products stored outside must be kept dry. We recommend **AFICO** products to be always stored in covered and dry areas. **AFICO** is not liable for the damage resulting from inadequate utilization, loading and off loading and mishandling of its products.

## WARRANTY

See manufacturer's General Terms and Conditions of Sale. As **AFICO** and/or **OCF** has no control over installation design, installation workmanship, accessory materials, or conditions of application, **AFICO** and/or **OCF** does not warrant their performance or results of any installation containing their products. This warranty disclaimer includes all implied warranties, including the warranties or merchantability and fitness for a particular purpose.

**Arabian Fiberglass Insulation Company AFICO** reserves the right to alter product specifications without prior notice, as part of its policy of continued development and improvement. The installation methods described in this leaflet are not compulsory. The choice of materials and methods of fixing are the decision of the specifier, consultant or contractor. For further information or advice on specification of products, contact your local sales office.

## AVAILABILITY

Manufactured by **Arabian Fiberglass Insulation Company, Ltd. (AFICO)**, member of **Zamil Industrial Co. (ZI)**, with headquarters and production facilities located in Dammam, Saudi Arabia, under license from and utilizing the manufacturing specifications and technology of **Owens-Corning Corporation (OCF)**, Toledo, Ohio, U.S.A.

Marketed throughout Saudi Arabia, the G.C.C. countries, the Middle East and the Far East. **AFICO** products are available directly from **AFICO** as well as through a vast and reliable network of local distributors.

Special products are manufactured on request.

## AFICO PRODUCTS

Acoustical Ceiling Panels  
Blanket Insulation  
HD Series Blanket Insulation  
Board Insulation  
Roof Deck Board Insulation  
Cavity Wall Insulation  
Pre-engineered Metal Building Insulation  
Faced Duct Wrap  
Duct Liner  
Duct Liner Board  
Mechanical Board Insulation  
**Heavy Density Pipe Insulation**  
Pipe Wrap Insulation  
Thermal Insulating Wool  
Quiet Liner  
Quiet Liner Board

## PRODUCTS CODE

ACP  
BKT  
HDB  
BD  
RI/RD  
CWI  
PEBI  
FDW  
DL  
DLB  
MBD  
**PI**  
PWI  
TIW  
QL  
QLB

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