



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.



Technical Data Sheet  
Product Code: **PI**

## 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 ⅙ 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.

### 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

### NOMINAL WALL THICKNESS

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

### 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 THERMAL CONDUCTIVITY

W/m·°K or Btu-in/hr·ft²·°F (ASTM C 518)  
"K" or "λ" value at mean temperatures

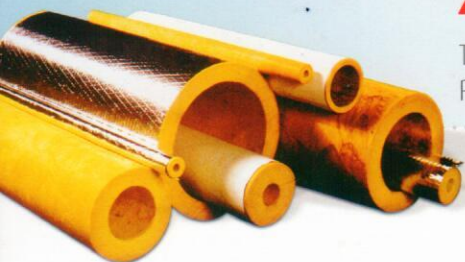
Type	W/m·°K or Btu-in/hr·ft²·°F (ASTM C 518)															
	0°C	32°F	10°C	50°F	24°C	75°F	50°C	122°F	75°C	167°F	100°C	212°F	150°C	302°F	260°C	500°F
640	0.029	0.21	0.029	0.20	0.030	0.21	0.032	0.22	0.036	0.27	0.040	0.27	0.050	0.34	0.079	0.55





# AFICO Heavy Density Pipe Insulation

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## Performance & Physical Characteristics

SIZE IN (INCHES)	Cooper Tube (INCHES)	SIZE IN MM
	$\frac{5}{8}$	16
$\frac{1}{2}$	$\frac{7}{8}$	22
$\frac{3}{4}$	$1 \frac{1}{8}$	28
1	$1 \frac{3}{8}$	35
$1 \frac{1}{4}$	$1 \frac{5}{8}$	42
$1 \frac{1}{2}$		48
	$2 \frac{1}{8}$	54
2		60
	$2 \frac{5}{8}$	67
$2 \frac{1}{2}$		76
	$3 \frac{1}{8}$	79
3		89
	$3 \frac{5}{8}$	92
	$4 \frac{1}{8}$	105
4		114
	$5 \frac{1}{8}$	130
5		141
	$6 \frac{1}{8}$	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:

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

$$\quad \quad \quad \text{"K" = Thermal Conductivity}$$

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

$$\quad \quad \quad r_2 = \text{outer radius of insulation}$$

$$\quad \quad \quad \ln = \text{log to the base e (natural log)}$$

### Linear Shrinkage (ASTM C 356)

Will not crack or shrink while permitting expansion and con-

### 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





## 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					
Heating Systems							
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
Cooling systems							
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.

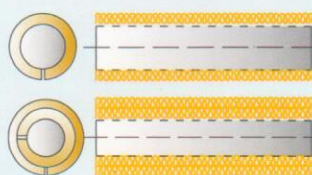
### Installation Recommendation

**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.

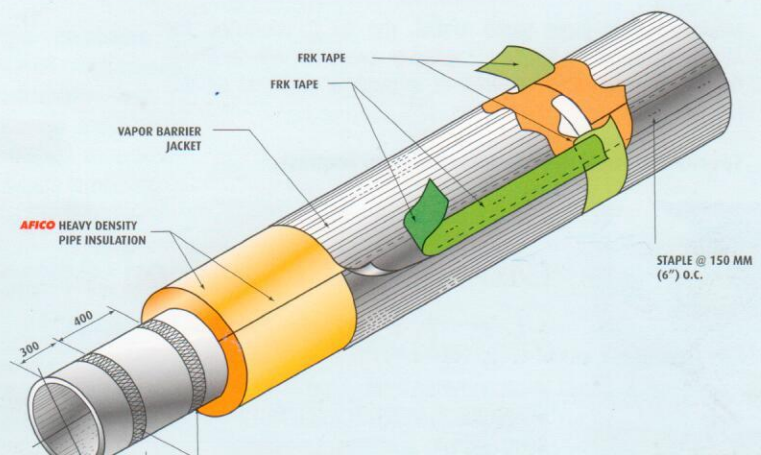
- **AFICO Heavy Density Pipe Insulation** for Exposed Pipe section faced with Aluminum Woven Glass (AWF) Facing will provide:
  - A substitute for conventional thermal insulation products that requires a costly & labour intensive work at site e.g. protection of pipe insulation by additional weather proofing.
  - 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.

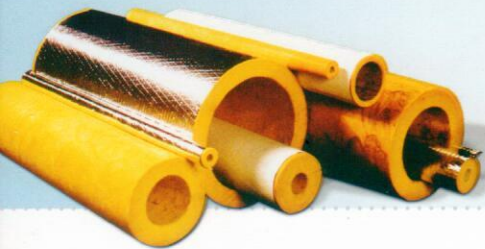


Installing single layer pipe sections

Installing double layer pipe sections







# AFICO Heavy Density Pipe Insulation

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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 the 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  
Board Insulation  
Roof Deck Board Insulation  
Cavity Wall Insulation  
Pre-engineered Metal Building Insulation  
Faced Duct Wrap  
Duct Liner  
Duct Liner Board  
**Heavy Density Pipe Insulation**  
Pipe Wrap Insulation  
Thermal Insulating Wool  
Quiet Liner  
Quiet Liner Board

## PRODUCTS CODE

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

## Contact us

For more information call the insulation professionals:



**H.O. & Factory:** P.O. Box 1289, Dammam 31431, Saudi Arabia  
Tel: +966 13 847 2901 / 847 1519 / 847 2301  
Fax: +966 13 847 3605  
E-mail: info@afico.com.sa

**Dammam Office:** P.O. Box 1289, Dammam 31431, Saudi Arabia  
Tel: +966 13 847 2901 / 847 1519  
Fax: +966 13 847 3605  
E-mail: info@afico.com.sa

**Riyadh Office:** P.O.Box 251, Riyadh 11411, Saudi Arabia  
Tel: +966 11 472 5555 ext. 5980  
Fax: +966 11 291 0162  
E-mail: info@afico.com.sa

**Jeddah Office:** P.O. Box 7504, Jeddah 21472, Saudi Arabia  
Tel: +966 12 670 0020 ext. 134  
Fax: +966 12 671 4566  
Email: info@afico.com.sa

**Gulf Regional Office:** P.O. Box 44493, Deira, Dubai, U.A.E.  
Tel: +971 4 294 1211  
Fax: +971 4 294 1168  
E-mail: info@afico.com.sa

**Export Office:** P.O. Box 90-284, Jdeidet El Metn, Beirut - Lebanon  
Tel: +961 3 709006  
E-mail: info@afico.com.sa



info@afico.com.sa

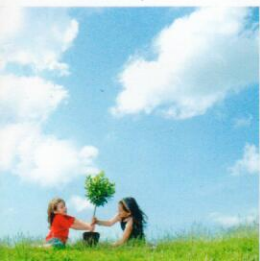


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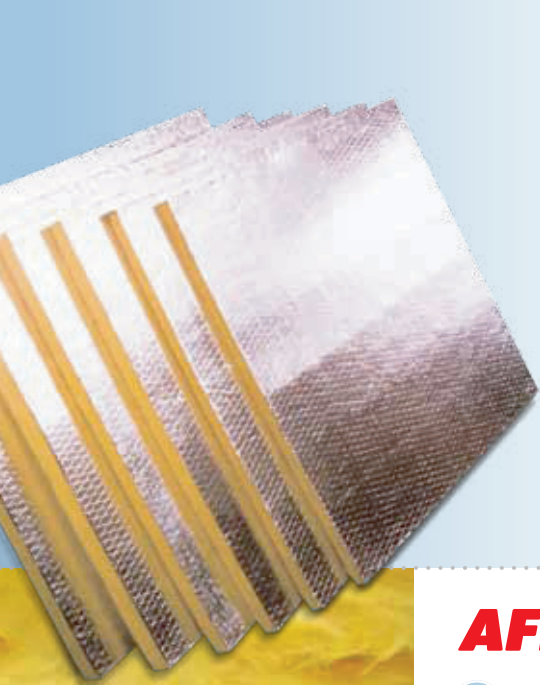
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Our GREEN promise:  
the healthy solution

- ENERGY SAVING
- ENVIRONMENTALLY FRIENDLY
- RECYCLED MATERIALS







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J.V. of Gulf Insulation Group (A Zamil Industrial Subsidiary) & Owens Corning Corp.

# AFICO Mechanical Board Insulation (MBD)



## DESCRIPTION

**AFICO Mechanical Board Insulation** is 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, and formed into semi-rigid rectangular boards or slabs. It is free from coarse fibers and shot due to its mineral composition.



## APPLICATION

**AFICO Mechanical Board Insulation** is intended for use in commercial, institutional, industrial and residential construction as thermal and acoustic insulation for the exterior of duct work and mechanical, air handling equipment, vessels and tanks where abuse resistance is required.



## FACING

**AFICO Mechanical Board Insulation** is available with one side factory-applied Aluminum Foil Reinforced Kraft Paper Laminate (FRK) available or with one side factory-applied KRAFT, the white All Service Jacket (ASJ) and the Auminum Foil Woven Fiberglass Jacket (AWF) to give a pleasing appearance vapor barrier. The facings have UL fire resistant ratings.

The semi-rigid boards with densities from 24 to 36 kg/m<sup>3</sup> (1.5 - 2.25 lb/ft<sup>3</sup>) are flexible insulation boards for application over irregularly shaped surfaces where board-like properties are desired. The rigid boards with densities from 48 to 96 kg/m<sup>3</sup>, (3.0 - 6.0 lb/ft<sup>3</sup>) are even more rigid for strength, abuse resistance and a flat appearance.



## STANDARD AVAILABLE PRODUCTS

Nominal Manufacturing Specifications.  
Check for availability of other dimensions and densities

### Semi-rigid Boards

Product Type	Density		K Value @24 °C		R Value / Thickness									
	Kg / m³	Lb / ft³	W / m · °K	BTU · in / hr · ft² · °F	25 mm	1 in.	50 mm	2 in.	75 mm	3 in.	100 mm	4 in.	150 mm	6 in.
MBD														
240	24	1.5	0.036	0.25	0.69	3.94	1.39	7.87	2.08	11.81	2.78	15.74	4.17	23.62
320	32	2	0.034	0.24	0.74	4.10	1.47	8.20	2.21	12.30	2.94	16.40	4.41	24.60
360	36	2.25	0.034	0.24	0.74	4.10	1.47	8.20	2.21	12.30	2.94	16.40	4.41	24.60

### Rigid Boards

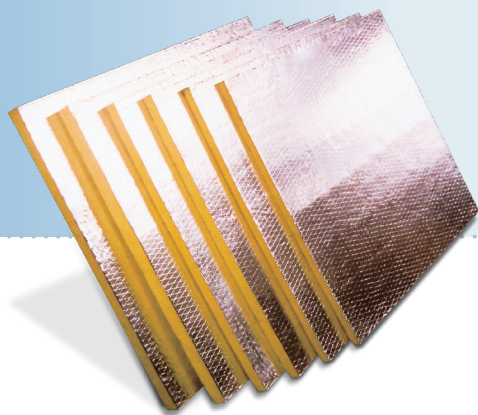
Product Type	Density		K Value @24 °C		R Value / Thickness									
	Kg / m³	Lb / ft³	W / m · °K	BTU · in / hr · ft² · °F	25 mm	1 in.	50 mm	2 in.	75 mm	3 in.	100 mm	4 in.	150 mm	6 in.
MBD														
480	48	3.0	0.033	0.23	0.76	4.28	1.52	8.56	2.27	12.83	3.03	17.11	4.55	25.67
560	56	3.5	0.033	0.23	0.76	4.28	1.52	8.56	2.27	12.83	3.03	17.11	4.55	25.67
640	64	4.0	0.032	0.23	0.80	4.50	1.60	8.90	2.30	13.40	3.10	17.90	4.70	26.80
720	72	4.5	0.033	0.22	0.76	4.28	1.52	8.56	2.27	12.83	3.03	17.11	4.55	25.67
960	96	6.0	0.033	0.23	0.76	4.28	1.52	8.56	2.27	12.83	3.03	17.11	4.55	25.67

Other thickness available upon request and verification

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Product Code: **MBD**







# AFICO Mechanical Board Insulation

Technical Data Sheet  
Product Code: **MBD**



## Performance & Physical Characteristics

### Apparent Thermal Conductivity ASTM C518, EN12667

W/m·°K or Btu·in/hr·ft<sup>2</sup>·°F for all product range  
"K" or "λ" value at mean temperatures  
Data for 10, 24 and 35 °C mean temperature

Nominal K-Value								
Product Type	Density		Mean Temperature					
MBD	Kg/m <sup>3</sup>	lb/ft <sup>3</sup>	10 °C	50 °F	24 °C	75 °F	35 °C	95 °F
240	24	1.5	0.032	0.22	0.036	0.25	0.037	0.26
320	32	2	0.032	0.22	0.034	0.24	0.036	0.25
360	36	2.25	0.032	0.22	0.034	0.24	0.036	0.25
480	48	3	0.031	0.21	0.033	0.23	0.035	0.24
560	56	3.5	0.031	0.21	0.033	0.23	0.034	0.24
640	64	4.0	0.031	0.21	0.032	0.23	0.033	0.23
720	72	4.5	0.031	0.21	0.033	0.22	0.034	0.24
960	96	6.0	0.031	0.21	0.033	0.23	0.034	0.24

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

"R" is a measure of the resistance to heat flow of a material of any given thickness.  
("R" = m<sup>2</sup>·°K/W or hr·ft<sup>2</sup>·°F/Btu)

$$R = \frac{T}{K} \quad \text{where "T" = Thickness} \\ \text{and "K" or "λ" = Thermal Conductivity}$$

### Thermal Transmittance "U" Value (ASTM C 168)

"U" is a measure of how much heat is lost through a given thickness of a particular material.  
("U" = W/m<sup>2</sup>·°C or Btu/hr·ft<sup>2</sup>·°F)

$$U = \frac{1}{R_t} \quad \text{where: "Rt" = Total Thermal Resistance} \\ \text{composed of all elements / layers}$$

U-Values are calculated from the thermal resistances of the parts making up a particular part of the structure. Transmission of heat is opposed in varying amounts dependent on material and surface.

$$U\text{-Value (of building element)} = 1 / (R_{so} + R_{si} + R_1 + R_s \dots)$$

Where R<sub>so</sub> is the fixed external resistance  
R<sub>si</sub> is the fixed internal resistance  
R<sub>1</sub>, R<sub>2</sub> etc are resistivity of all elements within the application including that of cavities within the construction.

### Example Calculation

Layer & Material	Thickness & Conductivity	R Value
R <sub>so</sub> - Fixed external resistance	–	0.40 m <sup>2</sup> ·°K/W
R <sub>si</sub> - Fixed internal resistance	–	0.13 m <sup>2</sup> ·°K/W
R <sub>1</sub> - Fiberglass insulation	0.100 m; 0.035 W/mK	2.85 m <sup>2</sup> ·°K/W
R <sub>2</sub> - Clay bricks	0.105 m; 0.710 W/mK	0.15 m <sup>2</sup> ·°K/W
R <sub>3</sub> - Concrete blocks	0.100 m; 0.018 W/mK	0.55 m <sup>2</sup> ·°K/W
R <sub>4</sub> - Plaster	0.013 m; 0.016 W/mK	0.08 m <sup>2</sup> ·°K/W
Total		4.16 m <sup>2</sup> ·°K/W

Therefore the overall wall element U-value = 1 / R = 1 / 4.16 = 0.24 W/m<sup>2</sup>K

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

Base glass fiber is non-combustible when tested.

Facing	Flame Spread	Smoke Developed
FRK	≤ 25	≤50
ASJ	≤ 25	≤50
AWF	≤ 25	≤50

### Working Temperature Limitations (ASTM C 411)

-4°C to +232°C At Excessive temperatures, a limited migration of binder may occur in the insulation in contact with the hot surface. This in no way impairs the performance of the insulation.

### Mold Growth (ASTM C1338)

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

### Corrosiveness (ASTM C 665)

Chemically inert. Will not cause or accelerate corrosion of steel, stainless steel, copper or aluminum, due to its particular inorganic and mineral composition.

### Alkalinity (ASTM C871)

pH9

### Specification Compliance

**AFICO Mechanical Board Insulation** complies with the property requirements of the following specifications:

DCL	: ASTM C 612
CE-EN	: EN 13162-T4-WS.WL(P)1121-CPD-BA0136
UL 723	: Classified as FHC 25/50 File no R37968
SCS	: Recycled Content Certified SCS-MC-02811
ASTM C 795	: Thermal Insulation for Use in Contact with Austenitic Stainless Steel tested
SASO	: SASO GSO EN 13162 License # 201800652111





## Performance & Physical Characteristics

### 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 'O' fire rating to the building regulations sections E15

### Facing Information (Flexible Vapor Barrier)

ASTM C1136 Standard Specification for Flexible, Low Permeance Vapor Retarders for Thermal Insulation

### Vapor Permeability (ASTM E 96 A)

FRK : 0.02 perms  
ASJ : 0.02 perms  
AWF : 0.0012 perms

### Puncture Resistance

25 : beach units  
85 : beach units  
1170 : beach units

### Thermal Transmittance (U Value)

Thermal transmittance is the rate of heat flow through unit area of a wall system when unit temperature difference exists between air on each side of the structure.

The U value is the reciprocal of the sum of the resistances of the component parts of the structure plus the resistance of the surfaces and any cavities within the structure.

### Sound Absorption Coefficients (ASTM C 423)

Insulation	Sound Absorption Coefficient at Frequencies (Hz)					
Thickness	125	250	500	1000	2000	NRC
<b>Semi-Rigid</b>						
25 mm ( 1in )	0.09	0.26	0.64	0.90	1.10	0.70
50 mm ( 2in )	0.28	0.80	1.12	1.18	1.10	1.05
<b>Rigid</b>						
25 mm ( 1in )	0.10	0.26	0.69	0.99	1.08	0.75
50 mm ( 2in )	0.26	0.75	1.17	1.14	1.07	1.05

### Installation Recommendation

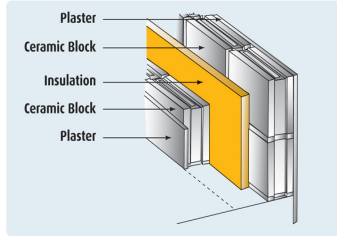
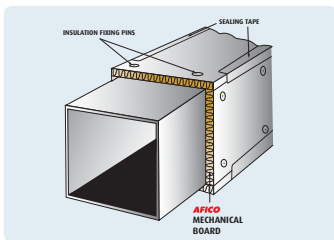
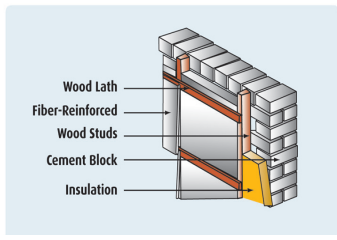
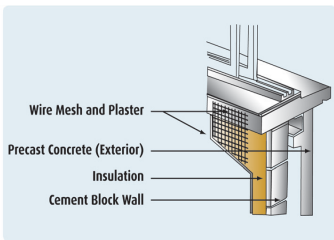
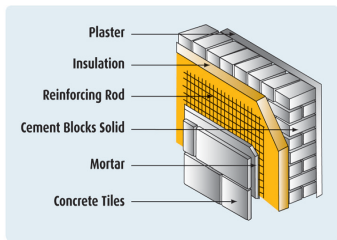
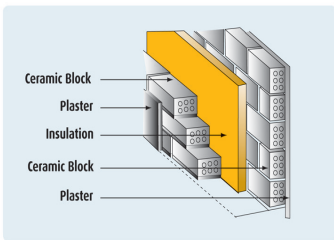
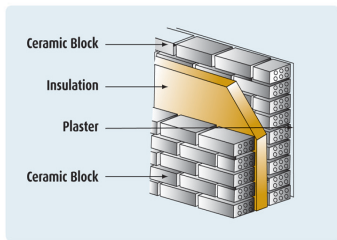
**AFICO Mechanical Board Insulation** products can be easily cut with a knife and neatly fitted into irregularly shaped areas.

**For Vertical Applications:** **AFICO Mechanical Board Insulation** can be installed between furring, strips or Z channels. For enclosed applications the product can be impaled on impaling pins and/or adhered with adhesives.

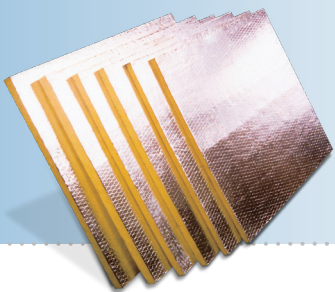
**For Horizontal Applications:** **AFICO Mechanical Board Insulation** can be installed by the use of impaling pins against horizontal surfaces.

**On Masonry Surface:** **AFICO Mechanical Board Insulation** can be installed between withes and on wall faces with impaling pins, mechanical fasteners and/or adhesives.

**On Precast Concrete:** **AFICO Mechanical Board Insulation** can be installed using impaling pins and/or appropriate adhesives.







# AFICO Mechanical Board Insulation

Technical Data Sheet  
Product Code: **MBD**



## MAINTENANCE

No maintenance is required. **AFICO Mechanical Board 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 the 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

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Marketed throughout Saudi Arabia, the G.C.C. countries, the Middle East and the Far East. **AFICO** products are available directly from 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  
Board Insulation  
Cavity Wall Insulation  
Duct Liner  
Duct Liner Board  
Faced Duct Wrap  
HD Series Blanket Insulation  
Heavy Density Pipe Insulation  
**Mechanical Board Insulation**  
Pipe Wrap Insulation  
Pre-engineered Metal Building Insulation  
Quiet Liner  
Quiet Liner Board  
Roof Deck Board Insulation  
Thermal Insulating Wool



## PRODUCTS CODE

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

**For more information call the insulation professionals:**



**H.O. & Factory:** P.O. Box 1289, Dammam 31431, Saudi Arabia  
Tel: +966 13 847 2901 / 847 1519 / 847 2301  
Fax: +966 13 847 3605  
E-mail: info@afico.com.sa

**Dammam Office:** P.O. Box 1289, Dammam 31431, Saudi Arabia  
Tel: +966 13 847 2901 / 847 1519 / 847 2301 ext. 1133  
Fax: +966 13 847 3605  
E-mail: info@afico.com.sa  
sales.eastern@afico.com.sa

**Riyadh Office:** P.O.Box 251, Riyadh 11411, Saudi Arabia  
Tel: +966 11 472 5555 ext. 5980  
Fax: +966 11 291 0162  
E-mail: info@afico.com.sa  
sales.central@afico.com.sa

**Jeddah Office:** P.O. Box 7504, Jeddah 21472, Saudi Arabia  
Tel: +966 12 670 0020 ext. 134  
Fax: +966 12 671 4566  
Email: info@afico.com.sa  
sales.western@afico.com.sa

**Gulf & Export Regional Office:** P.O. Box 44493, Deira, Dubai, U.A.E.  
Tel: +971 4 294 1211  
Fax: +971 4 294 1168  
E-mail: info@afico.com.sa  
sales.gcc@afico.com.sa / sales.export@afico.com.sa



[info@afico.com.sa](mailto:info@afico.com.sa)



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*Our GREEN promise:  
the healthy solution*

- ENERGY SAVING
- ENVIRONMENTALLY FRIENDLY
- RECYCLED MATERIALS
- SOLUTION FOR GLOBAL WARMING



AFICO is committed to a greener, cleaner environment. AFICO have responded to this call for conservation by increasing the amounts of recycled materials in our products.

Authorized Distributor





Affiliate of  
**OWENS CORNING**  
USA (OC)

Member of  
**Zamil Industrial**



Arabian Fiberglass Insulation Company Ltd.  
J.V. of Zamil Industrial & Owens Corning Corp.

## AFICO Faced Duct Wrap Insulation



### DESCRIPTION

**AFICO Faced Duct Wrap Insulation** is highly efficient, resilient, flexible blanket 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.



### FACING

**AFICO Faced Duct Wrap Insulation** is manufactured in a roll form and subsequently faced on one side by factory laminators, with a suitable vapor retardant Aluminium Foil Reinforced Kraft Paper Laminate (FRK), All Service Jacket (ASJ) or other specific vapor barrier for installation on the exterior of ductwork. The facings have UL fire resistant ratings.



### APPLICATION

**AFICO Faced Duct Wrap Insulation** is intended for use in commercial, institutional, industrial and residential construction as thermal and acoustical insulation of heating, air conditioning and dual temperature ducts and air handling equipment. The use of AFICO Faced Duct Wrap helps prevent condensation when properly applied to air-condition ductwork.

The semi-rigid duct wrap with densities from 24 to 56 kg/m<sup>3</sup>, (1.5 - 3.5 lb/ft<sup>3</sup>) are flexible insulation rolls for application over irregularly-shaped surfaces where rigidity properties are desired.



### STANDARD AVAILABLE PRODUCTS

Nominal Manufacturing Specifications.  
Check for availability of other dimensions and densities.



### NOMINAL THERMAL CONDUCTIVITY

W/m.°C-Btu.in./ft<sup>2</sup>.hr°F (ASTM C 518) (BS 874)  
"K" or "λ" value at mean temperatures

Product Type BD	Density		Thickness		Width		Length		0°C	32°F	10°C	50°F	24°C	75°F	50°C	122°F	75°C	167°F	100°C	212°F
	kg/m <sup>3</sup>	lb/ft <sup>3</sup>	mm	inch	m	ft	m	ft												
120*	12	0.75	25 38 50	1 1 1/2 2	1.2	4	30 25 20	100 80 65	0.036	0.25	0.038	0.27	0.040	0.28	0.048	0.34	0.059	0.41	0.065	0.45
140	14	0.875	25 38 50	1 1 1/2 2	1.2	4	30 25 20	100 80 65	0.036	0.24	0.037	0.26	0.039	0.27	0.046	0.32	0.055	0.38	0.061	0.42
160*	16	1.0	25 38 50	1 1 1/2 2	1.2	4	30 25 20	100 80 65	0.034	0.23	0.036	0.25	0.039	0.27	0.044	0.31	0.051	0.35	0.057	0.40
200	20	1.25	25 38 50	1 1 1/2 2	1.2	4	30 25 20	100 80 65	0.032	0.22	0.034	0.23	0.036	0.25	0.041	0.28	0.046	0.32	0.051	0.36
240*	24	1.5	25 38 50	1 1 1/2 2	1.2	4	30 25 20	100 80 65	0.031	0.21	0.032	0.22	0.035	0.24	0.039	0.27	0.043	0.30	0.047	0.33
320	32	2.0	25 38 50	1 1 1/2 2	1.2	4	20 15 10	65 50 33	0.030	0.20	0.031	0.22	0.033	0.23	0.037	0.25	0.040	0.27	0.044	0.30
480	48	3.0	25 38 50	1 1 1/2 2	1.2	4	20 15 10	65 50 33	0.029	0.20	0.030	0.21	0.031	0.22	0.035	0.24	0.037	0.26	0.041	0.29
560	56	3.5	25 38 50	1 1 1/2 2	1.2	4	20 15 10	65 50 33	0.030	0.21	0.031	0.21	0.032	0.23	0.036	0.24	0.038	0.26	0.042	0.29

\* Standard Products and Sizes

Technical Data Sheet  
Product Code: **FDW**





# AFICO Faced Duct Wrap Insulation

Technical Data Sheet  
Product Code: **FDW**



## Performance & Physical Characteristics

### Working Temperature Limitations (ASTM C 411)

-4°C to +350°C. At excessive temperatures a limited migration of binder may occur in the insulation in contact with the hot surface. This in no way impairs the performance of the insulation.

### Alkalinity

pH 9

### Corrosiveness (ASTM C 665)

Chemically inert. Will not cause or accelerate corrosion of steel, stainless steel, copper or aluminum, due to its particular inorganic and mineral composition.

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

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

### Moisture Absorption (ASTM D-07 B, ASTM C 553)

In conditions of 95% relative humidity at 49°C for 96 hours, moisture absorption is less than 0.2% by volume, when tested in accordance with ASTM C 533. **AFICO** fiberglass products do not absorb moisture from the ambient air nor water by capillary attraction, only water under pressure can enter the insulation products but that will quickly dry out owing to the material's open cell structure.

### Vapor Permeability (ASTM E 96 A)

FRK 0.02 PERM (U.S. Federal Specification HH-B-100 B TYPE I)  
ASJ 0.02 PERM

### Surface Burning Characteristics (UL 723, ASTM E 84, ASTM E 136)

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

Facing	Flame Spread	Smoke Developed	Fuel Contributed
FRK	0	0	0
ASJ	5	10	0

### Specification Compliance

**AFICO Faced Duct Wrap Insulation** complies with the property requirements of the following specifications:

- U.S. Federal Specification HH-I-558 B, Form B, Type 1, Class 6,
- ASTM C 553
- DCL ASTM - C 533 - C 547 - C 612 - C 665
- CE-EN 13162

### 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 'O' fire rating to the building regulations sections E15

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

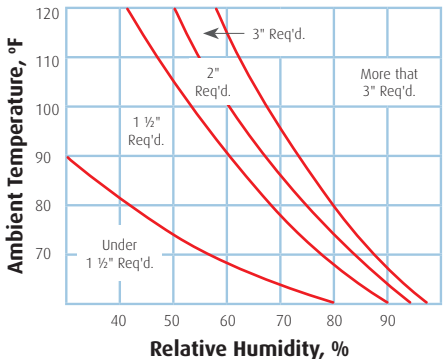
"R" is a measure of the resistance to heat flow of a material of any given thickness. ("R" = m<sup>2</sup>. °C/W or hr. ft<sup>2</sup>. °F/Btu.)

$$R = \frac{T}{K} \quad \text{where "T" = thickness} \\ \text{and "K" or "λ" = thermal conductivity}$$

### Condensation Control

How to select appropriate thickness for condensation control: to determine thickness to prevent condensation at various ambient temperature and humidity levels based on installed thickness 75% of nominal (out-of-package) thickness, 55°F air duct internal temperature:

1. Select maximum expected relative humidity (RH) on the lower scale.
2. Move up vertically until that line intersects the expected maximum ambient air temperature.
3. Select the thickness indicated by the intersection point



The above chart is based on indoor conditions so far as wind and other factors are concerned.





## Performance & Physical Characteristics

### Compressive Strength

Type	120	140	160	200	240	320	480	560
PSF at 10% Deformation	5	5	5	10	12	16	25	30
PSF at 25% Deformation	10	10	10	15	20	60	90	110

### Puncture Resistance (ASTM D 781)

FRK	25	Units
ASJ	50	Units

### Sound Absorption Coefficients

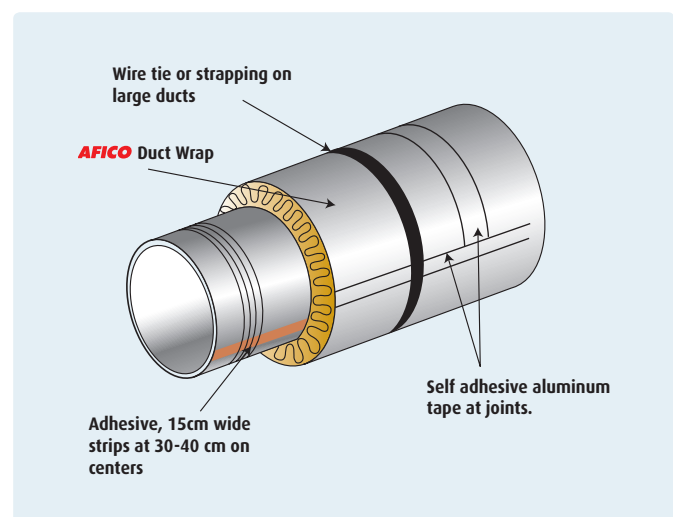
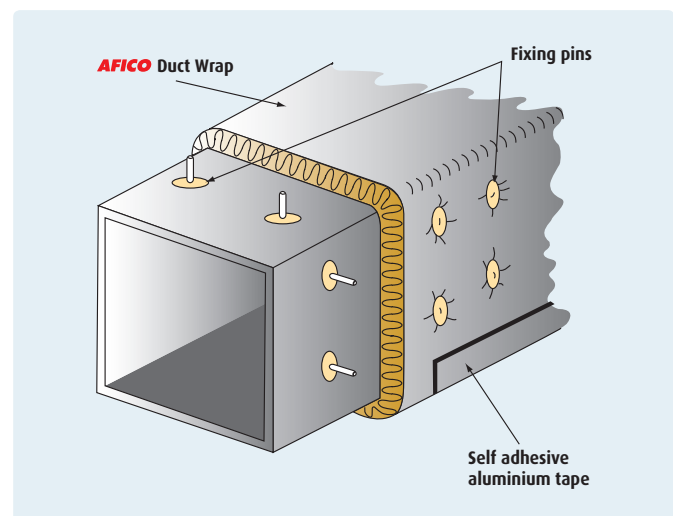
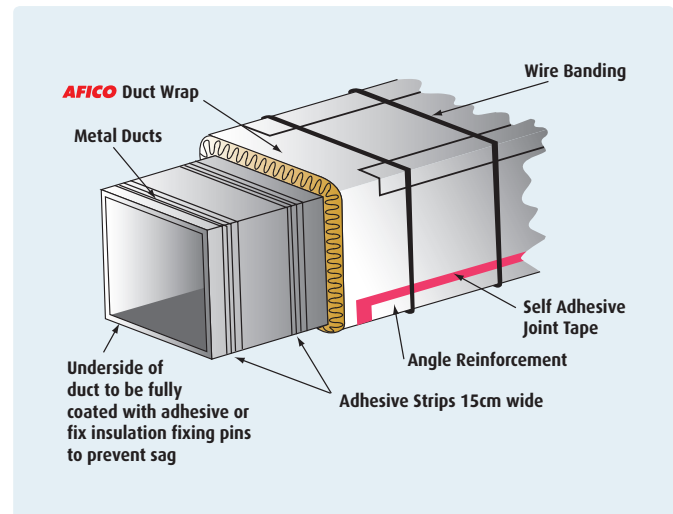
Insulation	Sound Absorption Coefficient at Frequencies (Hz)						
Thickness	125	250	500	1000	2000	4000	NRC
<b>Flexible</b>							
25mm ( 1in )	0.38	0.34	0.68	0.82	0.87	0.96	0.70
50mm ( 2in )	0.44	0.66	1.07	1.06	0.99	1.06	0.95
<b>Semi-Rigid</b>							
25mm ( 1in )	0.33	0.28	0.62	0.88	0.96	1.04	0.70
50mm ( 2in )	0.38	0.68	1.10	1.07	1.05	1.05	0.95

Mounting F405: Insulation placed against 24 gauge metal over a 16 inch air space. This mounting configuration is typical of a sheet metal enclosure with insulation on one side.

### Installation Recommendation

**AFICO Faced Duct Wrap Insulation** products are available in rolls. The desired application length can be easily measured and cut from the full roll. AFICO Faced Duct Wrap can be impaled on pins and adhered with recommended adhesive. When using aluminium alloys pins, pin spacing along a duct should be no greater than 300mm on centers. Fasteners should be located no less than 75mm from each edge or corner. Apply vapor-seal pressure-sensitive aluminium joint sealing tape to joints and protrusions. 75mm wide tape should be used.

Note: Outdoor applications require additional weather protection.





# AFICO Faced Duct Wrap Insulation

Technical Data Sheet

Product Code: **FDW**



## MAINTENANCE

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## AFICO PRODUCTS



## PRODUCTS CODE

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HD Series Blanket Insulation	HDB
Board Insulation	BD
Roof Insulation	RI
Roof Deck Board Insulation	RD
Cavity Wall Insulation	CWI
Pre-engineered Metal Building Insulation	MBI
<b>Faced Duct Wrap</b>	<b>FDW</b>
Duct Liner	DL
Duct Liner Board	DLB
Mechanical Board Insulation	MBD
Heavy Density Pipe Insulation	PI
Pipe Wrap Insulation	PWI
Thermal Insulating Wool	TIW
Quiet Liner	AQL
Woven Facing	AWF
Prefabricated Duct Board	PDB

**For more information call the insulation professionals:**



### H.O. & Factory:

P.O. Box 1289, Dammam 31431, Saudi Arabia  
Tel: +966 3 847 2901 / 847 1519  
Fax: +966 3 847 3605  
E-mail: wajdei@afico.com.sa

### Riyadh Office:

P.O. Box 50281, Riyadh 11523, Saudi Arabia  
Tel: +966 1 472 5555 ext. 283  
Fax: +966 1 291 0162  
E-mail: kathunaiyan@afico.com.sa

### Jeddah office:

P.O. Box 2140, Jeddah 21451, Saudi Arabia  
Tel: +966 2 670 0020 ext. 133  
Fax: +966 2 287 2283  
E-mail:

### Gulf Regional Office:

P.O. Box 44493, Deira, Dubai, U.A.E.  
Tel: +971 4 294 1211  
Fax: +971 4 294 1168  
E-mail: aficogcc@emirates.net.ae

### Export Office:

P.O. Box 90-284, Jdeidet El Metn Beirut - Lebanon  
Tel: +961 1 900962  
Fax: +961 1 900963  
E-mail: AFICO@cyberia.net.lb



[info@afico.com.sa](mailto:info@afico.com.sa)



[www.afico.com.sa](http://www.afico.com.sa)

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