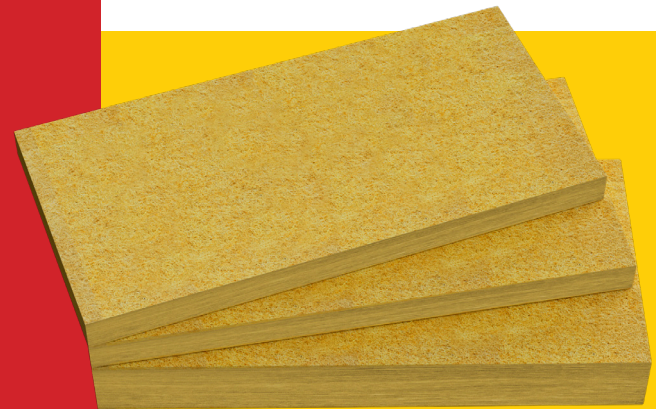




# Board Insulation (BD)



### Product Description

**AFICO 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.

### Facing

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

### Application

**AFICO Board Insulation** is a semi-rigid and rigid glass fiber board intended for use in commercial, institutional, industrial and residential construction as thermal and acoustical insulation for interior walls and partitions, cavity wall construction, floor, precast structures and prefabricated houses and exterior of duct work and mechanical, air handling equipment, vessels and tanks where abuse resistance is required.

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 Sizes

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/m <sup>3</sup>	Lb/ft <sup>3</sup>	W/m <sup>2</sup> ·K	BTU·in/hr·ft <sup>2</sup> ·°F	25 mm	1 in.	50 mm	2 in.	75 mm	3 in.	100 mm	4 in.	150 mm	6 in.
BD														
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	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	0.032	0.22	0.78	4.30	1.56	8.60	2.34	12.80	3.13	17.10	4.69	25.70

#### Rigid Boards

Product Type	Density		K Value@24°C		R Value / Thickness									
	Kg/m <sup>3</sup>	Lb/ft <sup>3</sup>	W/m <sup>2</sup> ·K	BTU·in/hr·ft <sup>2</sup> ·°F	25 mm	1 in.	50 mm	2 in.	75 mm	3 in.	100 mm	4 in.	150 mm	6 in.
BD														
480	48	3.0	0.032	0.22	0.78	4.28	1.56	8.56	2.34	12.83	3.13	17.11	4.69	25.67
560	56	3.5	0.032	0.22	0.78	4.28	1.56	8.56	2.34	12.83	3.13	17.11	4.69	25.67
640	64	4.0	0.032	0.22	0.80	4.50	1.60	8.90	2.34	13.40	3.13	17.90	4.69	26.80
720	72	4.5	0.032	0.22	0.80	4.50	1.60	8.90	2.34	12.40	3.13	17.90	4.69	25.67
960	96	6.0	0.032	0.22	0.80	4.50	1.60	8.90	2.34	12.40	3.13	17.90	4.69	25.67

Other thickness densities available upon request and verification





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## Performance & Physical Characteristics

### Apparent Thermal Conductivity ASTM C518, EN12667

W/m·°K or Btuin/hr·ft²·°F for all product range "K" or "λ" value at mean temperatures  
Data for 10°, 24° and 35°C mean temperature

Product Type	Density		Mean Temperature					
	Kg/m³	Lb/ft³	10°C	50°F	24°C	75°F	35°C	95°F
BD								
240	24	1.5	0.032	0.22	0.036	0.25	0.037	0.26
320	32	2.0	0.032	0.22	0.034	0.24	0.036	0.25
360	36	2.25	0.032	0.22	0.032	0.24	0.036	0.25
480	48	3.0	0.031	0.21	0.032	0.23	0.035	0.24
560	56	3.5	0.031	0.21	0.032	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 C518)

"R" is a measure of the resistance to heat flow of a material of any given thickness.  
("R" = m²·°K/W or hr·ft²·°F/Btu)

$$R = \frac{T}{K} \quad \text{Where "T" = Thickness}$$

$$R = \frac{1}{\lambda} \quad \text{Where "K" or "λ" = Thermal Conductivity}$$

### Thermal Transmittance "U" Value (ASTM C168)

"U" is a measure of how much heat is lost through a given thickness of a particular material.  
("U" = W/m²·°C or Btu/hr·ft²·°F)

$$U = \frac{1}{Rt} \quad \text{Where "Rt" = Total Thermal Resistance}$$

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.

$$U\text{-Value (of building element)} = 1 / (R_{so} + R_{si} + R_1 + R_2 + \dots)$$

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
Rso - Fixed external resistance	—	0.40m²·°K/W
Rsi - Fixed internal resistance	—	0.13m²·°K/W
R1 - Fiberglass insulation	0.100m; 0.035 W/mK	2.85m²·°K/W
R2 - Clay bricks	0.105m; 0.710 W/mK	0.15m²·°K/W
R3 - Concrete blocks	0.100m; 0.018 W/mK	0.55m²·°K/W
R4 - Plaster	0.013m; 0.016 W/mK	0.08m²·°K/W
Total		4.16m²·°K/W

Therefore the overall wall element U-value = 1/R = 1/4.16 = 0.24W/m²K

### Surface Burning Characteristics (ASTM E84, UL723)

Base glass fiber is non-combustible when tested.

Facing	Flame Spread	Smoke Developed
Unfaced	0	0
FRK	≤ 25	≤ 50
ASJ	≤ 25	≤ 50
AWF	≤ 25	≤ 50

### Working Temperature Limitations (ASTM C411)

-4°C to 232°C At excessive temperatures, limited migration of binder may occur in the insulation in contact with the hot surface. This is 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 C665)

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)

pH 9

### Non-Fibrous (Shot) Content (ASTM C 1335)

Not applicable to glass mineral fiber products.

### Specification Compliance

AFICO Board Insulation complies with the standard specification requirements of the following specifications:

DCL: ASTM C612

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 C795: Thermal Insulation for use in contact with Austenitic Stainless Steel tested

SASO: SASO GSO EN 13162 License # 201800652111

### 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

### Facing Information (Flexible Vapor Barrier)

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

### Vapor Permeability (ASTM E96A)

FRK: 0.02 perms

ASJ: 0.02 perms

AWF: 0.0012 perms

### Puncture Resistance

FRK: 25 beach units

ASJ: 85 beach units

AWF: 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 C423)

Insulation	Thickness	Sound Absorption Coefficient at Frequencies (Hz)					
		125	250	500	1000	2000	NCR
Flexible	25mm (1 inch)	0.14	0.27	0.53	0.69	0.84	0.60
	50mm (2 inches)	0.22	0.36	0.58	0.92	0.94	0.70
Semi-rigid	25mm (1 inch)	0.09	0.26	0.64	0.90	1.10	0.70
	50mm (2 inches)	0.28	0.80	1.12	1.18	1.10	1.05
Rigid	25mm (1 inch)	0.10	0.26	0.69	0.99	1.08	0.75
	50mm (2 inches)	0.26	0.75	1.17	1.14	1.07	1.05

### Installation Recommendation

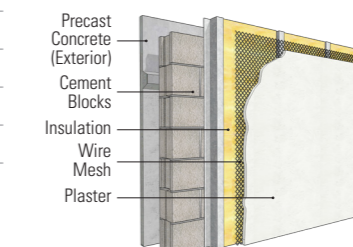
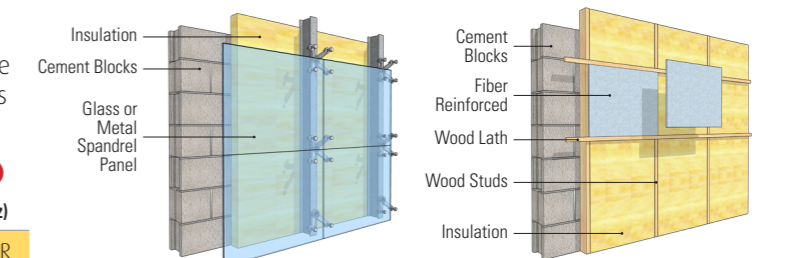
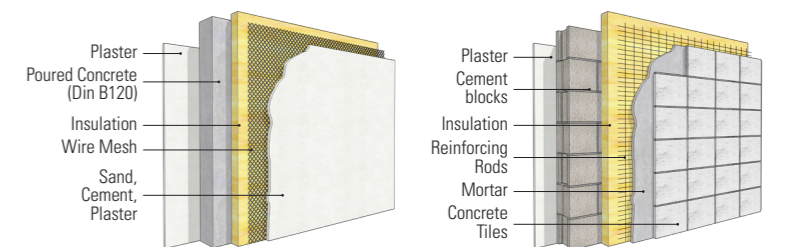
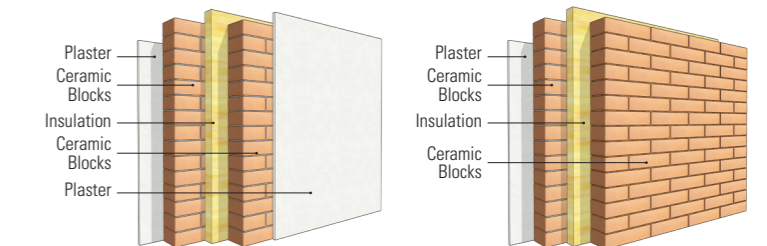
AFICO Board Insulation products can be easily cut with a knife and neatly fitted into irregularly shaped areas.

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

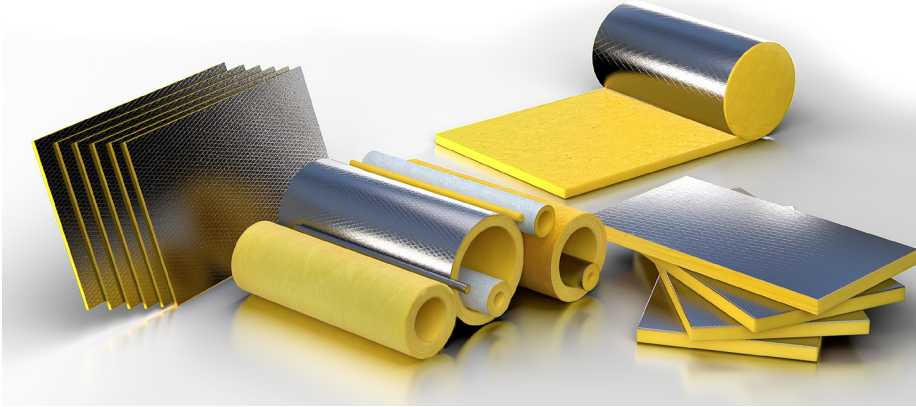
**On Masonry Surface:** AFICO Board Insulation can be installed between withes and on wall faces with impaling pins, mechanical fasteners and/or adhesives.

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





# Board Insulation (BD)



- The **AFICO Product Range** includes • 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

### Maintenance

No maintenance is required. **AFICO Board Insulation** products 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 head-quarters 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 as well as through a vast and reliable network of local distributors.

**Special products are manufactured on request.**

**Call us today for more information & professional guidance:**

**Dammam (H.O. & Factory):** +966 13 331 3333

**Riyadh:** +966 11 472 5555

**Jeddah:** +966 12 670 0020

**GCC & Int'l Export Office (Dubai):** +971 4 294 1211

**Egypt (Cairo):** +20 100 009 9209

**North Africa (Tunis):** +216 2 053 1000

**Please send all email inquiries to [info@afico.com.sa](mailto:info@afico.com.sa)**



## People & Planet Always First

AFICO's products are all **energy saving, environmentally friendly**, use even more **recycled materials** and contribute to the **fight against global warming**.

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



**Zamil**industrial

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