



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

# AFICO Residential Cavity Wall Insulation

Technical Data Sheet  
 Product Code: **CWI**



## DESCRIPTION

**Thermacon Cavity Wall Insulation** is composed of fine, stable and uniformly textured inorganic glass fibers bonded together by non-water soluble and fire-retardant thermosetting and heat resistant resin, and formed into semi-rigid non-combustible and moisture repellent rectangular boards or slabs. It is free from coarse fibers and shot due to its mineral composition.

## APPLICATION

**Thermacon Cavity Wall Insulation** is a semi-rigid board intended for use in commercial, institutional, industrial, agricultural and residential construction as thermal and acoustical insulation for interior, exterior and partial or fully cavity wall applications as well as in poultry farms, precast structures, prefabricated houses and new residential villa construction.

## FACING

**Thermacon Cavity Wall Insulation** is available either unfaced with a silicon-based emulsion additive in the wool to make the product water-repellent, or with a factory-applied kraft/asphalt vapour barrier facing or with an Aluminum Foil Fiberglass Reinforced Kraft Paper (FRK) facing.

## STANDARD NOMINAL DENSITY

26-27 kg/m<sup>3</sup> – 1.6 – 1.7lb/ft<sup>3</sup>

## STANDARD AVAILABLE PRODUCTS

Nominal Manufacturing Specifications.  
 Check for availability in other dimensions.

## NOMINAL THERMAL CONDUCTIVITY

(BS 874) (ASTM C 518)  
 "K" or "λ" value at mean temperatures

Thermal Resistance (m <sup>2</sup> .°C/W) (hr.ft <sup>2</sup> .°F/Btu)	Thickness		Width		Length Package		
	mm	inch	mm	inch	mm	inch	m <sup>2</sup> / ft <sup>2</sup>
1.00    6.00	25	1	1200/600	48/24	1000	40	28.8    310
1.40    8.00	50	2	1200/600	48/24	1000	40	14.4    155
2.15    12.00	75	3	1200/600	48/24	1000	40	9.6    104

Mean Temperatures		W/m. °C	Btu.in/ft <sup>2</sup> .hr.°F
10°C	50°F	0.034	0.24
24°C	75°F	0.035	0.24
50°C	122°F	0.042	0.29
75°C	167°F	0.047	0.33
100°C	212°F	0.052	0.36



\* Standard Products and Sizes

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## Performance & Physical Characteristics

### Working Temperature Limitations

-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 aluminium, 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 C553. **Thermacon** 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.

### Compressive Strength

12 PCF at 10% Deformation  
40 PCF at 25% Deformation

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

Base glass fiber is non combustible when tested to ASTM E 84.  
UNFACED: Flame Spread: 5 Smoke Developed: 0  
Fuel Contributed : 0

### 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 I  
Class '0' fire rating to the building regulations section E 15

### Specification Compliance

**Thermacon Cavity Wall Insulation** complies with the property requirements of the following specifications:

- UNFACED:
- U.S. Federal Specification HH-I-558 B, Form A, Class I: Form B Type I, Class 7.
  - ASTM C 612 Classes 1 and 2
  - DCL ASTM - C 533 - C 547 - C 612 - C 665
  - CE-EN 13162

### 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>. °C/W or hr. ft<sup>2</sup>. °F/Btu.)

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

### Thermal Conductance, 'C'-VALUE (ASTM C 518, ASTM C 177)

$$C = \frac{1}{R} = W/m^2 \cdot ^\circ C \text{ or Btu/hr.ft}^2 \cdot ^\circ F.$$

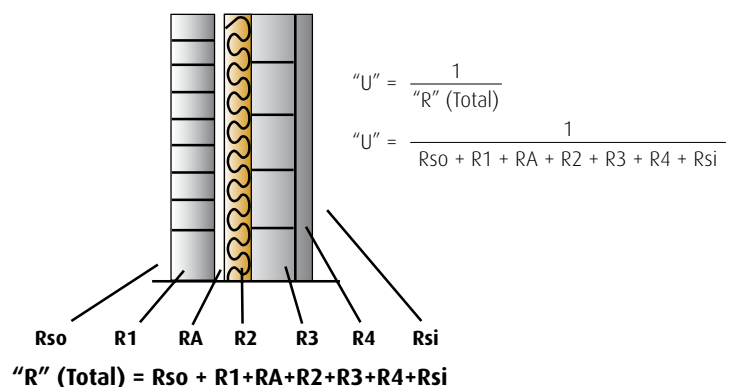
It is the ability of the product to conduct heat.

### 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.

### "U" Value of typical Cavity Wall Construction





## Performance & Physical Characteristics

### Key

Thermal Resistance =  $T/K$   
 $R_{so}$  =  $T/K$  of outside surface air film  
 $R_1$  =  $T/K$  of external wall  
 $R_A$  =  $T/K$  of air space  
 $R_2$  =  $T/K$  of insulation  
 $R_3$  =  $T/K$  of internal wall  
 $R_4$  =  $T/K$  of internal finish  
 $R_{si}$  =  $T/K$  of inside surface air film

### Sound Absorption Coefficient

ASTM C 423 - Mounting Type A  
 Product placed against a solid backing such as a block wall

Thickness	Sound Absorption Coefficients							
	Octave Band Center Frequencies, Hz							
(mm) (in)	125	250	500	1000	2000	4000	NRC	
25 1	0.09	0.26	0.64	0.90	1.05	1.10	0.70	
50 2	0.26	0.77	1.13	1.09	1.04	1.05	1.00	
75 3	0.28	0.80	1.12	1.18	1.12	1.10	1.05	

### Installation

**Thermacon CWI Insulation** products can be easily cut with a knife and neatly fitted into irregularly shaped areas.

#### For Vertical Applications:

**Thermacon CWI 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:

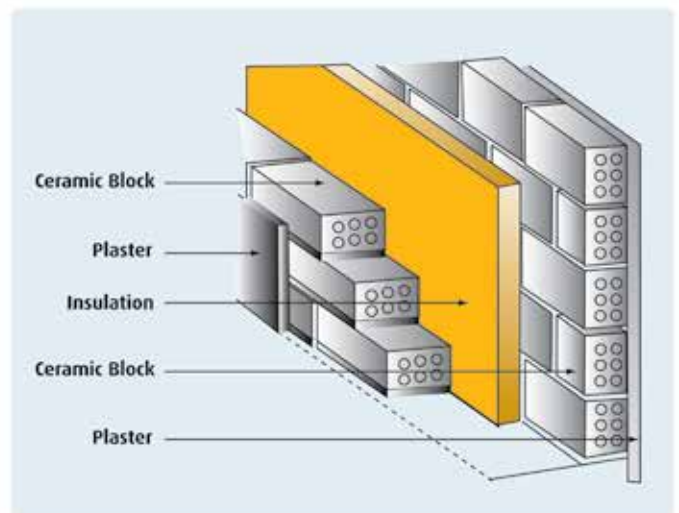
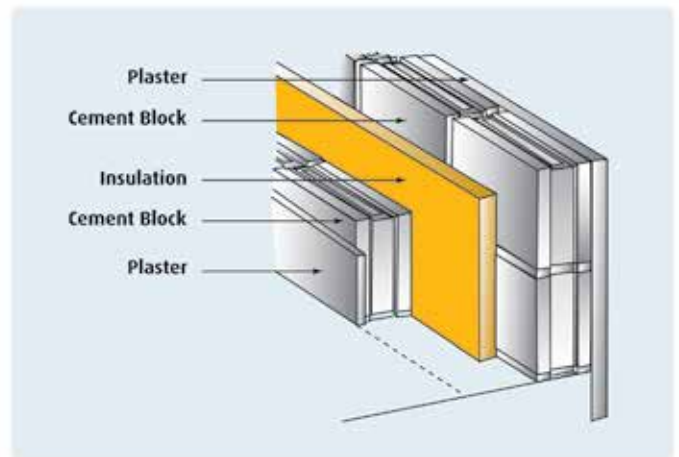
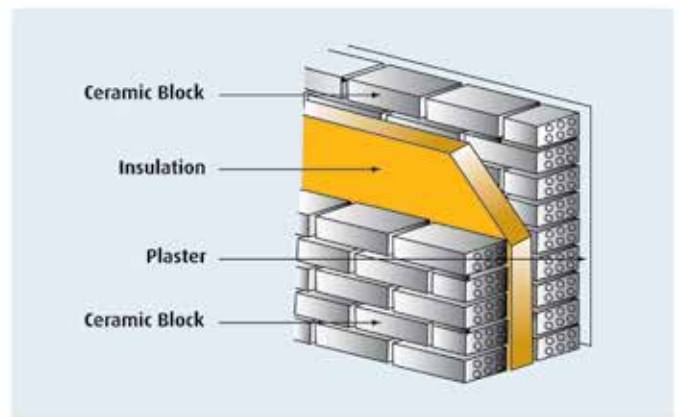
**Thermacon CWI Insulation** can be installed by the use of impaling pins against horizontal surfaces.

#### On Masonry Surface:

**Thermacon CWI Insulation** can be installed between wythes and on wall faces with impaling pins, mechanical fasteners and/or adhesives.

#### On Precast Concrete:

**Thermacon CWI Insulation** can be installed using impaling pins and/or appropriate adhesives.



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## MAINTENANCE

No maintenance is required. **Thermacon Cavity Wall 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, odourless, 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. **Thermacon** fibreglass is non toxic and not hazardous to health.

## STORAGE

To avoid moisture in the building construction, **Thermacon** insulation products stored outside must be kept dry. We recommend **Thermacon** products to be always stored in covered and dry areas. **Thermacon** 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 **Thermacon** and/or OC has no control over installation design, installation workmanship, accessory materials, or conditions of application, **Thermacon** and/or OC 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 Fibreglass Insulation Company **Thermacon** 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 **Thermacon** materials and methods of fixing are the decision of the specifier, consultant or contractor. For further information or advice on specification of **Thermacon** products, contact your local sales office.

## AVAILABILITY

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

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

**Special products are manufactured on request.**

## Thermacon PRODUCTS

## PRODUCTS CODE

Acoustical Ceiling Panels	ACP
Blanket Insulation	BKT
HD Series Blanket Insulation	HDB
Board Insulation	BD
Roof Insulation	RI
Roof Deck Board Insulation	RD
<b>Cavity Wall Insulation</b>	<b>CWI</b>
Pre-engineered Metal Building Insulation	MBI
Faced Duct Wrap	FDW
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:



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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



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