

افيكو AFICO

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



Technical Data Sheet
Product Code: **AQL**



AFICO Quiet Liner

DESCRIPTION

AFICO Quiet Liner is a highly efficient resilient fiber 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 fiber and shot due to its mineral composition.

FACING

AFICO Quiet Liner is supplied in rolls and boards with a strong, dimensionally stable black Woven Glass Fiber Fabric (WGF).

APPLICATION

AFICO Quiet Liner is intended for use in commercial, industrial and residential construction as thermal and acoustical insulation of heating, air-conditioning and interior of dual temperature duct work, air handling equipment and plenum operating at air velocities up to 30 m/s (6000 FM) and temperatures to 260°C (500°F).

Also used as an efficient sound absorption treatment of walls and ceilings, acoustic enclosures, generator rooms, studios, curtain walls, auditoriums, conference rooms, theaters and others.

STANDARD AVAILABLE PRODUCTS

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

Product Type AQL Density	kg/m ³	lbs/ft ³
160	16	1.0
240*	24	4.5
320	32	2.0
480*	48	3.0
640*	64	4.0
720	72	4.5
800	80	5.0
960	96	6.0

Thickness	Width	Length	
15mm / 0.5 in	1.2 m 4.0 ft	20 m or 65 ft	Board
25mm / 1 in			0.6 m / 2.0 ft
38mm / 1.5 in	4.0 ft	20 m or 65 ft	1 m / 3.3 ft
50mm / 2 in			2.4 m / 8.0 ft

* Standard Products and Sizes

NOMINAL THERMAL CONDUCTIVITY

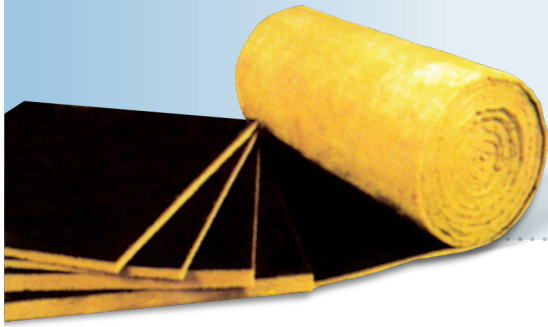
"k" or "λ" value at mean temperatures (ASTM C 518)
W/m.°C-Btu.in./ft².hr°F (BS 874)

Product Type AQL

Mean Temperature	160	240	320	480	640	720	800	960
0 °C	0.034	0.031	0.030	0.029	0.030	0.031	0.030	0.030
10 °C	0.036	0.032	0.031	0.030	0.031	0.033	0.031	0.031
24 °C	0.039	0.035	0.033	0.031	0.032	0.035	0.032	0.032
50 °C	0.044	0.039	0.037	0.035	0.036	0.037	0.036	0.036
75 °C	0.051	0.043	0.040	0.037	0.038	0.040	0.039	0.039
100 °C	0.057	0.047	0.044	0.041	0.042	0.043	0.043	0.043

Product Type AQL

Mean Temperature	160	240	320	480	640	720	800	960
32 °F	0.23	0.21	0.20	0.20	0.21	0.21	0.21	0.21
50 °F	0.25	0.22	0.21	0.21	0.21	0.23	0.21	0.21
75 °F	0.27	0.24	0.23	0.22	0.23	0.23	0.22	0.22
122 °F	0.31	0.27	0.25	0.24	0.24	0.26	0.25	0.25
167 °F	0.35	0.30	0.27	0.26	0.26	0.28	0.27	0.27
212 °F	0.40	0.33	0.30	0.29	0.29	0.30	0.30	0.30



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Performance & Physical Characteristics

Thermal Resistance "R" Value (Excluding Facing) (ASTM C 167)

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

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

Working Temperature Limitations (ASTM C 411)

Operating up to 260°C (500°F) for the WGF faced product. At excessive temperatures, a limited migration of binder may occur in the insulation in contact with hot 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.

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.

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.

Specification Compliance

AFICO Quiet Liner Insulation complies with the property requirements of the following specifications:

- U.S. Federal Specification HH-1-545 B, TYPE I
- ASTM C 1071: For Acoustical Performance
- NFPA 90 A: For Fire Resistance
- NFPA 255: For Fire Hazard Classification
- BS 476: parts 6,7 Class O Fire Classification
- DCL ASTM - C 533 - C 547 - C 612 - C 665
- CE-EN 13162

Friction Loss

According to TIMA AHS-152T Pressure loss, in W.G., **AFICO Fiberglass Quiet Liner**.

This chart is to be used in place of the standard friction loss chart published in the ASHRAE Handbook of fundamentals. For conversion of round equivalents to rectangular sizes, use Table C-2 "Circular Equivalents of Rectangular Ducts for Equal Friction and Capacity" from the same reference. Tests conducted in accordance with TIMA AHS 152T.

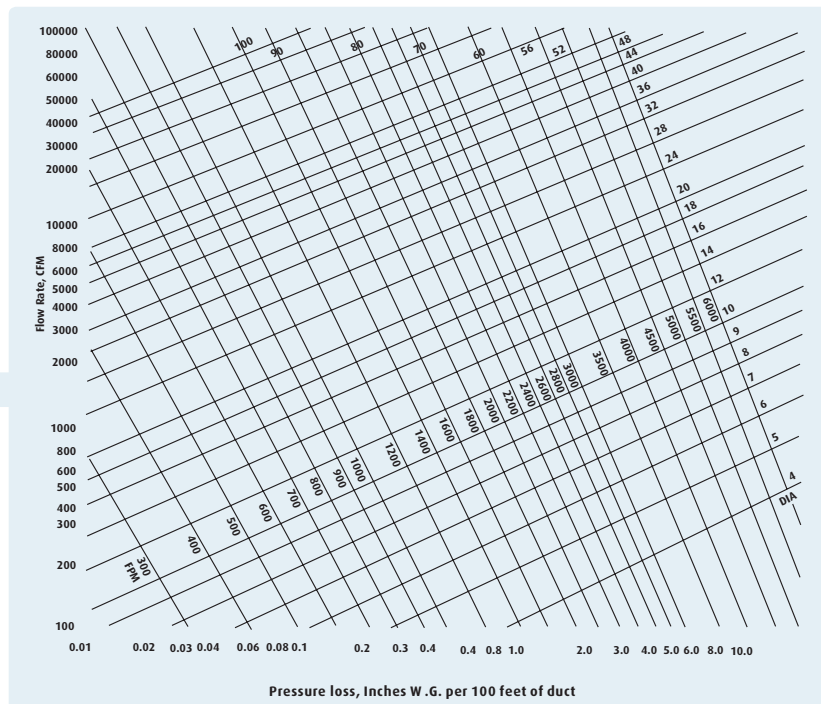
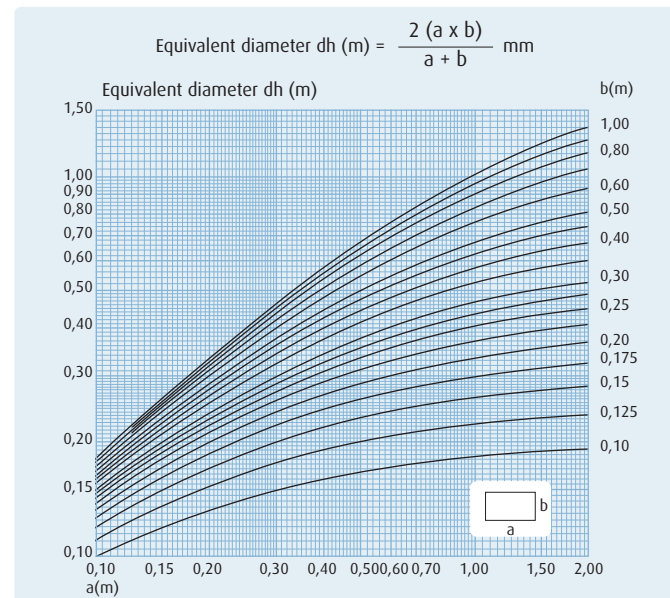
Surface Burning Characteristics (UL 723, ASTM E 84, ASTM E 136)

Base glass fiber is non-combustible when tested to ASTM E84.

Facing	Flame Spread	Smoke Developed	Fuel Contributed
WGF	25	50	0

Alkalinity

pH 9





Performance & Physical Characteristics

Acoustical Performance (ASTM C 423-777)

Reverberation Chamber Method
 Sound Absorption Coefficients at Frequencies (Hz)

Product Type	Thickness		Sound	Absorption coefficient at one third octave center frequencies (Hz)					
	mm	w		125	250	500	1000	2000	4000
AQL 160	25	1	0.09	0.24	0.49	0.85	0.83	0.77	0.60
	50	2	0.34	0.59	0.93	0.94	0.94	0.98	0.85
AQL 240	25	1	0.12	0.32	0.70	0.93	0.95	0.99	0.75
	50	2	0.27	0.69	1.01	1.07	1.06	1.05	0.95
AQL 320	15	½	0.05	0.13	0.32	0.65	0.79	0.93	0.45
	25	1	0.29	0.45	0.77	1.00	0.93	0.96	0.80
	50	2	0.37	0.92	1.04	1.14	1.13	1.01	1.05
AQL 480	15	½	0.05	0.12	0.29	0.51	0.68	0.80	0.40
	25	1	0.22	0.52	0.73	0.98	1.02	1.00	0.80
	50	2	0.30	0.85	1.03	1.07	1.06	1.00	1.00
AQL 640	25	1	0.06	0.19	0.62	0.83	0.90	0.95	0.65
	50	2	0.21	0.75	1.00	1.00	1.00	0.95	0.95

Installation Recommendation for flexible blanket

AFICO Quiet Liner Products are available in roll and board types. The desired application length can be easily measured and cut from the full size. **AFICO Quiet Liner** is applied to the interior

of ducts and plenums with the black surface facing the air stream. Transverse joints are to be neatly butted, with no interruptions or gaps. Longitudinal to be overlapped and compressed.

AFICO Quiet Liner should be adhered to sheet metal ducts with 100% coverage of adhesive, and all exposed leading edges and all transverse joints coated with adhesive. (The adhesive shall conform to standard ASC-A7001 C-1972 or as approved by the project consultant). The liner should be additionally secured with mechanical fasteners which will compress the product sufficiently to hold it firmly in place.

For velocities to 10 m/s: fasteners should start within 75 mm of the upstream transverse edges of the liner and 75 mm from longitudinal joints, and should be spaced at maximum of 300 mm from the corner break. Elsewhere, they should be a maximum 450 mm on centers except to be placed not more than 150 mm from a longitudinal joint and 300 mm from a corner break.

For velocities from 10 to 20 m/s: fasteners should be placed as above, except to be spaced at a maximum of 150 mm from the corner break. Elsewhere, they should be a maximum of 400 mm on centers except to be placed not more than 150 mm from the longitudinal joint and 300 mm from the corner break. In addition to the edge coating of transverse joints, longitudinal joints should be similarly coated with adhesive. For velocities from 20 to 30 m/s, fasteners should be similarly spaced as for 10 to 20 m/s. In addition, metal nosing should be installed to secure the liner at all upstream transverse edges.

No. Pins	Liner Interior Width
0	8" dn
2	9" - 16"
3	17" - 28"
4	29" - 40"
5	41" - 52"
6	53" - 64"
7	65" - 76"
8	77" - 88"
9	89" - 100"

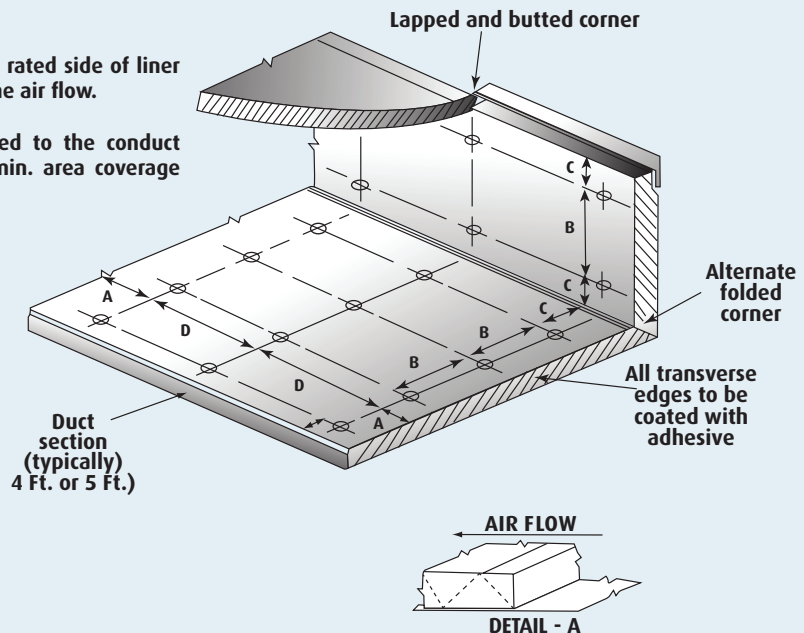
When velocity exceeds 4000 FPM use metal nosing on every leading edge. Nosing may be formed on duct or by channel or Zee attach by screws, rivets or welds.

Maximum spacing for fasteners.
 Actual intervals are approximate.

Velocity	Dimensions			
	A	B	C	D
0 - 2500 FPM	3"	12"	4"	18"
2501 - 6000 FPM	3"	6"	4"	16"

The velocity rated side of liner must face the air flow.

Liner adhered to the conduct with 90% min. area coverage of adhesive.



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MAINTENANCE

No maintenance is required. **AFICO Quiet Liner** 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. **AFICO** fibreglass 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 OC has no control over installation design, installation workmanship, accessory materials, or conditions of application, **AFICO** 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 **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 **AFICO** materials and methods of fixing are the decision of the specifier, consultant or contractor. For further information or advice on specification of **AFICO** 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. **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

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
Cavity Wall Insulation	CWI
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:
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- 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