

KIMMCO-ISOVER Clean Liner (KCL)



About Us

Alghanim Industries and French construction giant Saint-Gobain ISOVER join forces together after the recent launch of their new stone wool plant in Yanbu Saudi Arabia and the integration of KIMMCO in Kuwait.

With a 40 year track record in manufacturing, technology and supply of insulation materials and solutions to the Middle East markets, KIMMCO and Saint-Gobain ISOVER now offer their full range of glass wool and stone wool products and solutions under the brand KIMMCO-ISOVER.



- Alghanim Industries is one of the largest privately –owned companies in the Gulf region
- A heritage of over 100 years as a successful commercial enterprise in the Gulf region
- Operations in over 40 countries and employing
- Over 14,000 employees
- A multi-billion dollar company with more than 30 businesses.



World leader in sustainable habitat and construction market.

Saint-Gobain designs, manufactures and distributes material and solution which are key ingredients in the wellbeing of each of us and the future of all.

- Founded in 1665
- Nearly 179,000 employees
- Operates in 67 countries
- Close to 400 patents filed each year

KIMMCO-ISOVER Clean Liner (KCL)

APPLICATIONS

KCL is used to line air conditioning ducts, walls and/or ceilings of acoustically sensitive areas to provide efficient sound insulation for any variety of structure, and/or sensitive facilities as home theaters or studios, curtain walls.



DESCRIPTION

KCL is a highly efficient acoustic material, produced from strong resilient glass fibers firmly bounded together with a thermosetting resin. It can be supplied with **self-seal**.

Standard Dimensions

Thickness (mm)	Width (m)	Length (m)	
		Roll	Board
15	1.2	20	1
25	1.2	20	1
40	1.2	20	1
50	1.2	20	1

Other dimensions available.

Nominal Density

KCL	kg/m ³	Lbs/ft ³
24	24	1.5
32	32	2.0
48	48	3.0
60	60	3.75
72	72	4.5

Other densities available

Facings

KCL is faced with a black, strong, durable, dimensionally stable woven glass fabric.

FIBER MIGRATION

KCL achieves zero fiber migration.



Combustibility

Base fibers are non combustible when tested in accordance with BS 476 (part 4), ASTM E136.

No Corrosion

Does not cause or accelerate corrosion of steel, copper or aluminum.

Thermal Performance

Tested in accordance with ASTM C518.

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m ³				
°C	KCL 24	KCL 32	KCL 48	KCL 60	KCL 72
0	0.031	0.030	0.029	0.030	0.031
10	0.032	0.031	0.030	0.031	0.033
25	0.035	0.033	0.031	0.032	0.035
50	0.039	0.037	0.035	0.036	0.037
75	0.043	0.040	0.037	0.038	0.040
100	0.047	0.044	0.041	0.042	0.043

Mean Temperature	Thermal Conductivity in BTU.in/ft ² h.F for the densities in lbs/ft ³				
°F	KCL 24	KCL 32	KCL 48	KCL 60	KCL 72
32	0.21	0.20	0.20	0.21	0.21
50	0.22	0.21	0.21	0.22	0.23
77	0.24	0.23	0.22	0.23	0.24
122	0.27	0.25	0.24	0.25	0.26
167	0.30	0.27	0.26	0.26	0.28
212	0.33	0.30	0.29	0.29	0.30

Acoustical Performances

KCL is especially designed to provide exceptional sound absorption to acoustically sensitive environments and/or equipments as air-conditioning equipments, auditoriums, theatres, studios, acoustical building assemblies, curtain walls.

Product Type	Thickness (mm)	Absorption Coefficient of one-third octave band center frequencies (Hz)						
		125	250	500	1,000	2,000	4,000	NRC
KCL 24	25	0.12	0.32	0.70	0.93	0.95	0.99	0.75
	50	0.27	0.69	1.01	1.07	1.06	1.05	0.95
KCL 32	13	0.05	0.13	0.32	0.65	0.79	0.93	0.45
	25	0.29	0.45	0.77	1.00	0.93	0.96	0.80
	50	0.37	0.92	1.04	1.14	1.13	1.01	1.05
KCL 48	15	0.05	0.12	0.29	0.51	0.68	0.80	0.50
	25	0.16	0.32	0.82	1.02	1.05	1.00	0.85
	50	0.30	0.85	1.03	1.07	1.06	1.00	1.00
KCL 60	25	0.06	0.19	0.62	0.83	0.90	0.95	0.85
	50	0.21	0.75	1.00	1.00	1.00	0.95	1.10

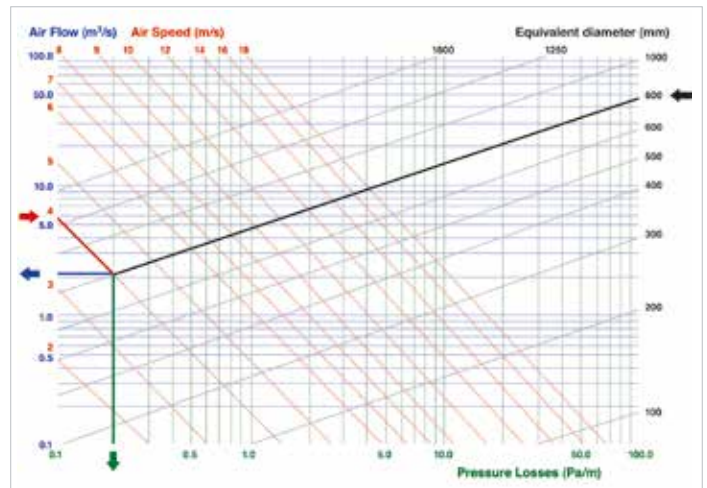
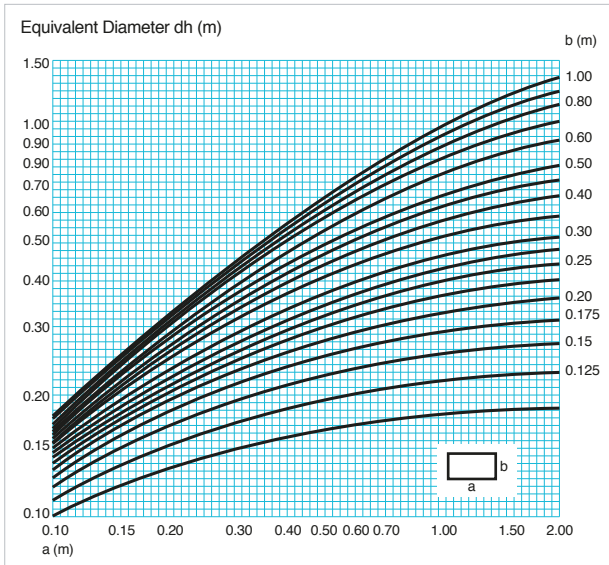
Test in accordance with ASTM C423 using Type A mounting as per ASTM E795. These are typical values subject to normal manufacturing and testing variances.

Physical Performances

Properties	Performances	Test method
Operating temperature limits	Maximum 230 °C	ASTM C411
Surface burning characteristics (Fire hazard classification)	Flame spread not over 25 Smoke developed not over 50	NFPA 255, UL 723, ASTM E84
Fire classification	Class 1 Class 0	BS 476 parts 7 BS 476 parts 6 and 7
Water vapor absorption	Not greater than 1% by volume	ASTM C1104
Fungi resistance Bacteria resistance	Does not breed or promote growth	ASTM C1071
Air velocity rating Air eroding rating	21.3 m/s (4,200 ft/minute) Nil at 53.3 m/s (10,500 ft/minute)	UL 181

PRESSURE LOSSES

Equivalent Diameter $dh = \frac{2(a \times b) \text{ mm}}{a + b}$



CONFORMITY TO STANDARDS

American Standards		British Standards	ISO	Other Standards
C167	C1104 /1104M	BS 476 (part 7 & 6 ,4)	354	UL 181
C168	C1304	BS 874	8301	UL 723
C411	C1338	BS 2972	8302	NFPA 255 NFPA 259 NFPA 90A & 90B
C423	E84	BS 3533	9229	NAIMA Standards
C518	E336	BS 3958 (part 5),	9291	SMACNA Standards
C13.9 & 13.8 & 665	E477	BS 5643		F.S. HH521-1-F[superseded by ASTM C665] F.S. HH558-1-B[superseded by ASTM C612]
C1071	E795	BS 5720		German Standards DIN 18165, DIN 52612

Conversion Factors

Reference: ASTM E380

Length	1 in	= 25,4 mm				
	1 ft	= 0,3048 m				
Area	1 in ²	= 645,16 mm ²				
	1 ft ²	= 0,0929 m ²				
Volume	1 in ³	= 16387 mm ³				
	1 ft ³	= 0,0283 m ³				
	1 UK gallon (liquid)	= 4,546 liter				
	1 US gallon (liquid)	= 3,785 liter				
Mass	1 ounce (av)	= 28,3 g				
	1 gr (grain)	= 0,0648 g				
	1 lb	= 0,4536 kg				
Density	1 lb/ft ³ /pcf	= 16,018 kg/m ³				
Force	1 lbf	= 0,4536 kPa				
	1 lbf	= 0,00445 kN				
	1 kPa	= 0,00981 kN				
Temperature	°F = 9/5°C + 32	°C = 5/9 (°F - 32)				
	°F = 9/5 (°K - 273) + 32					
	°C = °K - 273					
Permeability	1 perm (grain/ft ² h inHg)	= 0,028 gram mm/m ² h mmHg				
	1 perm (grain/ft ² h inHg)	= 0,00021 gram/Nh				
	1 perm in (grain in/ft ² h inHg)	= 17 gram mm/m ² h mmHg				
	1 perm in (grain in/ft ² h inHg)	= 0,0007 gram/m h mmHg				
	1 perm in (grain in/ft ² h inHg)	= 0,000005 m/Nh				
	1 gram/m h mmHg	= 0,0075 gram m/Nh				
1 m ² /h mmH ₂ O	= 0,1 m ⁴ /Nh					
Energy		Btu	kcal	KJ	kWh	
	1 Btu	1	0,252	1,055	0,000029307	
	1 kcal	3,968	1	4,187	0,001163	
	1 kJ	0,9478	0,2398	1	0,000278	
	1 kWh	3410	860	3600	1	
Heat flow	1 Btu/ft h	= 0,8268 kcal/m				
	1 Btu/ft h	= 0,9615 W/m				
	1 kcal/m h	= 1,163 W/m				
	1 Btu/ft ² h	= 2,712 kcal/m ² h				
	1 Btu/ft ² h	= 3,155 W/m ²				
	1 kcal/m h	= 1,163 W/m ²				
Thermal Conductivity		Btu/ft.h °F	Btu in/ft².h °F	kcal/m.h.K	W/m.K	
	1 Btu/ft.h °F	1	12	1,4882	1,7307	
	1 Btu in/ft ² .h °F	0.0833	1	0,124	0,1442	
	1 kcal/m.h.k.	0.672	8,064	1	1,163	
1 W/m.K	0.578	6,933	0,860	1		
Thermal Conductance		Btu/ft².h °F	kcal/m².h.K	W/m².K		
	1 Btu/ft.h °F	1	4,882	5,678		
	1 kcal/m ² .h.k.	0,00142	1	1,163		
1 W/m ² .K	0,00122	0,860	1			
Pressure		lbf/in²	lbf/ft²	mm of water	kPa = KN/m²	Torr = mm Hg
	1 lbf/in ²	1	144	703	6,895	51,71
	1 lbf/ft ² (psf)	0,00694	1	4,882	0,04788	0,36
	1 mm of water	0,00142	0,2048	1	0,00981	0,0736
	1 kPa = 1 kN/m ²	0,145	20,885	102	1	7,50
	1 Torr = 1 mm Hg	0,0193	2,78	13,59	0,133	1

Commitment to Quality

Properties of KIMMCO-ISOVER Products

- Excellent thermal performance
- Superior acoustic performance
- Excellent fire safety
- Environmentally friendly: made from abundantly available, non-strategic materials.
- Suitable for a wide variety of applications (flexible, semi-rigid, rigid and extra-rigid)
- Address a variety of performance requirements (wide range of facing materials)
- Easy to cut and install, minimum wastage on-site
- Comparatively light in weight
- Dimensionally stable
- No sagging or settling
- Complies with international standards

Further, we are members of the following industry associations:

- Emirates Green Building Council (EGBC)
- Kuwait Green Building Council (KGBC)
- Qatar Green Building Council (QGBC)
- Singapore Green Building Council (SGBC)
- MASDAR (The Future Build)
- Middle East Mineral wool Insulation Manufacturers Association (MEMIMA)

Our Commitment to the Environment

KIMMCO-ISOVER was selected as the sole insulation supplier and official collaborator with MASDAR city, the world's first zero-carbon, zero-waste city, in Abu Dhabi. We have a strong commitment to the environment, health and safety of our people, and surrounding communities, and actively collaborate with local and international environmental agencies. Further, KIMMCO-ISOVER products help developers achieve green building rating certifications such as LEED, Estidama and QSAS

Our Product Listing & Certification

- DCL
- UL
- CE
- BV
- ABS

Our Commitment to Quality

we have a strong commitment to quality, as recognized by our certification by international bodies such as ISO.



KIMMCO ISOVER
SAINT-GOBAIN

www.kimmco-isover.com