KIMMCO ISOVER
SAINT-GOBAIN

LEADER IN INNOVATIVE
SUSTAINABLE SOLUTIONS

EcoBuild
NEXT GENERATION INSULATION

ECOBUILD CLEAN LINER (ECL)

- High Performance
- High Quality
- High Value
- 100% Natural
- Mineral Wool

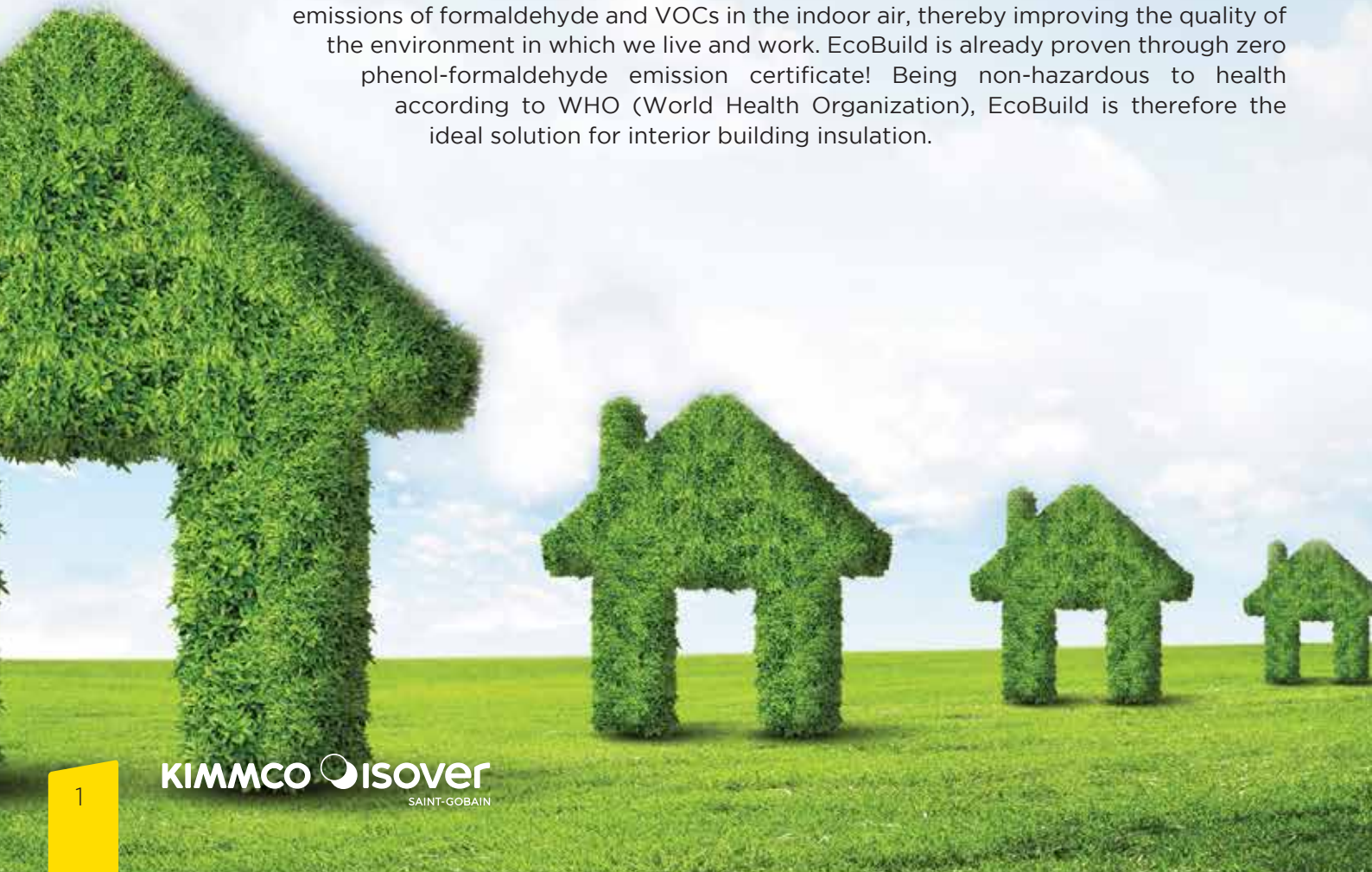
www.kimmco-isover.com

Next Generation Products

ABOUT US

EcoBuild Mineral wool is a product range which is predestined for the comfort and safety insulation inside a building. Made out of 100% natural resources, its performance protects the environment during the lifetime of a building.

With exceptional handling benefits including superior softer touch and no odour. EcoBuild mineral wool slabs and rolls improves job-site efficiency, as it is less dusty and easier to work with, while also providing the excellent thermal, acoustic, fire and indoor air quality performance that customer demands. It meets the most stringent requirements, statutory or voluntary, in Europe on emissions of formaldehyde and VOCs in the indoor air, thereby improving the quality of the environment in which we live and work. EcoBuild is already proven through zero phenol-formaldehyde emission certificate! Being non-hazardous to health according to WHO (World Health Organization), EcoBuild is therefore the ideal solution for interior building insulation.



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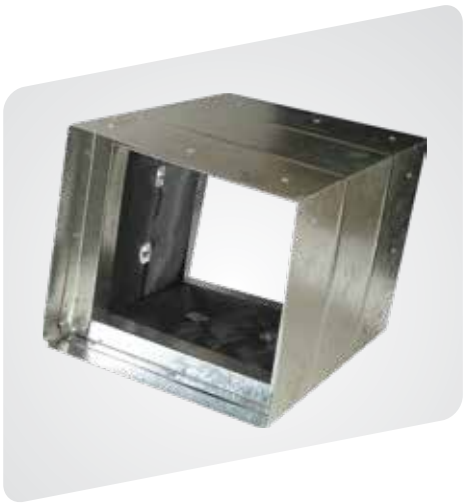
ECOBUILD CLEAN LINER (ECL)

APPLICATIONS

EcoBuild Clean Liner 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

EcoBuild Clean Liner is a highly efficient acoustic material, produced from strong resilient Glass Mineral wool firmly bounded together with green binder. It can be supplied with **Self-Seal**.



STANDARD DIMENSIONS

Thickeness (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 upon request

NOMINAL DENSITY

ECL	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 dimensions available upon request

FACINGS

EcoBuild Clean Liner is faced with a black, strong, durable, dimensionally stable woven glass fabric.

FIBER MIGRATION

EcoBuild Clean Liner achieves zero fiber migration.

COMBUSTIBILITY

Glass Mineral wool is non combustible when tested in accordance with BS 476 (part 4), ASTM E136.

THERMAL PERFORMANCE

Tested in accordance with ASTM C518.

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m3				
°C	ECL 24	ECL 32	ECL 48	ECL 60	ECL 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

NO CORROSION

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

Mean Temperature	Thermal Conductivity in BTU.in/ft2 h.F for the densities in lbs/ft3				
°F	ECL 24	ECL 32	ECL 48	ECL 60	ECL 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 PERFORMANCE

ECL 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
ECL 24	25	0.12	0.39	0.76	1.00	0.98	0.68	0.80
	50	0.34	0.93	1.09	1.05	1.01	1.01	1.00
ECL 32	25	0.16	0.58	0.99	1.07	0.97	0.80	0.90
	50	0.37	0.92	1.04	1.14	1.03	1.01	1.05
	75	0.57	1.07	1.16	1.07	1.01	0.94	1.10
ECL 48	25	0.08	0.34	0.83	1.04	1.07	0.91	0.80
	50	0.38	0.93	1.16	1.01	0.95	0.89	1.00
	75	0.66	1.05	1.19	1.02	0.95	0.81	1.05
ECL 60	25	0.12	0.39	0.87	1.06	1.08	1.00	0.85
	50	0.25	1.04	1.24	1.05	1.06	1.11	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 erosing rating	21.3 m/s (4,200 ft/minute) Nil at 53.3 m/s (10,500 ft/minute)	UL 181

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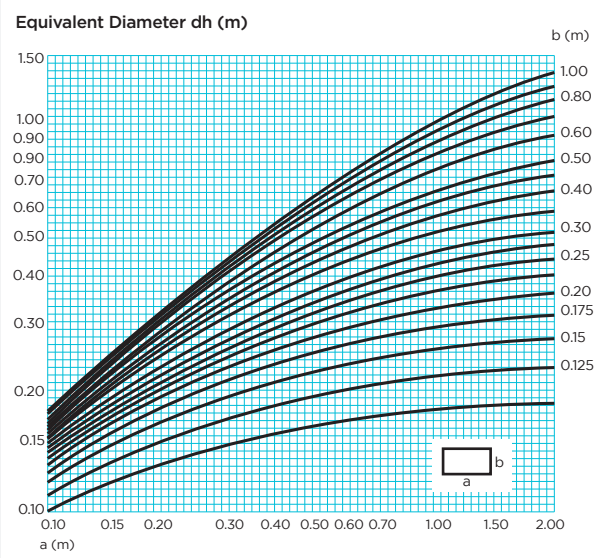
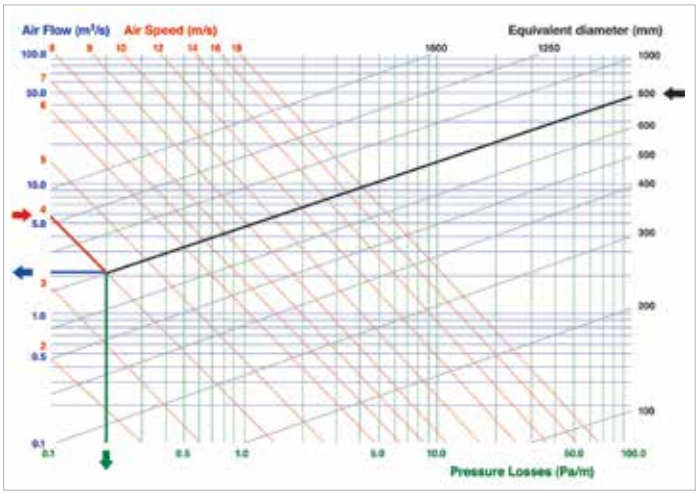
PRESSURE LOSSES

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





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	
C518	E336	BS 3958 (part 5)	9291	NAIMA Standards
C 668 & 13.8 & 13.9	E477	BS 5643		German Standards DIN 18165, DIN 52612
C1071	E795	BS 5720		SMACNA Standards

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 °F = 9/5 (°K - 273) + 32 °C = °K - 273	°C = 5/9 (°F - 32)				
Permeability	1 perm (grain/ft^2h inHg) = 0,028 gram mm/m^2h mmHg 1 perm (grain/ft^2h inHg) = 0,00021 gramNh 1 perm in (grain in/ft^2h inHg) = 17 gram mm/m^2h mmHg 1 perm in (grain in/ft^2h inHg) = 0,0007 gram/m h mmHg 1 perm in (grain in/ft^2h inHg) = 0,000005 m/Nh 1 gram/m h mmHg = 0,0075 gram m/Nh 1 m^2/h mmH_20 = 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/fth = 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/ft^2.h °F	kcal/m.h.K	W/m.K	
	1 Btu/ft.h°F	1	12	1,4882	1,7307	
	1 Btu in/ft^2h°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/ft^2.h °F	kcal/m^2.h.K	W/m^2.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/in^2	lbf/ft^2	mm of water	kPa = KN/m^2	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

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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
- BV
- EPD
- UL
- ABS
- CE
- EUCEB

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

@kimmcoisover
@KIMMCO
@kimmco_isover_insulation
@KimmcoKuwait
www.kimmco-isover.com
kimmco@kimmco-isover.com
marketing.ki@kimmco-isover.com

Kuwait Insulating
Material Manufacturing Co.

P.O. Box 10042 Shuaiba,
65451 Kuwait

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