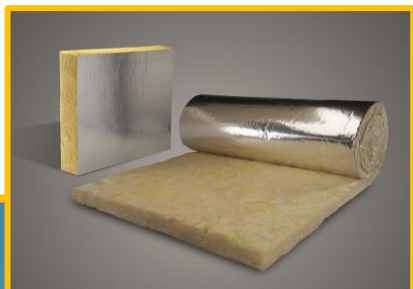


KIMMCO Marine Insulation (KMI)



KIMMCO

means insulation!

KIMMCO Marine Insulation (KMI)

APPLICATIONS

For thermal and / or acoustic insulation for ships.

DESCRIPTION

KIMMCO Marine Insulation is manufactured from stable glass fibers bonded with thermosetting resins binder. They are light in weight, strong, resilient and easy to handle. One face of the board is covered with 'E' glass facing cloth which is suitable for painting with oil bound paints. KIMMCO Marine Insulation is available in various thickness, dimensions and densities.

PERFORMANCE

Working Temperature: - 200 °C up to 230 °C

Permanence

Dimensionally stable under varying conditions of temperature and humidity, rot proof, odourless, non-hygroscopic and will not sustain vermin or fungus. Longer life due to no sag and settling.

Fire Safety / Reaction to Fire

Non-combustible when tested in accordance with BS 476 (Part 4), ASTM E84, 136.

Alkalinity

Less than 1% calculated as Na₂O

Shot content

Free from shot or non-fibrous content when tested in accordance to BS 2972 (section 14)

Surface spread of flame

Class 1 when tested in accordance to BS 476 (part 7)

NON TOXIC

KIMMCO Marine Insulation is not hazardous to health. (See KIMMCO MSDS)

Moisture Absorption

Less than 1% by volume when tested in accordance with BS 2972 or 6676, ASTM C1104. KIMMCO Marine Insulation does 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.

CONFORMITY TO STANDARDS

KIMMCO Marine Insulation complies with the following standards:

American Standards

ASTM C167, 168, 177, 423, 518, 653, 665 § 13.8 & 13.9, 686, 991, 1045, 1101/1101M, 1104/1104M, 1136 (types 1&2), 1335; E 84, 96, 136, 336, 795
UL723
F.S.), HH-I-558B
NFPA 255
NAIMA Standards
ASHARE 90.1 requirements

British Standards

BS 476 (parts 4, 6 & 7), 874, 2972, 3533, 6676 (part 1)

German Standards

DIN 52612

ISO

354, 8301, 8302, 9229

Nominal Density

KMI	kg/m ³	Lbs/ft ³	Availability
10	10	0.625	Roll
12	12	0.750	Roll
16	16	1	Roll
18	18	1.125	Roll
20	20	1.250	Roll
24	24	1.5	Roll/ Slab
32	32	2	Roll/ Slab
36	36	2.25	Roll/ Slab
48	48	3	Roll/ Slab
64	64	4	Slab

Non-standard densities and thickness are available upon request

Facings

KIMMCO Glasswool product is available un-faced or with a variety of facings to suit the applications: white vinyl, FSK, Black glass cloth, ASJ and Aluglass, MB 2001, Kraft paper, canvas and aluminum foil.



Standard Dimensions

Availability	Thickness (mm)	Width (m)	Length (m)
Rolls	25, 40, 50, 75, 100	0.4, 0.6, 1.0, 1.2	10 to 45 according to thickness & density
Slabs	25, 40, 50, 75, 100	1.2	1.0 to 2.4

Non-standard sizes may be available on request.
Thickness depends upon density.

Acoustic Performance

ASTM C423 - Mounting A as per ASTM E795

Product Type	Thickness	Absorption Coefficient of one-third octave frequencies Hz						
		125	250	500	1000	2000	4000	NRC
KMI 12	25	0.10	0.27	0.45	0.61	0.80	0.60	0.55
	50	0.20	0.52	0.71	0.88	0.85	0.80	0.75
	100	0.60	0.95	1.05	1.08	1.08	1.06	1.05
KMI 16	25	0.06	0.19	0.39	0.70	0.81	0.64	0.55
	50	0.20	0.51	0.72	0.89	0.88	0.88	0.80
	75	0.30	0.80	0.98	0.95	0.95	0.95	0.90
KMI 24	25	0.09	0.30	0.59	0.80	0.90	0.91	0.65
	50	0.22	0.57	0.97	1.00	0.98	1.00	0.90
KMI 32	25	0.05	0.32	0.80	0.90	0.97	0.90	0.75
	50	0.30	0.86	1.27	1.11	1.06	1.05	1.05
KMI 36	25	0.03	0.28	0.78	0.88	0.94	0.87	0.70
	50	0.27	0.81	1.15	1.06	1.00	1.03	1.00
KMI 48	25	0.23	0.38	0.81	0.91	0.95	0.96	0.75
	50	0.16	0.78	1.09	1.12	1.03	1.05	1.00
KMI 64	25	0.08	0.19	0.68	0.93	0.96	0.90	0.70
	50	0.27	0.79	1.09	1.09	1.05	1.06	1.00

These are typical values subject to normal manufacturing and testing variances.

Thermal Conductivity

Thermal conductivity according to BS 874, ASTM C177, 518; ISO 8301, 8302 or DIN 52612 are described in tables below:

Mean Temperature °C	Thermal Conductivity in W/m.K for the following densities in kg/m ³								
	KMI 12	KMI 16	KMI 18	KMI 20	KMI 24	KMI 32	KMI 36	KMI 48	KMI 64
0	0.036	0.034	0.033	0.032	0.031	0.030	0.029	0.029	0.030
10	0.038	0.036	0.035	0.034	0.032	0.031	0.030	0.030	0.031
25	0.041	0.039	0.038	0.036	0.035	0.033	0.032	0.031	0.032
50	0.048	0.044	0.043	0.041	0.039	0.037	0.036	0.035	0.036
75	0.059	0.051	0.048	0.046	0.043	0.040	0.039	0.037	0.038
100	0.065	0.057	0.053	0.051	0.047	0.044	0.043	0.041	0.043

Thickness (mm)	Thermal Resistance (m ² .K/W) At 25°C Mean Temp								
	KMI 12	KMI 16	KMI 18	KMI 20	KMI 24	KMI 32	KMI 36	KMI 48	KMI 64
25	0.610	0.641	0.658	0.694	0.714	0.758	0.781	0.806	0.781
40	0.976	1.026	1.053	1.111	1.143	1.212	1.250	1.290	1.250
50	1.220	1.282	1.316	1.389	1.429	1.515	1.563	1.613	1.563
65	1.585	1.667	1.711	1.806	1.859	1.970	2.031	2.097	2.031
75	1.829	1.923	1.974	2.083	2.143	2.273	2.344	2.419	2.344
100	2.439	2.564	2.632	2.778	2.857	3.030	3.125	3.226	3.125
125	3.049	3.205	3.289	3.472	3.571	3.788	3.906	4.032	3.906
150	3.659	3.846	3.947	4.167	4.286	4.545	4.688	4.839	4.688

Mean Temperature (°F)	Thermal Conductivity in BTU.in/ft ² .h °F for the following densities in Lbs/ft ³								
	KMI 12	KMI 16	KMI 18	KMI 20	KMI 24	KMI 32	KMI 36	KMI 48	KMI 64
32	0.25	0.23	0.23	0.22	0.21	0.20	0.20	0.20	0.21
50	0.27	0.25	0.24	0.23	0.22	0.22	0.21	0.21	0.23
77	0.29	0.27	0.26	0.25	0.24	0.23	0.22	0.22	0.23
122	0.34	0.31	0.30	0.28	0.27	0.25	0.25	0.24	0.25
167	0.41	0.35	0.34	0.32	0.30	0.27	0.27	0.26	0.27
122	0.45	0.40	0.37	0.36	0.33	0.30	0.30	0.29	0.30

Thickness (inch)	Thermal Resistance (ft ² .h/Btu) at 77 °F Mean Temp.								
	KMI 12	KMI 16	KMI 18	KMI 20	KMI 24	KMI 32	KMI 36	KMI 48	KMI 64
1	3.448	3.704	3.846	4.000	4.167	4.371	4.507	4.653	4.507
1.5	5.172	5.556	5.769	6.000	6.250	6.556	6.761	6.979	6.761
2	6.897	7.407	7.692	8.000	8.333	8.742	9.015	9.306	9.015
3	10.345	11.111	11.538	12.000	12.500	13.113	13.522	13.958	13.522
4	13.793	14.815	15.385	16.000	16.667	17.483	18.030	18.611	18.030
5	17.241	18.519	19.231	20.000	20.833	21.854	22.537	23.264	22.537
6	20.690	22.222	23.077	24.000	25.000	26.225	27.045	27.917	27.045

These are typical values subject to normal manufacturing and testing.

Commitment to Quality

Properties of KIMMCO Glasswool Products

- Excellent thermal performance
- Superior acoustic performance
- Excellent fire safety
- Environmentally friendly: made from abundantly available, non-strategic materials like sand and up to 80% recycled glass.
- 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 weight
- Dimensionally stable
- No sagging or settling
- Complies with international standards

Our Commitment to Quality

Our Glasswool products are manufactured under license of Saint-Gobain ISOVER, a leading insulation provider headquartered in France.

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

Our Commitment to the Environment

KIMMCO 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 Glasswool products help developers achieve green building rating certifications such as LEED, Estidama and QSAS.

Further, we are members of the following industry associations:

- Emirates Green Building Council (EGBC)
- Qatar Green Building Council (QGBC)
- MASDAR (The Future Build)
- Middle East Mineralwool Insulation Manufacturers Association (MEMIMA)

Our Product Listing & Certification

- CE
- UL
- BV
- ABS
- DCL (Dubai Central Laboratory)



KIMMCO

means insulation!

KIMMCO

Kuwait Insulating Material Manufacturing Co.
P.O. Box 10042 Shuaiba, 65451 Kuwait
Tel : +965 2326 2020

| kimmco@alghanim.com |
| www.kimmcoinsulation.com |



KIMMCO

means insulation!