Stonewool Insulation for Thermal, Acoustic and Fire Safety Industrial Applications

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KIMMCO Stonewool LRB Mattresses

- KIMMCO Stonewool LRB Mattresses are flexible rock fibre mattresses, stitched with wire mesh and manufactured from stable rock fibres bonded with a minimum quantity of thermosetting resin binder.
- KIMMCO Stonewool LRB Mattresses are light weight, strong, resilient, easy to handle and cut to suit intricate shapes.

Standard Dimensions

Thickness (mm)	Width (mm)	Length (m)
25 to 140	1,220	1.52 to 4.00*

* Available length will depend on thickness of the mattress required.

Standard Density

Density (kg/m³)	Thickness (mm)
80	40 - 110
100	25 - 100
120	25 - 100
128	30 - 100
144	25 - 100
150	25 - 100

Non-standard sizes may be available on request

Facing Types

KIMMCO Stonewool LRB Mattresses are available with a galvanized steel or stainless steel hexagonal wire netting (mesh) on one or two sides.

PERFORMANCE

Working Temperature

Up to 750 °C

Thermal Performance (K Value)

The thermal conductivity of KIMMCO Stonewool LRB Mattresses as per ASTM C177, 518, IS 3346 is displayed in the tables below:

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m³						
°C	80	96	100	120	128	144	150
50	0.038	0.037	0.037	0.038	0.039	0.039	0.039
100	0.044	0.043	0.043	0.045	0.046	0.046	0.046
150	0.053	0.050	0.051	0.051	0.052	0.051	0.052
200	0.062	0.059	0.060	0.060	0.060	0.059	0.059
250	0.070	0.068	0.069	0.070	0.070	0.069	0.069
300	0.086	0.081	0.082	0.083	0.082	0.081	0.081
350	0.102	0.095	0.095	0.091	0.091	0.091	0.091

Mean Temperature	Thermal Conductivity in BTU.in/ft²h.F for the following densities in Lbs/ft³						
°F	5.000	6.000	6.250	7.500	8.000	9.000	9.375
122	0.263	0.257	0.257	0.263	0.270	0.270	0.270
212	0.305	0.298	0.298	0.312	0.319	0.319	0.319
302	0.367	0.347	0.354	0.354	0.361	0.354	0.361
392	0.430	0.409	0.416	0.416	0.416	0.409	0.409
482	0.485	0.471	0.478	0.485	0.485	0.478	0.478
572	0.596	0.562	0.569	0.575	0.569	0.562	0.562
662	0.707	0.659	0.659	0.631	0.631	0.631	0.631

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

Fire Safety Performance

KIMMCO Stonewool LRB Mattresses are non-combustible when tested in accordance with IS 3144, BS 476 (part 4), ISO 1182 and ASTM E136 and have the following fire safety rating achievements:

1. Class I surface spread of flame in accordance to BS 476 (part 7)
2. Class 0 in accordance to the BS 476 (part 6 & 7) and to British Building Regulations

3. Class A1 in accordance with European norms
4. Show loss in total mass less than 5% when tested in accordance to IS 3144
5. Surface burning characteristics in accordance to ASTM E84

a. Fire Spread Index : Less than 25
b. Smoke Developed Index : Less than 50

Moisture Absorption Performance

KIMMCO Stonewool LRB Mattresses absorb less than 1% by volume when tested in accordance with BS 2972, ASTM C 1104 and do not absorb moisture from ambient air or from water by capillary attraction. Only water under pressure can enter the stonewool insulation products; however it quickly dries out due to the open cell structure of KIMMCO Stonewool LRB Mattresses.

Applications

KIMMCO Stonewool LRB Mattresses are used for thermal insulation and fire safety for high temperature industrial applications such as boilers, turbines, furnaces, large diameter pipes, flues, industrial ducts, and for irregular shaped pieces of equipment such as valves and flanges. KIMMCO Stonewool LRB Mattresses are also used for thermal and acoustic insulation for industrial applications such as diesel engine exhaust systems and silencers, large diameter pipelines that transport high velocity fluids or gases.

Installation Procedures

KIMMCO Stonewool LRB Mattresses are pre-cut in required dimensions and wrapped around the surface to be insulated. The joints are laced with galvanized wire by passing it through the eyes of the wire mesh. Care should be taken to ensure that the joints fit properly and no gaps are left at the joints. During the application on large surfaces, the mattresses should be impaled over 5-6 welded pins per square metre. The mattresses are held in position by placing retaining washers over the pins. These pins also work as spacers for the insulation between the sheet metal cover and the insulated surface.

Handling and Storage

Stonewool being light in weight is easy to handle. Products are to be stored in a well-lit, dry and protected area. They are to be kept in the original packaging, at elevated positions above the ground or on a slab, and away from the walls, in order to avoid any penetration of moisture and dust or foreign contamination. If stored outside and in an open area, packages should be protected with a polyethylene film, canvas or other similar type of covering.

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KIMMCO Stonewool RB Slabs

- KIMMCO Stonewool RB Slabs are semi-rigid and rigid boards manufactured from stable stone fibres bonded with a thermosetting resin binder.
- KIMMCO Stonewool RB Slabs are capable of withstanding extreme temperatures up to 750 °C and are light weight, strong, resilient, easy to handle, and easy to cut to suit intricate shapes.

Standard Dimensions

Thickness (mm)	Width (mm)	Length (m)
25 to 125	600	1.0 to 1.2

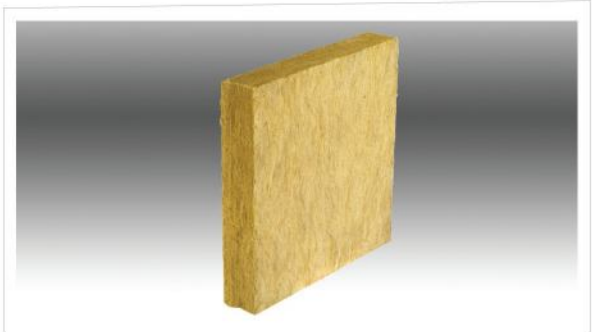
Standard Density

Density (kg/m³)	Thickness (mm)
48	50 - 200
64	40 - 150
80	25 - 125
96	25 - 100
120	25 - 100
144	25 - 100
160	25 - 75
200	25 - 50

Non-standard sizes may be available on request

Facing Types

KIMMCO Stonewool RB Slabs for Industrial Applications are unfaced, or with a facing of glass reinforced Aluminium foil / Kraft paper laminate (FSK), Aluglass and Black Glass Tissue (BGT).



PERFORMANCE

Working Temperature

Up to 750 °C

At temperatures in excess of 230 °C a limited migration of binder may occur in the insulation in contact with the hot face. This does not impair the insulation performance.

Thermal Performance (K Value)

The thermal conductivity of KIMMCO Stonewool RB Slabs as per ASTM C177, 518, IS 3346 is displayed in the tables below:

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m³								
°C	48	64	80	96	100	128	144	160	200
50	0.042	0.038	0.038	0.037	0.037	0.039	0.039	0.040	0.040
100	0.051	0.046	0.044	0.043	0.043	0.046	0.046	0.047	0.047
150	0.059	0.054	0.053	0.050	0.051	0.052	0.051	0.052	0.053
200	0.074	0.064	0.062	0.059	0.060	0.060	0.059	0.061	0.062
250	0.088	0.072	0.070	0.068	0.069	0.070	0.069	0.070	0.072
300	0.101	0.091	0.086	0.081	0.082	0.082	0.081	0.082	0.083
350	0.120	0.109	0.102	0.095	0.095	0.091	0.091	0.092	0.093

Thermal Performance (R Value)

Thickness (mm)	Thermal Resistance (m².K/W) at 50 °C mean temp. for following densities in Kg/m³								
	48	64	80	96	100	128	144	160	200
25	-	-	-	0.676	0.676	0.641	0.641	0.625	0.625
50	1.190	1.316	1.361	1.351	1.351	1.282	1.282	1.250	1.250
75	1.786	1.974	1.974	2.027	2.027	1.923	1.923	1.875	-
100	2.381	2.632	2.632	2.703	2.703	2.564	2.564	-	-
125	2.976	3.289	3.289	-	-	-	-	-	-
150	3.571	3.947	-	-	-	-	-	-	-
200	4.762	-	-	-	-	-	-	-	-

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

Acoustic Performance

KIMMCO Stonewool RB Slabs achieve excellent acoustic performances (sound absorption coefficients, sound insulation, and impact sound isolation) when tested in accordance to various relevant ASTM standards.

KIMMCO Stonewool RB Slabs achieve Noise Reduction Coefficient (NRC) values up to 1.05, when tested in accordance to ASTM C423.

Fire Safety Performance

Unfaced KIMMCO Stonewool RB Slabs are non-combustible when tested in accordance with IS 3144, BS 476 (part 4), ISO 1182 and ASTM E136 and are classified as Class A1, in accordance with European norms.

Unfaced, FSK and Aluglass-faced KIMMCO Stonewool RB Slabs have the following fire safety rating achievements:

1. Class 1 surface spread of flame in accordance to BS 476 (part 7)
2. Class 0 in accordance to the BS 476 (part 6 & 7) and to British Building Regulations.
3. Surface burning characteristics in accordance to ASTM E84 / UL 723
   a. Fire Spread Index : Less than 25
   b. Smoke Developed Index : Less than 50

Moisture Absorption Performance

KIMMCO Stonewool RB Slabs absorb less than 1% by volume when tested in accordance with BS 2972, ASTM C1104 / 1104 M, and do not absorb moisture from ambient air or from water by capillary action. Only water under pressure can enter into stonewool insulation products; however, it quickly dries out due to the open cell structure of KIMMCO Stonewool RB Slabs.

When tested in accordance to ASTM E96, FSK-faced RB Slabs achieve water vapour permeability of ≤ 0.02 perm, Aluglass-faced RB Slabs achieve zero water vapour permeability.

Applications

KIMMCO Stonewool RB Slabs are used for thermal and acoustic insulation in industrial buildings where fire safety is a primary concern.

Handling and Storage

Stonewool being light in weight is easy to handle. Products are to be stored in a well-lit, dry and protected area. They are to be kept in the original packaging, at elevated positions above the ground or on a slab, and away from the walls, in order to avoid any penetration of moisture and dust or foreign contamination. If stored outside and in an open area, packages should be protected with a polyethylene film, canvas or other similar type of covering.

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KIMMCO Stonewool Pipe Sections

KIMMCO Stonewool Pipe Sections are made from non-combustible, inorganic rock fibres and are suitable for the insulation of small and large diameter heating and ventilation pipes and irregular surfaces such as valves.

Standard Dimensions and Densities

Density (kg/m³)	Pipe Size (Nom. Bore)		Pipe Insulation ID (mm)	Thickness (mm)		Length (mm)
	inch	mm		min.	max.	
100, 128, 130, 136, 144	1/2	15	21.3	25	100	1200 & 1250
	3/4	20	26.7	25	100	
	1	25	33.4	25	100	
	1 1/4	32	42.2	25	120	
	1 1/2	40	48.3	25	120	
	2	50	60.3	25	120	
	2 1/2	65	73	25	100	
	3	80	88.9	25	150	
	3 1/2	90	101.6	25	100	
	4	100	114.3	25	150	
	5	125	139.7	25	150	
	6	150	168.3	25	150	
	6 1/2	175	188	25	120	
	8	200	219.1	25	150	
	10	250	273.1	25	150	
	12	300	323.9	25	120	
	14	350	355.6	25	100	
	16	400	406.4	25	75	
	18	450	457.2	25	25	

Facing Types

KIMMCO Stonewool Pipe Sections are available unfaced or with a facing of glass reinforced Aluminium foil / Kraft paper laminate (FSK), and Aluglass.

PERFORMANCE

Working Temperature

KIMMCO Stonewool Pipe Sections can be used at temperatures up to 750 °C.

Thermal Performance

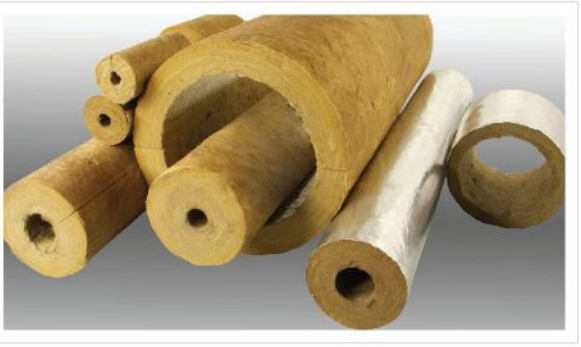
KIMMCO Stonewool Pipe Sections have a thermal conductivity of 0.034 W/m.K at 25 °C mean temperature.

Fire Safety Performance

Unfaced KIMMCO Stonewool Pipe Sections are non-combustible when tested in accordance with IS 3144, BS 476 (part 4), ISO 1182 and ASTM E136 and are classified as Class A1, in accordance with European norms.

Unfaced, FSK and Aluglass-faced KIMMCO Stonewool Pipe Sections have the following fire safety rating achievements:

1. Class 1 surface spread of flame in accordance to BS 476 (part 7)
2. Class 0 in accordance to the BS 476 (part 6 & 7) and to British Building Regulations.
3. Surface burning characteristics in accordance to ASTM E84 / UL 723
   a. Fire Spread Index : Less than 25
   b. Smoke Developed Index : Less than 50



Moisture Absorption Performance

KIMMCO Stonewool Pipe Sections absorb less than 1% by volume when tested in accordance with BS 2972, ASTM C1104 / 1104 M, and do not absorb moisture from ambient air or from water by capillary action. Only water under pressure can enter into stonewool insulation products; however, it quickly dries out due to the open cell structure of KIMMCO Stonewool Pipe Sections.

When tested in accordance to ASTM E96, FSK-faced Pipe Sections achieve water vapour permeability of ≤ 0.02 perm, Aluglass-faced Pipe Sections achieve zero water vapour permeability.

Installation Procedures

KIMMCO Stonewool Pipe Sections are wrapped around the pipe. Pieces of closely butted pipe sections are joined together by lacing the adjacent edges of the wire. The insulation is usually held in place by metal bands and/or adhesive.

Handling & Storage

KIMMCO Stonewool Pipe Sections should be stored safely indoors. If stored outside, they should be stacked clear of ground and covered with a securely anchored weather proof sheet.

Commitment to Quality

Properties of KIMMCO Stonewool Products

- Excellent thermal performance
- Superior acoustic performance
- Excellent fire safety
- Environmentally friendly; made from abundantly available, non-strategic materials like basalt, and contains up to 25% slag. (A waste product from the steel industry)
- 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 all relevant international standards

Our Commitment to Quality

Our Stonewool 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 various certifications such as the ISO 9001 certificate.

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 Stonewool 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 Minerwool Insulation Manufacturers Association (MEMIMA)

Our Product Listing & Certification

- UL
- FM
- EIL
- Warrington Fire Certification

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