KIMMCO-ISOVER
Bulding Slab (KBS)

KIMMCO ISOVER SAINT-GOBAIN

شركة قطر للعوازل
Qatar Insulation Company

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

- 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.

SAINT-GOBAIN

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 Bulding Slab (KBS)

APPLICATIONS

For thermal and acoustic insulation of concrete floors in order to reduce energy losses and transmission of impact sound.

For insulation of single leaf walls with dressed stone or marble facings, curtain wall and cavity wall construction, precast structures and prefabricated buildings.

For thermal insulation of concrete and metal roof decks.

For thermal insulation of industrial applications: boilers, ovens, refrigerators, storage tanks, marine and road transport.

DESCRIPTION

KBS are semi-rigid and rigid boards manufactured from stable glass fibers bonded with thermosetting resins.

Capable of withstanding the extreme temperatures encountered in industrial applications or in flat roofings, capable of withstanding normal loads met in domestic and commercial structures when used below floor screeds.

Easy to handle and cut to suit intricate shapes. Light in weight, strong and resilient.

Facings

KBS are available unfaced or with a variety of facings to suit the application such as bitumen kraft paper, canvas, or glass reinforced aluminum foil/kraft paper laminate facing (FSK), glass reinforced aluminum foil/high intensity bleached kraft paper (ASJ), metallized polyester, black glass cloth, Aluglass.

Standard Dimensions

Thickness (mm)	Width (m)	Length (m)
25	0.4, 0.6, 1.0, 1.2	1.0, 1.2, 2.4
40	"	"
50	"	"
75	"	"
100	"	"

Non-standard sizes may be available on request.

Nominal Density

KBS	kg/m^3	lbs/ft^3	APPLICATION
24	24	1.5	Industrial
32	32	2	Industrial, walls
36	36	2.25	Industrial, walls
48	48	3	Industrial, walls
64	64	4	Industrial, walls
72	72	4.5	Industrial, walls
80	80	5	Industrial, floor, roof
100	100	6.25	Industrial, floor, roof
120	120	7.5	Industrial, floor, roof

PERFORMANCE

Operating Temperature

Fiber upto 232 °C (450 °F)

Foil face 100 °C (212 °F)

Permanence

Dimensionally stable under varying conditions of temperature and humidity, rot proof, odourless, non-hygroscopic and will not sustain vermin or fungus.

No Corrosion

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

Thermal Conductivity

The dependencies of thermal conductivity of KIMMCO - ISOVER TEL process products on the mean temperature and density, according to BS 874, ASTM C177, 518, ISO 8301, 8302 or DIN 52612 are presented in the tables below:

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m^3										
°C	24	32	36	48	64	80	96	100	110	115	120
0	0.031	0.030	0.029	0.029	0.030	0.031	0.031	0.031	0.031	0.031	0.031
10	0.032	0.031	0.030	0.030	0.031	0.033	0.033	0.033	0.033	0.033	0.033
25	0.035	0.033	0.032	0.031	0.032	0.035	0.035	0.035	0.035	0.035	0.035
50	0.039	0.037	0.036	0.035	0.036	0.037	0.037	0.037	0.037	0.037	0.037
75	0.043	0.040	0.039	0.037	0.038	0.040	0.040	0.040	0.040	0.040	0.040
100	0.047	0.044	0.043	0.041	0.043	0.043	0.043	0.043	0.043	0.043	0.043

Mean Temperature	Thermal Conductivity in Btu.in/ft^{2}h.F for the below densities in Lbs/ft^3										
°F	1.500	2	2.250	3	4	5	6	6.250	6.875	7.1875	7.5
32	0.21	0.20	0.20	0.20	0.21	0.21	0.21	0.21	0.21	0.21	0.21
50	0.22	0.22	0.21	0.21	0.23	0.23	0.23	0.23	0.23	0.23	0.23
77	0.24	0.23	0.22	0.22	0.23	0.24	0.24	0.24	0.24	0.24	0.24
122	0.27	0.25	0.25	0.24	0.25	0.26	0.26	0.26	0.26	0.26	0.26
167	0.30	0.27	0.27	0.26	0.27	0.29	0.28	0.28	0.28	0.28	0.28
212	0.33	0.30	0.30	0.29	0.30	0.30	0.30	0.30	0.30	0.30	0.30

Thickness (mm)	Thermal Resistance (m^2 K/W) At 25 °C Mean Temperature							
	KBS 24	KBS 32	KBS 36	KBS 48	KBS 64	KBS 80	KBS 96	KBS 100
25	0.714	0.758	0.781	0.806	0.781	0.714	0.714	0.714
40	1.143	1.212	1.250	1.290	1.250	1.143	1.143	1.143
50	1.429	1.515	1.563	1.613	1.563	1.429	1.429	1.429
65	1.859	1.970	2.031	2.097	2.031	1.859	1.859	1.859
75	2.143	2.273	2.344	2.419	2.344	2.143	2.143	2.143
100	2.857	3.030	3.125	3.226	3.125	2.857	2.857	2.857

Thickness (inch)	Thermal Resistance (ft^2.h.F/Btu) at 77 °F Mean Temperature							
	KBS 24	KBS 32	KBS 36	KBS 48	KBS 64	KBS 80	KBS 96	KBS 100
1	4.121	4.371	4.507	4.653	4.507	4.121	4.121	4.121
1.5	6.182	6.556	6.761	6.979	6.761	6.182	6.182	6.182
2	8.242	8.742	9.015	9.306	9.015	8.242	8.242	8.242
2.5	10.303	10.927	11.269	11.632	11.269	10.303	10.303	10.303
3	12.363	13.113	13.522	13.958	13.522	12.363	12.363	12.363
4	16.484	17.483	18.030	18.611	18.030	16.484	16.484	16.484

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

Fire Safety

Combustibility

Base fibers are non combustible when tested in accordance with BS 476 (part 4), ASTM E136 and ISO 1182.

Surface Burning characteristics

KBS have been tested and listed by the Underwriters Laboratories according to UL 723 (file R 9703).

Glass reinforced aluminium/kraft laminate facing (FSK) are U.L. classified as follows:

Flame spread : not over 25

Smoke developed : not over 50

KBS achives class 1 when tested as per BS 476 part 7.

KBS achives class 0 when tested as per BS 476 part 6 & 7.

Moisture Absorption

Less than 1% by volume when tested in accordance with BS 2972 or 6676, ASTM C1104. KBS 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.

FSK faced KBS comply with ASTM E96 desiccant method. Permeance not to exceed 0.02 perms (Federal standard HH-B-100B Type 1- superseded by ASTM C1136)

NON TOXIC

KBS is not hazardous to health. (See KIMMCO-ISOVER MSDS)

Acoustic Performance

ASTM C423 - Mounting A as per ASTM E795

Product Type	Thickness (mm)	Absorption Coefficient of one-third octave frequencies Hz						
		125	250	500	1,000	2,000	4,000	NRC
KBS 24	25	0.17	0.46	0.78	0.93	0.90	0.90	0.75
	50	0.44	0.83	1.01	0.97	0.95	0.96	0.95
KBS 32	25	0.17	0.69	0.80	0.94	0.97	0.91	0.80
	50	0.37	0.73	1.07	1.05	1.04	1.03	1.00
KBS 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
KBS 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
KBS 72	20	0.04	0.21	0.43	0.83	0.96	0.99	0.60
	50	0.09	0.86	1.11	1.13	1.03	0.99	1.05
KBS 96	20	0.05	0.19	0.56	0.86	0.94	0.97	0.65
	50	0.37	0.84	1.01	1.04	1.04	1.06	1.00
KBS 120	25	0.13	0.27	0.79	0.97	0.96	0.89	0.75
	50	0.37	0.84	1.01	1.04	1.04	1.06	1.00

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

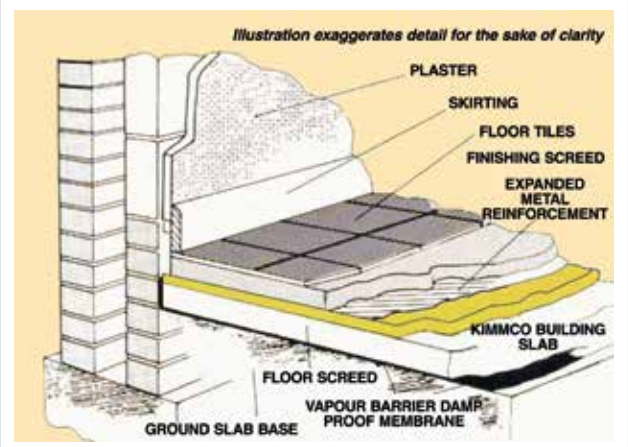
CONFORMITY TO STANDARDS

American Standards		British Standards	ISO	Other Standards
C165	C795 / C871	BS 476 (part 4, 6 & 7)	354	UL 723
C167	C1104 / 1104M	BS 874	1182	NFPA 255
C168	C1101/ 1101M	BS 2972	8301	NAIMA Standards ASHRAE 90.1 requirements
C177	C1136 (type 1&2)	BS 3533	8302	
C303	C1304	BS 3958 (part 5)	9229	F.S. HH-1-558B (superseded by ASTM C612)
C356	C1338	BS 6676 (part 1)	9291	F.S. HH-B-100B (Type 1) (superseded by ASTM C1136)
C411	C1045			
C423	E84			
C518	E96			German Standards DIN 18165, DIN 52612
C612 (Type I & II)	E136			
C665 & 13.8 & 13.9	E795			

TYPICAL INSTALLATION

Concrete Floors Above D.P.C. Level

Cover concrete floorslab with a suitable damp proof membrane, ensuring adequate coverage at joints. Membrane should be taken up vertical surfaces to finished screed level. KBS is laid directly on top of the damp proof membrane with edges close butted and joints staggered. Edge insulation consisting of strips of insulation not more than 2.5 cm thick cut from standard slab with a width to suit the specified screed thickness should be placed vertifically against the walls, the bottom edge resting on top of the horizontal

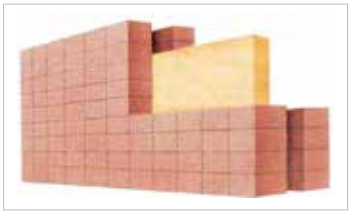


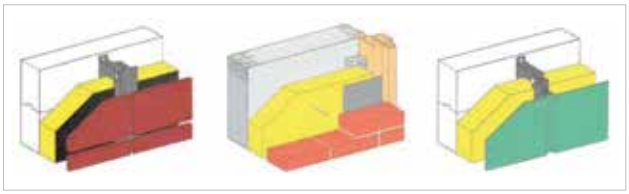
and vertical insulation with care taken to ensure that laps are well covered. It is recommended that the screed should be 60 mm thick with a galvanised mesh reinforcement laid into it.

Cavity Walls

Use galvanized, stainless steel or nylon hangers with retaining washers for holding the insulation in correct position.

The 2" FSK overlap of KBS to be positioned at the bottom of each slab in order to cover the top of the underlying slab to protect the insulation from accidental water spilling during the outside wall construction.

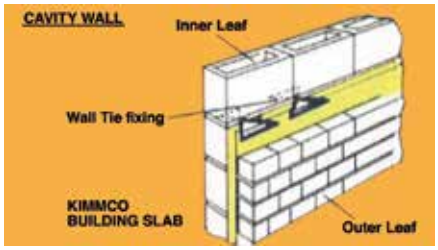




Cavity Walls With Ties

Construction methods are only slightly affected by the use of KBS. The inner leaf of the wall construction should be cleaned of mortar protrusions before fitting KBS between each horizontal run of wall ties. Mortar droppings should be removed from top edges of insulation before placing the next row in position. The insulation must be placed against the outer face of the inner leaf of the wall. A minimum air gap of 1 cm should be left between the insulation and the inner face of the external wall leaf. This ensures normal drainage and ventilation of the cavities.

Joints between insulation slabs must be close butted with all vertical joints staggered.

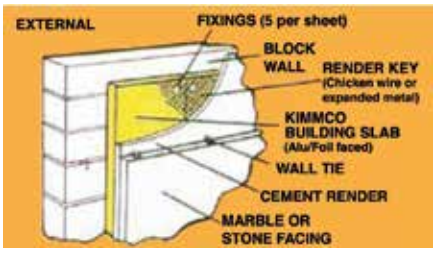


KBS are held back against the face of the inner leaf by the drip prong of the wall ties, special clips or adhesive. In applications using marble or stone facings, it is important that the facing be tied back to the main structure, the ties to be inserted at joints between the insulation. Type and frequency of fixing depends on size and weight of facing material specified.

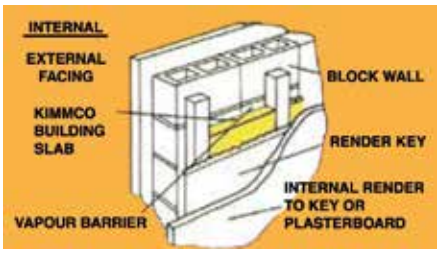
Solid Wall Construction

Insulation can be applied to the back up wall in one of the following manners:

A. Batten out surface of wall to suit width of slabs ensuring that KBS can be fixed snugly between battens without gaps. Apply a vapour barrier over the KBS, fixing it to the battens with staples or flat head nails. Vapour barrier to be applied horizontally with each run overlapping previous by at least 15cm. Fix expanded metal, galvanized chicken mesh or plastic netting over the vapour barrier as a key for the rendering, fixing it into the vertical battens by staples or flat head nails. Some additional fixing may be required between battens to remove excess bellying. Apply external render coats or plaster board.

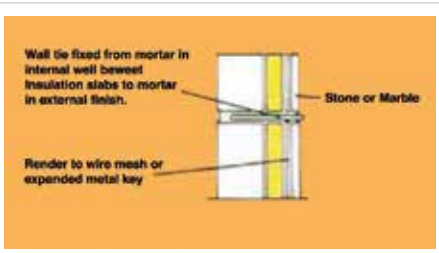


B. Apply foil faced KBS to the wall with recognized mechanical fastenings such as Hilti using large head washers. Insulation should be applied with staggered vertical joints. All boards to be close butted. Apply expanded metal, galvanized chicken mesh or plastic netting over the insulation using mechanical fasteners. External rendering or other facing can now be applied.



C. KBS recommends that metal wall ties or wires be used to tie the external wall finish (marble or stone) to the internal wall. This gives additional stability to the structure. Care should be taken to ensure that the wall ties are long enough to reach from the internal wall through the insulation to the external finish.

KBS recommends to seal all joints where vapour barriers are used.

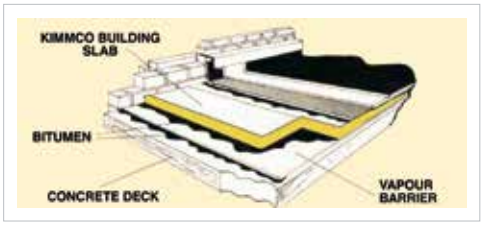


Concrete Roofs

The roof surface should be clean and dry. A perfectly smooth surface to the concrete is not necessary but care should be taken to ensure the boards do not rock.

KBS should be bedded in a bitumen compound on top of an approved continuous vapour barrier with well lapped joints. Weathering treatments should be laid in accordance with manufacturers instructions.

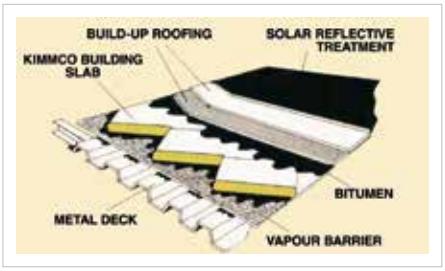
A reflective surface finish should be applied to reduce absorption of solar heat.



KBS can be used with synthetic membranes by sticking, in accordance with the membranes manufacturers specifications.

Metal Roofs

KBS may be applied to metal roof decks by bitumen adhesion or by mechanical fixings. For bitumen compound on top of a continuous vapour barrier, care must be taken to ensure that joints between boards are supported by the deck profiles and are not laid with the open flutes running continuously beneath.
It is recommended that the insination be placed at a 45 deg. angle to the line of the deck flutes.



For mechanical fastening, one of several methods may be used, i.e. Lexscuco clips or screw and washer fixings. Washers should be 50 mm in diameter with a large countersink cup so that screw heads do not protrude above insulation.

False Ceiling

Falls should be incorporated in roof deck construction by contractor.

Access Roofs

KBS laid directly beneath weather proofing such as built up roofing is suitable for roofs carrying normal light maintenance traffic. A finish of concrete tiles or similar should be applied where continuous foot traffic is expected.

KBS should not be used for roof decks where heavy point loadings can be expected or where vehicles of any type will be used.

Typical Industrial Application.

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.

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