

# KIMMCO RIGID PIPE COVERING (K450 & K850)



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# KIMMCO

means insulation!

MANUFACTURED  
UNDER LICENSE OF  
**ISOVER**  
SAINT-GOBAIN

# Our Insulation Business

As the market leader in the GCC, Turkey and India, the Insulation Group has a well-established reputation for delivering high-quality, energy-efficient insulation solutions to our customers.

We have a strong commitment to quality, as recognized by our accreditation by international standard bodies (ISO, UL, DCL and others); to the environment, as recognized by our selection as the sole insulation supplier and official collaborator with MASDAR City, the world's first zero-carbon, zero-waste city, in Abu Dhabi; and to the health and safety of our people.

## KIMMCO

Recognized as a leading insulation solution provider in the Middle East and Asia, KIMMCO provides insulation solutions for HVAC, building (roofs, walls, floors, metallic buildings) and technical/industrial applications. With an annual production capacity of 35,000 MT, KIMMCO is certified to ISO 9001, ISO 14001 and OHSAS 18001, and is compliant with ISO, ASTM, DIN, BS and other international standards.

## SAUDI INTERNATIONAL INSULATION MANUFACTURING COMPANY (SIIMCO)

Saudi International Insulation Manufacturing Company, a joint venture between Alghanim Industries and Saint-Gobain ISOVER (France), announced the construction of a new stonewool manufacturing facility based in Yanbu Al-Sinaiyah, Kingdom of Saudi Arabia in April 2012.

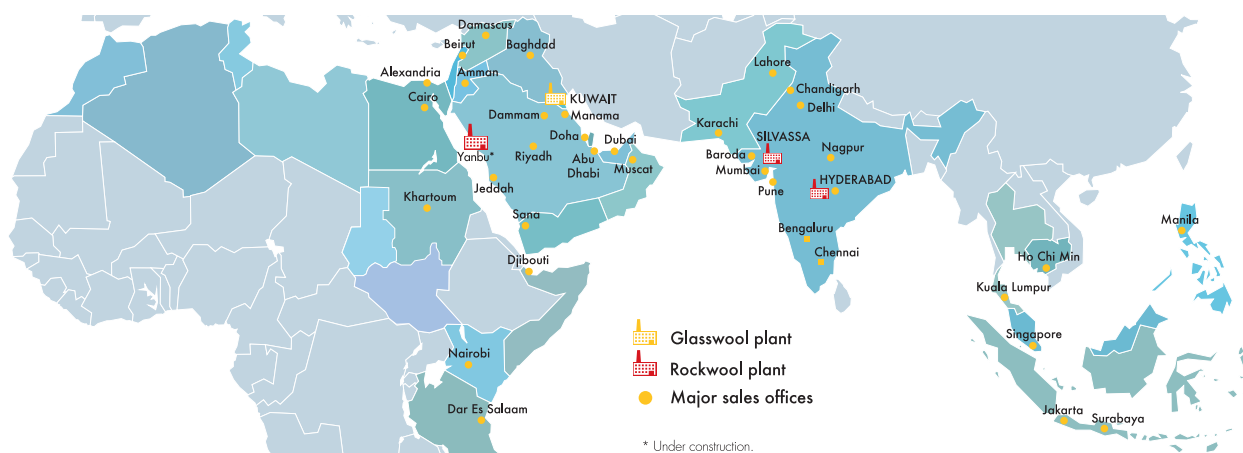
SIIMCO will manufacture a variety of stonewool products for thermal and acoustic insulation. Using Saint-Gobain's state-of-the-art technology (REX process), SIIMCO will serve both the industrial and building segments. The manufacturing facility in Yanbu will have a potential of 64,000 MT installed capacity, and serve markets in Saudi Arabia as well as other markets in the GCC, Egypt, Iraq and the Levant. The plant is expected to be commissioned in early 2014.

## ROCKWOOL INDIA LTD.

Rockwool India Ltd. (RIL) is recognized as the leading producer of stonewool insulation in India and has recently started serving customers in the broader GCC and MENA region. RIL operates two manufacturing facilities, one in Hyderabad and one in Silvassa, with a combined capacity of 50,000 MT per annum. RIL is a licensee of Saint-Gobain technology, and is ISO 9001 certified and ASTM compliant.

## IZOCAM

IZOCAM is the leading supplier of insulation in Turkey and has been operated as a joint venture between KIMMCO and Saint-Gobain ISOVER since 2006. IZOCAM manufactures a range of glasswool, stonewool, nitrile rubber, and foam-based insulation materials and holds the ISO 9001 and ISO 14001 certificates.



# KIMMCO Rigid Pipe (K450 & K850)

## APPLICATIONS

Thermal insulation of steel, copper or plastic pipes operating in temperature up to 230 °C (450 °F) in case of K450 and upto 454 °C (850 °F) in case of K850.

## DESCRIPTION

Pre-Formed sections of glass fibers bonded with a heat resistant resin, free from shot and coarse fiber, light, damage resistant, easy to handle, cut and fit. The sections are split along their lengths to provide a hinge for ease of fitting.

### Facings

KIMMCO Rigid Pipe Coverings can be supplied plain or with Glass Reinforced Aluminum Foil/Kraft Paper laminate (FSK), white ASJ, Canvas.

### Standard Length

1.2 m

### Nominal Density

KRS	kg/m <sup>3</sup>	Lbs/ft <sup>3</sup>
64	64	4.0
72	72	4.5
80	80	5.0
96	96	6.0
120	120	7.5
Other densities are available on request		



## DURABILITY

KIMMCO Rigid Pipe Coverings are rot proof, they resist the effects of moisture and will not decompose through continual exposure of the elements. They will not shrink due to the age or temperature variations. They will maintain their thermal properties through the lifetime of the construction

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## PIPE SIZES

### STEEL PIPES TO BS 1387, BS 3600 AND ANSI / ASTM B 36.10 -1985

PIPE SIZE				NOMINAL WALL THICKNESS									
NOM.BORE		O.D.		mm	20	25	30	40	50	60	75	100	
mm	inch	mm	inch	inch	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	
10	3/8	17	11/16		*	*	*	*	—	—	—	—	
15	1/2	21	27/32		*	*	*	*	*	—	—	—	
20	3/4	27	1 1/16		*	*	*	*	*	*	*	—	
25	1	34	1 1/32		*	*	*	*	*	*	*	—	
32	1 1/4	42	1 11/16		*	*	*	*	*	*	*	—	
40	1 1/2	48	1 29/32		*	*	*	*	*	*	*	—	
50	2	60	2 3/8		*	*	*	*	*	*	*	*	
65	2 1/2	76	3		*	*	*	*	*	*	*	*	
80	3	89	3 1/2		*	*	*	*	*	*	*	*	
90	3 1/2	102	4		*	*	*	*	*	*	*	*	
100	4	114	4 1/2	—	*	*	*	*	*	*	*	*	
114	4 1/2	127	5	—	*	*	*	*	*	*	*	*	
125	5	140	5 1/2	—	*	*	*	*	*	*	*	*	
150	6	166	6 1/2	—	*	*	*	*	*	*	*	*	
200	8	219	8 5/8	—	*	*	*	*	*	*	*	*	
250	10	273	10 3/4	—	*	*	*	*	*	*	*	*	
300	12	324	12 3/4	—	*	*	*	*	*	*	*	*	
350	14	356	14	—	*	*	*	*	*	*	*	*	
400	16	406	16	—	*	*	*	*	*	*	*	*	
450	18	457	18	—	*	*	*	*	*	*	*	*	
500	20	508	20	—	*	*	*	*	*	*	*	*	
550	22	559	22	—	*	*	*	*	*	*	*	*	
600	24	610	24	—	*	*	*	*	*	*	*	*	
Up to	36	914	36	—	*	*	*	*	*	*	*	*	

### COPPER TUBES TO BS 2871, ASTM B88M

PIPE SIZE				NOMINAL WALL THICKNESS									
NOM.BORE		O.D.		mm	20	25	30	40	50	60	75	100	
mm	inch	mm	inch	inch	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	
—	1/2	15	0.596		*	*	*	*	*	*	*	*	
—	3/4	22	0.846		*	*	*	*	*	*	*	*	
—	1	28	1.112		*	*	*	*	*	*	*	*	
—	1 1/4	35	1.362		*	*	*	*	*	*	*	*	
—	1 1/2	42	1.612		*	*	*	*	*	*	*	*	
—	2	54	2.128		*	*	*	*	*	*	*	*	
—	2 1/2	67	2.628		*	*	*	*	*	*	*	*	
—	3	76	3.000		*	*	*	*	*	*	*	*	
—	3	80	3.144		*	*	*	*	*	*	*	*	
—	3 1/2	93	3.660	—	*	*	*	*	*	*	*	*	
—	4	108/105	4.184	—	*	*	*	*	*	*	*	*	
—	5	133/130	5.184	—	*	*	*	*	*	*	*	*	
—	6	159/156	6.208	—	*	*	*	*	*	*	*	*	
Up to 12 inch													

#### Note: Steel & Copper Pipes

1. Other thickness and bores subject to special enquiry.
2. The section thickness is nominal radial thickness subject to manufacturing tolerance and is exclusive of surface finish.

## RECOMMENDED THICKNESS

### Chilled Pipes

Condensation may take place on piping with temperature below ambient, when sufficient moisture is present in the air. To prevent condensation occurring within the thickness of the insulation, it is necessary to provide vapour check to the warm surface of the insulation. Recommended minimum wall thicknesses of glass fiber pipe insulation for chilled cold water supplies, with vapor barrier applied, are given below:

Pipe Temperature		Ambient Conditions 90% R.H. & 25 °C			
°F	°C	Pipe Sizes		Thickness of Pipe Covering	
		inch	mm	inch	mm
35 - 49	1.5 - 9	Up to 2	Up to 50	1.5	40
		2 1/2 - 14	60 - 350	2.5	60
50 - 70	10 - 21	Up to 3/4	Up to 20	1	25
		1 - 14	25 - 350	1.5	40

### Heated Pipes

Recommended minimum thickness of KIMMCO Rigid Pipe Covering for process pipe work. Extracted from table 1.5 of BS 5422

Thicknesses given are nearest commercial thicknesses higher than those given in the original table. For thickness over 100 mm, multiple layering should be used with staggered joints.

Nom. Bore (mm)	O.D. (mm)	Thickness (mm)	
		100 °C	200 °C
10	17	25	40
15	21	25	50
20	27	30	50
32	42	40	60
40	48	40	60
50	60	50	60
65	76	50	70
80	89	50	75
90	102	50	80
100	114	55	80
150	168	60	90
250	273	70	100
300	324	70	110



## PERFORMANCE

### Thermal Conductivity

Test in accordance with ASTM C335.

Mean Temperature	Thermal Conductivity in W/m.K for the following densities in kg/m <sup>3</sup>				
°C	64	72	80	96	120
10	0.029	0.029	0.030	0.031	0.032
25	0.030	0.030	0.032	0.032	0.033
50	0.032	0.032	0.033	0.035	0.036
100	0.040	0.041	0.039	0.038	0.039
150	0.050	0.050	0.047	0.044	0.045

Mean Temperature	Thermal Conductivity in BTU.in/ft <sup>2</sup> h.F for the densities in lbs/ft <sup>3</sup>				
°F	4.0	4.5	5.0	6.0	7.5
50	0.205	0.205	0.210	0.210	0.225
77	0.210	0.210	0.220	0.220	0.232
122	0.225	0.225	0.230	0.240	0.254
212	0.270	0.270	0.270	0.265	0.270
302	0.340	0.340	0.330	0.310	0.317

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

### No Corrosion

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

### Fire Classification

KIMMCO Rigid Pipe Coverings have been tested and listed by the Underwriters Laboratory according to UL 723, ASTM E 84 (File 9704).

Classification (UL 723)	Unfaced	FSK Faced
Flame spread	not over 25	not over 25
Smoke developed	not over 50	not over 50

### Vapor Permeability

FSK and ASJ faced KIMMCO Rigid Pipe Coverings comply with ASTM E96 Desiccant Method. Permeance not to exceed 0.02 perms (HH - B -100 B Type 1).

### Linear Shrinkage

KIMMCO Rigid Pipe Coverings shrinkage is negligible when tested in accordance with ASTM C356.

### Specific Heat

837.4 J/kg.K

### Flexibility

KIMMCO Rigid Pipe Coverings will permit expansion and contractions of the pipe without cracking or shrinking.

## CONFORMITY TO STANDARDS

### American Standards

ASTM C168, 302, 303, 335, 356, 411, 547 (class 1), 585, 665 § 13.8 & 13.9, 680, 871, 1045, 1104/1104M, 1136 (Type 1&2), 1335, 1338; E 84, 96

UL 723

F.S. HH - B - 100B (type 1), HH-558B

NFPA 255

ASHRAE 90.1 requirements

### British Standards

BS 476 (part 4), 874, 1387, 2871, 2972, 3533, 3600, 3958 (part 4), 5422, 5643, 5970

### German Standards

DIN 18165, 52612

### ISO

161 (part 1), 274, 4200, 8497, 9229, 9291

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## TYPICAL INSTALLATION PROCEDURE

### A. Straight Pipes

- Make sure the pipe surface to be insulated is clean and dry from dust, oil or grease.
- Apply one coat of adhesive over the pipe surface, as per Adhesive manufacturers Instruction.
- Fix the preformed rigid section by opening snap on side enough to insert over the pipe.
- Press the section all over to achieve bonding between pipe and insulation.
- Keep the over lap over the section.
- Apply a light coat of adhesive on down part of overlap and fix it over the section - take care no wrinkles are formed.
- Wipe out any adhesive spill over by using a dry cotton cloth - make sure the surface is dry off adhesive.
- Fix 75 mm suitable tape (Aluglass tape for ALUGLASS facing; Aluminium tape for FSK facing) preferably UL Listed centric to lap and section surface of long seam and joints between section.
- Press the tape using smooth edged plastic card (used telephone cards also found ok) - make sure there are no wrinkles formed in the process of fixing the tape.
- While fixing the next length make sure a coat of adhesive is applied on any face on either of section of continuous joint.
- Fix suitable tape (Aluglass tape for ALUGLASS facing; Aluminium tape for FSK facing) preferably UL Listed equally centered between two sections.

### B. Joints at Support Insert

Fix the sections from either side of insert using coat of adhesive at each faces of substrate and make sure the insulation is friction fit.

- Apply suitable tape (Aluglass tape for ALUGLASS facing; Aluminium tape for FSK facing) centric to the insert allowing equal tape lap over insulation on both side.

### NOTE

Other fixing details for 90 degree bends, flange - joints, valve curves etc are available on request.

# 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 Minerwool Insulation Manufacturers Association (MEMIMA)

## Our Product Listing & Certification

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



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