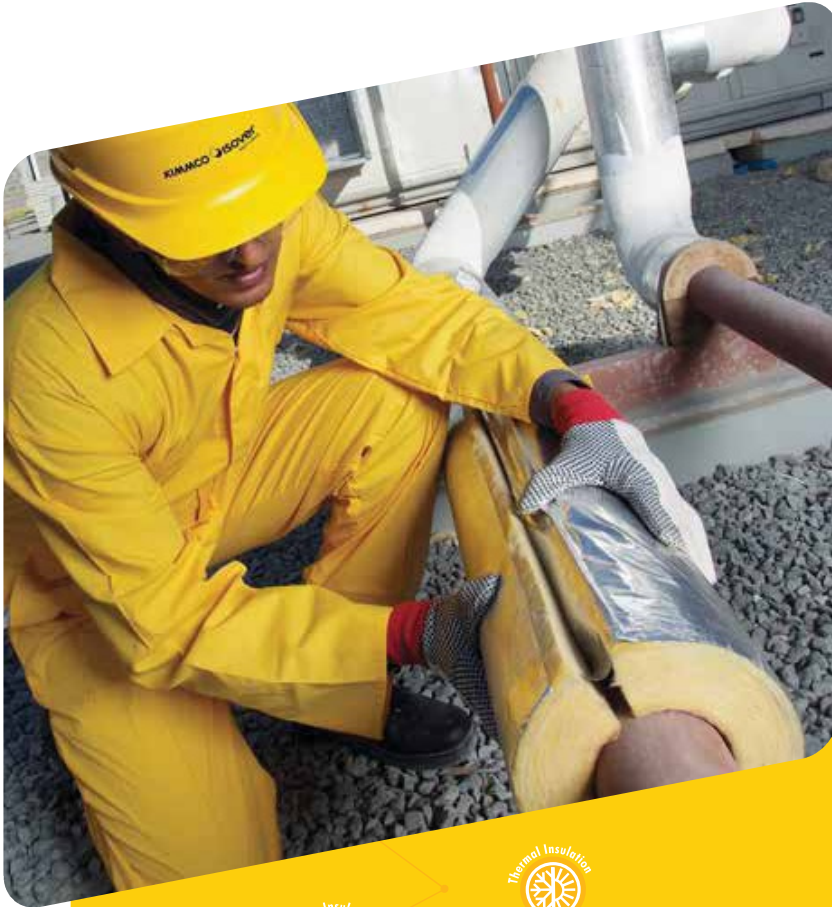


RIGID PIPE COVERING (K450)



WE'RE THE LEADERS OF MINERAL WOOL INSULATION IN GCC



KIMMCO-ISOVER is a joint-venture between the international leader in construction products Saint-Gobain and Alghanim Industries which is one of the largest privately owned companies in the gulf region. KIMMCO-ISOVER mineral wool solutions are the preferred choice for most of the consultants, contractors and developers in different applications such as HVAC, Façade, Partition, Roof, Industrial, OEM and others.

OUR PRODUCTION CAPABILITIES CAN ALWAYS FULFILL YOUR DEMAND & STANDARDS

KIMMCO-ISOVER owns 2 factories to cover all the market requirements of Mineral Wool insulations, one in Kuwait for Glass Wool Insulation and another in Saudi Arabia for Stone Wool insulation. We're exporting our products to more than 30 countries in Asia, Levant and Africa.

GLASS WOOL PLANT

ISO 9001 ISO 14001 ISO 45001

Over 45 years of expertise in manufacturing and supplying glass wool product to markets in GCC, Asia, Africa and other regions



STONE WOOL PLANT

ISO 9001

Highly sustainable Stone wool manufacturing technology which reduces production wastage to almost Zero.

KIMMCO-ISOVER

Rigid Pipe Covering (K450)

APPLICATIONS

Thermal insulation of steel, copper or plastic pipes operating in temperature up to 232 °C (450 °F) of K450.

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

K450 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

K450	Kg / m ³	Lbs / ft ³
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

K450 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



NO CORROSION

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

COMBUSTIBILITY

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

PIPE SIZES

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

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 80% 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 K450 Covering for process pipe work. Extracted from table 15 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 ³				
°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 ² h.F for the densities in lbs/ft ³				
°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.

FIRE CLASSIFICATION

K450 Coverings have been tested and listed by the Underwriters Laboratory according to UL 723, ASTM E 84 (File 9704).

K450 achieves class 1 when tested as per BS 476 part 7. K450 achieves class 0 when tested as per BS 476 part 6 & 7.

Classification (UL 723)

Flame spread
Smoke developed

Unfaced

not over 25
not over 50

FSK Faced

not over 25
not over 50

VAPOR PERMEABILITY

FSK and ASJ faced K450 Coverings comply with ASTM E96 Desiccant Method. Permeance not to exceed 0.02 perms (HH - B -100 B Type 1).

LINEAR SHRINKAGE

K450 Coverings shrinkage is negligible when tested in accordance with ASTM C356.

SPECIFIC HEAT

837.4 J/kg.K

FLEXIBILITY

K450 Coverings will permit expansion and contractions of the pipe without cracking or shrinking.

CONFORMITY TO STANDARDS

American Standards		British Standards	ISO	Other Standards
C168	C1045	BS 476 (part 4,6 & 7)	161 (part1)	UL723
C302	C1104/ 1104M	BS874	274	F.S. HH - B - 100B (type 1) superseded by ASTM C1136), HH-I-558B (superseded by ASTM C547)
C303	C1136 (type 1&2)	BS1387	4200	NFPA 255
C335	C1335	BS2871	8497	
C356	C1338	BS2972	9229	
C411	E84	BS3533	9291	
C547 (Type I)	E96	BS3600		ASHRAE 90.1 requirements
C585		BS3958(part 4)		
C665 & C 13.8 & 13.9		BS5422		German Standards DIN 18165, 52612
C680		BS5643		
C871		BS5970		

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-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
- 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.





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