



KIMMCO

KUWAIT INSULATING MATERIAL
MANUFACTURING CO. S.A.K. (Closed)
ISO 9001, ISO 14001
& OHSAS 18001 CERTIFIED

CE



DUCT INSUL (KDI)

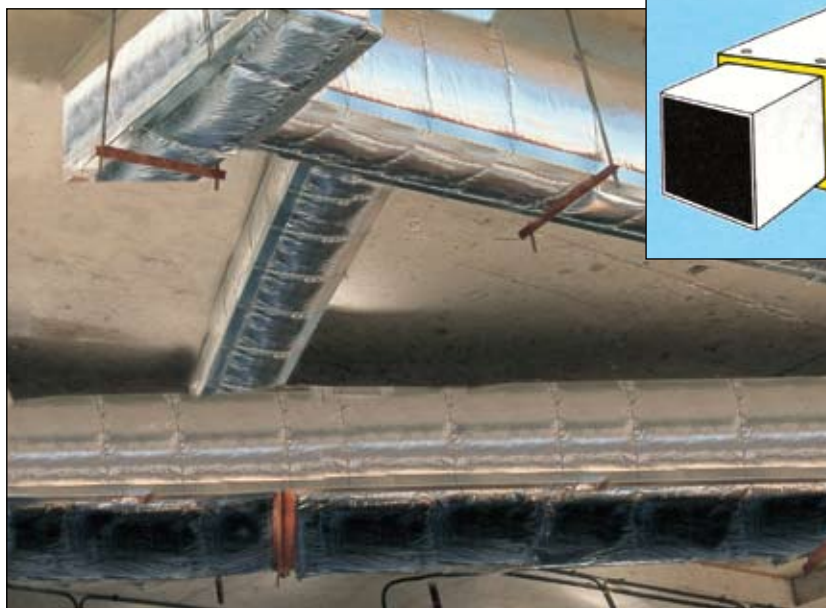


MANUFACTURED
UNDER LICENCE OF
ISOVER
SAINT-GOBAIN

www.kimmcoinsulation.com
www.alghanim.com

A subsidiary of
Alghanim
INDUSTRIES

DUCT INSUL (KDI)



APPLICATION

External insulation of rectangular and circular air ducting and air handling equipment.

DESCRIPTION

KIMMCO duct insul is in the form of flexible rolls, semi-rigid and rigid slabs manufactured from stable glass fibers bonded with thermo-setting resins, and free from coarse fibers and shot.

Easy to handle and cut to fit rectangular ducts and air handling equipment.

FACINGS

KIMMCO duct insul is available unfaced or with a glass reinforced aluminum foil/kraft laminate facing(FSK) which combines a pleasing appearance with excellent vapor resistance.

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 the density & thickness
Slabs	25, 40, 50, 75, 100	1.2	1.0 to 2.4
Other dimension and/or thickness upon request			

NOMINAL DENSITY

KDI	kg/m ³	lbs/ft ³	Availability
10	10	0.625	Rolls
12	12	0.75	Rolls
16	16	1	Rolls
18	18	1.125	Rolls
20	20	1.25	Rolls
24	24	1.5	Rolls or Slabs
32	32	2	Rolls* or Slabs
36	36	2.25	Rolls* or Slabs
48	48	3	Rolls* or Slabs
64	64	4	Slabs
72	72	4.5	Slabs
80	80	5	Slabs
96	96	6	Slabs
* Rolls according to the thickness			

PERFORMANCES

WORKING TEMPERATURE

Fiber : 230 °C
Foil face : 100 °C

PERMANENCE

KIMMCO duct insul has a high resistance to accident damage from knocks and handling during installation and maintenance. Dimensionally stable under varying conditions of temperature and humidity, rot proof, odourless, non-hygroscopic and will not sustain vermin or fungus.

THERMAL CONDUCTIVITY

The low thermal conductivity of fiberglass products is due to the fact that they consist of more than 95% air which is trapped and kept stationary by the thin fibers.

MEAN TEMPERATURE °C	THERMAL CONDUCTIVITY IN W/m.K FOR THE FOLLOWING DENSITIES IN kg/m ³												
	10	12	16	18	20	24	30	32	36	48	60	64	72
0	0.038	0.036	0.034	0.033	0.032	0.031	0.030	0.030	0.029	0.029	0.030	0.030	0.030
10	0.040	0.038	0.036	0.035	0.034	0.032	0.032	0.031	0.030	0.030	0.031	0.031	0.031
25	0.044	0.041	0.039	0.038	0.036	0.035	0.034	0.033	0.032	0.031	0.032	0.032	0.032
50	0.055	0.048	0.044	0.043	0.041	0.039	0.037	0.037	0.036	0.035	0.036	0.036	0.036
75	0.064	0.059	0.051	0.048	0.046	0.043	0.041	0.040	0.039	0.037	0.038	0.038	0.038
100	0.074	0.065	0.057	0.053	0.051	0.047	0.045	0.044	0.043	0.041	0.042	0.043	0.043

MEAN TEMPERATURE °F	THERMAL CONDUCTIVITY IN Btu.in/ft ² h.F FOR THE FOLLOWING DENSITIES IN lbs/ft ³												
	0.625	0.750	1.000	1.125	1.250	1.500	1.875	2.000	2.250	3.000	3.750	4.000	4.500
32	0.26	0.25	0.23	0.23	0.22	0.21	0.21	0.20	0.20	0.20	0.21	0.21	0.21
50	0.28	0.27	0.25	0.24	0.23	0.22	0.22	0.22	0.21	0.21	0.21	0.23	0.23
77	0.31	0.29	0.27	0.26	0.25	0.24	0.23	0.23	0.22	0.22	0.23	0.23	0.23
122	0.38	0.34	0.31	0.30	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.24	0.24
167	0.45	0.41	0.35	0.34	0.32	0.30	0.28	0.27	0.27	0.26	0.26	0.26	0.26
212	0.51	0.45	0.40	0.37	0.36	0.33	0.31	0.30	0.30	0.29	0.29	0.29	0.29

COMBUSTIBILITY

Fibers are non combustible when tested in accordance with BS 476 (part 4), ASTM E 136.

SURFACE BURNING CHARACTERISTICS

When tested as per ASTM E 84 / NFPA 255 / UL 723.

Flame spread index : not over 25

Smoke developed index : not over 50

MOISTURE ABSORPTION

Less than 1% by volume when tested in accordance with ASTM C 1104.

KIMMCO duct insul 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.

FSK faced duct insul comply with ASTM E 96 Desiccant Method. Permeance not to exceed 0.02 perms (Federal Standard HH-B-100 B Type 1).

NON TOXIC

KIMMCO DUCT INSUL IS NOT HAZARDOUS TO HEALTH (See KIMMCO MSDS).

The values mentioned herein are typical values subject to normal manufacturing and testing variances.

CONFORMITY TO STANDARDS

Kimcco duct insul complies with the following standards:

AMERICAN STANDARDS

ASTM C 165, 167, 168, 177, 303, 411, 518, 612 (Class 1 to 3) 665 § 13.8 & 13.9, 686, 1045, 1101/1101M, 1104/1104M, 1136 (types 1&2), 1290 (type 3), 1335; E 84, 96, 136

UL 723

F.S. HH-B-100B (Type1), HH-I-521F, HH-I-558B

NFPA 255, NFPA 90A & 90B

NAIMA standards

ASHRAE 90.1 & 90.2 requirements

SMACNA standards

BRITISH STANDARDS



BS 476 (parts 4,6&7), 874, 2972, 3533, 3958 (part 5), 5422, 5643, 6676 (part 1)

GERMAN STANDARDS

DIN 18165, 52612

ISO

8301, 8302, 9229, 9291

 Underwriters Laboratories Inc. 

KUWAIT INSULATING MATERIAL MFG CO
MICHEL C LUCE
(OFF WAEBE RD BEHIND MINA ABDULLAH
POLICE STATION NEAR KIRBY BLDGS PLANT)
PO BOX 24609
SAFAT KUWAIT

Your most recent listing is shown below. Please review this information and report any inaccuracies to the UL Engineering staff member who handled your Assignment.

BKV March 28, 1994
Batts and Blankets

KUWAIT INSULATING MATERIAL MFG CO , SAFAT **R9703 (N)**
KUWAIT

Glass fiber batts and blankets with and without facings on one surface.
The following products are eligible to bear the Laboratories Classification Marking incorporating the designation "FHC 25/75" unless of the individual Surface Burning Characteristic values for flame spread and smoke developed:
Unfaced Blankets
Aluminum Foil Faced Blankets
Foil-Scored/Foil Faced Blankets
Glass fiber batts and blankets with and without facings on one surface.

	Glass Blanket	Fiberglass-Kraft Facing	Vinyl Film Facing	Aluminum Foil Facing
Flame spread	15	15	25	15
Smoke developed	0	0	80.5CS	0

(OFF WAEBE RD BEHIND MINA ABDULLAH POLICE STATION NEAR KIRBY BLDGS PLANT) PO BOX 24609
LOOK FOR CLASSIFICATION MARKING ON PRODUCT

11076001 14871 Underwriters Laboratories Inc.® ALU068668
116

For information on placing an order for UL Listing Cards in a 3 x 5 inch card format, please refer to the enclosed ordering information.

UNDERWRITERS LABORATORIES INC.

A not-for-profit organization dedicated to public safety and committed to quality service

752 Pflingston Road Northbrook, Illinois 60062-0096, USA 1(847)77-8000 Telex: 8502843343 FAX No. (708) 270-8100	1220 West Wisconsin Road Melville, L.I. New York 11747-3221, USA 516(271)-4220 Telex No. 852215 FAX No. (516) 271-8228	1955 Scott Blvd Santa Clara, California 95050-4188, USA 408(998)-2400 FAX No. (408) 299-3688	13 Laboratory Drive P.O. Box 13008 Research Triangle Park, North Carolina 27709-2955, USA 919(549)-1400 Telex No. 493730 FAX No. (919) 549-1442
---	--	---	---

TYPICAL FIXING DETAILS

INSTALLATION 1

Ensure surface of duct is dry and free from dust or grease. Cut insulation to required length to fit around the duct, making sure that edges are straight.

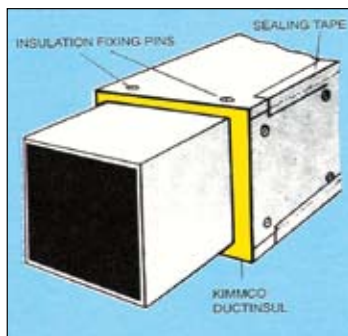
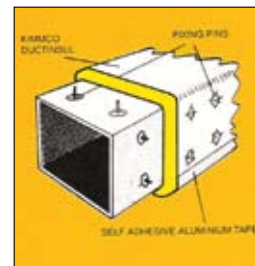
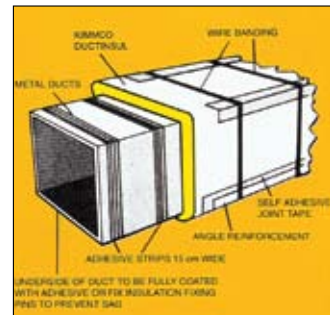
Apply insulation adhesive to duct surface in strips approx. 15 cm wide. Underside of duct should be completely coated with adhesive to prevent sagging.

Wrap insulation, foil face up, to the prepared duct surface once adhesive has become tacky, or as instructed by manufacturer, making sure that all edge joints are closely butted.

Apply uniform hand pressure to outside surface of insulation to obtain good bond.

Tape all longitudinal and transverse joints with a good quality self adhesive insulation tape. Seal any puncture points in insulation around hangers etc. with tape.

If lacing wire is used for additional security, a light gauge galvanized angle should be fitted on each edge to prevent wire from cutting into insulation.

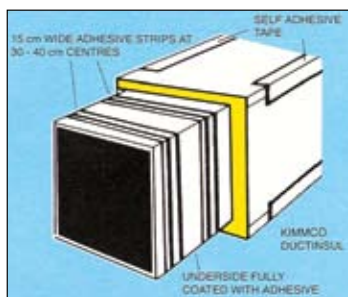


INSTALLATION 2

Ensure surface of duct is dry and free from dust and grease. Cut insulation to required length to fit around the duct, making sure that edges are straight.

Depending on size of duct, fit 2 or more rows of insulation, fixing pins to each face of duct at centres of 30 - 50 cm. Pins can be self adhesive type, bond-on type or stud welded.

Carefully position insulation over the pins, pressing firmly so that pins penetrate through the insulation. Fit spring clip or lock washer over pins, pushing them down until tight against insulation. Snip off any excess shank from pin. Seal all joints and openings with self adhesive tape.

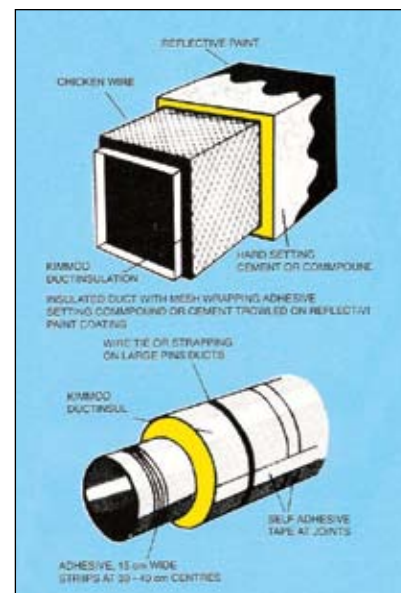


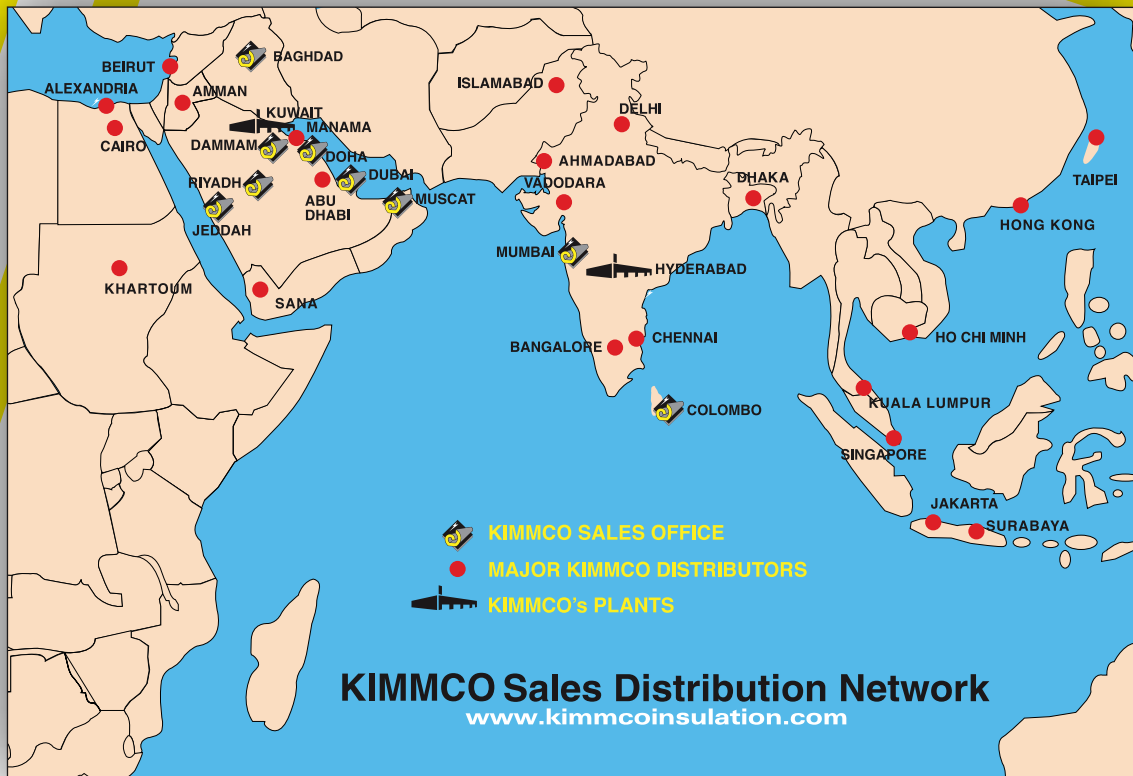
INSTALLATION 3

Where duct insulation requires protection against mechanical damage or is to be used outdoors, the insulation can be wrapped with wire mesh to which an application of quick setting compound or cement can be applied.

INSTALLATION 4

Circular ducts can be easily insulated with duct insul insulation. Cut duct insul to suit the circumference of duct. Clean surface of duct to remove dust and grease. Apply insulation adhesive in strips approx. 15 cm wide. Wrap insulation onto duct, applying firm hand pressure to obtain maximum bond. When applying each wrap of insulation, ensure that longitudinal joints are kept in line. Seal all joints with self adhesive tape. Large ducts can be reinforced with self adhesive tape, metal or nylon strapping.





Customer Services

P.O. Box: 10042 Shuaiba, 65451 Kuwait
 Phone : (00965) 326 2020 Ext. 125, 126
 Fax : (00965) 326 1251, 326 2027
 Email : kimcsd@alghanim.com

Saudi Arabia - Damman

P.O. Box: 2788 Damman, 31461 Saudi Arabia
 Phone : (009663) 833 1678, 832 6488
 Fax : (009663) 832 6477
 Email : kimmcoem@sahara.com.sa

Exports

P.O. Box: 10042 Shuaiba, 65451 Kuwait
 Phone : (00965) 326 2020 Ext. 123, 124
 Fax : (00965) 326 1251, 326 2027
 Email : kimexp@alghanim.com

Saudi Arabia - Riyadh

P.O. Box: 63577 Riyadh, 11526 Saudi Arabia
 Phone : (009661) 476 3334
 Fax : (009661) 476 5731
 Email : kirbyriyadh@zajil.net

Technical Services

P.O. Box: 10042 Shuaiba, 65451 Kuwait
 Phone : (00965) 326 2020 Ext. 115
 Fax : (00965) 326 1251, 326 2027
 Email : kimtech@alghanim.com

Saudi Arabia - Jeddah

P.O. Box: 402 Jeddah, 21411 Saudi Arabia
 Phone : (009662) 663 1829, 663 1702, 663 1536
 663 1361 (Ext. 207, 208, 209)
 Fax: : (009662) 661 3620
 Email : ngkimmcojed@zajil.net

Kuwait

P.O. Box: 24609 Safat, 13107 Kuwait
 Phone : (00965) 473 4439, 473 4467,
 471 0711, 474 7096
 Fax : (00965) 473 4538, 473 9789
 Email : kusales@alghanim.com

Qatar / Oman / Bahrain

P.O. Box: 7943 Doha, Qatar
 Phone : (00974) 4995075 / 4995077
 Fax : (00974) 4995088
 Email : kimmcoqatar@qatar.net.qa

Dubai

P.O. Box: 9201 Dubai, UAE
 Phone : (009714) 286 8963
 Fax : (009714) 286 8964
 Email : kimmco@emirates.net.ae

STORAGE: To avoid moisture in the building construction, KIMMCO insulation products which are stored outside must be kept dry. KIMMCO is not liable for the damage resulting from an improper utilization of TEL products manufactured or marketed by KIMMCO. KIMMCO products are manufactured under license of Isover Saint Goblain – France, using the latest technological developments of the famous TEL process. Kuwait Insulating Material Manufacturing Company (KIMMCO) reserves the right to alter product specifications without prior notice as part of its policy of continual development and improvement. The installation methods described in this leaflet are not compulsory. The choice of KIMMCO materials and methods of fixing are the decision of the specifier, consultant or constructor. For further information or advice or specifications of KIMMCO products, contact your local office.