

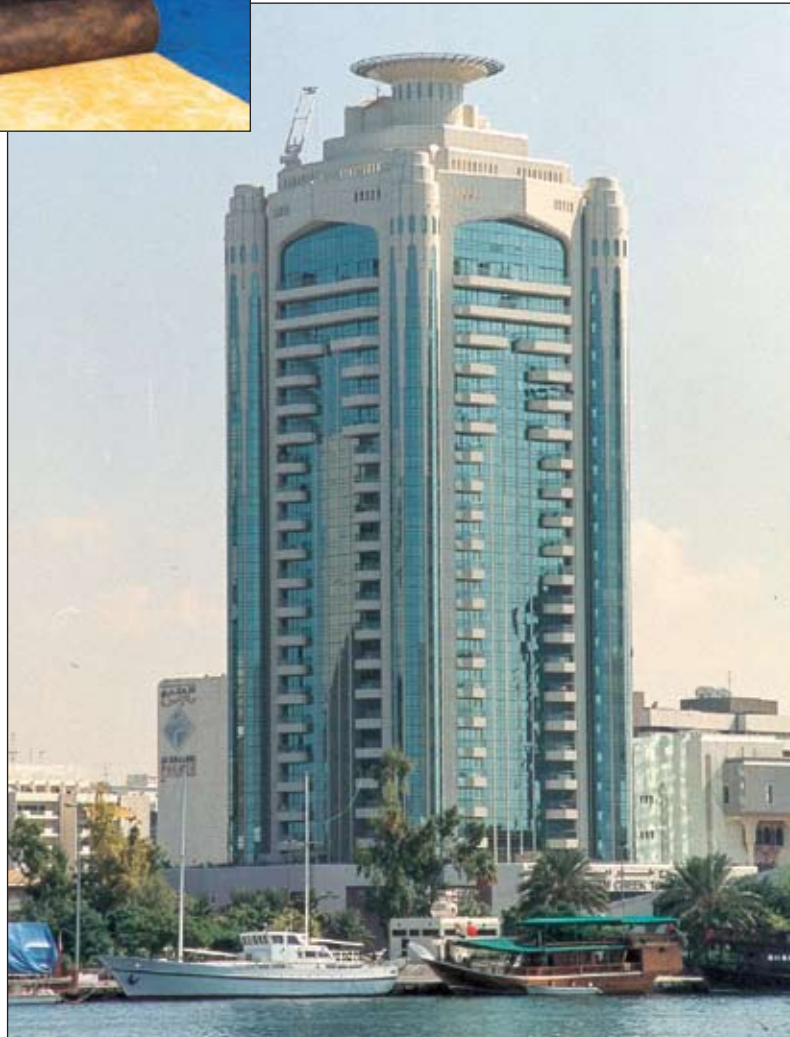


KIMMCO

KUWAIT INSULATING MATERIAL
MANUFACTURING CO. S.A.K. (Closed)

ISO 9001, ISO 14001
& OHSAS 18001 CERTIFIED

DUCT LINER (KDL)

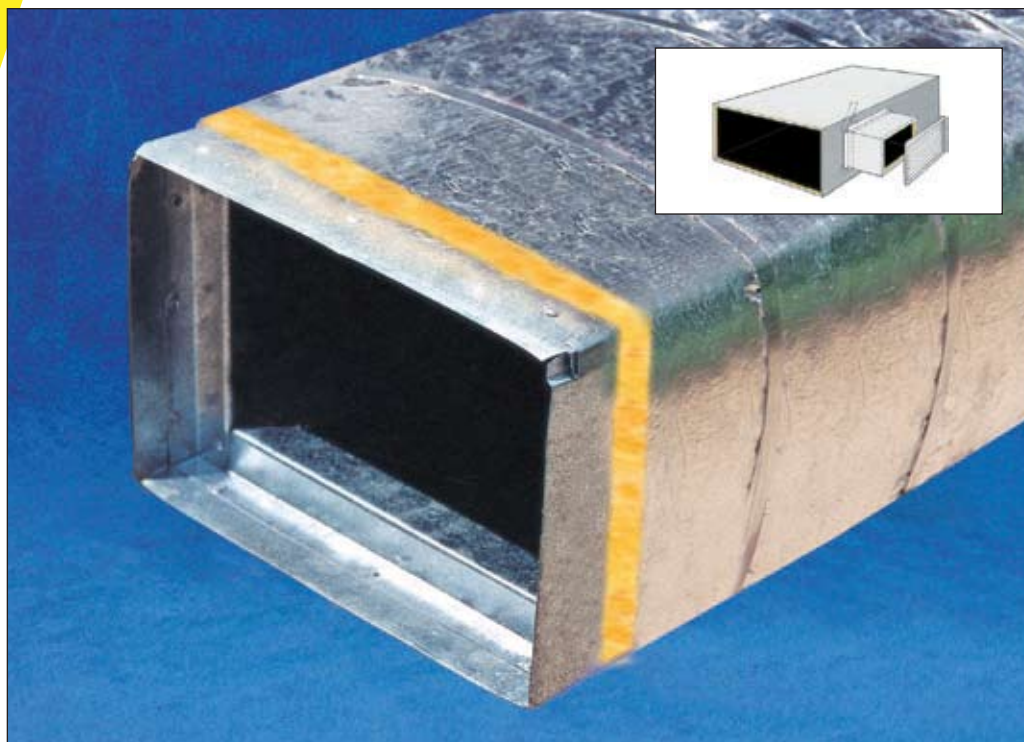


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DUCT LINER (KDL)



APPLICATIONS

For internal insulation of ducts and air handling equipment where sound absorption is required. Sound absorption treatment of walls and ceilings, acoustic enclosures etc.

DESCRIPTION

Produced from strong resilient glass fibres, free from shot and coarse fibres. Easy to handle cut and fit.

KIMMCO duct liner is available in flexible roll form and semi rigid slabs.

KIMMCO duct liner has a strong damage resisting facing which is carefully bonded to the glass fibre mat during manufacture. However care should be exercised during storage of installation.

FACINGS

Faced with a non-woven, strong, dimensionally stable black glass tissue to provide a highly efficient sound absorption performance free from fibre emission at internal air velocities up to 25 metres per second (4920 ft/minute).

STANDARD DIMENSIONS

Thickness	Width	Length	
		Roll	Board
15 mm	1.2m	20m	1m
25 mm			
50 mm			
Other dimensions available			

NOMINAL DENSITY

KDL	Kg/m ³	Lbs/ft ³
16	16	1.0
24	24	1.5
32	32	2.0
48	48	3.0
60	60	3.75
Other densities available		

PERFORMANCES

WORKING TEMPERATURE:

Fibre :	230 °C
Facing :	230 °C

PERMANENCE:

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

They will not shrink due to the age or temperature variations. They will maintain their performances throughout the life time of the construction.

THERMAL CONDUCTIVITY:

THERMAL CONDUCTIVITY IN W/m.K					
MEAN TEMPERATURE °C	FOR THE DENSITIES IN kg/m ³				
	16	24	32	48	60
0	0.034	0.031	0.030	0.029	0.030
10	0.036	0.032	0.031	0.030	0.031
25	0.039	0.035	0.033	0.031	0.032
50	0.044	0.039	0.037	0.035	0.036
75	0.051	0.043	0.040	0.037	0.038
100	0.057	0.047	0.044	0.041	0.042

THERMAL CONDUCTIVITY IN Btu.in/ft ² h.F					
MEAN TEMPERATURE °F	FOR THE DENSITIES IN lbs/ft ³				
	1	1.500	2	3	3.750
32	0.23	0.21	0.20	0.20	0.21
50	0.25	0.22	0.22	0.21	0.21
77	0.27	0.24	0.23	0.22	0.23
122	0.31	0.27	0.25	0.24	0.24
167	0.35	0.30	0.27	0.26	0.26
212	0.40	0.33	0.30	0.29	0.29

Test in accordance with ASTM C 518. These are typical values subject to normal manufacturing and testing variances

FIRE SAFETY:

Base fibre non combustible when tested in accordance with ASTM E 136, BS 476 (Part 4), and ISO 1182.

KIMMCO duct liner has been tested and listed by underwriters laboratories according to UL 723 (File R9073).

MOISTURE ABSORPTION:

Less than 1% by volume when tested in accordance with BS 2972 and 6676, ASTM C 1104. KIMMCO duct liner 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.

NON TOXIC:

KIMMCO DUCT LINER IS NOT HAZARDOUS TO HEALTH (see KIMMCO MSDS).

ACOUSTICS:

KIMMCO duct liner is, especially, designed to provide exceptional sound absorption to acoustically sensitive environments and/or equipments such as air-conditioning equipments, auditoriums, theatres, studios, acoustical building assemblies, curtain walls.

Product		Absorption coefficient at the octave band frequencies (Hz)						
Type	Thickness mm	125	250	500	1000	2000	4000	NRC
KDL 16	50	0.24	0.51	0.72	0.90	0.94	0.98	0.80
	25	0.12	0.31	0.64	0.83	0.95	0.99	0.70
KDL 24	50	0.27	0.69	1.01	1.07	1.06	1.05	0.95
	15	0.05	0.13	0.32	0.65	0.79	0.93	0.45
KDL 32	25	0.14	0.36	0.65	0.86	0.98	1.00	0.70
	50	0.24	0.77	1.02	1.04	1.04	1.01	0.95
	15	0.05	0.12	0.29	0.51	0.68	0.80	0.40
KDL 48	25	0.12	0.32	0.73	0.98	1.02	1.00	0.75
	50	0.30	0.85	1.03	1.07	1.06	1.00	1.00
	25	0.06	0.19	0.62	0.83	0.90	0.95	0.65
KDL 60	50	0.21	0.75	1.00	1.00	1.00	0.95	0.95

Test in accordance with ASTM C 423 using type A mounting as per ASTM E 795. These are typical values subject to normal manufacturing and testing variances.

INTERNAL EROSION:

The internal erosion is nil with air velocity of 25m/s or 4920 feet per minute, when tested according to SMACNA procedure.

LINEAR LOSSES:

The following diagram is established for air at 20 oC (68 oF) and 760 mm Hg.

CONFORMITY TO STANDARDS

Kimmco duct liner complies with the following Standards.

American standards

ASTM C 167, 168, 177, 411, 423, 518, 665 §13.8 & 13.9, 1071, 1101/1101M, 1104/1104M, 1335; E 84, 477, 795
 UL 181, 723
 F.S. HH-I-545B
 NFPA 255, NFPA 90A & 90B
 NAIMA standards
 SMACNA standards

British standards

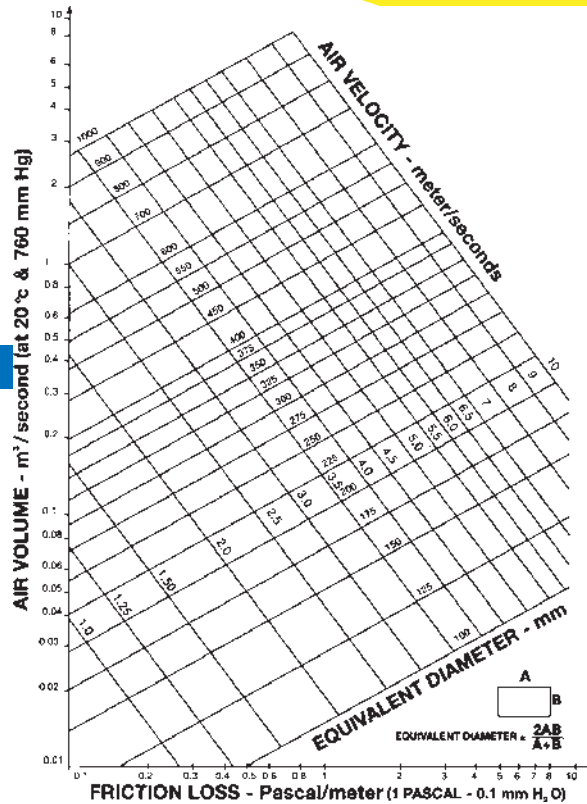
BS 476 (parts 4,6&7), 874, 2972, 3533, 5643, 5720

German standards

DIN 18165, 52612

ISO

354, 1182, 8301, 8302, 9229, 9291



TYPICAL INSTALLATION

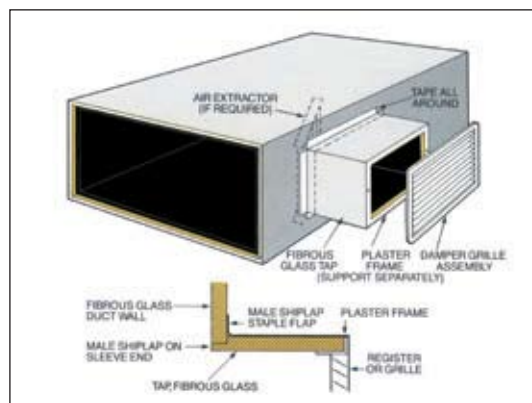
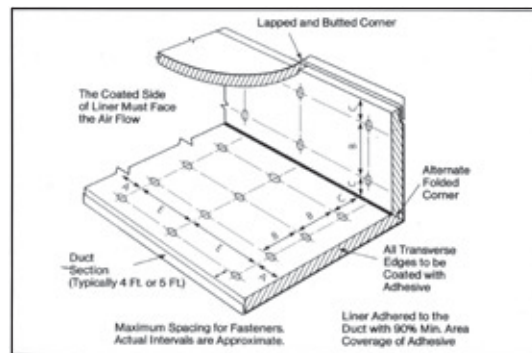
KIMMCO duct liner has been developed to meet specifications and is manufactured using materials of the highest quality. To obtain maximum performance the following installation procedures should be followed.

Measure and cut to shape the duct liner allowing a 5cm excess at down stream transverse joints. Carefully remove insulation from 5cm excess leaving only the surface tissue for overlapping to next section. Longitudinal joints should be close butted and sealed with a proprietary sealant, tape or metal angle. Ensure that internal surface of duct is clean and free from dust and grease. Affix mechanical fasteners in accordance with manufacturers instructions at not more than 45cm centres.

Fixings should start within 7.5 cm of joints corners, ends etc.

Apply suitable adhesive to duct surface before positioning duct liner over mechanical fastener pins. Fit washers or caps to pins and snip off excess shank of pins.

Transverse joints should have 5cm tissue flap fixed to following section of liner with adhesive then overlay with metal strip fixed through insulation to dust sheeting by screws or rivets at 7.5 cm centres. Start and finish ends of duct section to be treated as above with exposed edges of insulation coated with sealant or alternatively affix angle in place of metal strip with one leg masking edge or insulation.





SHAIKH FATMA TWIN TOWER - ABU DHABI



FORD SHOWROOM - KUWAIT



VILLAS - DUBAI, ABU DHABI ROAD



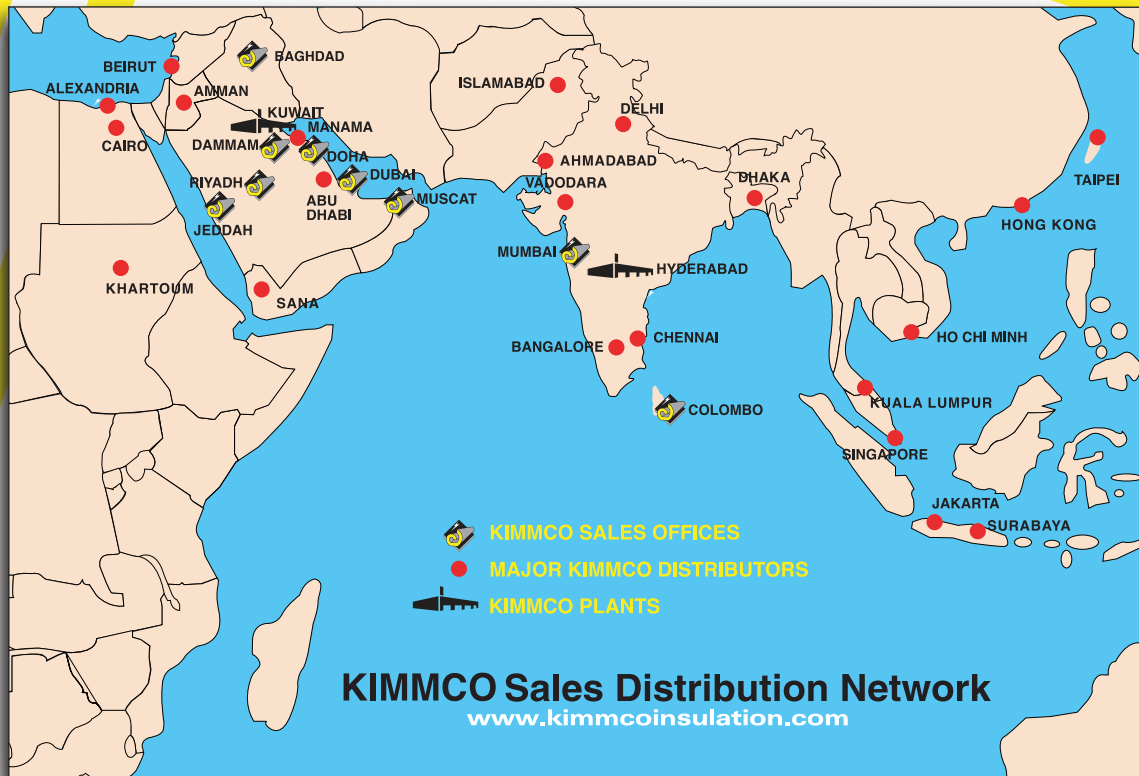
HOLIDAY INN HOTEL - ABU DHABI



YAAS CAR SHOWROOM - KUWAIT



NEW WORKSHOP - KUWAIT



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