



VAPOUR RESISTANT.
FIRE RETARDANT.
ENERGY SAVING.

CROSS-LINKED,
CLOSED CELL
POLYOLEFIN FOAM
INSULATION WITH
ALUMINIUM FOIL.

 **KEMBLA**

XLPE Insulation

TECHNICAL GUIDE

BY



K-FLEX

YOUR COMPLETE INSULATION SOLUTION BACKED BY MM KEMBLA'S QUALITY, RELIABILITY AND SERVICE

MM Kembla has been providing our customers with the highest quality and in conjunction with global insulation leader L'Isolante K-FLEX present the new range of K-FLEX XLPE cross-linked closed cell polyolefin foam insulation with a heat bonded aluminium foil jacket to protect against UV, mechanical damaged and as a barrier to water vapour.

Kembla K-FLEX XLPE Insulation provides a solution for applications that require low thermal conductivity and fire retardant properties through a tough insulation material that offers ease of installation and durable life span. Its completely closed cell structure via cross-linking ensures consistent insulation properties and resistance to water vapour ingress, thus maintaining the thermal resistance of the insulation.

Kembla K-FLEX XLPE Insulation is dust, fibre free and is HCFC-CFC free with an Ozone Depletion Potential (ODP) of zero. The impressive technical properties and supporting certifications and accreditations position MM Kembla Insulation as an ideal solution for any commercial, industrial, domestic, and marine and offshore applications. We offer a full comprehensive range that ensures MM Kembla Insulation is your one-stop insulation shop for all of your needs.



WHY USE KEMBLA K-FLEX XLPE INSULATION:

- ISO 9001:2000 Registered with over a thousand additional domestic and international certificates
- A wide range of pre-slit tube in 1 or 2 metre lengths and sheet in various lengths
- Light weight and flexible for easy and speedy installation with low maintenance resulting in time and cost savings
- CFC & HCFC free with ozone depletion potential of zero
- UV resistant, non-corrosive, smoke and fire retardant material
- Low thermal conductivity and high μ factor for effective control of condensation and insulating against heat loss and heat gain
- FM Approved Approval Class - 4924
- Unrivalled Distribution Footprint
 - National Network of Distribution warehouses that reach every major state and territory
- MM Kembla's National Sales Force
 - providing on the ground support
 - National Customer Service Centre
- Backed by a 10 year manufactures warranty and MM Kembla's reputation for high quality products, service and customer care for over 100 years.

CERTIFICATION & TESTING

MM Kembla Insulation has been independently tested by NATA accredited laboratories. Our insulation is compliant to the Australian Building Code Boards (ABCB) National Construction Code (NCC) 2022 edition. MM Kembla Insulation also carries a number of international globally recognised certifications.

TECHNICAL SPECIFICATIONS

Kembla K-FLEX XLPE Insulation conforms to the requirements of the Building Code of Australia (Vol) 1, of the National Construction Code (NCC). K-FLEX XLPE Insulation is a closed cell cross-linked polyolefin foam insulation with a heat bonded aluminium foil jacket that exhibits better thermal conductivity as the air inside the closed cells has lower mobility than that produced in open cells. Vapour Diffusion into the insulation is much lower allowing the thermal conductivity to be guaranteed longer and the heat bonded aluminium foil jacket provides UV protection and mechanical strength.

Kembla K-FLEX XLPE Insulation is FM Approved assuring customers that our product has been objectively tested and conforms to the highest national and international standards.

INDUSTRY APPLICATIONS

Kembla K-FLEX XLPE Insulation is suitable to be installed in: Heating, Ventilation, and Air Conditioning Systems, Refrigeration, Pharmaceuticals, Solar Systems, Automotive, Hospitals, Industrial Pre-Engineered Buildings, Room & Machines Acoustics, Plumbing, OEM's, Automotives, Marine & Shipbuilding Industries etc.

XLPE USAGE

Kembla XLPE Insulation Tube and can be used for air conditions ducting, piping insulation, wall insulation, acoustic insulations, underdeck insulations, tank insulations and many other interior applications Unlike rubber insulation, it is perfect for stainless steel applications and will not cause corrosion on stainless steel tube.

TECHNICAL SPECIFICATION FOR MM KEMBLA K-FLEX INSULATION XLPE

Construction	Cross-linked, closed cell, polyolefin foam insulation with aluminium foil	
Density	39 kg/m ³ 10% (foam core only)	
Colour	Grey (Foam only)	
Operating Temperature	-40 to 115 deg °C	
Thermal Conductivity	0.0322 W/m.k @ 23 deg °C 0.0361 W/m.k @ 36 deg °C	AS4859.1 ASTM C 518
Water Vapour Diffusion Transmission Factor, μ	> 20,000	BS EN 12086
Noise Reduction Coefficient	0.30 for 25mm thickness	ASTM C 423
PHYSICAL PROPERTIES		
Tensile Strength	44 psi	ASTM D 412
Ultimate Elongation	83%	ASTM D 412
50% Modulus	40 psi	ASTM D 412
100% Modulus	45 psi	ASTM D 412
Tear Strength	16 lbf/in	ASTM D 624
Compression Deflection	10% Deflection - 6.8 psi 25% Deflection - 12.1 psi 50% Deflection - 91.7 psi	ASTM D 1621
UV / Weathering & Ozone Resistance	Excellent	
FIRE PERFORMANCE		
Burning Test	Flame Spread Index : < 25 Smoke Developed Index : < 50	ASTM E 84
Fire Rating	Class 0	Tested acc to BS 476 Part 6 & Part 7 BOMBA Malaysia
FM Approvals	Approved	Approval Class - 4924
Burning Test	HF-1	Tested to UL 94
Fire Performance (Australia)	Class 1 – Complies with the fire hazard requirements of the Building Code of Australia. Ignitability: 0 Spread of Flame Index: 0 Heat Evolved Index: 0 Smoke Developed Index: 0-1	AS1530.3
OTHER CERTIFICATES		
Resistance to Fungal	Zero Growth	ASTM G 21
Green Star Rating	Low VOC Emitting	ASTM D 5116
Green Star Rating	Low VOC Emitting	ISO 16000

KEMBLA K-FLEX XLPE INSULATION IS A CROSS-LINKED CLOSED CELL POLYOLEFIN FOAM INSULATION WITH ALUMINIUM FOIL.

IT HAS MANY ADVANTAGES OVER THE TRADITIONAL OPEN CELL AND PRODUCTS MADE OF WOOL OR FIBREGLASS:

- Closed Cell Insulation has a better thermal conductivity, because the air inside of the closed cells has a lower mobility than that produced in open cells. Its closed cell structure has an excellent sound absorption properties.
- Vapour diffusion into KEMBLA K-FLEX XLPE Insulation is much lower, thus the thermal conductivity will be guaranteed for longer.
- The closed cell promotes a natural inhibition of bacterial growth as bacteria cannot spread within the structure.
- KEMBLA K-FLEX XLPE Insulation is available as tubing or sheet rolls for a wide variety of applications.



FEATURES OF KEMBLA K-FLEX XLPE INSULATION

VERY LOW THERMAL CONDUCTIVITY (λ FACTOR)

**0.032W/
(m.K)**

Thermal Conductivity is a measurement of the ability of a material to transmit heat.

KEMBLA K-FLEX XLPE Insulation thermal conductivity is $\lambda = 0.032W/(m.K)$ @ 23°C. The thermal coefficient is the most important factor in the calculation as it focuses on energy saving. The lower the figure the better the thermal insulation.

HIGH WATER VAPOUR DIFFUSION RESISTANCE (μ FACTOR)

**μ
0.>20k**

Kembla K-FLEX XLPE Insulation closed cell elastomeric insulation has a high water vapour diffusion resistance μ value > 20,000 to minimise water vapour penetration, ensuring excellent long term performance.

The higher the resistance to the penetrations of water vapour (μ), the greater the consistency of performance. This is significant when insulating cold items where insulation thicknesses are chosen to achieve a surface temperature above the ambient dewpoint.

LOW FLAME SPREAD

**0
A1530.3**

When fire tested Kembla K-FLEX XLPE Insulation does not generate flaming droplets and has a low fire propagation index.

Tested to AS1530.3, Kembla K-FLEX XLPE Insulation complies with the fire hazard requirements of the Building Code of Australia.

TEMPERATURE RANGE

**- 40 °C to
+115 deg °C**

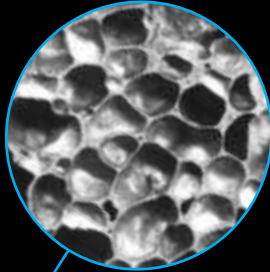
Kembla K-FLEX XLPE Insulation is suitable for applications ranging from: - 40 °C to +115 deg °C.

XLPE Insulation Tubing

PRODUCT RANGE

BY  **K-FLEX**

**CLOSED CELL
INSULATION**



NON-TOXIC PRODUCTS



Many insulation materials are porous or fibrous. In these types of materials the presence of moisture and organic matter allow the growth of bacteria, mould, and fungi.

Kembla K-FLEX XLPE Insulation is resistant to this and therefore helps contribute to the quality of the air that we breathe. MM Kembla K-FLEX XLPE Insulation is designed with Zero VOC, it is formaldehyde free and has zero ODP (Ozone Depletion Potential). Due to no presence of fibrous material and no release of harmful particles, XLPE is ideal for any application in public spaces such as schools and hospitals.

TOUGH & DURABLE

16 lbft/in

Kembla K-FLEX XLPE Insulation is very flexible yet tough material with a tear strength of 16 lbft/in, providing ease of installation along with a durable life span.

10 YEAR WARRANTY

Kembla K-FLEX XLPE Insulation is backed by a 10 Year Manufacturing Warranty.



APPLICATIONS



Plumbing
Systems



Solar
Systems



HVAC &
Refrigeration



Room
& Machine
Acoustics



Industrial &
Commercial



Pre-Engineered
Buildings



OEM's &
Automotive



Marine &
Shipbuilding

KEMBLA XLPE INSULATION - TUBING RANGE

INSIDE DIAMETER		INSULATION THICKNESS													
		10mm	10mm	13mm	13mm	16mm	16mm	20mm	20mm	25mm	25mm	32mm	40mm	50mm	60mm
(mm)	(inches)	1m	2m	1m	2m	1m	2m	1m	2m	1m	2m	2m/1.2m	2m/1.2m	2m/1.2m	2m/1.2m
6	1/4"	K41150	K41350	K41175	K41375	K41200	K41400	K41225	K41425	K41250	K41450				
10	3/8"	K41151	K41351	K41176	K41376	K41201	K41401	K41226	K41426	K41251	K41451				
13	1/2"	K41152	K41352	K41177	K41377	K41202	K41402	K41227	K41427	K41252	K41452	K41477	K41502		
16	5/8"	K41153	K41353	K41178	K41378	K41203	K41403	K41228	K41428	K41253	K41453	K41478			
20	3/4"	K41154	K41354	K41179	K41379	K41204	K41404	K41229	K41429	K41254	K41454	K41479	K41504	K41529	K41575
22	7/8"	K41155	K41355	K41180	K41380	K41205	K41405	K41230	K41430	K41450	K41455	K41480	K41505	K41530	K41576
25	1"	K41156	K41356	K41181	K41381	K41206	K41406	K41231	K41431	K41256	K41456	K41481	K41506	K41531	K41577
28	1-1/8"	K41157	K41357	K41182	K41382	K41207	K41407	K41232	K41432	K41257	K41457	K41482	K41507	K41532	K41578
32	1-1/4"	K41158	K41358	K41183	K41383	K41208	K41408	K41233	K41433	K41258	K41458	K41483	K41508	K41533	K41579
35	1-3/8"	K41159	K41359	K41184	K41384	K41209	K41409	K41234	K41434	K41259	K41459	K41484	K41509	K41534	K41580
40	1-1/2"	K41160	K41360	K41185	K41385	K41210	K41410	K41235	K41435	K41260	K41460	K41485	K41510	K41535	K41581
42	1-5/8"	K41161	K41361	K41186	K41386	K41211	K41411	K41236	K41436	K41261	K41461	K41486	K41511	K41536	K41582
48	1-7/8"	K41162	K41362	K41187	K41387	K41212	K41412	K41237	K41437	K41262	K41462	K41487	K41512	K41537	K41583
50	2"	K41163	K41363	K41188	K41388	K41214	K41413	K41238	K41438	K41263	K41463	K41488	K41513	K41538	K41584
54	2-1/8"	K41164	K41364	K41189	K41389	K41214	K41414	K41239	K41439	K41264	K41464	K41489	K41514	K41539	K41585
60	2-3/8"	K41165	K41365	K41190	K41390	K41215	K41415	K41240	K41440	K41265	K41465	K41490	K41515	K41540	K41586
67	2-5/8"	K41166	K41366	K41191	K41391	K41216	K41416	K41241	K41441	K41266	K41466	K41491	K41516	K41541	K41587
76	3"	K41167	K41367	K41192	K41392	K41217	K41417	K41242	K41442	K41267	K41467	K41492	K41517	K41542	K41588
79	3-1/8"	K41168	K41368	K41193	K41393			K41243	K41443	K41268	K41468	K41493		K41543	K41589
89	3-1/2"	K41169	K41369	K41194	K41394	K41218	K41418	K41244	K41444	K41269	K41469	K41494	K41518	K41544	K41590
102	4"					K41219	K41419						K41519		
114	4-1/2"			K41195	K41395	K41220	K41420	K41245	K41445	K41270	K41470	K41495		K41545	K41592
140	5-1/2"					K41221	K41421	K41246	K41446	K41271	K41471	K41496	K41521	K41546	K41594
168	6-1/2"					K41222	K41422	K41247	K41447	K41272	K41472	K41497	K41522	K41547	K41597
219	8-1/2"					K41223	K41423	K41248	K41448			K41498	K41523	K41548	K41598
273	10-1/2"					K41224	K41424	K41249	K41449			K41499	K41524	K41549	K41599
323	12-3/4"											K41550*	K41557*	K41564*	K41600*
356	14"											K41551*	K41558*	K41565*	K41601*
406	16"											K41552*	K41559*	K41566*	K41602*
457	18"											K41553*	K41560*	K41567*	K41603*
600	23-5/8"											K41554*	K41561*	K41568*	K41604*
609	24"											K41555*	K41562*	K41569*	K41605*
711	28"											K41556*	K41563*	K41570*	K41606*

*1.2m length

KEMBLA XLPE INSULATION - SHEET			
THICKNESS	LENGTH	WIDTH	AREA/ROLL
(mm)	(m)	(m)	m ²
6	50 / 80	1.2	60 / 96
10	25 / 60	1.2	30 / 72
13	20 / 60	1.2	24 / 72
15	20 / 60	1.2	24 / 72
20	15 / 45	1.2	18 / 54
22	15 / 30	1.2	18 / 36
25	2.4 / 20	1.2	2.88 / 24
28	2.4	1.2	2.88
32	2.4	1.2	2.88

ACCESSORIES

KEMBLA ADHESIVE		
Product Code	Product Description	Carton Quantity
K45971	MM Kembla Adhesive - 500ml/w brush	8



KEMBLA ALUMINIUM TAPE		
Product Code	Product Description	Carton Quantity
K45980	TESA Aluminium Foil Tape (205 µm thick) 48mm x 50mm	24
K45981	TESA Aluminium Foil Tape (205 µm thick) 72mm x 45mm	16
K45982	K-FLEX Aluminium Foil Tape 48mm x 45mm	24
K45983	K-FLEX Aluminium Foil Tape 72mm x 45mm	16



XLPE Insulation

R-VALUES

MM KEMBLA INSULATION ST - R-VALUES									
NOMINAL PIPE SIZE		INSULATION THICKNESS (MM)							
mm	Inch"	10mm	13mm	15mm	20mm	25mm	32mm	40mm	50mm
6	1/4"	-	0.84	1.01	1.46	1.95	-	-	-
10	3/8"	-	0.72	1.87	1.26	1.68	-	-	-
13	1/2"	-	0.67	0.80	1.16	1.55	-	-	-
15	5/8"	0.46	0.64	0.77	1.12	1.49	2.05	2.74	3.66
20	3/4"	0.43	0.60	0.72	1.03	1.37	1.88	2.51	3.36
22	7/8"	0.42	0.59	0.70	1.00	1.33	1.83	2.44	3.27
25	1"	0.41	0.57	0.68	0.97	1.29	1.77	3.35	3.14
28	1-1/8"	0.40	0.55	0.66	0.94	1.25	1.71	2.28	3.04
32	1-1/4"	0.39	0.54	0.64	0.91	1.21	1.65	2.19	2.92
35	1-3/8"	0.39	0.53	0.63	0.89	1.18	1.61	2.14	2.85
42	1-5/8"	0.38	0.51	0.61	0.86	1.13	1.53	2.03	2.70
48	1-7/8"	0.37	0.50	0.59	0.83	1.09	1.48	1.96	2.60
54	2-1/8"	0.36	0.49	0.58	0.81	1.07	1.44	1.90	2.52
60	2-3/8"	0.36	0.48	0.57	0.80	1.04	1.41	1.85	2.45
67	2-5/8"	0.36	0.48	0.56	0.78	1.02	1.37	1.80	2.38
76	3"	0.35	0.47	0.55	0.77	1.00	1.34	1.75	2.31
89	3-1/2"	0.35	0.46	0.54	0.75	0.97	1.30	1.69	2.22
102	4"	0.34	0.45	0.53	0.73	0.95	1.26	1.65	2.16
114	4-1/2"	0.34	0.45	0.53	0.72	0.93	1.24	1.61	2.10
140	5-1/2"	0.33	0.44	0.52	0.71	0.91	1.20	1.55	2.02
168	6-1/2"	0.33	0.44	0.51	0.69	0.89	1.17	1.51	1.96
219	8-1/2"	-	-	-	-	-	1.13	1.45	1.87
273	10-1/2"	-	-	-	-	-	-	1.42	1.82

R-value or Thermal resistance is a measure of the ability of a material to retard heat flow. The higher the R-value the higher the insulating value. The Building Code of Australia and several Australian standards specify R-values to help

determine what insulation material and thickness should be used. The BCA lists the requested R-values for pipe insulation in Specification J5.

For further information please contact your MM Kembla representative, customer service or visit our website.

MM Kembla Australia

Gloucester Boulevard, Port Kembla NSW 2505 Australia
PO Box 21, Port Kembla NSW 2505 Australia
T: 1800 804 631 F: 1800 817 846 E: sales@kembla.com.au
www.kembla.com.au

MM Kembla ABN 13 003 762 641

MM, Kembla and MM Kembla are trademarks
of Metal Manufactures Pty Limited

Technical Bulletin No: D83/26

MM Kembla New Zealand

263 Ti Rakau Drive, East Tamaki, Auckland 2013 New Zealand
PO Box 51-525, Pakuranga, Auckland 2140 New Zealand
T: +64 9 274 0111 F: +64 9 274 0347 E: sales@mmbrands.co.nz
www.mmbrands.co.nz