K-FLEX ST

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K-FLEX ST is a closed-cell, flexible elastomeric foam use in thermal and acoustic applications. K-FLEX ST is a Factory Mutual Approved, Class “0” fire rating (tested in accordance with BS476 Part 6 & 7), Anti-Microbial, Clean Room Approved insulation without CFCs, HCFs, HCFCs, Formaldehyde, Green Guard Approved, Singapore Green Mark Approved (GBI) and Fiber free. K-FLEX ST insulation is also available with pressure sensitive adhesive and aluminium foil for faster installation process.

EMSL ANALYTICAL, INC.

FM APPROVED

GREENGUARD

SINGAPORE GREEN BUILDING PRODUCT SGBC EXCELLENT

UL CERTIFIED ENVIRONMENTAL PRODUCT DECLARATION UL.COM/EPD

www.kflex.com.my

K-FLEX ST

"K-FLEX is the world's leading manufacturer of elastomeric insulation systems. In twenty one production facilities around the world, including Poland, France, China, India, Malaysia, Dubai, Egypt, the UK and the USA some 5,000 employees develop and manufacture outstanding product solutions for thermal and acoustic insulation.
K-FLEX is committed to ensuring its products comply with the fire safety and industry-wide safety standards.
K-FLEX has 63 sales offices on five continents, offering premium service to more than 50,000 customers.
As the world's fastest-growing company in the industry, K-FLEX is also a global player in the target markets of building services, refrigeration, air conditioning and ventilation, rail, shipping, automotive and beverage industries as well as the solar industry and OEM businesses.
K-FLEX has ISO 9001 and ISO 14001 certification."

PLANT TIMELINE

K-FLEX ST is a multi purpose flexible elastomeric thermal insulation with a built-in vapour barrier and a closed cell structure, this make K-FLEX insulation a high resistance to water vapour transmission which in turn enable the material to maintain a high level of energy conservation efficiency.
K-FLEX ST is a dust and fibre free insulation that make it an ideal product for apartments, commercial buildings, industrial plants, oil & gas industry, marine and offshore applications.
K-FLEX ST is the ideal choice for:

- Refrigeration pipework
- Hot water piping system
- Ducting system
- Large pipe and tanks
- Chilled water piping system
- Drainage system

With 21 plants worldwide, K-FLEX can uniquely provide On-Time Delivery, Consistent Product Quality and a Highly Competitive Price.

ADVANTAGES

Low flame spread
When fire tested K-FLEX ST, it does not generate flaming droplets, and has a low fire propagation index. These combined meet the fire performance requirement of class "0" as defined in Building Regulations. Further guarantee is given by supervision contracts with independent European laboratories.

High water vapour diffusion resistance
K-FLEX ST closed cell elastomeric insulation has a high water vapour diffusion resistance factor μ, that minimizes water vapour penetration, giving excellent long term performance.

Very low thermal conductivity
K-FLEX ST thermal conductivity is λ 0°C = 0.032W/{m·K). The thermal conductivity coefficient is the most important factor in calculation focused on energy saving.

TECHNICAL DATA

Brief description	Flexible elastomeric foam, closed-cell insulation material
Material type	Nitrile Butadine Rubber
Colour	Black
Assembly	Light weight and flexible. Closed cell structure means no additional vapour barrier is required.

Property	***Value/Assessment***	***Special Remark***
Temperature Range	Max. service temperature: +116 °C Min. service temperature: -200 °C	Tested acc.to EN 14706, EN 14707 and EN 14304
Thermal Conductivity	λ ≤ 0.034 W/(m.K) at +20 °C λ ≤ 0.032 W/(m.K) at 0 °C λ ≤ 0.028 W/(m.K) at -50 °C	Tested acc. to DIN EN 12667, EN ISO 8497
Water vapour diffusion resistance	Water vapour diffusion resistance: μ ≥ 10,000 Water Absorption: 0.2% by volume	Tested acc. To EN 12086, EN 13469 Test acc to ASTM C 209
Fire performance	Surface Spread of Flames: Class 1 Fire Propagation: Total Index Performance (I) ≤ 12 Sub Index (i1) ≤ 6 Fire Performance: Class 0	Surface Spread of Flame: tested according to BS 476 Part 7:1997 Self-extinguishing, does not drip, does not spread flames Fire Propagation: tested according to BS 476 Part 6:1989
Other Fire Class	FM-approved V0, 5VA Flame spread index (FSI): 25 Smoke develop index (SDI): 30 Ignitability index: 0 Spread of flame index: 0 Heat evolved index: 0 Smoke develop index: 3	Tested acc.to Class No.4924 UL 94 Tested acc. To ASTM E84 Tested acc. To AS/NZS 1530.3 - 1999
Chemical behaviour	Excellent resistance to ozone, oil and chemicals (consult product test list).	
Other certificates	Anti microbial Greenguard Low VOC Singapore Green Building Products	Tested acc. To ASTM G21 Tested acc. To ISO 17025 Tested acc. To ISO 16000 part -3, -6, -9, -11 Approved
Density	48 to 70 kg/m^3	
UV resistance	For UV protection K-FLEX finish paint required	

For temperatures below -50 °C please contact our Customer Service Center to request for the corresponding technical information.
The reaction to fire classification is valid on metal or solid, mineral surfaces.
Further documents such as test certificates, approvals and the like can be requested using the registration number given.
K-FLEX reserves the right to change data and technical requirements without notice.

PIPE INSULATION THICKNESS RECOMMENDATIONS

Conditions	Pipe Size			
	6mm - 28mm	**28mm - 60mm**	**60mm - 114mm**	**114mm - 168mm**
Ambient Temperature: 33°C Medium Temperature: 6°C				
Relative Humidity 60%	10 mm	13 mm	13 mm	13 mm
70%	19 mm	19 mm	19 mm	25 mm
80%	25 mm	32 mm	32 mm	32 mm
Ambient Temperature: 33°C Medium Temperature: 12°C				
Relative Humidity 60%	10 mm	10 mm	10 mm	13 mm
70%	13 mm	13 mm	19 mm	19 mm
80%	19 mm	25 mm	25 mm	25 mm
Ambient Temperature: 33°C Medium Temperature: -50°C				
Relative Humidity 60%	32 mm	40 mm	40 mm	50 mm
70%	50 mm	50 mm	60 mm	60 mm
80%	63 mm	75 mm	90 mm	100 mm

SHEET INSULATION THICKNESS RECOMMENDATIONS

Conditions	Ducts - Tanks - Vessels - Equipment Metal
Ambient Temperature: 33°C Medium Temperature: 6°C	
Relative Humidity 60%	13 mm
70%	25 mm
80%	40 mm
Ambient Temperature: 33°C Medium Temperature: 12°C	
Relative Humidity 60%	13 mm
70%	19 mm
80%	32 mm
Ambient Temperature: 33°C Medium Temperature: -50°C	
Relative Humidity 60%	50 mm
70%	75 mm
80%	125 mm

K-FLEX ST tube is available in 2 meters length. In sheet form, K-FLEX ST is available in roll or pre-cut sheet. All sheet material is available with or without self adhesive and/or self adhesive and aluminium foil.

RANGE ▸ K-FLEX ST TUBES (2 METRES)

Copper Pipe		Iron Pipe		6 • 1/4"		9 • 3/8"		13 • 1/2"		19 • 3/4"		25 • 1"		32 • 1 •1/4"		40 • 1 • 1/2"		50 • 2"	
OC Inches	ø OD mm	IPS Inches	ø OD mm	size	m/box	size	m/box	size	m/box	size	m/box	size	m/box	size	m/box	size	m/box	size	m/box
1/4"	6					9x6	316	13x6	200	19x6	100	25x6	60						
3/8"	10	1/6"	10.2			9x10	220	13x10	152	19x10	80	25x10	52						
1/2"	13					9x13	200	13x13	128	19x13	72	25x13	50						
5/8"	16	1/4"	13.5	6x16	266	9x16	188	13x16	112	19x16	72	25x16	50						
3/4"	19			6x19	180	9x19	136	13x19	100	19x19	60	25x19	40	32x19	32				
7/8"	22	1/2"	21.3	6x22	180	9x22	128	13x22	98	19x22	60	25x22	38	32x22	24	40x22	18	50x22	12
1"	25			6x25	152	9x25	108	13x25	80	19x25	50	25x25	32	32x25	24	40x25	16	50x25	10
1•1/8"	28	3/4"	26.9	6x28	130	9x28	98	13x28	72	19x28	48	25x28	32	32x28	24	40x28	16	50x28	10
1•3/8"	35	1"	33.7	6x35	100	9x35	76	13x35	58	19x35	40	25x35	30	32x35	18	40x35	16	50x35	8
1•5/8"	42	1•1/4"	42.4	6x42	90	9x42	60	13x42	50	19x42	32	25x42	24	32x42	18	40x42	12	50x42	8
1•7/8"	48	1•1/2"	48.3			9x48	50	13x48	40	19x48	28	25x48	22	32x48	16	40x48	10	50x48	8
2•1/8"	54					9x54	46	13x54	40	19x54	24	25x54	18	32x54	14	40x54	10	50x54	8
2•3/8"	60	2"	60.3			9x60	46	13x60	32	19x60	22	25x60	18	32x60	12	40x60	8	50x60	8
3"	76	2•1/2"	76.1			9x76	40	13x76	30	19x76	18	25x76	12	32x76	8	40x76	8	50x76	6
3•1/2"	89	3"	88.9			9x89	36	13x89	24	19x89	18	25x89	12	32x89	8	40x89	8	50x89	6
4•1/2"	114	4"	114.3			9x114	30	13x114	24	19x114	14	25x114	8	32x114	6	40x114	6	50x114	4
5•1/2"	140	5"	139.8													40x140	4	50x140	4
6•5/8"	168	6"	165.2													40x168	4	50x168	4

RANGE ▸ K-FLEX ST SHEET IN ROLLS

Type	Thickness		Sheet 1.14 metre wide	
	mm	inches	format	m²/box
PL/RO 06	6	1/4"	30 x 1.14	34.20
PL/RO 10	10	3/8"	20 x 1.14	22.80
PL/RO 13	13	1/2"	14 x 1.14	15.96
PL/RO 16*	16	5/8"	12 x 1.14	13.68
PL/RO 19	19	3/4"	10 x 1.14	11.40
PL/RO 25	25	1"	8 x 1.14	9.12
PL/RO 32	32	1•1/4"	6 x 1.14	6.84
PL/RO 40	40	1•1/2"	4 x 1.14	4.56
PL/RO 50	50	2"	4 x 1.14	4.56

* 16mm only available upon received Purchase Order from customer.
* 1.22m width will be available upon request.

Self adhesive sheets available in all sizes.

PACKAGING ▸

K-FLEX ST TUBES AND SHEETS

K-FLEX ST **Tubes**

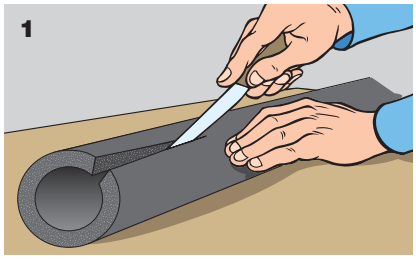
Measurements:
2.1m x 0.394m x 0.32m

K-FLEX ST **Sheets**

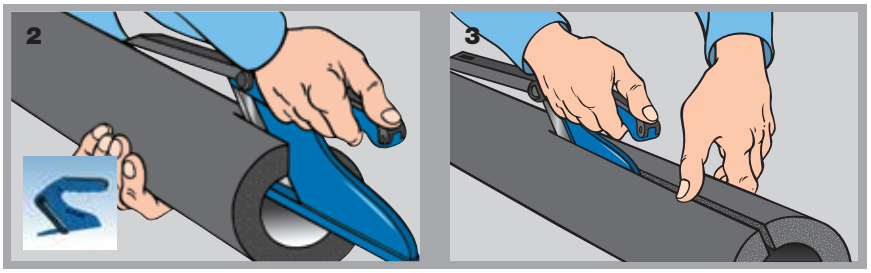
Polyethylene bags
The bags allows for outdoor storage during the sorting stage.

Measurements:
0.5m x 1.23m

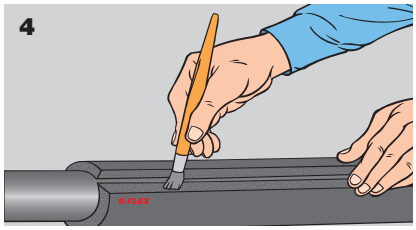
INSTALLATION ▸ FITTED PIPES



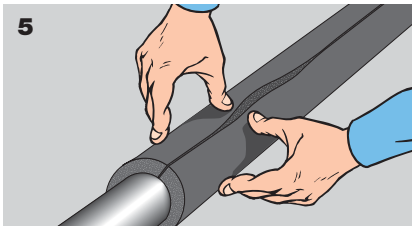
Use only the sharpest knife for cutting - this makes the subsequent glueing far easier.
We recommend using the K-FLEX cutter which is ideal for longitudinal cuts.



The use of the cutter is illustrated in these two diagrams. Let the blade run along the tube without the tool's surfaces touching it to get a neat, clean cut.

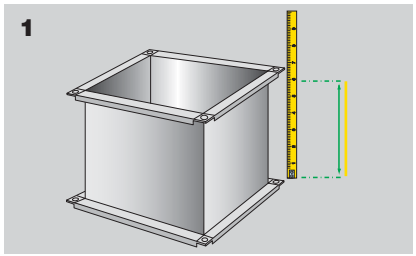


Position the tube so that the edges are separated, and apply an even layer of K-FLEX K-414 glue.

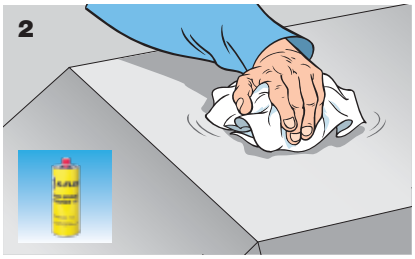


Once the glue has dried, reseal the tube, pressing the edges firmly together.

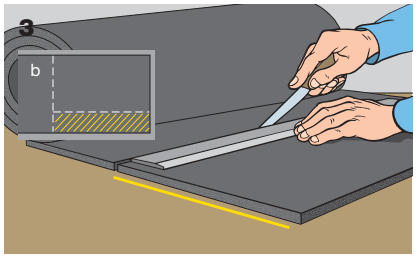
INSTALLATION ▸ INSULATION DUCTINGS



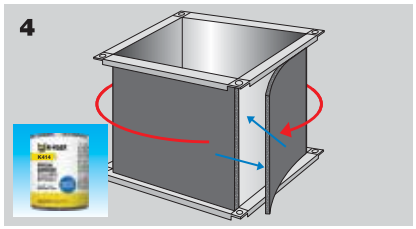
There are considerable advantages in using K-FLEX ST ROLL SHEET for ducting, which has the same height as the sheeting.
Take the measurements of the ducting section to be lagged.



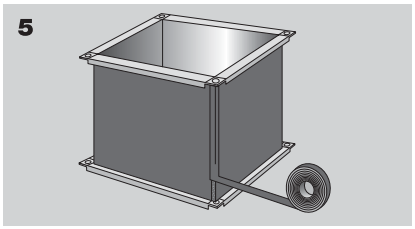
Use thinner to thoroughly clean the surface to be insulated. Insulation is not recommended where there is incrustation or other flaws which could prevent the sheeting from sticking perfectly.



Cut the corresponding portion out of the roll. There is an obvious saving in material by cutting the sheeting along its height (a) rather than along the length of the 1000 mm sheeting (b).



Glue the side of the sheeting to be stuck to the conduit and glue the conduit surface, then apply the sheeting, keeping it taut at the corners.



Cover the corner where the edges join with adhesive insulating tape. Compared to a similar operation carried out with 1000 mm sheeting, as well as the saving in material, there has only been one cut in the application.

PROJECT ▸ MALAYSIA

Hospital Putrajaya
Boston Scientific
Osram @ Kulim
IKEA Penang
Nation Cate
Hospital Cyberjaya
Central World @ I-City
Sandisk
Celestica Johor Bahru
Celestica Penang
Jabil Penang
Micron @ BT Kawan
Intel KM1
Keppel Factory
Hospital Tanjung Karang

PROJECT ▸ THAILAND

Mahanakhon Tower
Marriott Surawong
Palladium Hotel
Maya Chiangmai
Central Embassy Chiangmai
Promenada Chiangmai
Four Wing Grand Hotel
Dusit Hotel
Four Point Hotel
Best Western Hotel
Holiday Inn Hotel
Vana Belle Hotel
Paradise Park
The Nine Community Mall
The Walk

PROJECT ▸ INDONESIA

Akmani Hotel, Legian – Bali
All Season Hotel – Nusa Dua, Bali
Pullman Hotel, Central Park – Jakarta
Cavington Hotel – Jogya
Novotel Hotel – Tangerang
Sol Marina Hotel – Serpong
Mercure Hotel – Surabaya
Pakubuwono The View Apartment – Jakarta
Coca-Cola Factory – Surabaya
Australia Embassy Office – Jakarta
Istana Presiden Bogor
The East Office – Jakarta
Wisma Soho Office – Jakarta
The Peak Apartment – Jakarta
XXL Cinema All Outlet – Indonesia

PROJECT ▸ SINGAPORE

Changi Water Reclaimation Plant
Marina Band Sands
Norvatis Plant @ Tuas
Glory
Rio Casa Condominium
Mayflower Primary School
Biopolis Centre
NUS Laboratory
UMCi @ Pasir Ris
Sony A&A
40 Gul Circle
St Joseph Institution International School
Crystal Plant @ Jurong Island
Singapore General Hospital
Sime Darby Centre

PROJECT ▸ VIETNAM

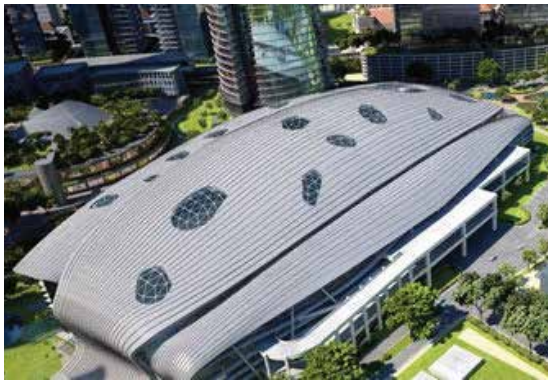
First Solar Factory
Nipro
DenEast Milk
Pepsico Suntory Factory
Cai Lan International Container Terminal
Intel
Olympus
Marigot Vietnam
Lotte Centre Ha Noi
Hyatt Regency Apartment
Hue Hospital
Intercontinental Resort and Spa
Bitexco Financial Center
Hilton Saigon Hotel
JW Marriott

PROJECT ▸ CAMBODIA

Cho Ray Phnom Penh Hospital
Almond Hotel
Olypia City
Calmette Hospital
City Tower
The Bridge Showroom
Toyoko Inn Hotel
Thai Villiage Restaurant
Cazameridian Twin Tower
Era Phnom Penh Hotel
Era Siem Reap Hotel
Tela Gase Station Head Office
Mazda Showroom
Marriott Hotel
The Parkland

PROJECT ▸ PHILIPPINES

Filinvest Plaza E
BPO-Araneta
Winford Hotel
Citadine
Northgate DCS
Circuit BPO
Texas Instruments
Novotel Aqua
World Commerce Place
Palawan International Airport
Robinson's Naga
National Musuem – Philippines
81 Newport
Studio A
Batasan Congress



ACCESSORIES

SELF ADHESIVE FOAM TAPES

PIPE SUPPORT

K 414 GLUE

K-FLEX ST_V11_0724

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