



July 2016

K-FLEX



K-FLEX ST



K-FLEX ST is closed cell, flexible elastomeric foam use in thermal and acoustic applications. K-FLEX ST is a Factory Mutual Approved, Class "0" fire rating (based on 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.



APPROVED



SINGAPORE
GREEN
BUILDING
COUNCIL



K-FLEX

www.kflex.com

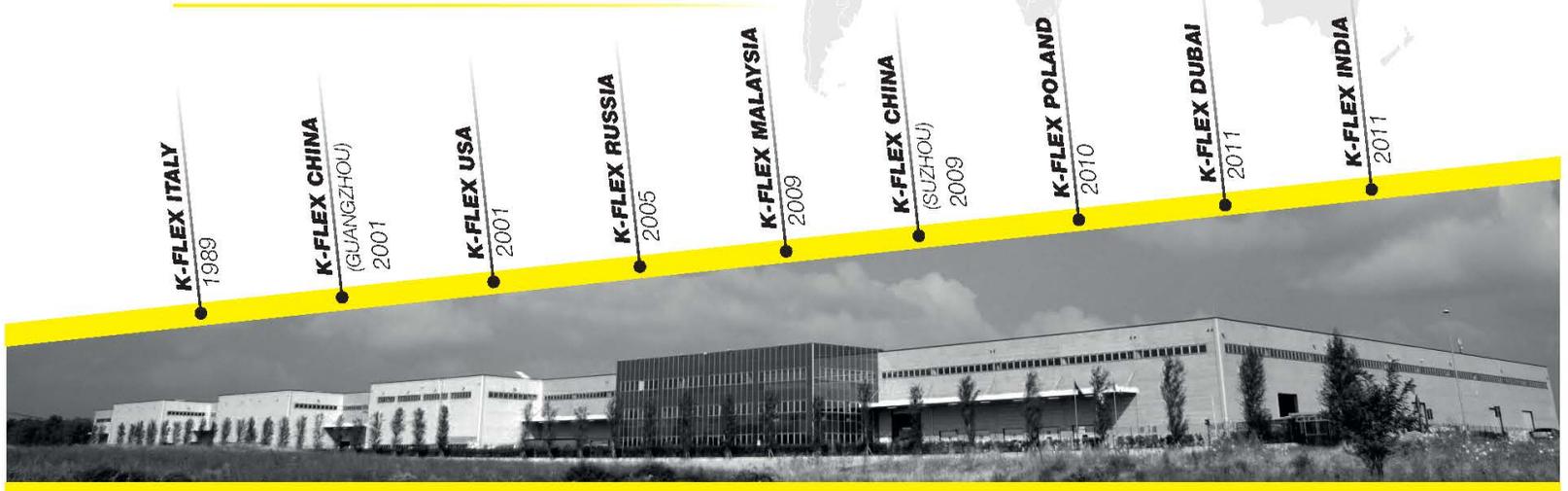
K-FLEX ▶ ST

K-FLEX is an Italian manufacturing company specialised in the production of thermal and acoustic flexible elastomeric insulation materials.

K-FLEX is an example of a successful Italian company that has established itself worldwide. The company is present in 60 countries, with production facilities in all continents and more than 2,000 employees. In addition, the company has commercial distribution branches, located all over the world, for the efficient and effective global distribution process of its products.

The original manufacturing plant, located in Roncello (Italy), was founded in 1989 and today it is the largest in the world for the production of elastomeric insulation.

PLANT TIMELINE ▶



K-FLEX ▶ ST

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

K-FLEX ST ▶ 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 $\lambda_{0^\circ\text{C}} = 0.032\text{W}/(\text{m}\cdot\text{K})$. The thermal conductivity coefficient is the most important factor in calculation focused on energy saving.

TECHNICAL DATA ▶ K-FLEX ST

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	$\lambda \leq 0.034$ W/(m.K) at +20 °C $\lambda \leq 0.032$ W/(m.K) at 0 °C $\lambda \leq 0.028$ W/(m.K) at -50 °C	Tested according to DIN EN 12667, EN ISO 8497
Water vapour diffusion resistance	Water vapour diffusion resistance: $\mu \geq 10,000$ 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).	
UV resistance	For UV protection K-FLEX finish paint required	
Acoustic Insertion Loss	35 dB	
Other certificates	Anti microbial Clean room - contamination class "A" Greenguard Singapore Green Building Products Low VOC	Tested acc. To ASTM G21 Tested acc. To ASTM F51-00 Tested acc. To ISO 17025 Approved Tested acc. To ISO 16000 part -3, -6, -9, -11

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.

K-FLEX ST

K-FLEX ST ▶ 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

K-FLEX ST ▶ 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



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	LPS 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	288	13x6	160	19x6	100								
3/8"	10	1/6"	10.2			9x10	240	13x10	152	19x10	80	25x10	60						
1/2"	12					9x13	180	13x13	128	19x13	72	25x13	50						
5/8"	15	1/4"	13.5	6x16	266	9x16	168	13x16	112	19x16	60	25x16	50						
3/4"	20			6x19	180	9x19	136	13x19	104	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	40	32x25	24	40x25	16	50x25	10
1.1/8"	28	3/4"	26.9	6x28	130	9x28	98	13x28	78	19x28	48	25x28	32	32x28	24	40x28	16	50x28	10
1.3/8"	35	1"	33.7	6x35	100	9x35	76	13x35	58	19x35	36	25x35	24	32x35	18	40x35	16	50x35	8
1.5/8"	42	1.1/4"	42.4	6x42	90	9x42	60	13x42	48	19x42	32	25x42	22	32x42	16	40x42	12	50x42	8
1.7/8"	48	1.1/2"	48.3			9x48	50	13x48	40	19x48	24	25x48	18	32x48	14	40x48	10	50x48	8
2.1/8"	54					9x54	46	13x54	34	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	10	40x60	8	50x60	8
3"	76	2.1/2"	76.1			9x76	40	13x76	26	19x76	18	25x76	10	32x76	8	40x76	8	50x76	6
3.1/2"	89	3"	88.9			9x89	36	13x89	24	19x89	14	25x89	8	32x89	8	40x89	8	50x89	6
4.1/2"	114	4"	114.3			9x114	22	13x114	18	19x114	12	25x114	6	32x114	6	40x114	6	50x114	6
		5"	139.8													40x140	4	50x140	4
		6"	165.2													40x168	4	50x168	4

RANGE ▶ K-FLEX ST SHEET IN ROLLS

Type	Thickness		Sheet 1.14 metre wide	
	mm	inches	format	m ² /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



Self adhesive sheets available in all sizes.

*16mm only available upon received Purchase Order from customer.

PACKAGING ▶ K-FLEX ST TUBES AND SHEETS

K-FLEX ST Tubes



Measurements:
2.1m x 0.394m x 0.32m

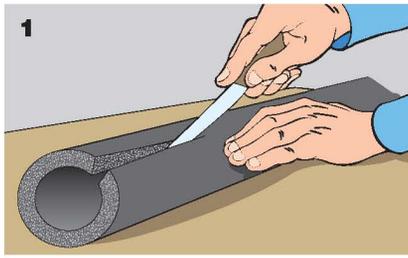
K-FLEX ST Sheets

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

Measurements:
0.5m x 1.23m



INSTALLATION ▶ FITTED PIPES



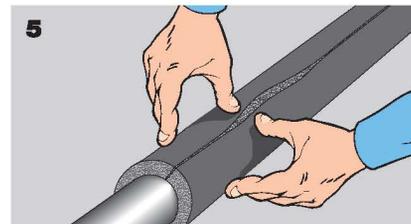
Use only the sharpest knife for cutting - this makes the subsequent glueing far easier.
We recommend using the K-FLEX cutter which is ideal for longitudinal cuts.



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.

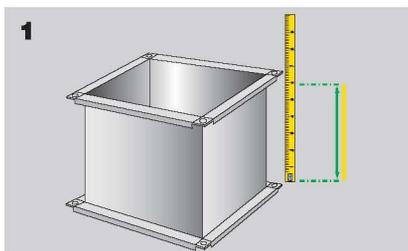


Position the tube so that the edges are separated, and apply an even layer of K-FLEX K-996 glue.



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

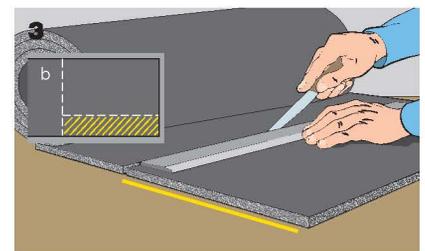
INSTALLATION ▶ INSULATION DUCTINGS



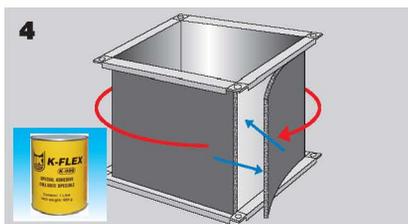
There are considerable advantages in using K-FLEX ST ROLL SHEET for ducting, which has the same height as the sheeting.
Take the measurements of the ducting section to be lagged.



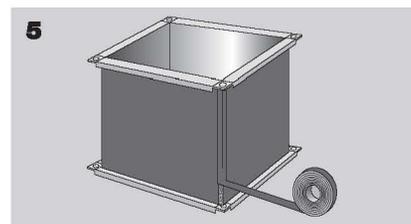
Use K-FLEX thinner to thoroughly clean the surface to be insulated. Insulation is not recommended where there is incrustation or other flaws which could prevent the sheeting from sticking perfectly.



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.

K-FLEX ST



K-FLEX ▶ ST



PROJECT ▶ MALAYSIA

D&Y Textile(M), Johor
 Kaifa Technology, Johor
 First Solar
 Robert Bosch
 Scandisk
 Infineon Kulim
 Haemonetics
 B.Braun
 Finisar Corporation
 Sunpower Alor Gajah
 Biocon
 Hershey Chocolate
 Seagate JB
 Platinum Face, Jln Sultan Ismail
 The Leafz, Off Jln Sg. Besi
 JAKIM A,B,C,D, Putrajaya
 2C10 Putrajaya
 4G5 Putrajaya
 DBKL Tower, KL Eco City
 Sky88
 The Puteri Cove Residence, Puteri Harbour
 Green Haven, JB
 D' Summit, JB
 Paradigm Johor
 Four Season, KL
 Uptown Residences, D'sara Uptown
 Cherish Springs Condo & Hotel, Jaya 33
 Damansara Foresta, Sri D'sara
 Glomac Damansara
 Le Nouvel, KLCC
 Regina, USJ 1
 The Centina, Jln Sg Besi
 Beremi Hotel, Jln Bellamy, KL
 Dijaya, Tropez Danga Bay, JB
 UiTM Puncak Alam
 One Amerin, Balakong
 Pangaea, Cyberjaya
 Tabung Haji Sepang
 One South, Serdang Perdana
 Pusara, Putrajaya
 M-City, Jln Ampang
 Top Glove HQ @Setia Alam
 Country Garden, JB
 Forest City, JB
 Schlumberger, Labuan
 Parcel F, Putrajaya
 IIUM, Medical Campus, Kuantan
 KL Metropolis, Matrade
 Vogue Suites, KL Eco City
 CPI Avantas, Old Klang Road
 Sierramas Height Condo,
 Three28 Residence, Jln Tun Razak
 Public Mutual HQ
 JKG Tower
 D'Centrum, Uniten
 MAHSA University, Putra Permai
 VINA SOHO, Cheras
 IKEA Cheras
 Cristal Residence, Cyberjaya
 Verde, Ara Damansara
 Continental City, Glenmarie
 First Lady Apparrels
 Lembaga Koko Malaysia
 ACORIS, MK 20
 Glomac Centro
 Reflection Damansara
 IPKB, Setia Alam
 Teega Residence, Puteri Harbour
 Vortex, Jln Sultan Ismail
 The Park Residences, Bangsar South
 3Towers, Jln Ampang
 Arcadia, Desa Parkcity
 Bangi Hospital
 Berjaya Central Park Tower 1 & 2
 GM Klang
 Vertical Tower, Bangsar South
 Tropicana International School
 The Robertson
 Parliament House
 Residence 22, Mon't Kiara



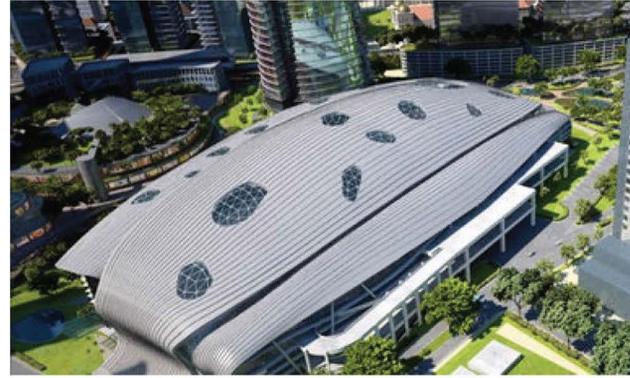
PROJECT ▶ THAILAND

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
 Fashion Island
 Mega Play
 Merry King Rungsit
 Western Digital
 Canon Korat
 Toshiba Factory
 Seagate Korat
 Ichitan Factory
 Doubla A Factory
 Nikon Factory
 Ajinomoto Factory
 Nidec Copel
 Asahi Factory
 Ducati Factory
 New Tobacco Factory
 Sukhothai King Palace
 Royal Gems
 Thammasat University
 IDEO Mobil
 Mega Home
 Noble Ploenjit
 Noble Revolve Ratchada
 Harbor Mall Laemcogabang
 Index Living Mall
 The Garden Night Latgrabang
 Alucon Factory
 Chapter One The Campus
 Fabinet Factory
 Egat kronoy
 Choroom Dukdt ramIntar
 Royal Paragon Phuket
 G-Land Tower
 Bang - Bangkok CDC
 Ares pattaya
 Pockpertl Khaoyai
 FYI HOTEL
 FYI CENTER (OFFICE)
 Park 24 Condominium
 Rosewood Hotel @Kampuchea
 Ratianathibet Park
 Siamese@ Sukhumvit 31
 Siamese Blossom@ Ramintra
 Than Living Condo @Bangbuathong
 Than Living Condo @Sathorn-charoenraj
 Wish Signature Condo @Siam
 Bluport
 Celeste Condo (Khao Tao Bay View Resort)
 Terminal 21 @ Korat
 Pearl Bangkok 25 Fl (Pruksa Head Office)
 Maya Theatre @Pattaya
 Issara Collection @Sathorn
 Arcadia Beach @Chonburi
 Nitta project
 Extension Factory @ Amata, Rayong
 T Project
 Hemaraj Industrial Estate @ Rayong
 Mal Ton Residence 31 @Sukhumvit 63



PROJECT ▶ INDONESIA

Akmani Hotel, Legian - Bali
 All Season Hotel - Nusa Dua, Bali
 Pullman Hotel, Central Park - Jakarta
 Cavington Hotel - Jogja
 Novotel Hotel - Tangerang
 Sol Marina Hotel - Serpong
 Mercure Hotel - Surabaya
 Pakubuwono The View Apartement - Jakarta
 Coca-Cola Factory - Surabaya
 Australla Embassy Office - Jakarta
 Istana Presiden Bogor
 The East Office - Jakarta
 Wisma Soho Office - Jakarta
 The Peak Apartement - Jakarta
 XXI Cinema All Outlet - Indonesia
 Darya Varia Laboratories Factory - Cileungsi
 Indo-Bharat Rayon Factory - Purwakarta
 Indolaktto Factory - Sukabumi
 Sanbe Farma Factory - Bandung
 Uniplast Factory - Cikarang
 Central Park Office Tower - Jakarta
 Mall Paris Van Java - Bandung
 Schering Pharmaceutical - Pandaan, Surabaya
 Bank Indonesia (BI) - Lampung
 Mall & Office Tower Kota Kasablanka - Jakarta
 Plaza Indonesia Extension - Jakarta
 Theme Park Trans Studio - Bandung
 Konlmex Pharmaceutical - Solo
 Kraft Foods Factory - Cikarang
 Pt Krakatau Steel - Cilegon
 Apartemen Kencana Pondok Indah - Jakarta
 Alport Bajo - Nusa Tenggara Timur
 Ferron Par Pharmaceutical Factory - Cikarang
 Jotun Factory - Cibitung
 Nutrifood Factory - Cikarang
 Reckitt Becknser (Detol) Factory - Bekasi
 Unilever Factory - Cikarang
 Rs Pertamina - Sentul
 Data Center Cbn Cyber Office - Jakarta
 Kantor Kementrian Pemberdayaan Perempuan & Anak - Jakarta
 Schlumberger Workshop And Office - Bekasi
 Apartement Ambasadior - St Moritz - Jakarta
 Apartement Presidential Puri Kembangan - Jakarta
 Capitol Apartement - Jakarta
 Sumarecon Mall - Bekasi
 Bayer Healthcare Indonesia Factory - Cibinong
 B-Braun Medical Factory - Cikampek
 Fahrenheit Factory - Tangerang
 Frislan Flag Factory - Jakarta
 Hankook Tire Factory - Cikarang
 Fave Hotel - Papua Nuglil
 Alfa Head Quarter Alam Sutra - Tangerang
 Infomedia Office - Bandung
 Maxx Box Mall - Tangerang
 Glaxo Parmaceutical Factory - Pulo Gadung
 Hotel Swiss - Bel Legian Bali
 Menara Danamon Kuningan - Jakarta
 Hotel Radison - Bali
 Tempo Scan Pacific - Cikarang
 Sinda Budi Sentosa Tambun Bekasi
 Toyota Training Center
 Lotte Factory - Cibitung
 Nittsu Shoji - Kerawang
 Sano Gratia Pharmaceutical - Cikarang
 Mahakam Beta Farma (Mbf) Factory, Pulogadung - Jakarta
 Kawan Lama Sejahtera Office - Jakarta
 Mid Town Signature - Summarecon Serpong
 Tangerang
 Tanto Line Office - Tj Perioek Jakarta



PROJECT ▶ SINGAPORE

Changi Water Reclamation Plant
 NUS Laboratory
 AMD Singapore
 Biopolis Centre
 Glaxo Wellcome Pharmaceutical (GSK)
 Novartis Plant @ Tuas
 Crystal Plant @ Jurong Island
 Singapore General Hospital
 P&G @ Biopolis
 Sony A&A
 Abbott Pharmaceuticals
 Wyeth Pharmaceuticals
 Schering Plough Corporation
 UMCi @ Pasir Ris
 3M @ Gambas Ave
 Philips SSMC Wafer Fab
 Seagate @ Woodlands
 Siemens Semiconductors Plant
 Hewlett Packard
 Changi Store Hub
 Bugis Junction
 Comcentre 3
 HDB Hub @Toa Payoh
 Marina Bay Sand
 New Cathay Building
 Nanyang Polytechnic
 Teck Ghee Community Club
 Global Switch @ Tai Seng
 IMM extension
 Kranji Turf Club
 DHL Head Office
 UE Square
 Singapore American School
 Bukit Timah Cold Storage
 City Sqaure Mall
 Hitachi Tower
 Ministry of Manpower
 Japanese School @ Changi Campus
 Junction Nine @ Yishun
 High Park Residence @ Seng Kang
 Cabana @ Yio Chu Kang
 Double Bay @ Simei
 Tampines Central 8 (DBSS)
 Twin Fountains @ Woodland
 Sentosa Cove Apartment
 Lincoln Suites Condo
 Cote D'Azur Condo
 Caspian Condo @lakeside
 Cusaden Condo
 Skyline @Telok Blangah
 High Oak Condo
 Latitude Condo @ Jalan Mutiara
 Rain Forest Condo
 Austville Condo @ Seng Kang
 Light Condo @ Cairhill

PROJECT ▶ PHILIPPINES

Texas Instrument
 Sunpower Fab 2 & Fab 4 Factory
 United Pulp and Paper Manufacturing Plant
 Marina Bay Resort
 BPO Araneta Call Center
 Cebu Airport Terminal
 Palawan Airport Terminal
 Metro North Call Center
 Conrad Hotel
 Festival Shopping Mall
 MBR Hotel & Casino
 National Museum of Natural History
 Cebu Hotel
 SMDC-New Port

PROJECT ▶ CAMBODIA

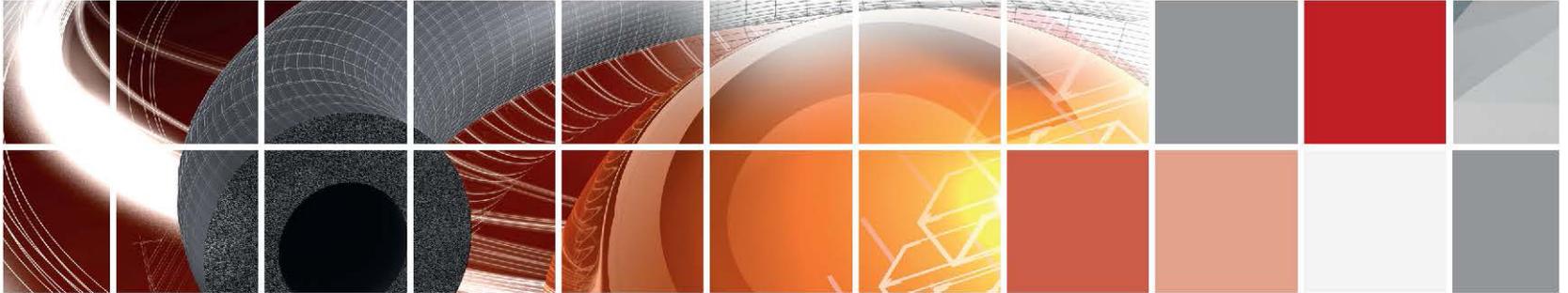
Cho Ray Phnom Penh Hospital
 Almond Hotel
 Olypia City
 Calmette Hospital
 City Tower
 The Bridge Showroom
 Toyoko Inn Hotel
 Thai Villiage Restaurant
 Cazameridian Twin Tower
 Era Phnom Penh Hotel
 Era Siem Reap Hotel
 Tela Gase Station Head Office
 Mazda Showroom
 Marriott Hotel
 The Parkland
 DFS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

PROJECT ▶ VIETNAM

Robert Borsch Factory
 Dona Food Wear Standard Vietnam Factory
 PNJ Factory
 Pepsi Cola Factory
 First Solar Factory
 LPG Thi Vai Factory
 TCIE Da Nang Factory
 DKSH Factory
 CICT Cai Lan Port
 Lao Coffee Factory
 City Garden Apartment
 Hyatt Regency Apartment
 Crown Plaza Hotel
 Times Square
 Hue Hospital
 Russia Embassy
 Big C Supermarket
 ICON 4 Complex
 British Vietnam International School
 An Giang Television
 Minh Viet Building
 Cotec Office Building
 Sai Gon Pavillon
 Intercontinental Resort & Spa @ Da Nang
 Bitexco Financial Centre



K-FLEX ST



ACCESSORIES ▶ K-FLEX ST

SELF ADHESIVE FOAM TAPES



PIPE SUPPORT



K 996 GLUE



ALUMINIUM TAPE



SPT GREEN BUILDING COMPANY

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Tel: (08) 6258 3778 - 6258 3779
Email : sales@sptbuilding.com

Fax: (08) 6258 3789