



KAIMANN

SAINT-GOBAIN



Product Overview

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Content

	Page
Application areas	3
About Kaimann	4
Clean Efficiency	6
Local service and expertise	8
Application considerations	10
Product range	13-90
General information	93
Packaging types	94
Tolerances, Limits	96
General Terms and Conditions of Sale and Delivery	97
Partnerships & Environmental management	99





Application areas

Product	Page	Application areas													
		Refrigeration	Chilled water applications	Air conditioning / Ventilation	HVAC	Heating / Plumbing	Covering systems	Solar hot water	Fire protection	Heat pumps	Food Industries	Chemical & Pharmaceutical Industries	Ship Building	Process Industries	Acoustics
Kaiflex ST s2 / ST	13	•	•	•	•	•			•	•	•	•	•	•	•
Kaiflex KKplus s3 Connect	29		•		•				•					•	
Kaiflex EPDMplus	33	•		•	•			•			•	•	•	•	•
Kaiflex HFplus s2	39			•							•	•	•	•	•
Kaifoam PE	43		•			•									
Kaiflex Protect TC	47	•		•	•					•	•	•			
Kaiflex Protect Alu-TEC	53										•	•	•	•	
Kaiflex Protect Alu-NET	57				•										
Kaiflex Protect F-BLACK	61											•	•	•	
Kaiflex Solar EPDMplus 2in2	65							•							
Kaiflex Pyrostar	69				•				•						
Kaisound	71													•	•
Kaivenience	77				•										•
Kaiflex RT-ST	81	•	•	•							•	•	•	•	
Accessories	87	•	•	•	•	•	•	•	•	•	•	•	•	•	•

WE CREATE SOLUTIONS

For more than 55 years Kaimann has looked to build for the future. The success of the company has always been based on a reputation for innovation, outstanding quality and commitment to establishing fair, long-term business partnerships with all our customers.

Since Kaimann was founded in 1959, the company has been driven by the aspiration to enhance the performance and quality of its products; as well as design market services focused on the needs of our customers. Following decades of development under this vision, our manufacturing hub in Hövelhof has become one of the most modern and technologically advanced facilities for the development and production of flexible elastomeric foam and polyethylene insulation products in Europe. Becoming a part of the Saint-Gobain group at the end of 2018 reinforces our aspiration to engineer highly efficient insulation products being fit to fulfil the energy challenges of the future.

Kaiflex, our main insulation brand, is known as the leading flexible insulation for air-conditioning, refrigeration, heating, hot water and solar hot water applications. Utilising Kaimann's precision engineering technology, Kaiflex offers consistently high-performance, time after time.





Knowledge and innovation

Achieving even greater energy savings and further reductions in Carbon Dioxide emissions requires product innovation and technical expertise. Kaimann's experienced team of expert research and development chemists work closely with industry stakeholders to determine and realise the insulation solutions of tomorrow.

Engineering performance

For Kaimann engineering insulation is a true passion and our state-of-the-art manufacturing facilities are the beating heart of the company. Our advanced pallet feed process is the culmination of years of development and represents a fine-tuned technology, which enables us to deliver insulation manufactured to the highest standards.

Quality management

Kaimann is an ISO 9001 compliant quality manufacturer and to us this means more than just supplying quality products every time. Managing quality means ensuring that every customer receives the same level of care and attention. We are constantly building upon customer feedback to offer continual improvement in every aspect of our business, so that we can offer our products in the best condition via a process that works for you.

Environmental management

Manufacturing should be sustainable and non-polluting which is why Kaimann is dedicated to minimising the environmental impact associated with manufacturing Kaiflex. An environmental management system in accordance with ISO 14001 commits Kaimann to pursuing excellence in this field.

Energy management

Kaiflex saves so much energy over its lifespan, that it offsets the energy used in its manufacturing many times over. This comes from years of development, reducing energy consumption across all stages of manufacturing, packaging and logistics. This focus is now formally recognised as Kaimann operates an ISO 50001 certified energy management system and commits Kaimann to reducing energy use each year.



Clean Efficiency

Insulation is amongst the most cost-effective energy saving measures available and technical insulation materials like Kaiflex can also prevent condensation, ensuring that pipes remain dry and free from corrosion throughout the life of the mechanical system.

Over many decades, Kaiflex insulation has been continually re-engineered

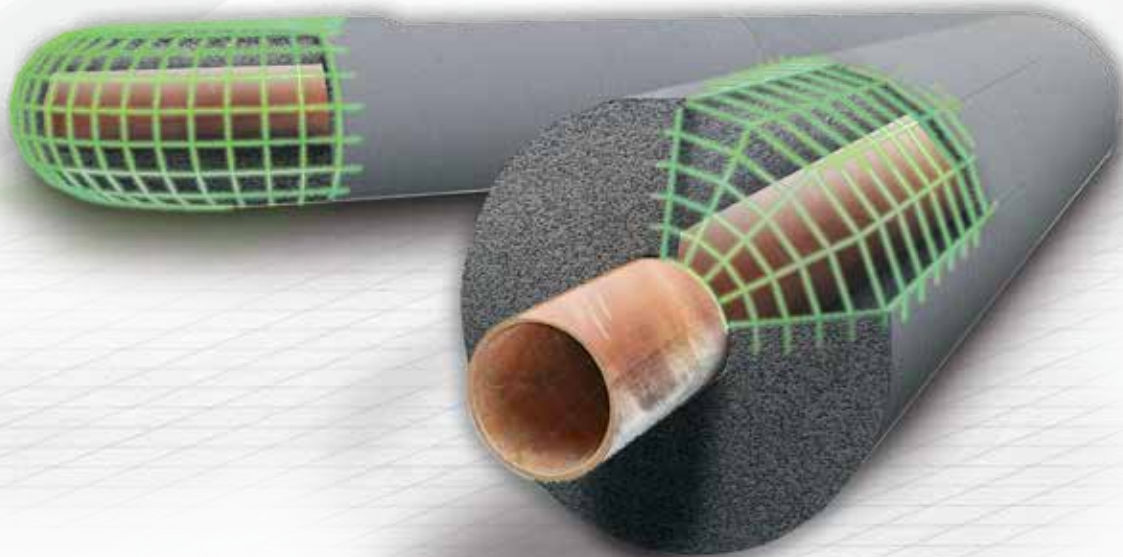
and improved to meet all of your requirements for saving energy without compromising on material quality safety or the indoor environment. At the heart of this is the closed cell structure of Kaiflex that traps air within the insulating foam, while keeping moisture out.

This makes Kaiflex durable and long lasting, but also ensures a secure

insulation system free from dust and fibres that can be used in almost any building, without any adverse impact on the indoor environment.

That's what we call
Clean Efficiency.





Flexible nature

Kaiflex is a highly flexible rubber foam that makes it easy to insulate complex pipe runs with many bends or irregular fixtures.



Inherent resistance to microbial growth

By effectively preventing moisture ingress, Kaiflex is inherently resistant to the microbial and mould growth that otherwise compromise indoor air quality.



Closed cell structure with in-built water vapour barrier

Formed from thousands of independently water resistant cells, Kaiflex insulation is naturally resistant to moisture ingress and requires no additional water vapour barrier.



Long-term thermal performance

With low conductivity and high resistance values that do not noticeably diminish over time, Kaiflex is highly effective insulation for a wide range of purposes and applications.



Inherently resistant to corrosion

With an inherent resistance to moisture ingress Kaiflex insulation keeps pipes dry and helps to prevent corrosion under insulation.



Dust and fibre free

Dust & fibres can aggravate respiratory conditions and create an additional site hazard. Kaiflex is dust and fibre free making installation easier and healthier.



Local service and expertise

Kaimann has a long-established presence in the UK & Ireland and operates a dedicated sales office and warehouse. Highly trained and responsive, your local Kaimann service team is intensely focused on ensuring that customers throughout the UK & Ireland receive a level of involved support that most other companies can't match.

Dedicated expertise

Business culture varies from region to region, even within the UK & Ireland. Kaimann is a company that appreciates this and embraces local differences, which is why Kaimann employs a team of local representatives and

technical experts. Kaimann literature presents advice and information drawn from the accumulated knowledge of technical insulation experts with vast experience in the UK insulation industry. Driven by a philosophy to make this knowledge available to all, Kaimann's experienced technical service team can provide support and advice to our customers free of charge.

Professional customer service team

Kaimann customers benefit from a dedicated sales & customer service team covering the whole of the UK & Ireland. Customer enquiries and orders are handled from our sales office

in Oldham, Greater Manchester and in each region Kaimann representatives are constantly working to further develop the market for Kaiflex products.

Local warehousing and logistics

We also operate our own warehouse in the heart of the country, and this gives us the flexibility to offer fast & reliable delivery on a wide range of products. With a large range stocked locally, Kaimann can offer next day delivery throughout the UK for many Kaiflex sheet, tube and coils sizes. Furthermore, the scale of our business in the UK & Ireland means that we regularly draw additional stock from our state-

of-the-art central logistics centre in Germany, enabling us to offer shorter lead times for non-standard items.

Technical support and guidance

As a highly technical product, selecting the correct mechanical service insulation is about more than just technical values. Kaimann's experienced UK technical service team can provide all the expert advice needed to make the right decisions free of charge.

Professional installation

Nothing can substitute for working hands on with Kaiflex, which is why

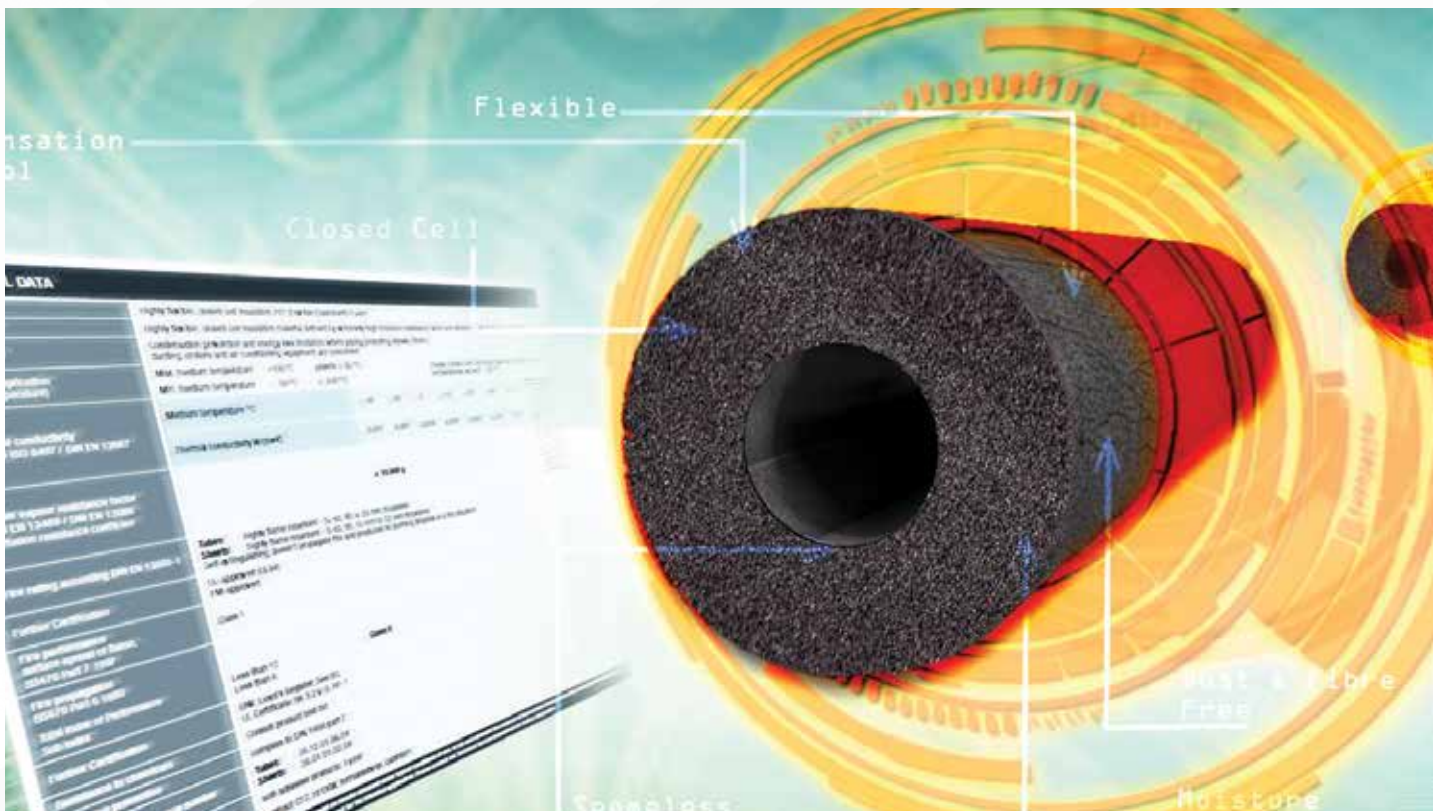
Kaimann offers application training for all Kaiflex products and accessories, both on-site and at our training facility. Together with a range of detailed installation guides, techniques and videos, Kaimann is committed to ensuring that customers can get the very best performance possible out of Kaiflex insulation.

Digital service tools 24/7

In an always-connected digital world, Kaimann understands the importance of providing customer support 24 hours a day, 7 days a week. Our sophisticated suite of online services and support tools are available when you need them, wherever you may be.

Solutions customised for local needs

The dedication of Kaimann to the local market extends beyond literature, sales and customer support. Traditional insulation practice in the UK & Ireland is subtly different from that in continental Europe and energy saving legislation is implemented in unique ways. With this in mind, the Kaiflex range of flexible insulation has been specifically tailored to the needs of UK & Irish consultants, contractors and wholesalers, with tubes and sheets sized to meet local demand. Kaimann is also constantly looking to introduce innovative new thermal and acoustic products and solutions that meet the insulation challenges facing the UK & Ireland.



Design considerations for **heating** **applications**



Taken together, domestic and commercial buildings account for around 40 % of all the energy we use. Although this includes the use of electricity for lighting, computers and other devices, the biggest single area of use is space heating.

Pipes and ducts carry heat around a building and are an essential element of any central heating system. Heat lost from pipes and ducts rarely plays any role in heating the building, so using insulation to stop this waste is an important part of maximising energy efficiency. Selecting the right material means considering a number of things.



Long term thermal efficiency

An insulation that offers true thermal efficiency not only exhibits low thermal conductivity values, these values also remain consistent over long periods of time.

Fire performance

Pipe insulation used inside a non-residential building must be shown to resist flame spread when tested in accordance with the new European fire test regulations.

Indoor air quality

Making the right material choice can help to keep the air in a building healthy. Utilising insulation free from dust and fibres means there's no potential for fibre migration while closed cell materials are also engineered to stop mould and bacterial growth.

Design considerations for **air-conditioning & refrigeration applications**



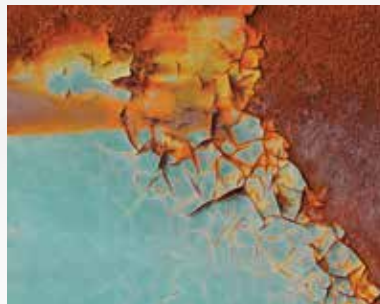
Pipes that carry mechanically chilled water or cooled liquid refrigerants throughout a building often suffer from condensation and associated problems, such as pipe corrosion or mould growth that can cause damage to the fabric of the building.

Only by controlling the temperature of surfaces exposed to the ambient air can condensation be averted. Insulating pipes is the best way to do this. Selecting the right material is not just about thermal performance - an insufficient water vapour barrier will render even the best insulation ineffective.



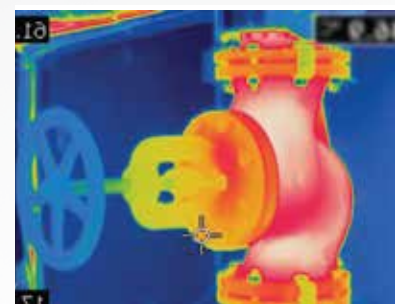
Corrosion resistance

Since corrosion can only occur in the presence of moisture, water resistant closed cell insulation can form a critical part of any anti-corrosion system, by keeping the pipework dry. The best corrosion-inhibiting materials go one step further and have neutral acidity so that they won't easily react when in direct contact with metal pipes.



Water vapour resistance

The most reliable water barriers are engineered into the structure of the insulation itself. Closed cell materials, formed from thousands of independently water-resistant cells, stop the passage of water vapour, even if the surface is damaged.



Reduce thermal bridging

Where small details such as pipe hangers, valves, flanges and bends are left uninsulated thermal bridging accounts for a very significant level of energy loss. These are also points where condensation and corrosion are most likely. The best insulation systems are installed seamlessly with no weak points.

kaiflex[®] ST_{s2} / kaiflex[®] ST



Designed to prevent condensation and energy losses

Kaiflex ST s2 / ST flexible closed cell rubber insulation reliably prevents condensation and reduces energy loss. By incorporating a water vapour barrier into the insulation cell structure Kaiflex ST s2 / ST can effectively eliminate water vapour migration and retain outstanding performance over the entire system life.

Available in tube, coils and sheets for use on air-conditioning, refrigeration, chilled water, heating and hot water pipes and air-distribution ductwork, Kaiflex ST s2 / ST is versatile insulation with consistent and reliable technical values. In addition to exceptional condensation preventing performance, Kaiflex ST s2 / ST also performs an acoustic function, absorbing sound and dampening duct wall vibration. With inherent anti-microbial resistance as standard and a closed cell rubber structure that is completely dust and fibre free, Kaiflex ST s2 / ST can be used in any kind of building without impacting on health or the quality of air.

Kaiflex ST s2 / ST has been designed to meet European fire regulations and is a self-extinguishing foam that will not drip or support flame spread. With a European Class B_L-s2, d0 or Class B-s3, d0 fire classification, Kaiflex ST s2 / ST can be safely used with confidence in public, commercial and industrial buildings.

- Class 0 Certified
- Euroclass up to B_L-s2, d0/B_L-s3 d0 in acc. with DIN EN 13501-1 for additional safety in a case of fire
- Reduces energy losses, up to $\lambda \leq 0.033 \text{ W/(m}\cdot\text{K)}$ at 0 °C
- In-built vapour barrier for long lasting protection against corrosion, up to $\mu \geq 10000$
- Inherent resistance to microbial growth, fibre free (for high hygiene requirements)
- Reliable long term performance
- Suitable for use in public buildings

Kaiflex ST s2 Technical Data

Material		Elastomeric foam based on synthetic rubber, Flexible Elastomeric Foam (FEF)		
Cell structure		Closed cell		
Colour		Black		
Max. service temperature	Pipe	+110 °C		
Min. service temperature		-50 °C (-200 °C)	See remark (1)	
Thermal conductivity	Thickness <25 mm	λ_{10} at -10 °C at 0 °C at +10 °C λ_{0}	$0.033 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ $\leq 0.032 \text{ W/(m-K)}$ $\leq 0.033 \text{ W/(m-K)}$ $\leq 0.034 \text{ W/(m-K)}$ $0.036 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$	Test acc. to DIN EN ISO 8497
	Thickness ≥ 25 mm	λ_{10} at -10 °C at 0 °C at +10 °C	$\leq 0.035 \text{ W/(m-K)}$ $\leq 0.036 \text{ W/(m-K)}$ $\leq 0.037 \text{ W/(m-K)}$	Test acc. to DIN EN ISO 8497
Water vapour permeability	Thickness <25 mm	Moisture resistance factor μ	≥ 10000 No separate vapour barrier required	Test acc. to DIN EN 13469
	Thickness ≥ 25 mm	Moisture resistance factor μ	≥ 7000 No separate vapour barrier required	Test acc. to DIN EN 13469
Fire behaviour	Thickness ≤ 45 mm	Euroclass characteristics ⁽²⁾	B _L -s2, d0	Test acc. to DIN EN 13501-1
	Thickness >45 mm	Euroclass characteristics ⁽²⁾	C _L -s2, d0	
	Tape	Euroclass characteristics ⁽²⁾	B-s3, d0 (as part of a system incl. Kaiflex ST s2 tubes: up to B _L -s2, d0)	
		Characteristics acc. to British Standard	Class 0	In acc. with UK Building Regulations
	Surface spread of flame	Class 1	Test acc. to BS 476-7	
	Fire propagation	Total spread index: <12 Sub Index 1: <6 Self-extinguishing, no drips	Test acc. to BS 476-6 Test acc. to BS 476-6	
Resistance to	Corrosion	Satisfies requirements	In acc. with DIN 1988	
	Mould and bacteria	No growth	Test acc. to DIN EN ISO 846 Meth. A+C In acc. with VDI 6022	
Insulation material index number acc. to AGI		36.12.02.05.04		
Environmental aspects		No biocides added		
Health aspects		Fibre free: For high hygiene requirements Heavy metal (e.g. cadmium, lead) and formaldehyde free		
Other attributes	pH-Value	7		
Other certificates / approvals		CE-compliant		
		UL-approved (UL94)	In acc. with UL94 V-0,HF-1	
		FM-approved		
		DNV, Lloyd's Register, See BG IAC Gold	In acc. with ISO 16000, Part 3 & 6	

Designed to prevent condensation and energy losses

Kaiflex ST s2 Technical Data

Storage	Self-adhesive products	The material must be installed within one year after delivery and proper storage. Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)	
Tolerances & limits		Satisfies requirements	In acc. with EN 14304:2009+A1:2013
Outdoor applications		Needs protection against UV-radiation	See remark (3)

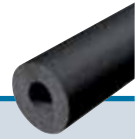
Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

Remark (2) The Euroclass rating applies to metallic or solid mineral substrates.

Remark (3) To protect against UV-induced deterioration Kaiflex must be either painted using Kaifinish Color paint or covered with a suitable UV resistant cladding system within 1 day of being installed outdoors.



Designed to prevent condensation and energy losses



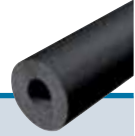
Kaiflex ST s2 Tube

Colour: Anthracite - Length: 2 m											
Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	STs2-T-2m-09x006	4001200	360	STs2-T-2m-13x006	4001232	240
	5/16	8.0				STs2-T-2m-09x008	4001201	340			
	3/8	10.0	1/8	10.2	11.0	STs2-T-2m-09x010	4001202	320	STs2-T-2m-13x010	4001234	190
3/8	1/2	12.0		12.5	13.0	STs2-T-2m-09x012	4014070	264	STs2-T-2m-13x012	4001235	172
1/2	5/8	15.0	1/4	13.5	16.0	STs2-T-2m-09x015	4014071	224	STs2-T-2m-13x015	4014073	144
	3/4	18.0	3/8	17.2		STs2-T-2m-09x018	4014072	192	STs2-T-2m-13x018	4014074	128
5/8	3/4			20.0	21.0	STs2-T-2m-09x020	4001206	160	STs2-T-2m-13x020	4001238	120
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-2m-09x022	4001207	156	STs2-T-2m-13x022	4014075	108
	1	25.0		25.0		STs2-T-2m-09x025	4001208	130	STs2-T-2m-13x025	4001240	92
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-09x028	4001209	124	STs2-T-2m-13x028	4014076	84
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-09x035	4001212	92	STs2-T-2m-13x035	4001244	76
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-09x042	4001214	70	STs2-T-2m-13x042	4001246	56
			1 1/2	48.3	49.5	STs2-T-2m-09x048	4001216	60	STs2-T-2m-13x048	4001248	48
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-09x054	4001217	60	STs2-T-2m-13x054	4001249	46
			2	60.3	61.5	STs2-T-2m-09x060	4001219	60	STs2-T-2m-13x060	4001251	40
		64.0		63.5					STs2-T-2m-13x064	4001252	40
	2 3/4	70.0		70.0					STs2-T-2m-13x070	4001254	40
2 13/16	3	76.1	2 1/2	76.1	77.0				STs2-T-2m-13x076	4001255	34
3	3 1/8	80.0			81.0				STs2-T-2m-13x080	4001256	30
		88.9	3	88.9	90.5				STs2-T-2m-13x089	4001257	30
4	4 1/4	108.0		108.0	109.5				STs2-T-2m-13x108	4001259	28
		114.0	4	114.3	116.0				STs2-T-2m-13x114	4001260	28

All tubes are available as slit items. For ordering slit items add "-SL" to the reference codes above (example: STs2-T-2m-13x076-SL).

9 mm tubes are available upon request for the pipe dimensions: 9 x 64, 9 x 76, 9 x 89, 9 x 108, 9 x 114, 9 x 125, 9 x 133, 9 x 140 and 9 x 160.

13 mm tubes are available upon request for the pipe dimensions: 13 x 125, 13 x 133, 13 x 140 and 13 x 160 mm.



Kaiflex ST s2 Tube

Colour: Anthracite - Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	STs2-T-2m-19x006	4014078	128			
	5/16	8.0									
	3/8	10.0	1/8	10.2	11.0	STs2-T-2m-19x010	4014079	108	STs2-T-2m-25x010	4001300	72
3/8	1/2	12.0		12.5	13.0	STs2-T-2m-19x012	4001268	100	STs2-T-2m-25x012	4001301	60
1/2	5/8	15.0	1/4	13.5	16.0	STs2-T-2m-19x015	4014080	80	STs2-T-2m-25x015	4014085	56
	3/4	18.0	3/8	17.2		STs2-T-2m-19x018	4014081	80	STs2-T-2m-25x018	4014086	48
5/8	3/4			20.0	21.0	STs2-T-2m-19x020	4001271	76	STs2-T-2m-25x020	4001304	50
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-2m-19x022	4014082	72	STs2-T-2m-25x022	4001305	42
	1	25.0		25.0		STs2-T-2m-19x025	4001273	60	STs2-T-2m-25x025	4001306	40
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-19x028	4014083	56	STs2-T-2m-25x028	4001307	40
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-19x035	4001277	48	STs2-T-2m-25x035	4001309	32
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-19x042	4001279	40	STs2-T-2m-25x042	4001311	24
			1 1/2	48.3	49.5	STs2-T-2m-19x048	4014084	36	STs2-T-2m-25x048	4001312	24
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-19x054	4001282	30	STs2-T-2m-25x054	4001313	22
			2	60.3	61.5	STs2-T-2m-19x060	4001284	28	STs2-T-2m-25x060	4001314	22
		64.0		63.5		STs2-T-2m-19x064	4001285	28	STs2-T-2m-25x064	4001315	18
	2 3/4	70.0		70.0		STs2-T-2m-19x070	4001287	28	STs2-T-2m-25x070	4001317	18
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-2m-19x076	4001288	28	STs2-T-2m-25x076	4001318	18
3	3 1/8	80.0			81.0	STs2-T-2m-19x080	4001289	26	STs2-T-2m-25x080	4001319	14
		88.9	3	88.9	90.5	STs2-T-2m-19x089	4001290	22	STs2-T-2m-25x089	4001320	14
4	4 1/4	108.0		108.0	109.5	STs2-T-2m-19x108	4001292	20	STs2-T-2m-25x108	4001322	10
		114.0	4	114.3	116.0	STs2-T-2m-19x114	4001293	18	STs2-T-2m-25x114	4001323	10

All tubes are available as slit items. For ordering slit items add "-SL" to the reference codes above (example: STs2-T-2m-13x076-SL).

19 mm tubes are available upon request for the pipe dimensions: 19 x 125, 19 x 133, 19 x 140 and 19 x 160 mm.

25 mm tubes are available upon request for the pipe dimensions: 25 x 140 mm.



Kaiflex ST_{s2} Tube

Colour: Anthracite - Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			32 mm Insulation thickness			40 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0	1/8	10.2	11.0	STs2-T-2m-32x010	4001345	40			
	3/8	12.0		12.5	13.0	STs2-T-2m-32x012	4001346	36			
	1/2	15.0	1/4	13.5	16.0	STs2-T-2m-32x015	4001347	32			
	3/4	18.0	3/8	17.2		STs2-T-2m-32x018	4001348	32			
	3/4	22.0	1/2	21.3	23.0	STs2-T-2m-32x022	4001349	32	STs2-T-2m-40x022	4001373	22
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-32x028	4001351	24	STs2-T-2m-40x028	4001375	16
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-32x035	4001352	24	STs2-T-2m-40x035	4001376	16
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-32x042	4001353	22	STs2-T-2m-40x042	4014088	12
			1 1/2	48.3	49.5	STs2-T-2m-32x048	4001354	18	STs2-T-2m-40x048	4001378	12
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-32x054	4001355	18	STs2-T-2m-40x054	4001379	10
			2	60.3	61.5	STs2-T-2m-32x060	4001357	16	STs2-T-2m-40x060	4001380	10
				63.5		STs2-T-2m-32x064	4001358	16	STs2-T-2m-40x064	4001381	10
	2 3/4	70.0		70.0		STs2-T-2m-32x070	4001360	14			
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-2m-32x076	4001361	12	STs2-T-2m-40x076	4001382	10
	3	80.0			81.0	STs2-T-2m-32x080	4001362	12			
		88.9	3	88.9	90.5	STs2-T-2m-32x089	4014087	12	STs2-T-2m-40x089	4014089	8
4	4 1/4	108.0		108.0	109.5	STs2-T-2m-32x108	4001365	8			
		114.0	4	114.3	116.0	STs2-T-2m-32x114	4001366	8	STs2-T-2m-40x114	4001387	6

Copper pipe Cu			Iron & steel pipe Fe			50 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
	3/4	22.0	1/2	21.3	23.0	STs2-T-2m-50x022	4001393	14			
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-50x028	4001395	10			
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-50x035	4001396	8			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-50x042	4001397	8			
			1 1/2	48.3	49.5	STs2-T-2m-50x048	4001398	8			
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-50x054	4001399	8			
			2	60.3	61.5	STs2-T-2m-50x060	4001400	8			
				63.5		STs2-T-2m-50x064	4001401	6			
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-2m-50x076	4001402	6			
		88.9	3	88.9	90.5	STs2-T-2m-50x089	4001403	6			
		114.0	4	114.3	116.0	STs2-T-2m-50x114	4001406	4			

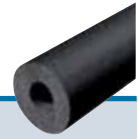
All tubes are available as slit items. For ordering slit items add "-SL" to the reference codes above (example: STs2-T-2m-13x076-SL).

32 mm tubes are available upon request for the pipe dimensions: 32 x 133, 32 x 140 and 32 x 160 mm.

40 mm tubes are available upon request for the pipe dimensions: 40 x 140, 40 x 160 and 40 x 168 mm.

50 mm tubes are available upon request for the pipe dimensions: 50 x 140, and 50 x 160.

Designed to prevent condensation and energy losses

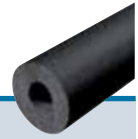


Kaiflex ST s2 Tube

Colour: Anthracite - Length: 1.2 m											
Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	STs2-T-1,2m-09x006	4002889	270.0	STs2-T-1,2m-13x006	4002910	163.2
	3/8	10.0	1/8	10.2	11.0	STs2-T-1,2m-09x010	4002890	228.0	STs2-T-1,2m-13x010	4002911	134.4
3/8	1/2	12.0		12.5	13.0	STs2-T-1,2m-09x012	4014096	182.4	STs2-T-1,2m-13x012	4002912	120.0
1/2	5/8	15.0	1/4	13.5	16.0	STs2-T-1,2m-09x015	4014097	144.0	STs2-T-1,2m-13x015	4014099	98.4
	3/4	18.0	3/8	17.2		STs2-T-1,2m-09x018	4014098	134.4	STs2-T-1,2m-13x018	4014216	86.4
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-1,2m-09x022	4002894	112.8	STs2-T-1,2m-13x022	4014100	76.8
	1	25.0		25.0					STs2-T-1,2m-13x025	4010874	67.2
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-1,2m-09x028	4002895	90.0	STs2-T-1,2m-13x028	4014101	57.6
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-1,2m-09x035	4002896	69.6	STs2-T-1,2m-13x035	4014102	48.0
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-1,2m-09x042	4002897	57.6	STs2-T-1,2m-13x042	4014203	43.2
			1 1/2	48.3	49.5	STs2-T-1,2m-09x048	4002898	50.4	STs2-T-1,2m-13x048	4002919	38.4
2	2 1/8	54.0		54.0	55.0	STs2-T-1,2m-09x054	4002899	45.6	STs2-T-1,2m-13x054	4002920	36.0
			2	60.3	61.5	STs2-T-1,2m-09x060	4002900	43.2	STs2-T-1,2m-13x060	4002921	28.8
		64.0		63.5		STs2-T-1,2m-09x064	4002901	43.2	STs2-T-1,2m-13x064	4002922	28.8
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-1,2m-09x076	4002902	36.0	STs2-T-1,2m-13x076	4002923	27.6
		88.9	3	88.9	90.5	STs2-T-1,2m-09x089	4002903	28.8	STs2-T-1,2m-13x089	4002924	24.0
4	4 1/4	108.0		108.0	109.5				STs2-T-1,2m-13x108	4002925	19.2
		114.0	4	114.3	116.0	STs2-T-1,2m-09x114	4002905	19.2	STs2-T-1,2m-13x114	4002926	19.2
	5			125.0	125.0	STs2-T-1,2m-09x125	4002906	13.2	STs2-T-1,2m-13x125	4002927	13.2
		133.0		133.0	133.0				STs2-T-1,2m-13x133	4002928	12.0
	5 1/2		5	139.7	140.0	STs2-T-1,2m-09x140	4002908	12.0	STs2-T-1,2m-13x140	4002929	12.0
		159.0		160.0	161.0	STs2-T-1,2m-09x160	4002909	10.8	STs2-T-1,2m-13x160	4002930	10.8

All tubes are available as slit items. For ordering slit items add "-SL" to the reference codes above (example: STs2-T-1,2m-13x076-SL).

Designed to prevent condensation and energy losses



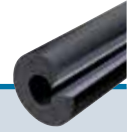
Kaiflex ST s2 Tube

Colour: Anthracite · Length: 1.2 m											
Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0	1/8	10.2	11.0	STs2-T-1,2m-19x010	4002931	86.4			
3/8	1/2	12.0		12.5	13.0	STs2-T-1,2m-19x012	4002932	72.0			
1/2	5/8	15.0	1/4	13.5	16.0	STs2-T-1,2m-19x015	4002933	67.2			
	3/4	18.0	3/8	17.2		STs2-T-1,2m-19x018	4002934	50.4	STs2-T-1,2m-25x018	4010699	37.2
5/8	3/4			20.0	21.0	STs2-T-1,2m-19x020	4012650	50.4			
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-1,2m-19x022	4014103	48.0	STs2-T-1,2m-25x022	4002951	30.0
	1	25.0		25.0		STs2-T-1,2m-19x025	4010698	46.8			
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-1,2m-19x028	4014104	38.4	STs2-T-1,2m-25x028	4002952	24.0
									STs2-T-1,2m-25x032	4012654	21.6
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-1,2m-19x035	4014105	28.8	STs2-T-1,2m-25x035	4002953	21.6
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-1,2m-19x042	4002938	28.8	STs2-T-1,2m-25x042	4002954	19.2
			1 1/2	48.3	49.5	STs2-T-1,2m-19x048	4014106	24.0	STs2-T-1,2m-25x048	4002955	16.8
2	2 1/8	54.0		54.0	55.0	STs2-T-1,2m-19x054	4002940	21.6	STs2-T-1,2m-25x054	4002956	16.8
			2	60.3	61.5	STs2-T-1,2m-19x060	4002941	21.6	STs2-T-1,2m-25x060	4002957	15.6
		64.0		63.5		STs2-T-1,2m-19x064	4002942	21.6	STs2-T-1,2m-25x064	4002958	14.4
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-1,2m-19x076	4002943	16.8	STs2-T-1,2m-25x076	4002959	12.0
		88.9	3	88.9	90.5	STs2-T-1,2m-19x089	4002944	16.8			
	4		3 1/2	101.6		STs2-T-1,2m-19x102	4012652	14.4			
4	4 1/4	108.0		108.0	109.5	STs2-T-1,2m-19x108	4014107	14.4	STs2-T-1,2m-25x108	4002961	7.2
		114.0	4	114.3	116.0	STs2-T-1,2m-19x114	4002946	13.2	STs2-T-1,2m-25x114	4002962	7.2
	5			125.0	125.0	STs2-T-1,2m-19x125	4002947	12.0			
		133.0		133.0	133.0	STs2-T-1,2m-19x133	4002948	9.6			
	5 1/2		5	139.7	140.0	STs2-T-1,2m-19x140	4002949	9.6	STs2-T-1,2m-25x140	4002963	6.0
		159.0		160.0	161.0	STs2-T-1,2m-19x160	4002950	7.2	STs2-T-1,2m-25x160	4002964	6.0

All tubes are available as slit items. For ordering slit items add "-SL" to the reference codes above (example: STs2-T-1,2m-13x076-SL).

Designed to prevent condensation and energy losses

Kaiflex ST s2 Tube · self-adhesive · with tangential cut



Colour: Anthracite · Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	5/8	15.0	1/4	13.5	16.0	STs2-T-2m-09x015-SA	4014125	224	STs2-T-2m-13x015-SA	4014127	144
	3/4	18.0	3/8	17.2		STs2-T-2m-09x018-SA	4014126	192	STs2-T-2m-13x018-SA	4014128	128
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-2m-09x022-SA	4001651	156	STs2-T-2m-13x022-SA	4014129	108
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-09x028-SA	4001652	124	STs2-T-2m-13x028-SA	4014130	84
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-09x035-SA	4001653	92	STs2-T-2m-13x035-SA	4001665	76
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-09x042-SA	4001654	70	STs2-T-2m-13x042-SA	4001666	56
			1 1/2	48.3	49.5	STs2-T-2m-09x048-SA	4001655	60	STs2-T-2m-13x048-SA	4001667	48
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-09x054-SA	4001656	60	STs2-T-2m-13x054-SA	4001668	46
			2	60.3	61.5	STs2-T-2m-09x060-SA	4001657	60	STs2-T-2m-13x060-SA	4001669	40
		64.0		63.5		STs2-T-2m-09x064-SA	4001658	54	STs2-T-2m-13x064-SA	4001670	40
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-2m-09x076-SA	4001659	54	STs2-T-2m-13x076-SA	4001671	34
3	3 1/8	80.0			81.0				STs2-T-2m-13x080-SA	4001672	30
		88.9	3	88.9	90.5	STs2-T-2m-09x089-SA	4001660	36	STs2-T-2m-13x089-SA	4001673	30

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	5/8	15.0	1/4	13.5	16.0	STs2-T-2m-19x015-SA	4014131	80	STs2-T-2m-25x015-SA	4014136	56
	3/4	18.0	3/8	17.2		STs2-T-2m-19x018-SA	4014132	80			
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-2m-19x022-SA	4014133	72	STs2-T-2m-25x022-SA	4001688	42
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-2m-19x028-SA	4014134	56	STs2-T-2m-25x028-SA	4001689	40
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-2m-19x035-SA	4001678	48	STs2-T-2m-25x035-SA	4001690	32
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-2m-19x042-SA	4001679	40	STs2-T-2m-25x042-SA	4001691	24
			1 1/2	48.3	49.5	STs2-T-2m-19x048-SA	4014135	36	STs2-T-2m-25x048-SA	4001692	24
2	2 1/8	54.0		54.0	55.0	STs2-T-2m-19x054-SA	4001681	30	STs2-T-2m-25x054-SA	4001693	22
			2	60.3	61.5	STs2-T-2m-19x060-SA	4001682	28	STs2-T-2m-25x060-SA	4001694	22
		64.0		63.5		STs2-T-2m-19x064-SA	4001683	28			
						STs2-T-2m-19x067-SA	4001684	28	STs2-T-2m-25x067-SA	4007422	18
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-2m-19x076-SA	4001685	28	STs2-T-2m-25x076-SA	4001695	18
		88.9	3	88.9	90.5	STs2-T-2m-19x089-SA	4001686	22	STs2-T-2m-25x089-SA	4001696	14

Designed to prevent condensation and energy losses

Kaiflex ST s2 Tube · self-adhesive · with tangential cut



Colour: Anthracite · Length: 1.2 m

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
3/8	1/2	12.0		12.5	13.0				STs2-T-1,2m-13x012-SA	4004928	120.0
	5/8	15.0	1/4	13.5	16.0	STs2-T-1,2m-09x015-SA	4014137	158.4	STs2-T-1,2m-13x015-SA	4014138	98.4
	3/4	18.0	3/8	17.2					STs2-T-1,2m-13x018-SA	4014217	86.4
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-1,2m-09x022-SA	4003003	112.8	STs2-T-1,2m-13x022-SA	4014139	76.8
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-1,2m-09x028-SA	4006747	90.0	STs2-T-1,2m-13x028-SA	4014140	57.6
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-1,2m-09x035-SA	4005862	69.6	STs2-T-1,2m-13x035-SA	4014141	48.0
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-1,2m-09x042-SA	4006748	57.6	STs2-T-1,2m-13x042-SA	4014204	43.2
			1 1/2	48.3	49.5	STs2-T-1,2m-09x048-SA	4009480	50.4	STs2-T-1,2m-13x048-SA	4005866	38.4
2	2 1/8	54.0		54.0	55.0	STs2-T-1,2m-09x054-SA	4006749	45.6	STs2-T-1,2m-13x054-SA	4005867	36.0
			2	60.3	61.5	STs2-T-1,2m-09x060-SA	4005863	43.2	STs2-T-1,2m-13x060-SA	4005868	28.8
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-1,2m-09x076-SA	4006750	36.0	STs2-T-1,2m-13x076-SA	4005869	27.6
		88.9	3	88.9	90.5				STs2-T-1,2m-13x089-SA	4012822	24.0

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	5/8	15.0	1/4	13.5	16.0	STs2-T-1,2m-19x015-SA	4006752	67.2	STs2-T-1,2m-25x015-SA	4012617	39.6
	3/4	18.0	3/8	17.2		STs2-T-1,2m-19x018-SA	4010416	50.4			
3/4	7/8	22.0	1/2	21.3	23.0	STs2-T-1,2m-19x022-SA	4014142	48.0	STs2-T-1,2m-25x022-SA	4012613	30.0
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-1,2m-19x028-SA	4014143	38.4	STs2-T-1,2m-25x028-SA	4012614	24.0
1 1/4	1 3/8	35.0	1	33.7	36.0	STs2-T-1,2m-19x035-SA	4014144	28.8	STs2-T-1,2m-25x035-SA	4012827	21.6
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	STs2-T-1,2m-19x042-SA	4010717	28.8	STs2-T-1,2m-25x042-SA	4012828	19.2
			1 1/2	48.3	49.5	STs2-T-1,2m-19x048-SA	4014145	24.0	STs2-T-1,2m-25x048-SA	4012829	16.8
2	2 1/8	54.0		54.0	55.0	STs2-T-1,2m-19x054-SA	4010871	21.6	STs2-T-1,2m-25x054-SA	4012830	16.8
			2	60.3	61.5	STs2-T-1,2m-19x060-SA	4012824	21.6	STs2-T-1,2m-25x060-SA	4012831	15.6
2 13/16	3	76.1	2 1/2	76.1	77.0	STs2-T-1,2m-19x076-SA	4010872	16.8	STs2-T-1,2m-25x076-SA	4012832	12.0
		88.9	3	88.9	90.5	STs2-T-1,2m-19x089-SA	4010873	16.8			

Designed to prevent condensation and energy losses

Kaiflex ST s2 Tube · endless



Colour: Anthracite · in box

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	STs2-T-e-09x006	4001508	40	STs2-T-e-13x006	4001516	26
	3/8	10.0	1/8	10.2	11.0	STs2-T-e-09x010	4001510	34	STs2-T-e-13x010	4001518	23
3/8	1/2	12.0		12.5	13.0	STs2-T-e-09x012	4001511	31	STs2-T-e-13x012	4001519	18
1/2	5/8	15.0	1/4	13.5	16.0	STs2-T-e-09x015	4001512	27	STs2-T-e-13x015	4001520	17
	5/8	3/4		20.0	21.0	STs2-T-e-09x020	4006619	23	STs2-T-e-13x020	4001521	15
	3/4	7/8	1/2	21.3	23.0	STs2-T-e-09x022	4001514	19	STs2-T-e-13x022	4001522	14
1	1 1/8	28.0	3/4	26.9	29.0	STs2-T-e-09x028	4001515	14	STs2-T-e-13x028	4001523	10

Kaiflex ST s2 Tube · endless · pre-chalked



Colour: Anthracite · Length: 15 m · individually packaged in plastic bags

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness				13 mm Insulation thickness			
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	coils/ carton	m/ carton	Reference	Order No.	coils/ carton	m/ carton
	1/4	6.0			7.0	ST-T-e-pc-15BG-09x006	4001629	20	300	ST-T-e-pc-15BG-13x006	4001636	13	195
	3/8	10.0	1/8	10.2	11.0	ST-T-e-pc-15BG-09x010	4001630	15	225	ST-T-e-pc-15BG-13x010	4001637	10	150
3/8	1/2	12.0		12.5	13.0	ST-T-e-pc-15BG-09x012	4001631	14	210	ST-T-e-pc-15BG-13x012	4001638	9	135
1/2	5/8	15.0	1/4	13.5	16.0	ST-T-e-pc-15BG-09x015	4001632	13	195	ST-T-e-pc-15BG-13x015	4001639	8	120
	5/8	3/4		20.0	21.0	ST-T-e-pc-15BG-09x020	4001633	12	180	ST-T-e-pc-15BG-13x020	4001640	7	105
	3/4	7/8	1/2	21.3	23.0	ST-T-e-pc-15BG-09x022	4001634	9	135	ST-T-e-pc-15BG-13x022	4001641	6	90
1	1 1/8	28.0	3/4	26.9	29.0	ST-T-e-pc-15BG-09x028	4001635	8	120	ST-T-e-pc-15BG-13x028	4001642	6	90

Designed to prevent condensation and energy losses

Kaifix ECplus Easy Connect · self-adhesive joint · for Kaiflex ST s2 tubes



Colour: Black

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	pcs/ carton	Reference	Order No.	pcs/ carton
1/2	5/8	15.0			16.0	EC+ns-09x015	4005018 *	660	EC+ns-13x015	4005039 *	450
3/4	7/8	22.0	1/2	21.3	23.0	EC+ns-09x022	4005020 *	470	EC+ns-13x022	4005041 *	360
1	1 1/8	28.0	3/4	26.9	29.0	EC+ns-09x028	4005021 *	375	EC+ns-13x028	4005042 *	260
1 1/4	1 3/8	35.0	1	33.7	36.0	EC+ns-09x035	4005022 *	290	EC+ns-13x035	4005043 *	210
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	EC+ns-09x042	4005023 *	240	EC+ns-13x042	4005044 *	175
			1 1/2	48.3	49.5	EC+ns-09x048	4005024 *	210	EC+ns-13x048	4005045 *	160
2	2 1/8	54.0		54.0	55.0	EC+ns-09x054	4005025 *	190	EC+ns-13x054	4005046 *	150
			2	60.3	61.5	EC+ns-09x060	4005026 *	180	EC+ns-13x060	4005047 *	120
2 13/16	3	76.1	2 1/2	76.1	77.0	EC+ns-09x076	4005028 *	150	EC+ns-13x076	4005049 *	115
			3	88.9	90.5	EC+ns-09x089	4005029 *	120	EC+ns-13x089	4005050 *	100

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	pcs/ carton	Reference	Order No.	pcs/ carton
1/2	5/8	15.0			16.0	EC+ns-19x015	4005059 *	280			
3/4	7/8	22.0	1/2	21.3	23.0	EC+ns-19x022	4005061 *	215	EC+ns-25x022	4005079 *	125
1	1 1/8	28.0	3/4	26.9	29.0	EC+ns-19x028	4005062 *	165	EC+ns-25x028	4005080 *	115
1 1/4	1 3/8	35.0	1	33.7	36.0	EC+ns-19x035	4005063 *	145	EC+ns-25x035	4005081 *	100
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	EC+ns-19x042	4005064 *	120	EC+ns-25x042	4005082 *	80
			1 1/2	48.3	49.5	EC+ns-19x048	4005065 *	115	EC+ns-25x048	4005083 *	70
2	2 1/8	54.0		54.0	55.0	EC+ns-19x054	4005066 *	90	EC+ns-25x054	4005084 *	70
			2	60.3	61.5	EC+ns-19x060	4005067 *	90	EC+ns-25x060	4005085 *	65
2 13/16	3	76.1	2 1/2	76.1	77.0	EC+ns-19x076	4005069 *	70	EC+ns-25x076	4005087 *	50
			3	88.9	90.5	EC+ns-19x089	4005070 *	70	EC+ns-25x089	4005088 *	40

* No stock item, delivery time on request.

For further dimensions please contact our customer service.

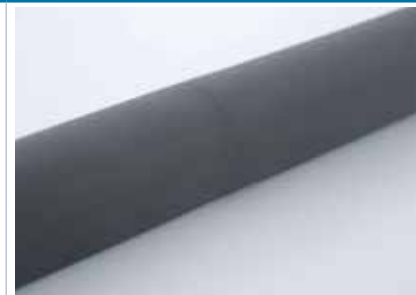
Kaifix ECplus Application guide



Remove foil.



Apply on one end.



Stick together.

Kaiflex ST Technical Data

Material		Elastomeric foam based on synthetic rubber, Flexible Elastomeric Foam (FEF)		
Cell structure		Closed cell		
Colour		Anthracite		
Max. service temperature	Flat surface	+85 °C		
Min. service temperature		-50 °C (-200 °C)	See remark (1)	
Thermal conductivity	Thickness ≤32 mm	λ_{10} at -10 °C at 0 °C at +10 °C λ_{0}	$0.033 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ ≤ 0.033 W/(m·K) ≤ 0.034 W/(m·K) ≤ 0.035 W/(m·K) $0.036 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ ≤ 0.035 W/(m·K) ≤ 0.036 W/(m·K) ≤ 0.037 W/(m·K)	Test acc. to DIN EN ISO 12667 Test acc. to DIN EN ISO 12667
	Thickness >32 mm	λ_{10} at -10 °C at 0 °C at +10 °C	$0.036 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ ≤ 0.035 W/(m·K) ≤ 0.036 W/(m·K) ≤ 0.037 W/(m·K)	Test acc. to DIN EN ISO 12667
Water vapour permeability	Thickness ≤32 mm	Moisture resistance factor μ	≥ 10000 No separate vapour barrier required	Test acc. to DIN EN 12086
	Thickness >32 mm	Moisture resistance factor μ	≥ 7000 No separate vapour barrier required	Test acc. to DIN EN 12086
Fire behaviour		Euroclass characteristics ⁽²⁾	B-s3, d0	Test acc. to DIN EN 13501-1
		Characteristics acc. to British Standard	Class 0	In acc. with UK Building Regulations
		Surface spread of flame	Class 1	Test acc. to BS 476-7
		Fire propagation	Total spread index: <12 Sub Index 1: <6 Self-extinguishing, no drips	Test acc. to BS 476-6 Test acc. to BS 476-6
Resistance to	Corrosion		Satisfies requirements	In acc. with DIN 1988
	Mould and bacteria		No growth	Test acc. to DIN EN ISO 846 Meth. A+C In acc. with VDI 6022
Insulation material index number acc. to AGI			36.07.02.05.04	
Environmental aspects			No biocides added	
Health aspects			Fibre free: For high hygiene requirements Heavy metal (e.g. cadmium, lead) and formaldehyde free	
Other attributes	pH-Value		7	
Other certificates / approvals			CE-compliant UL-approved (UL94) FM-approved DNV, Lloyd's Register, See BG IAC Gold	In acc. with UL94 V-0, HF-1
				In acc. with ISO 16000, Part 3 & 6

Designed to prevent condensation and energy losses

Kaiflex ST Technical Data

Storage	Self-adhesive products	The material must be installed within one year after delivery and proper storage. Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)	
Tolerances & limits		Satisfies requirements	In acc. with EN 14304:2009+A1:2013
Outdoor applications		Needs protection against UV-radiation	See remark (3)

Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

Remark (2) The Euroclass rating applies to metallic or solid mineral substrates.

Remark (3) To protect against UV-induced deterioration Kaiflex must be either painted using Kaifinish Color paint or covered with a suitable UV resistant cladding system within 1 day of being installed outdoors.



Designed to prevent condensation and energy losses

Kaiflex ST Sheet · endless

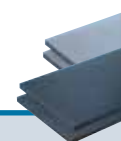


Colour: Anthracite

Insulation thickness mm	Sheet · endless 1 m width · OD coil: 40 cm · in box			Sheet · endless · self-adhesive 1 m width · OD coil: 40 cm · in box		
	Reference	Order No.	m ² /carton	Reference	Order No.	m ² /carton
6	ST-Sh-e-1m-40BX-06	4012754	18	ST-Sh-e-1m-40BX-06-SA	4012757	18
10	ST-Sh-e-1m-40BX-10	4001584	10	ST-Sh-e-1m-40BX-10-SA	4001588	10
13	ST-Sh-e-1m-40BX-13	4001585	8	ST-Sh-e-1m-40BX-13-SA	4001589	8
19	ST-Sh-e-1m-40BX-19	4001586	6	ST-Sh-e-1m-40BX-19-SA	4001590	6
25	ST-Sh-e-1m-40BX-25	4012756	4	ST-Sh-e-1m-40BX-25-SA	4012759	4
32	ST-Sh-e-1m-40BX-32	4001587	3	ST-Sh-e-1m-40BX-32-SA	4012760	3

Insulation thickness mm	Sheet · endless 1 m width · OD coil: 53 cm · in box			Sheet · endless · self-adhesive 1 m width · OD coil: 53 cm · in box		
	Reference	Order No.	m ² /carton	Reference	Order No.	m ² /carton
6	ST-Sh-e-1m-53BX-06	4001537	30	ST-Sh-e-1m-53BX-06-SA	4001563	30
10	ST-Sh-e-1m-53BX-10	4001539	20	ST-Sh-e-1m-53BX-10-SA	4001564	20
13	ST-Sh-e-1m-53BX-13	4001540	14	ST-Sh-e-1m-53BX-13-SA	4001565	14
19	ST-Sh-e-1m-53BX-19	4001542	10	ST-Sh-e-1m-53BX-19-SA	4001567	10
25	ST-Sh-e-1m-53BX-25	4001543	8	ST-Sh-e-1m-53BX-25-SA	4001568	8
32	ST-Sh-e-1m-53BX-32	4001544	6	ST-Sh-e-1m-53BX-32-SA	4001569	6
40	ST-Sh-e-1m-53BX-40	4012596	5.5	ST-Sh-e-1m-53BX-40-SA	4012597	5.5
50	ST-Sh-e-1m-53BX-50	4012226	4	ST-Sh-e-1m-53BX-50-SA	4012594	4

Kaiflex ST Sheet · pre-cut



Colour: Anthracite

Insulation thickness mm	Sheet · pre-cut 2.0 x 1.0 m			Sheet · pre-cut · self-adhesive 2.0 x 1.0 m		
	Reference	Order No.	m ² /carton	Reference	Order No.	m ² /carton
50	ST-Sh-c-2x1m-BX-50	4001561	6	ST-Sh-c-2x1m-BX-50-SA	4001583	6

kaiflex[®] KKplus s3 Connect



Designed to save time for large diameter pipework

Flexible closed cell sheets designed specifically for larger diameter pipes and ducts, Kaiflex KKplus s3 Connect is a unique insulation system that combines the same exceptional condensation controlling and energy saving technical values for which Kaiflex has always been known together with a streamlined application process.

Kaiflex KKplus s3 Connect sheets are sheets of Kaiflex cut exactly to size with a special tangential cut that minimises seam tension and maximises the strength of adhesion. Being already cut to size means that Kaiflex KKplus s3 Connect doesn't require precise on-site measurements, making it easier to install insulation in locations where workspace is limited.

Self-adhesive strips along the seam, together with a secondary self-adhesive overlap, make installing Kaiflex KKplus s3 Connect as easy as peeling a self-adhesive release tape.

- Reliably prevents condensation, $\mu \geq 10000$
- High thermal efficiency, $\lambda \leq 0.033 \text{ W/(m}\cdot\text{K)}$ at 0 °C
- Ease of application reduces cost and time of installation
- Reliable long term performance
- In-built anti-microbial resistance

Kaiflex KKplus s3 Technical Data

Material base		Elastomeric foam based on synthetic rubber, Flexible Elastomeric Foam (FEF)		
Cell structure		Closed cell		
Colour		Anthracite		
Max. service temperature	Flat surfaces	+85 °C		
Min. service temperature		-50 °C (-200 °C)	See remark (1)	
Thermal conductivity	Thickness <32 mm	λ_{10} at -10 °C	$0.033 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ $\leq 0.032 \text{ W/(m}\cdot\text{K)}$	Test acc. to DIN EN ISO 8497
		at 0 °C	$\leq 0.033 \text{ W/(m}\cdot\text{K)}$	
		at +10 °C	$\leq 0.034 \text{ W/(m}\cdot\text{K)}$	
	Thickness ≥ 32 mm	λ_{10} at -10 °C	$0.036 + 7.1316 \cdot 10^{-5} \cdot \vartheta + 1.2533 \cdot 10^{-6} \cdot \vartheta^2$ $\leq 0.035 \text{ W/(m}\cdot\text{K)}$	Test acc. to DIN EN ISO 8497
		at 0 °C	$\leq 0.036 \text{ W/(m}\cdot\text{K)}$	
		at +10 °C	$\leq 0.037 \text{ W/(m}\cdot\text{K)}$	
Water vapour permeability	Thickness <32 mm	Moisture resistance factor μ	≥ 10000 No separate vapour barrier required	Test acc. to DIN EN 12086
	Thickness ≥ 32 mm	Moisture resistance factor μ	≥ 7000 No separate vapour barrier required	Test acc. to DIN EN 12086
Fire behaviour		Euroclass characteristics	B-s3, d0	Test acc. to DIN EN 13501-1 See remark (2)
		Characteristics acc. to British Standard	Class 0	In acc. with UK Building Regulations
			Self-extinguishing, no drips	
Fire resistance classification		R90	(ABP) Nr.:P-MPA-E-14-001	
Resistance to	Corrosion		Satisfies requirements	In acc. to DIN 1988
	Mould and bacteria		No growth	Test acc. to DIN EN ISO 846 Meth. A+C In acc. with VDI 6022
Insulation material index number acc. to AGI			36.07.02.05.10	
Environmental aspects			No biocides added	
Health aspects			Fibre free: For high hygiene requirements	
			Heavy metal (e.g. cadmium, lead) and formaldehyde free	
Other attributes	pH-Value		7	
Other certificates / approvals			CE-compliant	
			FM-approved	
			DNV, Lloyd's Register, See BG	
Storage	Self-adhesive products		The material must be installed within one year after delivery and proper storage. Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)	
Tolerances & limits			Satisfies requirements	In acc. with EN 14304:2009+A1:2013
Outdoor applications			Needs protection against UV-radiation	See remark (3)

Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

Remark (2) The Euroclass rating applies to metallic or solid mineral substrates.

Remark (3) To protect against UV-induced deterioration Kaiflex should be either painted using Kaifinish Color paint or covered with a suitable UV resistant cladding system within 1 day of being installed outdoors.



Designed to save time for large diameter pipework

Kaiflex KKplus s3 Sheet · pre-cut (Connect) · self-adhesive · with tangential cut · with SA-overlap (3 mm Tape)



Colour: Anthracite · Length: 1 m

Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
		114.0	4	114.3	114.0	KK+s3-Sh-c-Con-13x114-SA	4000656 *	25	KK+s3-Sh-c-Con-19x114-SA	4000665 *	18
		125.0		125.0	125.0	KK+s3-Sh-c-Con-13x125-SA	4000657 *	25	KK+s3-Sh-c-Con-19x125-SA	4000666 *	18
		133.0			133.0	KK+s3-Sh-c-Con-13x133-SA	4000658 *	25	KK+s3-Sh-c-Con-19x133-SA	4000667 *	18
		140.0	5	139.7	140.0	KK+s3-Sh-c-Con-13x140-SA	4005577 *	25	KK+s3-Sh-c-Con-19x140-SA	4000668 *	18
		160.0			161.0	KK+s3-Sh-c-Con-13x160-SA	4000659 *	25	KK+s3-Sh-c-Con-19x160-SA	4000670 *	18
		168.0	6	168.3	168.0	KK+s3-Sh-c-Con-13x168-SA	4000660 *	25	KK+s3-Sh-c-Con-19x168-SA	4000671 *	18
		219.0	8	219.1	220.0	KK+s3-Sh-c-Con-13x219-SA	4000661 *	25	KK+s3-Sh-c-Con-19x219-SA	4000673 *	18
		273.0	10	273.0	274.0	KK+s3-Sh-c-Con-13x273-SA	4005578 *	25	KK+s3-Sh-c-Con-19x273-SA	4000674 *	18



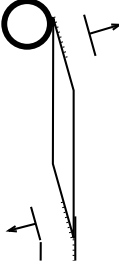
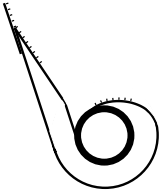
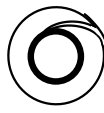

Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness			32 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
		114.0	4	114.3	114.0	KK+s3-Sh-c-Con-25x114-SA	4000677 *	13	KK+s3-Sh-c-Con-32x114-SA	4007358 *	11
		125.0		125.0	125.0	KK+s3-Sh-c-Con-25x125-SA	4007357 *	13	KK+s3-Sh-c-Con-32x125-SA	4000681 *	11
		133.0			133.0	KK+s3-Sh-c-Con-25x133-SA	4005581 *	13	KK+s3-Sh-c-Con-32x133-SA	4007359 *	11
		140.0	5	139.7	140.0	KK+s3-Sh-c-Con-25x140-SA	4000678 *	13	KK+s3-Sh-c-Con-32x140-SA	4000682 *	11
		160.0			161.0	KK+s3-Sh-c-Con-25x160-SA	4006527 *	13	KK+s3-Sh-c-Con-32x160-SA	4007360 *	11
		168.0	6	168.3	168.0	KK+s3-Sh-c-Con-25x168-SA	4000679 *	13	KK+s3-Sh-c-Con-32x168-SA	4000683 *	11
		219.0	8	219.1	220.0	KK+s3-Sh-c-Con-25x219-SA	4005582 *	13	KK+s3-Sh-c-Con-32x219-SA	4000684 *	11
		273.0	10	273.0	274.0	KK+s3-Sh-c-Con-25x273-SA	4005583 *	13	KK+s3-Sh-c-Con-32x273-SA	4000685 *	11

* No stock item, delivery time on request.

For further dimensions please contact our customer service.

Designed to save time for large diameter pipework

Kaiflex KKplus s3 Connect Application guide

		
<p>Remove the plastic film from the reverse side of the Kaiflex Connect.</p>	<p>Affix the Kaiflex Connect to the pipe.</p>	<p>Remove the remaining plastic films.</p>
		
<p>Wrap the Kaiflex Connect around the pipe.</p>	<p>Firstly, close the inside of the material together firmly.</p>	<p>Then press down the overlapping adhesive strip.</p>



Designed to resist high temperatures and UV radiation

Durable UV resistant rubber insulation for higher temperatures, Kaiflex EPDMplus is an insulation material with a closed cell structure that provides an inherent water vapour barrier, which ensures Kaiflex EPDMplus can be used to prevent condensation and pipe corrosion.

Resisting temperatures of up to +150 °C makes Kaiflex EPDMplus appropriate for use on low pressure steam pipework, and also the in-built water vapour barrier of Kaiflex EPDMplus means that the material can also be used on pipework that is operated at very low temperatures or pipework and equipment that intermittently cycles between hot and cold.

Kaiflex EPDMplus is naturally resistant to moisture and chemicals. Together these properties make Kaiflex EPDMplus ideally suited for use in demanding industrial process environments where salt water, chemical vapours and high temperatures combine to accelerate corrosion.

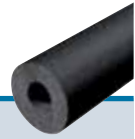
- Rated for temperatures from +150 °C to –50 °C (–200 °C)
- In-built vapour barrier for long lasting protection against corrosion
- High thermal efficiency, $\lambda \leq 0.038 \text{ W/(m}\cdot\text{K)}$ at 0 °C
- No flaming droplets when burning

Kaiflex EPDMplus Technical Data

Material		EPDM	
Cell structure		Closed cell	
Colour		Black	
Max. service temperature	Tubes & Sheets Tape	+150 °C +90 °C	
Min. service temperature		-50 °C (-200 °C)	See remark (1)
Thermal conductivity	λ_{10} at -10 °C at 0 °C at +10 °C	$0.038 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$ $\leq 0.037 \text{ W/(m·K)}$ $\leq 0.038 \text{ W/(m·K)}$ $\leq 0.039 \text{ W/(m·K)}$	Test acc. to DIN EN ISO 8497 DIN EN 12667
Water vapour permeability	Moisture resistance factor μ	≥ 4500	Test acc. to DIN EN 12086
Euroclass ^o		E _L /E	Test acc. to DIN EN 13501-1
Practical fire behaviour		Self-extinguishing, no drips, does not support flame spread	
Environmental aspects		ODP Zero GWP Zero	
Insulation material index number acc. to AGI	Tubes Sheets	36.12.03.06.04 36.07.03.06.04	
Health aspects		Fibre free: For high hygiene requirements Heavy metal (e.g. cadmium, lead) and formaldehyde free	
Resistance to	UV	Excellent	
Other attributes	pH-Value	CE marked Neutral	
Shelf life	Self-adhesive products	1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)
Tolerances		In acc. with DIN EN 14304:2013-04	
Outdoor applications		No additional protection against UV-radiation required	

Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

^o The Euroclass rating applies to metallic or solid mineral substrates.



Kaiflex EPDMplus Tube

Colour: Black · Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			10 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0			11.0	EPDMp-10x010	4003230 *	220	EPDMp-13x010	4003245 *	152
3/8	1/2	12.0			13.0	EPDMp-10x012	4003231 *	190	EPDMp-13x012	4003246 *	136
1/2	5/8	15.0			16.0	EPDMp-10x015	4003232 *	172	EPDMp-13x015	4003247	120
					19.0	EPDMp-10x018	4003233 *	136	EPDMp-13x018	4003248	106
3/4	7/8	22.0	1/2	21.3	23.0	EPDMp-10x022	4003234 *	112	EPDMp-13x022	4003249	84
1	1 1/8	28.0	3/4	26.9	29.0	EPDMp-10x028	4003235 *	84	EPDMp-13x028	4003250	72
1 1/4	1 3/8	35.0	1	33.7	36.0	EPDMp-10x035	4003237 *	60	EPDMp-13x035	4003251	50
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	EPDMp-10x042	4003238 *	50	EPDMp-13x042	4003252	40
			1 1/2	48.3	49.5	EPDMp-10x048	4003239 *	40	EPDMp-13x048	4003253	36
2	2 1/8	54.0		54.0	55.0	EPDMp-10x054	4003240 *	36	EPDMp-13x054	4003254	32
			2	60.3	61.5	EPDMp-10x060	4003242 *	32	EPDMp-13x060	4003256	24
2 13/16	3	76.1	2 1/2	76.1	77.0	EPDMp-10x076	4003243 *	20	EPDMp-13x076	4003257	18
			3	88.9	90.5	EPDMp-10x089	4003244 *	18	EPDMp-13x089	4003258	16

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0			11.0						
3/8	1/2	12.0			13.0	EPDMp-19x012	4003259 *	78	EPDMp-25x012	4003273 *	50
1/2	5/8	15.0			16.0	EPDMp-19x015	4003260 *	72	EPDMp-25x015	4003274 *	50
					19.0	EPDMp-19x018	4003261	60	EPDMp-25x018	4003275	40
3/4	7/8	22.0	1/2	21.3	23.0	EPDMp-19x022	4003262	56	EPDMp-25x022	4003276	36
1	1 1/8	28.0	3/4	26.9	29.0	EPDMp-19x028	4003263	40	EPDMp-25x028	4003277	32
1 1/4	1 3/8	35.0	1	33.7	36.0	EPDMp-19x035	4003264	36	EPDMp-25x035	4003278	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	EPDMp-19x042	4003265	32	EPDMp-25x042	4003279	22
			1 1/2	48.3	49.5	EPDMp-19x048	4003266	24	EPDMp-25x048	4003280	18
2	2 1/8	54.0		54.0	55.0	EPDMp-19x054	4003267	22	EPDMp-25x054	4003281	18
			2	60.3	61.5	EPDMp-19x060	4003269	18	EPDMp-25x060	4003283	16
2 13/16	3	76.1	2 1/2	76.1	77.0	EPDMp-19x076	4003270	16	EPDMp-25x076	4003285	12
			3	88.9	90.5	EPDMp-19x089	4003271	12	EPDMp-25x089	4003287	12

* No stock item, delivery time on request.

For further References please contact our customer service.

Designed to resist high temperatures and UV radiation

Kaiflex EPDMplus Tube



Colour: Black · Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			32 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
1/2	5/8	15.0			16.0	EPDMp-32x015	4003290 *	32			
					19.0	EPDMp-32x018	4003291	24			
3/4	7/8	22.0	1/2	21.3	23.0	EPDMp-32x022	4003292	24			
1	1 1/8	28.0	3/4	26.9	29.0	EPDMp-32x028	4003293	22			
1 1/4	1 3/8	35.0	1	33.7	36.0	EPDMp-32x035	4003294	18			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	EPDMp-32x042	4003295	18			
			1 1/2	48.3	49.5	EPDMp-32x048	4003296	14			
2	2 1/8	54.0		54.0	55.0	EPDMp-32x054	4003297	12			
			2	60.3	61.5	EPDMp-32x060	4003299	12			
2 13/16	3	76.1	2 1/2	76.1	77.0	EPDMp-32x076	4003301	8			
			3	88.9	90.5	EPDMp-32x089	4003302	8			

* No stock item, delivery time on request.

For further References please contact our customer service.

Kaiflex Solar EPDM Tube · endless



Colour: Black											
Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
1/2	5/8	15.0			16.0	SEPDM-13x015-E	4003220 *	18	SEPDM-19x015-E	4003225 *	14
					19.0	SEPDM-13x018-E	4003221 *	16	SEPDM-19x018-E	4003226 *	12
3/4	7/8	22.0	1/2	21.3	23.0	SEPDM-13x022-E	4003222 *	15	SEPDM-19x022-E	4003227 *	10
1	1 1/8	28.0	3/4	26.9	29.0	SEPDM-13x028-E	4003223 *	11	SEPDM-19x028-E	4003228 *	8
1 1/4	1 3/8	35.0	1	33.7	36.0	SEPDM-13x035-E	4003224 *	10	SEPDM-19x035-E	4003229 *	6

* No stock item, delivery time on request.

Kaiflex EPDM_{plus} Sheet · endless



Colour: Black			
Insulation thickness mm	Sheet · endless 1 m width		
	Reference	Order No.	m ² / carton
6	EPDMp-06-RL	4003333	18
10	EPDMp-10-RL	4003334	10
13	EPDMp-13-RL	4003336	8
19	EPDMp-19-RL	4003338	6
25	EPDMp-25-RL	4003340	4
32	EPDMp-32-RL	4003341	3

Designed to resist high temperatures and UV radiation

Kaiflex[®] HFplus s2



Halogen-free complete solution for reliable fire and corrosion protection

As a halogen-free solution, Kaiflex HFplus s2 is the ideal solution for the technical insulation of buildings, industrial and specialist applications. Classified as s2, it simultaneously provides a high level of safety in the event of fire and reliable corrosion protection. Kaiflex HFplus s2 is therefore particularly well suited for the insulation of stainless steel pipes and meets the required safety standards even in demanding environments.

Kaiflex HFplus s2 is free of PVC, chlorides and brominated flame retardants. Depending on the configuration, it complies with the Green Building standards and can therefore be safely used in sustainable buildings.

All the components are ideally matched to each other and form a halogen-free complete system.

- Halogen-free insulation system – including all components
- Ideal solution for buildings, industrial and specialist applications
- Classified as s2, it complies with the exacting European smoke specifications
- Free of PVC, chlorides and brominated flame retardants
- Safe to use in sustainable buildings

Kaiflex HFplus s2 Technical Data

Material type base		Elastomeric foam based on synthetic rubber, Flexible Elastomeric Foam (FEF)	
Cell structure		Closed cell	
Colour		Anthracite	
Max. service temperature	Pipe Flat surface	+110 °C +85 °C	
Min. service temperature		-40 °C	See remark (1)
Thermal conductivity	λ_{10} at -10 °C at 0 °C at +10 °C	$0.040 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$ $\leq 0.039 \text{ W/(m·K)}$ $\leq 0.040 \text{ W/(m·K)}$ $\leq 0.041 \text{ W/(m·K)}$	Test acc. to DIN EN ISO 8497 DIN EN 12667
Water vapour permeability	Moisture resistance factor μ	≥ 2000	Test acc. to DIN EN 12086 DIN EN 13469
Euroclass^o	Tubes	Euroclass characteristics ⁽²⁾ D _L -s2, d0 (corresponds to RF3 in acc. with Vkf Fire protection guidelines)	Test acc. to DIN EN 13501-1
	Sheets	Euroclass characteristics ⁽²⁾ D-s2, d0 (corresponds to RF3 in acc. with Vkf Fire protection guidelines) Self-extinguishing, no drips	Test acc. to DIN EN 13501-1
Environmental aspects		ODP Zero GWP Zero	
Health aspects		Fibre free: For high hygiene requirements Halogen free (chlorine, bromine, PVC etc.) Free from heavy metal (e.g. cadmium, lead) and formaldehyde	
Other properties	pH-Value	Neutral	
Other certificates / approvals		CE-compliant Lloyds Register Approval Bureau Veritas Type Approved Det Norske Veritas Type Approval ABS Type Approval Certificate IMO MSC.61(67) MED Modul B & D	
Storage	Self-adhesive products	The material must be installed within one year after delivery and proper storage. Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)	
Tolerances & limits		Satisfies requirements	In acc. with EN 14304:2009+A1:2013
Outdoor applications		Needs protection against UV-radiation	See remark (3)

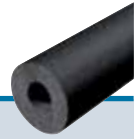
Remark (1) For temperatures below -40 °C please contact our Technical Support Team for advice.

Remark (2) The Euroclass rating applies to metallic or solid mineral substrates.

Remark (3) To protect against UV-induced deterioration Kaiflex should be either painted using Kaifinish Color paint or covered with a suitable UV resistant cladding system within 1 day of being installed outdoors.



Kaiflex HF_{plus} s2 Tube · uncoated



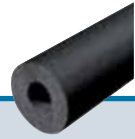
Colour: Anthracite · Length: 1.2 m

Copper pipe Cu			Iron & steel pipe Fe			9 mm Insulation thickness			13 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0			11.0	HF+s2-T-1,2m-09x010	4000807 *	204.0	HF+s2-T-1,2m-13x010	4000820 *	134.4
3/8	1/2	12.0			13.0	HF+s2-T-1,2m-09x012	4000808 *	144.0	HF+s2-T-1,2m-13x012	4000821 *	120.0
1/2	5/8	15.0			16.0	HF+s2-T-1,2m-09x015	4000809 *	158.4	HF+s2-T-1,2m-13x015	4000822	96.0
					19.0	HF+s2-T-1,2m-09x018	4000810 *	144.0	HF+s2-T-1,2m-13x018	4000823 *	88.8
3/4	7/8	22.0	1/2	21.3	23.0	HF+s2-T-1,2m-09x022	4000811 *	105.6	HF+s2-T-1,2m-13x022	4000824	72.0
1	1 1/8	28.0	3/4	26.9	29.0	HF+s2-T-1,2m-09x028	4000812 *	86.4	HF+s2-T-1,2m-13x028	4000825	57.6
1 1/4	1 3/8	35.0	1	33.7	36.0	HF+s2-T-1,2m-09x035	4000813 *	69.6	HF+s2-T-1,2m-13x035	4000826	43.2
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	HF+s2-T-1,2m-09x042	4000814 *	57.6	HF+s2-T-1,2m-13x042	4000827	36.0
			1 1/2	48.3	49.5	HF+s2-T-1,2m-09x048	4000815 *	50.4	HF+s2-T-1,2m-13x048	4000828	38.4
2	2 1/8	54.0		54.0	55.0				HF+s2-T-1,2m-13x054	4000829	28.8
			2	60.3	61.5				HF+s2-T-1,2m-13x060	4000830	28.8
2 13/16	3	76.1	2 1/2	76.1	77.0				HF+s2-T-1,2m-13x076	4000831	25.2
			3	88.9	90.5				HF+s2-T-1,2m-13x089	4000832	16.8

Copper pipe Cu			Iron & steel pipe Fe			19 mm Insulation thickness			25 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	3/8	10.0			11.0	HF+s2-T-1,2m-19x010	4000833 *	72.0			
3/8	1/2	12.0			13.0	HF+s2-T-1,2m-19x012	4000834 *	72.0			
1/2	5/8	15.0			16.0	HF+s2-T-1,2m-19x015	4000835 *	62.4	HF+s2-T-1,2m-25x015	4000846 *	39.6
					19.0	HF+s2-T-1,2m-19x018	4000836 *	50.4	HF+s2-T-1,2m-25x018	4000847	36.0
3/4	7/8	22.0	1/2	21.3	23.0	HF+s2-T-1,2m-19x022	4000837	43.2	HF+s2-T-1,2m-25x022	4000848	30.0
1	1 1/8	28.0	3/4	26.9	29.0	HF+s2-T-1,2m-19x028	4000838	39.6	HF+s2-T-1,2m-25x028	4000849	21.6
1 1/4	1 3/8	35.0	1	33.7	36.0	HF+s2-T-1,2m-19x035	4000839	30.0	HF+s2-T-1,2m-25x035	4000850	24.0
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	HF+s2-T-1,2m-19x042	4000840	26.4	HF+s2-T-1,2m-25x042	4000851	19.2
			1 1/2	48.3	49.5	HF+s2-T-1,2m-19x048	4000841	22.8	HF+s2-T-1,2m-25x048	4000852 *	16.8
2	2 1/8	54.0		54.0	55.0	HF+s2-T-1,2m-19x054	4000842	21.6	HF+s2-T-1,2m-25x054	4000853	16.8
			2	60.3	61.5	HF+s2-T-1,2m-19x060	4000843	19.2	HF+s2-T-1,2m-25x060	4000854	14.4
2 13/16	3	76.1	2 1/2	76.1	77.0	HF+s2-T-1,2m-19x076	4000844	14.4	HF+s2-T-1,2m-25x076	4000855	12.0
			3	88.9	90.5	HF+s2-T-1,2m-19x089	4000845	12.0	HF+s2-T-1,2m-25x089	4000856	9.6

* No stock item, delivery time on request.

Slit tubes available on request.



Kaiflex HFplus s2 Tube · uncoated

Colour: Anthracite · Length: 1.2 m

Copper pipe Cu		Iron & steel pipe Fe			Min ID mm	32 mm Insulation thickness					
OD mm	Nom width DN	Inch	OD mm	Nom width DN		Reference	Order No.	m/ carton			
10.0	8	1/8	10.2	6	11.0						
12.0	10		12.5		13.0						
15.0	10	1/4	13.5	8	16.0	HF+s2-T-1,2m-32x015	4000857 *	21.6			
18.0	15	3/8	17.2	10	19.0	HF+s2-T-1,2m-32x018	4000858 *	21.6			
22.0	20	1/2	21.3	15	23.0	HF+s2-T-1,2m-32x022	4000859 *	21.6			
28.0	25	3/4	26.9	20	29.0	HF+s2-T-1,2m-32x028	4000860 *	19.2			
35.0	32	1	33.7	25	36.0	HF+s2-T-1,2m-32x035	4000861 *	18.0			
42.0	40	1 1/4	42.4	32	43.5	HF+s2-T-1,2m-32x042	4000862 *	14.4			
		1 1/2	48.3	40	49.5	HF+s2-T-1,2m-32x048	4000863 *	13.2			
54.0	50		54.0		55.0	HF+s2-T-1,2m-32x054	4000864 *	10.8			
		2	60.3	50	61.5	HF+s2-T-1,2m-32x060	4000865 *	10.8			
76.1	65	2 1/2	76.1	65	77.0	HF+s2-T-1,2m-32x076	4000866 *	8.4			
88.9	80	3	88.9	80	90.5	HF+s2-T-1,2m-32x089	4000867 *	7.2			

* No stock item, delivery time on request.

Slit tubes available on request.

Kaiflex HFplus s2 Sheet · uncoated · endless

Colour: Anthracite

Insulation thickness mm	Sheet · endless 1 m width · OD coil: 40 cm · in box				Sheet · endless · self-adhesive 1 m width · OD coil: 40 cm			
	Reference	Order No.	rm/ roll	m ² / roll	Reference	Order No.	rm/ roll	m ² / roll
6	HF+s2-Sh-e-1m-40BX-06	4013734 *	18	18	HF+s2-Sh-e-1m-40BX-06-SA	4013735 *	18	18
10	HF+s2-Sh-e-1m-40BX-10	4013736 *	10	10	HF+s2-Sh-e-1m-40BX-10-SA	4013737 *	10	10
13	HF+s2-Sh-e-1m-40BX-13	4008750	8	8	HF+s2-Sh-e-1m-40BX-13-SA	4013738	8	8
19	HF+s2-Sh-e-1m-40BX-19	4008751	6	6	HF+s2-Sh-e-1m-40BX-19-SA	4008753	6	6
25	HF+s2-Sh-e-1m-40BX-25	4008752	4	4	HF+s2-Sh-e-1m-40BX-25-SA	4008754	4	4
32	HF+s2-Sh-e-1m-40BX-32	4013739	3	3	HF+s2-Sh-e-1m-40BX-32-SA	4013740	3	3

* No stock item, delivery time on request.



Saves energy and offsets pipe freezing in domestic applications

Kaifoam PE is a high-quality, easy-to-process polyethylene insulation material for heating and sanitary facilities. With its low thermal conductivity and minimised energy loss, it is capable of sustainably reducing CO₂ emissions. The material also prevents the formation of condensation on cold water pipes.

Saves energy and offsets pipe freezing in domestic applications

Kaifoam PE Technical Data

Material type base		Foam made from high-quality polyethylene	
Cell structure		Closed cell	
Max. service temperature		+100 °C	
Min. service temperature		As typical for heating and plumbing installations	
Thermal conductivity	at +40 °C	≤0.040 W/(m·K)	Test acc. to DIN EN ISO 8497
Euroclass[°]	Euroclass characteristics ⁽¹⁾	E _L	Test acc. to DIN EN 13501-1
Other certificates / approvals		CE-compliant	
Tolerances & limits		Satisfies requirements	In acc. with EN 14313:2009+A1:2013

Remark (1) The Euroclass rating applies to metallic or solid mineral substrates.

Saves energy and offsets pipe freezing in domestic applications



Kaifoam PE Tube

Colour: Grey - Length: 2 m

Copper pipe Cu			Iron & steel pipe Fe			9 mm * Insulation thickness					13 mm * Insulation thickness				
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	act. thickn. mm	Reference	Order No.	m/ carton	act. thickn. mm	Reference	Order No.	m/ carton		
1/2	5/8	15.0	1/4	13.5	16.0	9.0	PE-T-2m-09x015-PSL	4013649	150	13.0	PE-T-2m-13x015-PSL	4013662	100		
	3/4	18.0	3/8	17.2		9.0	PE-T-2m-09x018-PSL	4013650	140	13.0	PE-T-2m-13x018-PSL	4013663	100		
3/4	7/8	22.0	1/2	21.3	23.0	9.0	PE-T-2m-09x022-PSL	4013651	100	13.0	PE-T-2m-13x022-PSL	4013664	80		
1	1 1/8	28.0	3/4	26.9	29.0	9.0	PE-T-2m-09x028-PSL	4013652	80	13.0	PE-T-2m-13x028-PSL	4013665	60		
1 1/4	1 3/8	35.0	1	33.7	36.0	9.0	PE-T-2m-09x035-PSL	4013653	60	13.0	PE-T-2m-13x035-PSL	4013666	56		
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	9.0	PE-T-2m-09x042-PSL	4013654	50	13.0	PE-T-2m-13x042-PSL	4013667	40		
			1 1/2	48.3	49.5	9.0	PE-T-2m-09x048-PSL	4013655	40	13.0	PE-T-2m-13x048-PSL	4013668	36		
2	2 1/8	54.0		54.0	55.0	9.0	PE-T-2m-09x054-PSL	4013656	36	13.0	PE-T-2m-13x054-PSL	4013669	28		
			2	60.3	61.5	9.0	PE-T-2m-09x060-PSL	4013657	32	13.0	PE-T-2m-13x060-PSL	4013670	24		
2 13/16	3	76.1	2 1/2	76.1	77.0	9.0	PE-T-2m-09x076-PSL	4013658	22	13.0	PE-T-2m-13x076-PSL	4013671	18		
		88.9	3	88.9	90.5	9.0	PE-T-2m-09x089-PSL	4013659	18	13.0	PE-T-2m-13x089-PSL	4013672	12		
4	4 1/4	108.0		108.0	109.5	9.0	PE-T-2m-09x108-PSL	4013660	12	13.0	PE-T-2m-13x108-PSL	4013673	10		
		114.0	4	114.3	116.0	9.0	PE-T-2m-09x114-PSL	4013661	10	13.0	PE-T-2m-13x114-PSL	4013674	10		

Copper pipe Cu			Iron & steel pipe Fe			20 mm * Insulation thickness					25 mm * Insulation thickness				
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	act. thickn. mm	Reference	Order No.	m/ carton	act. thickn. mm	Reference	Order No.	m/ carton		
1/2	5/8	15.0	1/4	13.5	16.0	20.0	PE-T-2m-20x015-SL [◊]	4013676	66	27.0	PE-T-2m-25x015-SL [◊]	4013692	40		
	3/4	18.0	3/8	17.2		20.0	PE-T-2m-20x018-PSL	4013677	60	26.0	PE-T-2m-25x018-PSL	4013693	40		
3/4	7/8	22.0	1/2	21.3	23.0	20.0	PE-T-2m-20x022-SL [◊]	4013679	56	26.0	PE-T-2m-25x022-SL [◊]	4013695	36		
1	1 1/8	28.0	3/4	26.9	29.0	20.0	PE-T-2m-20x028-SL [◊]	4013681	40	25.0	PE-T-2m-25x028-SL [◊]	4013697	30		
1 1/4	1 3/8	35.0	1	33.7	36.0	20.0	PE-T-2m-20x035-PSL	4013682	34	25.0	PE-T-2m-25x035-PSL	4013698	24		
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	20.0	PE-T-2m-20x042-PSL	4013683	26	25.0	PE-T-2m-25x042-PSL	4013699	22		
			1 1/2	48.3	49.5	20.0	PE-T-2m-20x048-PSL	4013684	24	25.0	PE-T-2m-25x048-PSL	4013700	18		
2	2 1/8	54.0		54.0	55.0	20.0	PE-T-2m-20x054-PSL	4013685	22						
			2	60.3	61.5	20.0	PE-T-2m-20x060-PSL	4013686	18						
2 13/16	3	76.1	2 1/2	76.1	77.0	20.0	PE-T-2m-20x076-PSL	4013687	12						
		88.9	3	88.9	90.5	20.0	PE-T-2m-20x089-PSL	4013688	10						
4	4 1/4	108.0		108.0	109.5	20.0	PE-T-2m-20x108-PSL	4013689	8						
		114.0	4	114.3	116.0	20.0	PE-T-2m-20x114-PSL	4013690	8						

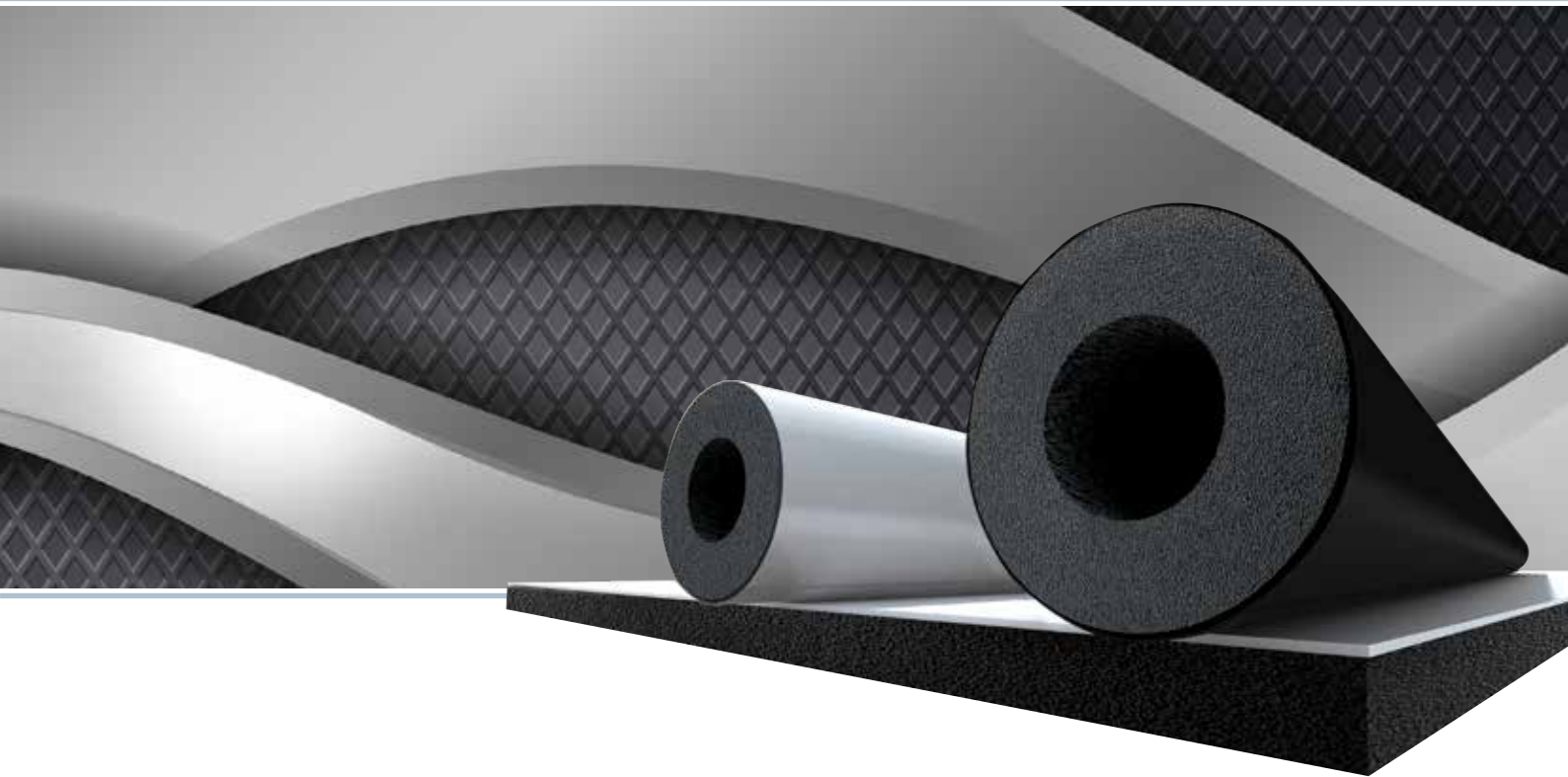
* semi slit

[◊] fully slit

1m tubes are available upon request.

Saves energy and offsets pipe freezing in domestic applications

Kaiflex[®] PROTECT TC



Designed to be tough and durable

Nitrile rubber tubes and sheet with a tough PVC coating pre-applied, Kaiflex Protect TC prevents energy loss and condensation whilst providing the waterproof rubber foam insulation with protection against the weather, impact, vandalism and UV damage.

Kaiflex Protect TC is durable and visually attractive. The finish resists dirt and makes Kaiflex Protect TC ideal for use in food production and clean room locations. With inherent UV resistance Kaiflex Protect TC can be used outdoors without the need for additional paint or cladding. Kaiflex Protect TC can even be used on pipework buried in shallow soil, on pipe connecting mains cold water to houses and on sections of ground source heat loops which require insulation.

Available in pure white or black films, on rolls or pre-bonded to Kaiflex tubes and sheet, Kaiflex Protect TC is particularly easy to install with application times minimised.

- Closed cell structure with in-built water vapour barrier
- Inherent resistance to microbial growth
- Weather & UV resistant for outdoor use
- Durable protective covering
- Clean surface for food production locations

Kaiflex Protect TC Technical Data

Polymer		NBR Foam	
Covering		Polymer (PVC)	
Cell structure		Closed cell	
Colour	Covering	Black or white	
Max. service temperature		+80 °C	See remark (1)
Min. service temperature		-10 °C	See remark (2)
Thermal conductivity	λ_{10} at -10 °C at 0 °C at +10 °C	$0.034 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$ $\leq 0.033 \text{ W/(m·K)}$ $\leq 0.034 \text{ W/(m·K)}$ $\leq 0.035 \text{ W/(m·K)}$	Test acc. to DIN EN ISO 8497 DIN EN 12667
Water vapour permeability	Moisture resistance factor μ	≥ 10000 No separate vapour barrier required	Test acc. to DIN EN 13469 DIN EN 12086
EuroClass °		E	Test acc. to DIN EN 13501-1
Practical fire behaviour		Self-extinguishing, no drips, does not support flame spread	
Surface spread of Flame		Class 1	Test acc. to BS 476-7
Environmental aspects		ODP Zero GWP Zero	
Health aspects		Fibre free: For high hygiene requirements Heavy metal (e.g. cadmium, lead) and formaldehyde free	
Resistance to	UV Mould and bacteria	Excellent no growth	In acc. with VDI 6022
Shelf life	Self-adhesive products	1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)
Tolerances		In acc. with DIN EN 14304:2013-04	
Outdoor applications		No additional protection required	

Remark (1) For temperatures above +80 °C please contact our Technical Support Team for advice.

Remark (2) For temperatures below -10 °C please contact our Technical Support Team for advice.

° The Euroclass rating applies to metallic or solid mineral substrates.

Designed to be tough and durable

Kaiflex Protect TC ST-tube · TC pre-covered

Colour: Black · Length: 1 m											
Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	TC-ST13x006-BK	4009304	120			
	3/8	10.0			11.0	TC-ST13x010-BK	4009305	95	TC-ST19x010-BK	4010760	53
3/8	1/2	12.0			13.0	TC-ST13x012-BK	4009306	86	TC-ST19x012-BK	4001866	50
1/2	5/8	15.0			16.0	TC-ST13x015-BK	4001854	77	TC-ST19x015-BK	4001867	43
5/8	3/4				21.0	TC-ST13x020-BK	4009307	60	TC-ST19x020-BK	4001868	38
3/4	7/8	22.0	1/2	21.3	23.0	TC-ST13x022-BK	4001855	55	TC-ST19x022-BK	4001869	37
1	1 1/8	28.0	3/4	26.9	29.0	TC-ST13x028-BK	4001856	43	TC-ST19x028-BK	4001870	29
1 1/4	1 3/8	35.0	1	33.7	36.0	TC-ST13x035-BK	4001857	38	TC-ST19x035-BK	4001871	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	TC-ST13x042-BK	4001858	28	TC-ST19x042-BK	4001872	20
			1 1/2	48.3	49.5	TC-ST13x048-BK	4001859	24	TC-ST19x048-BK	4009309	15
2	2 1/8	54.0		54.0	55.0	TC-ST13x054-BK	4001860	23	TC-ST19x054-BK	4001873	15
			2	60.3	61.5	TC-ST13x060-BK	4001861	20	TC-ST19x060-BK	4001874	14
2 1/2	2 5/8	67.0			68.5	TC-ST13x067-BK	4001862	20	TC-ST19x067-BK	4001875	14
2 13/16	3	76.1	2 1/2	76.1	77.0	TC-ST13x076-BK	4001863	17	TC-ST19x076-BK	4001876	14
3	3 1/8	80.0			81.0	TC-ST13x080-BK	4001864	15	TC-ST19x080-BK	4001877	13
			3	88.9	90.5	TC-ST13x089-BK	4001865	15	TC-ST19x089-BK	4001878	11
4	4 1/4	108.0			109.5	TC-ST13x108-BK	22613108	14	TC-ST19x108-BK	4012752	10
			4	114.3	116.0	TC-ST13x114-BK	22613114	14	TC-ST19x114-BK	22619114	8

Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
3/8	1/2	12.0			13.0	TC-ST25x012-BK	4009310	30			
1/2	5/8	15.0			16.0	TC-ST25x015-BK	4009311	30			
5/8	3/4				21.0	TC-ST25x020-BK	4001880	25			
3/4	7/8	22.0	1/2	21.3	23.0	TC-ST25x022-BK	4001881	21			
1	1 1/8	28.0	3/4	26.9	29.0	TC-ST25x028-BK	4001882	20			
1 1/4	1 3/8	35.0	1	33.7	36.0	TC-ST25x035-BK	4001883	16			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	TC-ST25x042-BK	4009312	12			
			1 1/2	48.3	49.5	TC-ST25x048-BK	22613048	12			
2	2 1/8	54.0		54.0	55.0	TC-ST25x054-BK	4001884	11			
			2	60.3	61.5	TC-ST25x060-BK	4001885	11			
2 13/16	3	76.1	2 1/2	76.1	77.0	TC-ST25x076-BK	4012716	9			
			3	88.9	90.5	TC-ST25x089-BK	22613089	7			
4	4 1/4	108.0			109.5	TC-ST25x108-BK	22613108	5			
			4	114.3	116.0	TC-ST25x114-BK	22613114	5			

For further dimensions please contact our customer service.

Delivery for all Kaiflex Protect TC products: 10 working days

Designed to be tough and durable

Kaiflex Protect TC ST-tube · TC pre-covered

Colour: White · Length: 1 m											
Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
	1/4	6.0			7.0	TC-ST13x006-WH	4012750	120			
	3/8	10.0			11.0	TC-ST13x010-WH	4009313	95	TC-ST19x010-WH	4009315	53
3/8	1/2	12.0			13.0	TC-ST13x012-WH	4012751	86	TC-ST19x012-WH	22719012	50
1/2	5/8	15.0			16.0	TC-ST13x015-WH	22713015	77	TC-ST19x015-WH	22719015	43
5/8	3/4				21.0	TC-ST13x020-WH	4009314	60	TC-ST19x020-WH	22719020	38
3/4	7/8	22.0	1/2	21.3	23.0	TC-ST13x022-WH	22713022	55	TC-ST19x022-WH	4009316	37
1	1 1/8	28.0	3/4	26.9	29.0	TC-ST13x028-WH	4001887	43	TC-ST19x028-WH	22719028	29
1 1/4	1 3/8	35.0	1	33.7	36.0	TC-ST13x035-WH	22713035	38	TC-ST19x035-WH	22719035	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	TC-ST13x042-WH	22713042	28	TC-ST19x042-WH	22719042	20
			1 1/2	48.3	49.5	TC-ST13x048-WH	22713048	24	TC-ST19x048-WH	22719048	15
2	2 1/8	54.0		54.0	55.0	TC-ST13x054-WH	4001888	23	TC-ST19x054-WH	22719054	15
			2	60.3	61.5	TC-ST13x060-WH	22713060	20	TC-ST19x060-WH	22719060	14
2 1/2	2 5/8	67.0			68.5	TC-ST13x067-WH	4001889	20	TC-ST19x067-WH	22719067	14
2 13/16	3	76.1	2 1/2	76.1	77.0	TC-ST13x076-WH	22713076	17	TC-ST19x076-WH	22719076	14
3	3 1/8	80.0			81.0	TC-ST13x080-WH	22713080	15	TC-ST19x080-WH	22719080	13
			3	88.9	90.5	TC-ST13x089-WH	22713089	15	TC-ST19x089-WH	22719089	11
4	4 1/4	108.0			109.5	TC-ST13x108-WH	22713108	14	TC-ST19x108-WH	22719108	10
			4	114.3	116.0	TC-ST13x114-WH	22713114	14	TC-ST19x114-WH	22719114	8





Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
3/8	1/2	12.0			13.0	TC-ST25x012-WH	4009318	30			
1/2	5/8	15.0			16.0	TC-ST25x015-WH	4009319	30			
5/8	3/4				21.0	TC-ST25x020-WH	22713020	25			
3/4	7/8	22.0	1/2	21.3	23.0	TC-ST25x022-WH	22713022	21			
1	1 1/8	28.0	3/4	26.9	29.0	TC-ST25x028-WH	4001890	20			
1 1/4	1 3/8	35.0	1	33.7	36.0	TC-ST25x035-WH	22713035	16			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	TC-ST25x042-WH	4005780	12			
			1 1/2	48.3	49.5	TC-ST25x048-WH	22713048	12			
2	2 1/8	54.0		54.0	55.0	TC-ST25x054-WH	22713054	11			
			2	60.3	61.5	TC-ST25x060-WH	22713060	11			
2 13/16	3	76.1	2 1/2	76.1	77.0	TC-ST25x076-WH	22713076	9			
			3	88.9	90.5	TC-ST25x089-WH	22713089	7			
4	4 1/4	108.0			109.5	TC-ST25x108-WH	22713108	5			
			4	114.3	116.0	TC-ST25x114-WH	22713114	5			

For further dimensions please contact our customer service.

Delivery for all Kaiflex Protect TC products: 10 working days

Designed to be tough and durable

Kaiflex Protect TC Accessories

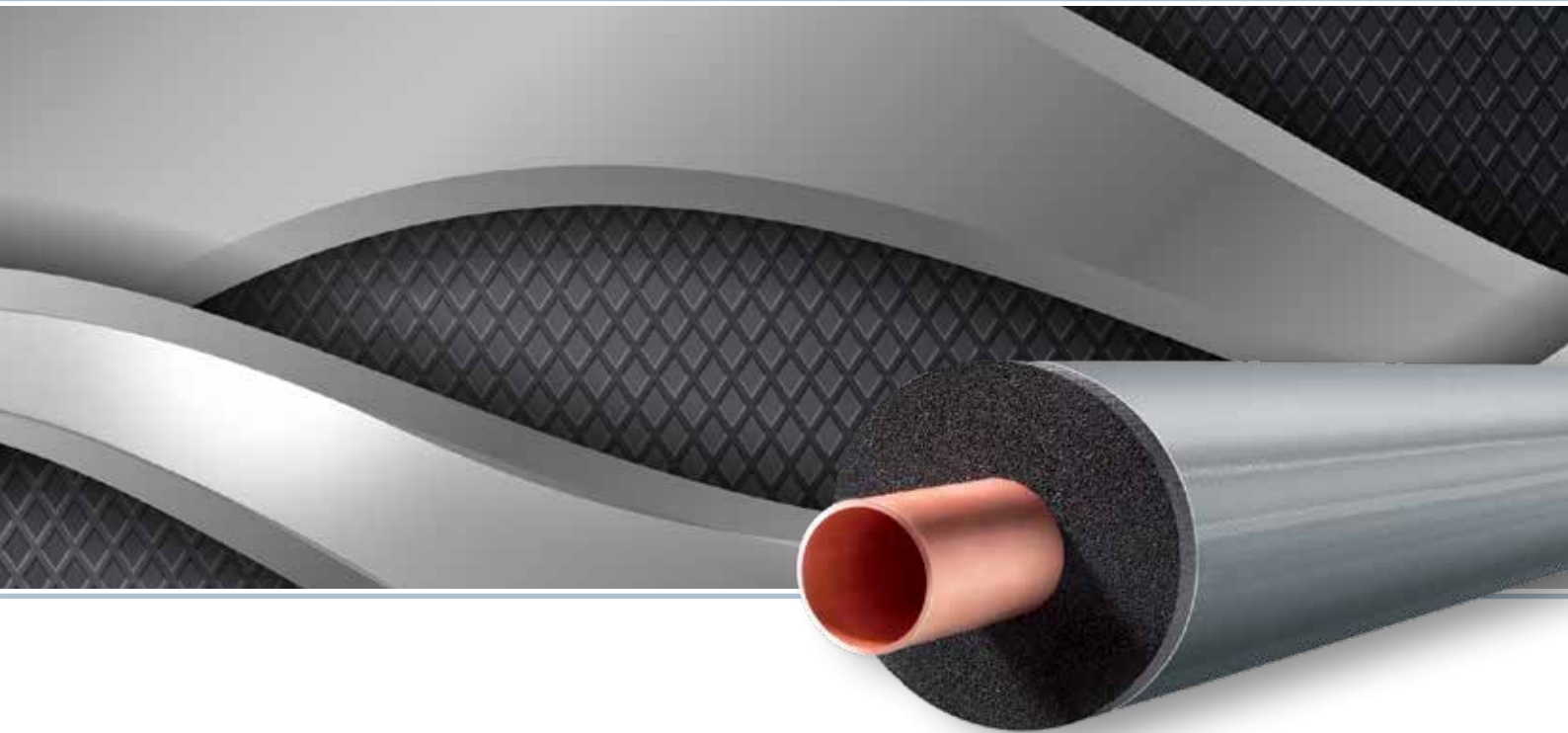
	Description	Order No.	Colour	pcs/ carton
	Sealing compound · content: 290 ml *	4004680	Transparent	12
		4004679	Black	12
	Description	Order No.	Width mm	m ² / roll
	Coating · 25 m Length · Colour: Black	4012204 *	1000	25
	Coating · 25 m Length · Colour: White	259TCW100 *	1000	25
	Description	Order No.	Width mm	rolls/ carton
	Protect TC Tape · 50 m Length · Colour: Black	4004687 *	50	4
	Protect TC Tape · 50 m Length · Colour: White	4004689 *	50	4

* No stock item, delivery time on request.

kaiflex® **PROTECT TC**

Designed to be tough and durable

Kaiflex[®] **PROTECT ALU-TEC**



Rigid PVC cladding with a bright surface finish

Semi-rigid PVC pipe covering with permanent curl characteristics, Kaiflex Protect Alu-TEC protects insulation from damage whilst providing a durable anti-static surface finish.

Kaiflex Protect Alu-TEC gives a visually attractive surface resembling a brightly polished Aluminium pipe, providing all of the advantages of a metallic cladding but with the added benefits of an anti-static surface finish that cannot corrode.

- Non-metallic covering system
- Weather- & UV-resistant for outdoor use
- Non-metallic system for safer use
- Protects against impact
- Self-adhesive strips ensure faster installation

Kaiflex Protect Alu-TEC Technical Data

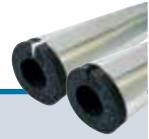
Covering		Flexible hard foil cladding with a weatherproof aluminum bright surface finish	
Colour		Silver	
Thickness		230 µm	
Max. service temperature		+80 °C	
Min. service temperature		-30 °C	See remark (1)
Euroclass [◊]		E _L / E	Test acc. to DIN EN 13501-1
Water vapour permeability		<0.028 g/m ² x d	Test acc. to ISO 15106-2
Weight		340 g/m ²	Test acc. to EN 22286
Tensile Strength	MD	200 N/15 mm	Test acc. to EN ISO 527-3
	CD	175 N/15 mm	See remark (2)
Elongation	MD	45 %	Test acc. to EN ISO 527-3
	CD	51 %	See remark (2)
Tear Strength	MD	70 N	Test acc. to EN ISO 527-3
	CD	28 N	See remark (2)
Puncture resistance	Ø 0.3 mm	23 N	Test acc. to prEN 14477
	Ø 0.8 mm	87 N	
Resistance to	UV	Excellent	
	Mechanical impact	Very good	
	Sea water	Good	
Shelf life	Self-adhesive products	1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)
Outdoor applications		No additional protection required	

Remark (1) For temperatures below -30 °C please contact our Technical Support Team for advice.

Remark (2) MD: Machine Direction · CD: Cross Direction

[◊] The Euroclass rating applies to metallic or solid mineral substrates.

Rigid PVC cladding with a bright surface finish



Kaiflex Protect Alu-TEC ST-tube · Alu-TEC pre-covered · self-adhesive

Colour: Silver · Length: 1 m

Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
1/2	5/8	15.0			16.0	AT-ST13x015	4000739 *	77	AT-ST19x015	4000754 *	43
3/4	7/8	22.0	1/2	21.3	23.0	AT-ST13x022	4000741 *	55	AT-ST19x022	4000755 *	37
1	1 1/8	28.0	3/4	26.9	29.0	AT-ST13x028	4000742 *	43	AT-ST19x028	4000757 *	29
1 1/4	1 3/8	35.0	1	33.7	36.0	AT-ST13x035	4000743 *	38	AT-ST19x035	4000758 *	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	AT-ST13x042	4000744 *	28	AT-ST19x042	4000759 *	20
			1 1/2	48.3	49.5	AT-ST13x048	4000745 *	24	AT-ST19x048	4000760 *	15
2	2 1/8	54.0		54.0	55.0	AT-ST13x054	4000746 *	23	AT-ST19x054	4000761 *	15
			2	60.3	61.5	AT-ST13x060	4000748 *	20	AT-ST19x060	4000762 *	14
2 13/16	3	76.1	2 1/2	76.1	77.0	AT-ST13x076	4000750 *	17	AT-ST19x076	4000765 *	14
3	3 1/8	80.0			81.0	AT-ST13x080	4005602 *	15	AT-ST19x080	4000766 *	13
			3	88.9	90.5	AT-ST13x089	4000751 *	15	AT-ST19x089	4000767 *	11
4	4 1/4	108.0			109.5						
			4	114.3	116.0	AT-ST13x114 [◊]	4000752 *	14	AT-ST19x114 [◊]	4000768 *	9

Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
1/2	5/8	15.0			16.0	AT-ST25x015	4000769 *	30			
3/4	7/8	22.0	1/2	21.3	23.0	AT-ST25x022	4000770 *	21			
1	1 1/8	28.0	3/4	26.9	29.0	AT-ST25x028	4000771 *	20			
1 1/4	1 3/8	35.0	1	33.7	36.0	AT-ST25x035	4000772 *	16			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	AT-ST25x042	4000773 *	12			
			1 1/2	48.3	49.5	AT-ST25x048	4000774 *	12			
2	2 1/8	54.0		54.0	55.0	AT-ST25x054	4000775 *	11			
			2	60.3	61.5	AT-ST25x060	4000776 *	11			
2 13/16	3	76.1	2 1/2	76.1	77.0	AT-ST25x076	4000778 *	9			
3	3 1/8	80.0			81.0						
			3	88.9	90.5	AT-ST25x089	4000779 *	7			
4	4 1/4	108.0			109.5	AT-ST25x108 [◊]	4005608 *	5			
			4	114.3	116.0	AT-ST25x114 [◊]	4007394 *	5			

* No stock item, delivery time on request.

◊ Slit (without self-adhesive seal)

For further dimensions please contact our customer service.

Rigid PVC cladding with a bright surface finish

Kaiflex Protect Alu-TEC ST-Sheet · Alu-TEC pre-covered · endless






Colour: Silver

Insulation thickness mm	Sheet · endless 1 m width			Sheet · endless · self-adhesive 1 m width		
	Reference	Order No.	m ² /carton	Reference	Order No.	m ² /carton
10	AT-ST10-RL	4000794 *	20	AT-ST10-RL-SK	4002761 *	20
13	AT-ST13-RL	4000795 *	14	AT-ST13-RL-SK	4002762 *	14
19	AT-ST19-RL	4000796 *	10	AT-ST19-RL-SK	4002763 *	10
25	AT-ST25-RL	4000797 *	8	AT-ST25-RL-SK	4002764 *	8
32	AT-ST32-RL	4000798 *	6	AT-ST32-RL-SK	4002765 *	6

* No stock item, delivery time on request.

For insulation of ductwork and vessels - may be used for pipe work with a diameter > 323 mm

Kaiflex Protect Alu-TEC Accessories

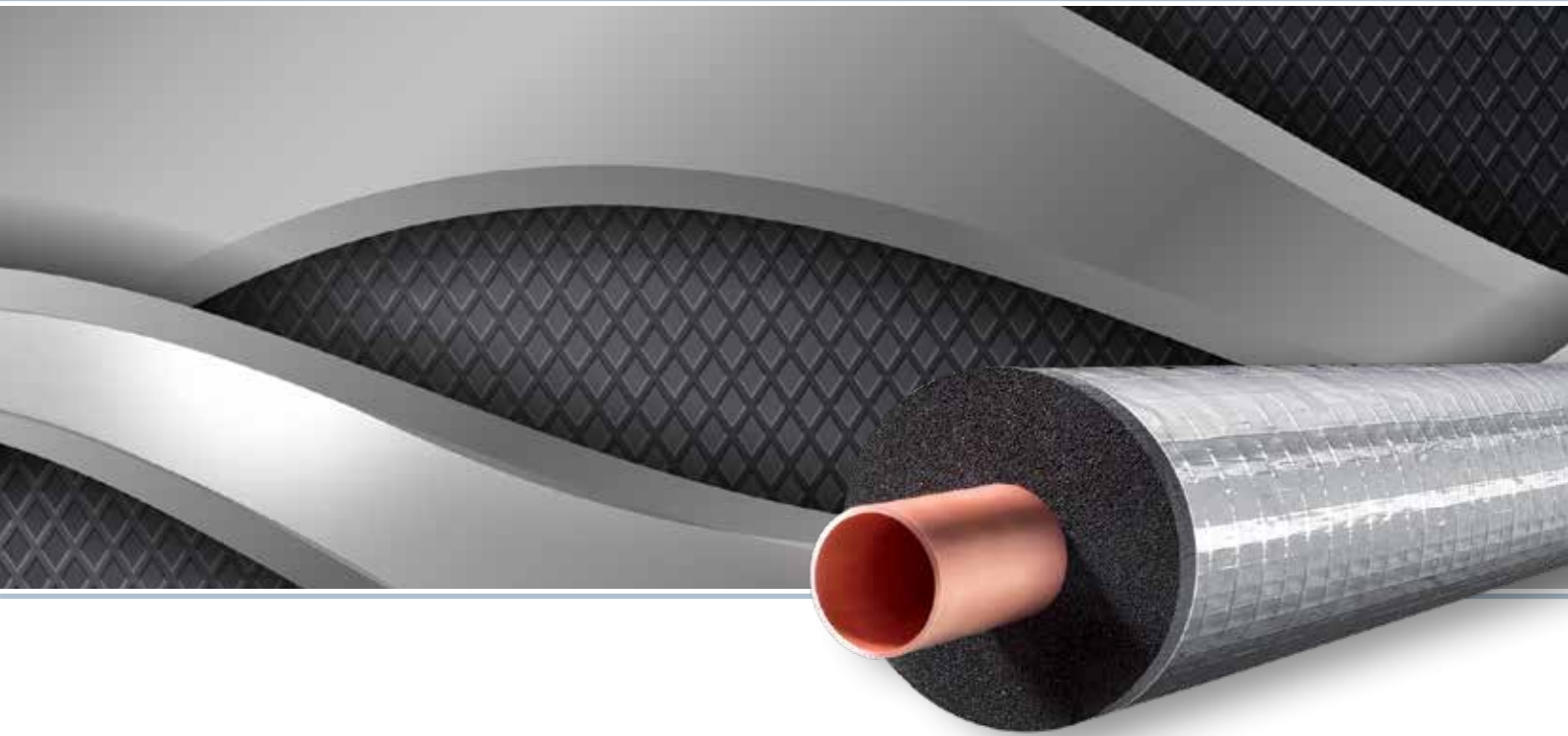
	Description	Order No.	Colour	pcs/ carton
	Sealing compound · content: 290 ml [◊]	4004680 *	Transparent	12
		4004678 *	Grey	12
	Description	Order No.	Width mm	m/ roll
	Coating	4003844 *	1060	25
	Coating · self-adhesive	4003845 *	1060	25
	Description	Order No.	Width mm	rolls/ carton
	Protect Alu Butyl Tape · 25 m Length	4004681 *	20	30
		4004682 *	50	12
		4004684 *	100	6
	Protect Alu Tape · 25 m Length	4004401 *	19	36
	Protect Alu Tape · 50 m Length	4004402 *	50	24
		4004403 *	100	12

* No stock item, delivery time on request.

[◊] 1 cartridge seals about 8 m.

In case of creasing Protect sealing compound is to be used. Apply in min. width of 10 mm and min. thickness of 3 mm (refer to Kaiflex Application Manual).

kaiflex[®] **PROTECT ALU-NET**



Bright surface finish for internal applications

Glass fibre reinforced aluminium foil covering for Kaiflex insulation, Kaiflex Protect Alu-NET protects insulation against mechanical damage and can be supplied either separately as rolls of thin sheet or pre-applied to Kaiflex tube or sheet

Kaiflex Protect Alu-NET is particularly attractive with a superior aluminium finish that provides an alternative to metal cladding on a range of applications. The covering also features a smooth waterproof finish that can be easily cleaned, making Kaiflex Protect Alu-NET appropriate for clean room and food production environments.

- Attractive aluminium foil finish
- Non-metallic covering free from corrosion

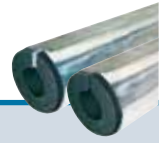
Bright surface finish for internal applications

Kaiflex Protect Alu-NET Technical Data

Covering		Woven glass fibre cloth with a weatherproof aluminium finish	
Colour		Silver	
Max. service temperature		+80 °C	
Min. service temperature		-30 °C	See remark (1)
Water vapour permeability		0.030 g/m ² x d	Test acc. to DIN 53122
Weight		86 g/m ²	Test acc. to EN 22286
Tear Strength	MD	4 %	In acc. with DIN 53354
Tensile Strength		250 N/50 mm	In acc. with DIN 53354
Resistance to	UV	Poor	
	Mechanical impact	Good	
Outdoor applications		Not suitable for installation outdoors	

Remark (1) For temperatures below -30 °C please contact our Technical Support Team for advice.

Bright surface finish for internal applications



Kaiflex Protect Alu-NET ST-tube · Alu-NET pre-covered · self-adhesive

Colour: Silver · Length: 1 m

Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
1/2	5/8	15.0			16.0	AN-ST13x015	4006730 *	77	AN-ST19x015	4007687 *	43
3/4	7/8	22.0	1/2	21.3	23.0	AN-ST13x022	4002709 *	55	AN-ST19x022	4002720 *	37
1	1 1/8	28.0	3/4	26.9	29.0	AN-ST13x028	4002710 *	43	AN-ST19x028	4002722 *	29
1 1/4	1 3/8	35.0	1	33.7	36.0	AN-ST13x035	4002711 *	38	AN-ST19x035	4002723 *	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	AN-ST13x042	4002712 *	28	AN-ST19x042	4002724 *	20
			1 1/2	48.3	49.5	AN-ST13x048	4002713 *	24	AN-ST19x048	4002725 *	15
2	2 1/8	54.0		54.0	55.0	AN-ST13x054	4005842 *	23	AN-ST19x054	4002726 *	15
			2	60.3	61.5	AN-ST13x060	4002715 *	20	AN-ST19x060	4002727 *	14
2 13/16	3	76.1	2 1/2	76.1	77.0	AN-ST13x076	4002716 *	17	AN-ST19x076	4002729 *	14
3	3 1/8	80.0			81.0	AN-ST13x080	4007680 *	15	AN-ST19x080	4007689 *	13
			3	88.9	90.5	AN-ST13x089	4002717 *	15	AN-ST19x089	4002730 *	11
4	4 1/4	108.0			109.5	AN-ST13x108 °	4007682 *	14	AN-ST19x108 °	4002731 *	10
			4	114.3	116.0	AN-ST13x114 °	4002718 *	14	AN-ST19x114 °	4007691 *	9

Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
1/2	5/8	15.0			16.0						
3/4	7/8	22.0	1/2	21.3	23.0	AN-ST25x022	4002735 *	21			
1	1 1/8	28.0	3/4	26.9	29.0	AN-ST25x028	4002736 *	20			
1 1/4	1 3/8	35.0	1	33.7	36.0	AN-ST25x035	4002737 *	16			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	AN-ST25x042	4002738 *	12			
			1 1/2	48.3	49.5	AN-ST25x048	4002739 *	12			
2	2 1/8	54.0		54.0	55.0	AN-ST25x054	4002740 *	11			
			2	60.3	61.5	AN-ST25x060	4002741 *	11			
2 13/16	3	76.1	2 1/2	76.1	77.0	AN-ST25x076	4002742 *	9			
3	3 1/8	80.0			81.0						
			3	88.9	90.5	AN-ST25x089	4002743 *	7			
4	4 1/4	108.0			109.5	AN-ST25x108 °	4005844 *	5			
			4	114.3	116.0	AN-ST25x114 °	4007696 *	5			

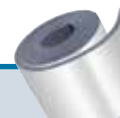
* No stock item, delivery time on request.

° Slit (without self-adhesive seal)

For further dimensions please contact our customer service.

Bright surface finish for internal applications

Kaiflex Protect Alu-NET ST-Sheet · Alu-NET pre-covered · endless



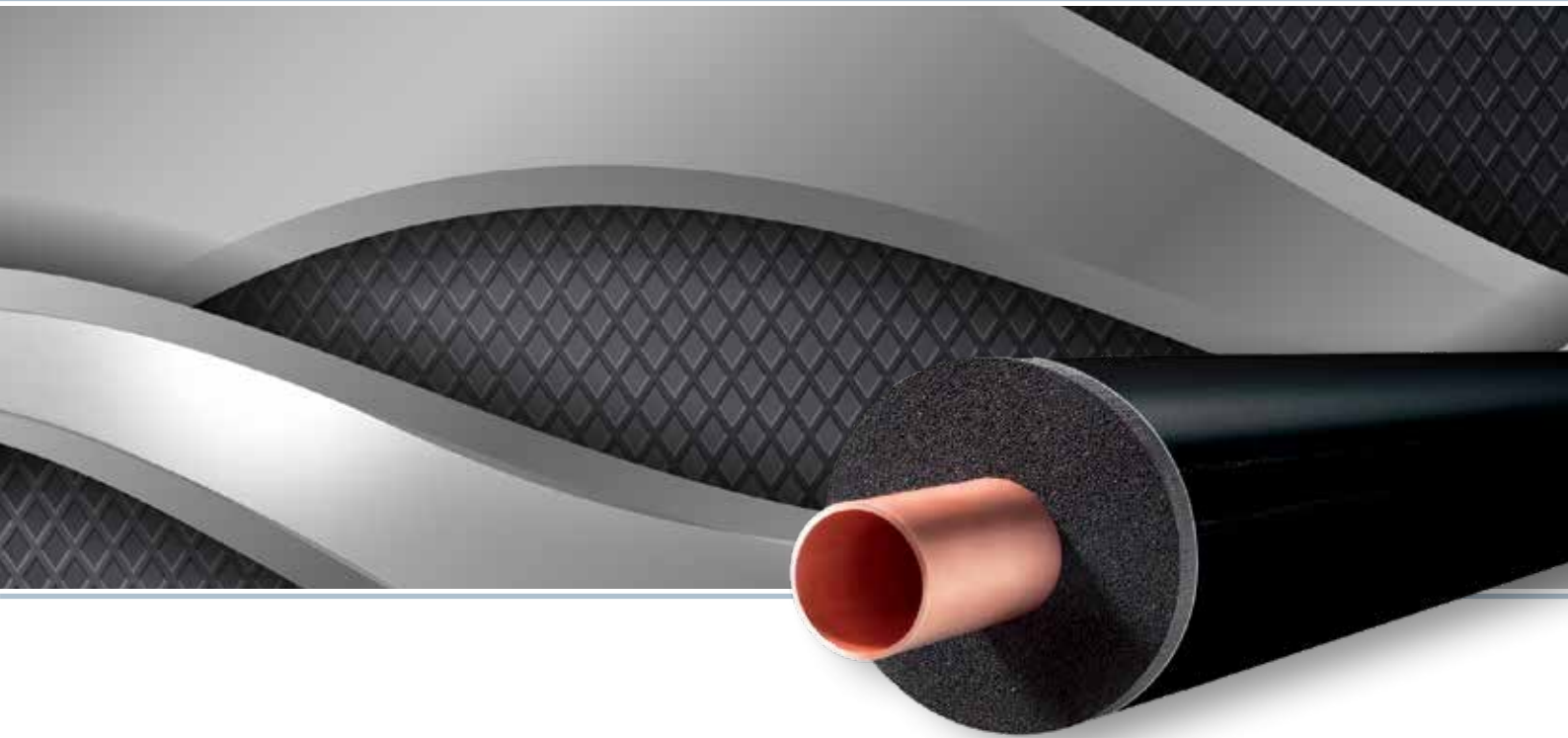
Colour: Silver

Insulation thickness mm	Sheet · endless 1 m width			Sheet · endless · self-adhesive 1 m width		
	Reference	Order No.	m ² /carton	Reference	Order No.	m ² /carton
10	AN-ST10-RL	4002744 *	20	AN-ST10-RL-SK	4002750 *	20
13	AN-ST13-RL	4002745 *	14	AN-ST13-RL-SK	4002752 *	14
19	AN-ST19-RL	4002746	10	AN-ST19-RL-SK	4002754 *	10
25	AN-ST25-RL	4002747 *	8	AN-ST25-RL-SK	4002756 *	8
32	AN-ST32-RL	4002748 *	6	AN-ST32-RL-SK	4002757 *	6

* No stock item, delivery time on request.

For insulation of ductwork and vessels - may be used for pipe work with a diameter > 323 mm

kaiflex[®] **PROTECT F-BLACK**



Mechanical resistance with a black surface finish

With a tough black woven glass fibre fabric covering for Kaiflex insulation, Kaiflex Protect F-BLACK protects insulation against mechanical damage and can be supplied either separately as rolls of thin sheet or pre-applied to Kaiflex tube or sheet.

Kaiflex Protect F-BLACK is attractive, unobtrusive, easy to clean and ideal for covering pipe and duct insulation publicly exposed to view. The covering is also UV resistant and waterproof making it suitable for outdoor use.

- Weather- & UV-resistant for outdoor use
- Protects against impact
- Easy application

Mechanical resistance with a black surface finish

Kaiflex Protect F-BLACK Technical Data

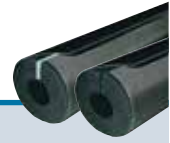
Covering		Woven glass fibre cloth with a black finish	
Colour		Black	
Max. service temperature		+80 °C	
Min. service temperature		-30 °C	See remark (1)
Euroclass [°]		E _L /E	Test acc. to DIN EN 13501-1
Weight		245 g/m ²	Test acc. to EN 22286
Elongation		5 %	Test acc. to EN ISO 13934
Tensile Strength	MD	3100 N/50 mm	Test acc. to EN ISO 13934
	CD	2700 N/50 mm	See remark (2)
Tear Strength	MD	165 N	Test acc. to EN ISO 53363
	CD	180 N	See remark (2)
Resistance to	UV	Very good	
	Mechanical impact	Very good	
Shelf life	Self-adhesive products	1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)
Outdoor applications		No additional protection required	

Remark (1) For temperatures below -30 °C please contact our Technical Support Team for advice.

Remark (2) MD: Machine Direction · CD: Cross Direction

[°] The Euroclass rating applies to metallic or solid mineral substrates.

Mechanical resistance with a black surface finish



Kaiflex Protect F-BLACK ST-tube · F-BLACK pre-covered · self-adhesive

Colour: Black · Length: 1 m

Copper pipe Cu			Iron & steel pipe Fe			13 mm Insulation thickness			19 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton	Reference	Order No.	m/ carton
1/2	5/8	15.0			16.0	FB-ST13x015	4007513 *	77	FB-ST19x015	4006671 *	43
3/4	7/8	22.0	1/2	21.3	23.0	FB-ST13x022	4006669 *	55	FB-ST19x022	4001834 *	37
1	1 1/8	28.0	3/4	26.9	29.0	FB-ST13x028	4001828 *	43	FB-ST19x028	4001835 *	29
1 1/4	1 3/8	35.0	1	33.7	36.0	FB-ST13x035	4001829 *	38	FB-ST19x035	4001836 *	24
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	FB-ST13x042	4007517 *	28	FB-ST19x042	4001837 *	20
			1 1/2	48.3	49.5	FB-ST13x048	4001830 *	24	FB-ST19x048	4005767 *	15
2	2 1/8	54.0		54.0	55.0	FB-ST13x054	4006670 *	23	FB-ST19x054	4001838 *	15
			2	60.3	61.5	FB-ST13x060	4001831 *	20	FB-ST19x060	4006672 *	14
2 13/16	3	76.1	2 1/2	76.1	77.0	FB-ST13x076	4007521 *	17	FB-ST19x076	4007534 *	14
3	3 1/8	80.0			81.0	FB-ST13x080	4007522 *	15	FB-ST19x080	4007535 *	13
			3	88.9	90.5	FB-ST13x089	4001832 *	15	FB-ST19x089	4007536 *	11
4	4 1/4	108.0			109.5	FB-ST13x108 °	4007524 *	14	FB-ST19x108 °	4007537 *	10
			4	114.3	116.0	FB-ST13x114 °	4007525 *	14	FB-ST19x114 °	4007538 *	9

Copper pipe Cu			Iron & steel pipe Fe			25 mm Insulation thickness					
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	Min ID mm	Reference	Order No.	m/ carton			
1/2	5/8	15.0			16.0						
3/4	7/8	22.0	1/2	21.3	23.0	FB-ST25x022 °	4007544 *	21			
1	1 1/8	28.0	3/4	26.9	29.0	FB-ST25x028	4001839 *	20			
1 1/4	1 3/8	35.0	1	33.7	36.0	FB-ST25x035	4007545 *	16			
1 1/2	1 5/8	42.0	1 1/4	42.4	43.5	FB-ST25x042	4005768 *	12			
			1 1/2	48.3	49.5	FB-ST25x048	4006674 *	12			
2	2 1/8	54.0		54.0	55.0	FB-ST25x054	4001840 *	11			
			2	60.3	61.5	FB-ST25x060	4001841 *	11			
2 13/16	3	76.1	2 1/2	76.1	77.0	FB-ST25x076	4001842 *	9			
3	3 1/8	80.0			81.0						
			3	88.9	90.5	FB-ST25x089	4001843 *	7			
4	4 1/4	108.0			109.5	FB-ST25x108 °	4007548 *	5			
			4	114.3	116.0	FB-ST25x114 °	4007549 *	5			

* No stock item, delivery time on request.

° Slit (without self-adhesive seal)

For further dimensions please contact our customer service.

Kaiflex[®] PROTECT F-BLACK

Mechanical resistance with a black surface finish

Kaiflex Protect F-BLACK ST-Sheet · F-BLACK pre-covered · endless






Colour: Black			
Insulation thickness mm	Sheet · endless 1 m width		
	Reference	Order No.	m ² /carton
10	FB-ST10-RL	4001844 *	20
13	FB-ST13-RL	4001846 *	14
19	FB-ST19-RL	4001848 *	10
25	FB-ST25-RL	4001850 *	8
32	FB-ST32-RL	4001852 *	6

* No stock item, delivery time on request.

For insulation of ductwork and vessels - may be used for pipe work with a diameter > 323 mm

Kaiflex Protect F-BLACK Accessories

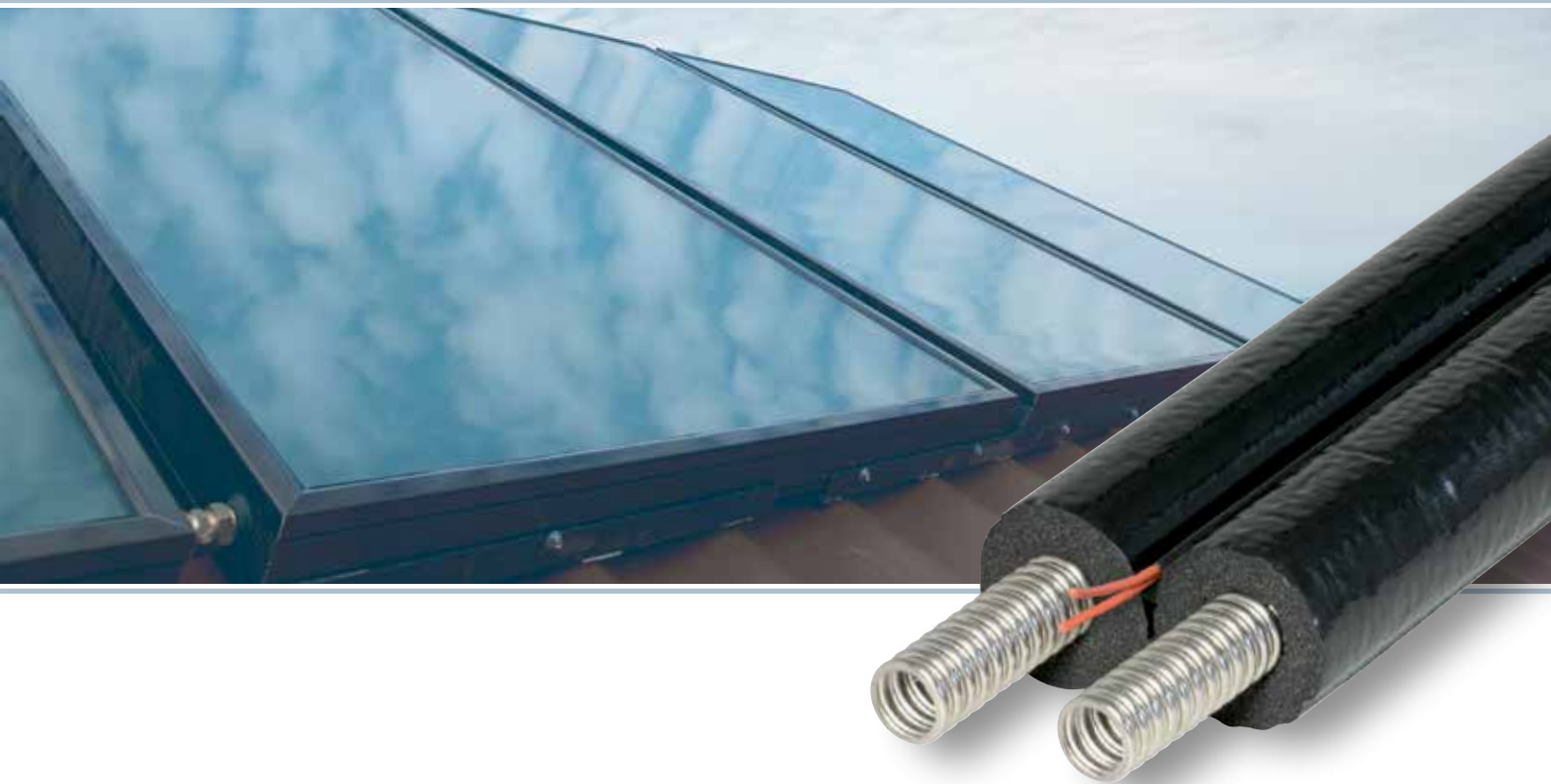
	Description	Order No.	Colour	pcs/carton
	Sealing compound · content: 290 ml [◇]	4004680 *	Transparent	12
		4004679 *	Black	12
	Description	Order No.	Width mm	m/roll
	Coating	4003843 *	1060	25
	Coating · self-adhesive	4003847 *	1060	25
	Description	Order No.	Width mm	rolls/carton
	Protect BLACK Butyl Tape · 25 m Length	4004685 *	50	2
		4004686 *	100	1

* No stock item, delivery time on request.

[◇] 1 cartridge seals about 8 m.

In case of creasing Protect sealing compound is to be used. Apply in min. width of 10 mm and min. thickness of 3 mm (refer to Kaiflex Application Manual).

kaiflex[®] SOLAR EPDM plus 2in2



Designed to improve solar hot water efficiency

Kaiflex Solar EPDMplus 2in2 is supplied as twin coils of corrugated stainless steel pipe that is pre-insulated with solar grade EPDM insulation. Kaiflex Solar EPDMplus 2in2 connects solar panels to storage cylinders while minimising energy loss, keeping solar water hot long into the colder months.

Kaiflex Solar EPDMplus 2in2 is based on naturally UV-resistant EPDM rubber and comes with an additional co-extruded foil pre-applied that deters accidental and deliberate damage and vandalism over long periods of time.

The corrugated pipe is specifically designed for to withstand high solar temperatures and pressures. By incorporating a corrugated structure the pipe can be effortlessly bent around the tightest bends and Kaiflex Solar EPDMplus 2in2 is fully compatible with all standard solar panels, cylinders, pumps and fittings.

- Foil covering protects against UV and mechanical impact
- Identifies flow and return
- Compliant with modern solar hot water systems
- Robust insulation ensures separation causes no damage
- Pre-insulated twin pipes, joined for convinience, split for flexibility

Kaiflex Solar EPDMplus 2in2 Technical Data

Description		Twin coils of corrugated stainless steel pipe pre-insulated with high temperature Kaiflex EPDM insulation with a tough co-extruded foil covering.	
Material (pipe)		Corrugated stainless steel pipe	
Corrugated stainless steel pipe	Type	1.4404 / AISI 316L	Test acc. to DIN EN ISO 10380
	Max. service temperature	+600 °C	
	Min. service temperature	-270 °C	
	Type test	Audited	
	Operating pressure at +20 °C	The permissible operating pressure was evaluated with 4-fold safety. This statement is based on the tier-system of the rated pressure in acc. with the norm stated.	Test acc. to DIN EN ISO 10380
Cell structure		Closed cell	
Colour		Black	
Max. service temperature		+150 °C (+175 °C)	See remark (1)
Min. service temperature		-50 °C	See remark (2)
Thermal conductivity	λ_{θ}	$0.038 + 8.0 \cdot 10^{-5} \cdot \theta + 7.0 \cdot 10^{-7} \cdot \theta^2$	Test acc. to DIN EN ISO 8497
	at -10 °C	$\leq 0.037 \text{ W/(m}\cdot\text{K)}$	
	at 0 °C	$\leq 0.038 \text{ W/(m}\cdot\text{K)}$	
	at +10 °C	$\leq 0.039 \text{ W/(m}\cdot\text{K)}$	
Euroclass[°]	Euroclass	E _L	Test acc. to DIN EN 13501-1
Practical fire behaviour		Self-extinguishing, no drips, does not support flame spread	
Packaging		76 x 76 cm	See remark (3)
Outdoor applications		No additional protection against UV-radiation required	

Remark (1) For temperatures above +150 °C please contact our Technical Support Team for advice.

Remark (2) For temperatures below -50 °C please contact our Technical Support Team for advice.

Remark (3) Robust cardboard packaging and end caps protect the pipe work during transport.

[°] The Euroclass rating applies to metallic or solid mineral substrates.

Kaiflex Solar EPDMplus 2in2 Technical Data · Corrugated stainless steel pipe

Nom ID mm	ID mm	OD mm	Pipe wall thickness mm	Min. bending radius mm	Max. operating pressure bar	Content l/m	Width mm	Height mm	Lengths m
16	16.3	21.4	0.2	25	10	0.273	100	50	10, 15, 20, 25, 50
20	20.5	26.7	0.2	30	10	0.430	110	55	10, 15, 20, 25, 50
25	25.4	31.8	0.2	35	10	0.633	120	60	10, 15, 20, 25, 50

Kaiflex Solar EPDMplus 2in2 VA Pre-insulated pipe



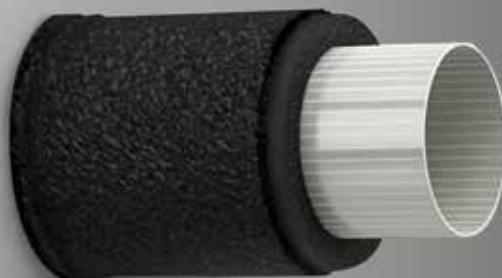
Colour: Black - Delivery including extension-fitting-set

Corrugated stainl. steel pipe Va		14 mm Wall thickness				
OD mm	Nom ID mm	Reference	Order No.	Ø pipe + insulation mm	cartons/ palette	m/ carton
21.4	16	SEPDMp2i2-VA-14x016/10	4004643	100	10	10
21.4	16	SEPDMp2i2-VA-14x016/15	4004644	100	10	15
21.4	16	SEPDMp2i2-VA-14x016/20	4004645	100	7	20
21.4	16	SEPDMp2i2-VA-14x016/25	4004646	100	6	25
21.4	16	SEPDMp2i2-VA-14x016/50 * °	4004647	100	4	50
26.7	20	SEPDMp2i2-VA-14x020/10	4004648	110	10	10
26.7	20	SEPDMp2i2-VA-14x020/15	4004649	110	8	15
26.7	20	SEPDMp2i2-VA-14x020/20	4004650	110	6	20
26.7	20	SEPDMp2i2-VA-14x020/25	4004651	110	4	25
26.7	20	SEPDMp2i2-VA-14x020/50 * °	4004652	110	4	50
31.8	25	SEPDMp2i2-VA-14x025/10	4004653	120	8	10
31.8	25	SEPDMp2i2-VA-14x025/15	4004654	120	6	15
31.8	25	SEPDMp2i2-VA-14x025/20	4004655	120	4	20
31.8	25	SEPDMp2i2-VA-14x025/25	4004656	120	4	25
31.8	25	SEPDMp2i2-VA-14x025/50 * °	4007736	120	4	50

* Custom length of 50 metres per wooden drum upon request. Delivery in full packing units only.

° Delivery without fitting-set

kaiflex pyrostar®



Designed to stop fire spread

Kaiflex Pyrostar is thin and flexible with a strong intumescent effect that tightly seals fire wall penetrations and prevents fire spread. Kaiflex Pyrostar is fibre free and features a closed cell structure to prevent any moisture ingress that could impact on performance.

Compatible with flexible and rigid insulation and extensively tested in real fire situations on combustible and non-combustible pipes passing through both light and solid wall constructions, Kaiflex Pyrostar fully maintains the fire wall integrity up to 120 minutes.

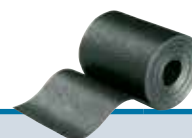
As a flexible solution which is easily cut to size, Kaiflex Pyrostar eliminates the need to order and retain a wide range of uniquely sized cuffs for each combination of pipe size and insulation thickness. One roll of Kaiflex Pyrostar can be adapted on site to seal almost any pipe penetration against fire spread.

- No material change necessary through fire rated walls
- Easy application, even in confined areas
- Effective and easy application
- High levels of safety at wall penetrations.
- Easy to fix

Kaiflex Pyrostar Technical Data

Material		Fibreglass finished with a graphine-based intumescent material	
Cell structure		Dark grey	
Thickness		approx. 1 mm	
Feuerwiderstandsklasse	Solid walls and ceilings Lightweight partition walls	R 90 / R 120 R 90 / R 120	In acc. with DIN 4102-11
National test certificate for a construction product (allg. bauaufsichtliches Prüfzeugnis, abP)		P-MPA-E-14-001	Valid until 13.04.2026
National technical approval (allg. bauaufsichtliche Zulassung, abZ)		Z-19.11-1687	Valid until 02.04.2023
General construction technique permit (allg. Bauartgenehmigung, aBG)	For combustible pipe work	Z-19.53-2460	Valid until 28.04.2025
Solid walls and ceilings	Thickness Iron & steel pipe Copper pipe Insulation thickness iron & steel pipe Insulation thickness copper pipe	≥150 mm ≤∅ 273 mm (synthetic rubber) ≤∅ 323,9 mm (foam glass) ≤∅ 88,9 mm ≤50 mm (synthetic rubber) ≤60 mm (foam glass) 10-39 mm (synthetic rubber) 25-30 mm (foam glass)	
Lightweight partition walls	Minimum thickness Iron & steel pipe Copper pipe Insulation thickness	For space enclosing, non bearing lightweight partition walls (F 90 - minimum thickness d ≥ 100 mm) ≤∅ 159 mm ≤∅ 88,9 mm 9-39 mm	


Kaiflex Pyrostar Fire wrap

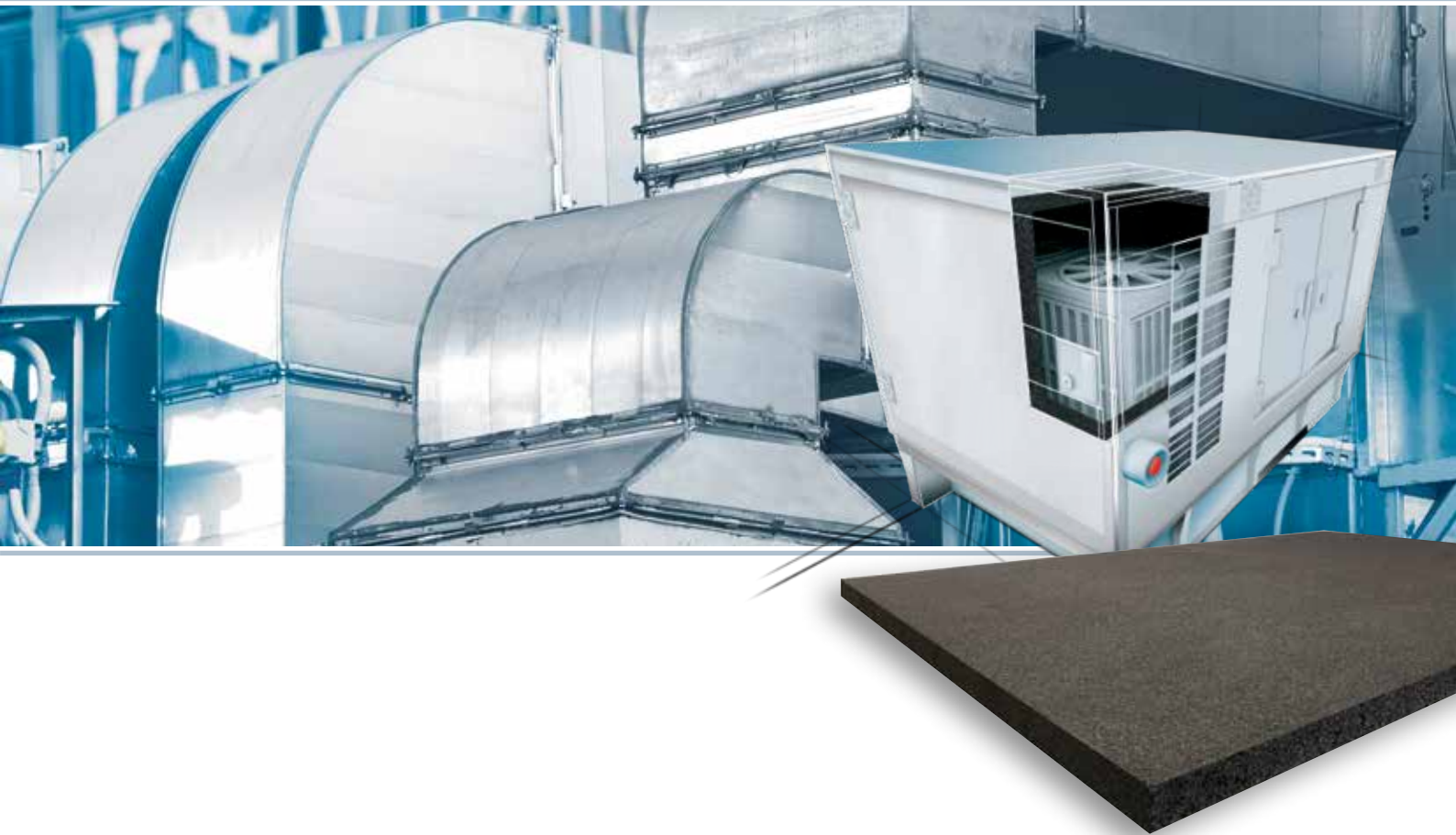


Colour: Dark grey

Description	Order No.	Width mm	Length m
PYROSTAR-BSM-125/05	4004404	125	5
PYROSTAR-BSM-125/10	4004405	125	10

Kaiflex Pyrostar Accessories

Description	Format	Order No.	Pcs/ carton
 BMK Fire-protection compound	Cartridge 0.4 kg	4004406	12



The most flexible approach to soundproofing

Kaisound has extraordinary properties. It's a flexible insulation material whose originally closed-cell components are rearranged by a specific manufacturing process and thus form an open-pore unit. The resulting network has an extremely versatile structure with unique physical properties. The various pore dimensions absorb the problematic frequencies found in building acoustics. Together with the high flow resistance and the viscoelastic properties, excellent sound reduction and damping results are achieved.

Kaisound is largely made from recycled materials and thus helps to avoid wasting valuable resources.

- Sound insulation for refrigeration/ air conditioning/ ventilation systems
- Triple noise reduction effect: absorber/ reduction/ damper
- Broadband sound absorption
- Flexible and easy to handle
- Fibre free: For high hygiene requirements

Kaisound 240 Technical Data

Material		Open porous, hydrophobic and flexible acoustic insulation material based on synthetic rubber	
Cell structure		Open cell, with broad variation of cavity geometries for multi-frequency absorption	
Colour		Black	
Max. service temperature		+85 °C (+250 °C)	See remark (1)
Min. service temperature		-20 °C (-200 °C)	See remark (2)
Thermal conductivity	λ_{10} at -10 °C at 0 °C at +10 °C	$0.056 + 8.0 \cdot 10^{-5} \vartheta + 7.0 \cdot 10^{-7} \vartheta^2$ $\leq 0.055 \text{ W/(m}\cdot\text{K)}$ $\leq 0.056 \text{ W/(m}\cdot\text{K)}$ $\leq 0.057 \text{ W/(m}\cdot\text{K)}$	In acc. with DIN EN 12667
Euroclass [°]		C-s3, d0	In acc. with EN 13823 EN ISO 11925-2 See remark (3)
Practical fire behaviour		Self-extinguishing, no drips, does not support flame spread	
Density		220 to 280 kg/m ³ (average: 240 kg/m ³)	In acc. with ISO 845 ASTM D1622
Acoustic insertion loss		Complies to ISO 15665 – Classes A to C – and Shell DEP 31.46.00.31-Gen – Class D when used as part of an insulation system	In acc. with ISO 3741 (equivalent method ASTM E1222) Classification acc. to ISO 15665
Other certificates / approvals		Satisfies classes 6, 7 and 8 of NORSOK R-004 when used as part of a "Kaimann Industrial Solutions" insulation system	In acc. with ISO 3741 Classification acc. to ISO 15665
Tensile strength		50 to 200 kPa	In acc. with ISO 1798
Tear strength		0.5 to 1.5 kN/m	In acc. with ISO 34-1
Elongation at break		50 to 90 %	In acc. with ISO 1798
Health aspects		Fibre free: For high hygiene requirements No bacterial or fungal growth	In acc. with ISO 846 ASTM G-21 ASTM G-22
Water absorption		<5 % by volume	In acc. with AGI Q 136 See remark (4)
Application and handling conditions	Ambient temperature Max. relative humidity	+5 °C to +35 °C 80 %	
Shelf life		Material has to be mounted within two years after supply and proper storage. Self-adhesive material within one year.	Store in a dry room away from UV and sunlight at a typical relative humidity (between 50 % and 70 %) and room temperature (between +5 °C and +35 °C)
Outdoor applications		Coverings – such as Protect (R) HD, metal cladding or GRP – must be applied when Kaisound would be directly exposed to the outdoor environment	See remark (5)

For industrial applications it is recommended to consult the Kaimann Industrial Systems Application Manual and other relevant Kaimann installation instructions and application manuals.

Remark (1) For temperatures above +85 °C please contact our Technical Support Team for advice.

Remark (2) For temperatures below -20 °C please contact our Technical Support Team for advice.

Remark (3) In-house production control.

Remark (4) Based on single test results which are not monitored in regular frequency. Can be used for information/reference only.

Remark (5) Please contact our Technical Support Team for advice.

[°] The Euroclass rating applies to metallic or solid mineral substrates.

Kaisound 240 Technical Data

Frequency (Hz)	Practical sound absorption coefficients α_p						Calculated acc. to ISO 10534-1:1996
	Thickness (mm)						
	6	10	15	20	25	50	
250.00	0.00	0.05	0.10	0.15	0.25	0.70	
500.00	0.05	0.15	0.30	0.50	0.70	0.85	
1000.00	0.15	0.40	0.70	0.95	1.00	0.85	
2000.00	0.45	0.85	1.00	1.00	0.90	0.95	
4000.00	0.90	1.00	1.00	1.00	1.00	1.00	

Sound absorption (Typical values)	Thickness (mm)						Test acc. to ISO 354:2003
	6	10	15	20	25	50	

	Weighted sound absorption coefficients α_w						Rated acc. to EN ISO 11654
	Thickness (mm)						
	6	10	15	20	25	50	
α_w	0.15 (H)	0.25 (H)	0.35 (MH)	0.45 (MH)	0.55 (MH)	0.90	
Class	E α	E	D	D	D	A	

	Noise reduction coefficients (NRC)						Calculated acc. to ASTM C423-01
	Thickness (mm)						
	6	10	15	20	25	50	
NRC	0.15	0.35	0.55	0.65	0.70	0.90	

Kaisound 240 Sheet · pre-cut



Colour: Black

Insulation thickness mm	Sheet · pre-cut 1.20 x 0.84 m (= 1.00 m ²)				Sheet · pre-cut · self-adhesive 1.20 x 0.84 m (= 1.00 m ²)			
	Reference	Order No.	pcs / carton	m ² / carton	Reference	Order No.	pcs / carton	m ² / carton
6	KS240-06-PL-M	4010596 *	16	16	KS240-06-PL-SK-M	4010608 *	16	16
10	KS240-10-PL-M	4010597 *	10	10	KS240-10-PL-SK-M	4010609 *	10	10
15	KS240-15-PL-M	4010598 *	6	6	KS240-15-PL-SK-M	4010610 *	6	6
20	KS240-20-PL-M	4010599 *	5	5	KS240-20-PL-SK-M	4010611 *	5	5
25	KS240-25-PL-M	4010600 *	4	4	KS240-25-PL-SK-M	4010612 *	4	4
50	KS240-50-PL-M	4010601 *	2	2	KS240-50-PL-SK-M	4010613 *	2	2

* No stock item, delivery time on request.

Kaisound 140 Technical Data

Material		Open porous, hydrophobic and flexible acoustic insulation material based on synthetic rubber	
Cell structure		Open cell, with broad variation of cavity geometries for multi-frequency absorption	
Colour		Black	
Max. service temperature		+85 °C	
Min. service temperature		-20 °C (-200 °C)	See remark (1)
Thermal conductivity	λ_{θ} at -10 °C at 0 °C at +10 °C	$0.047 + 8,0 \cdot 10^{-5} \cdot \theta + 7,0 \cdot 10^{-7} \cdot \theta^2$ $\leq 0.046 \text{ W/(m}\cdot\text{K)}$ $\leq 0.047 \text{ W/(m}\cdot\text{K)}$ $\leq 0.048 \text{ W/(m}\cdot\text{K)}$	In acc. with DIN EN 12667
Euroclass [◊]		D-s3, d0	In acc. with EN 13823 EN ISO 11925-2 See remark (2)
Practical fire behaviour		Self-extinguishing, no drips, does not support flame spread	
Density		100 to 180 kg/m ³ (average: 140 kg/m ³)	In acc. with ISO 845 ASTM D1622
Tensile strength		50 to 200 kPa	In acc. with ISO 1798
Tear strength		0.5 to 1.5 kN/m	In acc. with ISO 34-1
Elongation at break		50 to 90 %	In acc. with ISO 1798
Health aspects		Fibre free: For high hygiene requirements No bacterial or fungal growth	In acc. with ISO 846 ASTM G-21 ASTM G-22
Water absorption		<5 % by volume	In acc. with AGI Q 136 See remark (3)
Application and handling conditions	Ambient temperature Max. relative humidity	+5 °C to +35 °C 80 %	
Shelf life		Material has to be mounted within two years after supply and proper storage. Self-adhesive material within one year.	Store in a dry room away from UV and sunlight at a typical relative humidity (between 50 % and 70 %) and room temperature (between +5 °C and +35 °C)
Outdoor applications		Coverings – such as Protect (R) HD, metal cladding or GRP – must be applied when Kaisound would be directly exposed to the outdoor environment	See remark (4)

For industrial applications it is recommended to consult the Kaimann Industrial Systems Application Manual and other relevant Kaimann installation instructions and application manuals.

Remark (1) For temperatures below -20 °C please contact our Technical Support Team for advice.

Remark (2) In-house production control.

Remark (3) Based on single test results which are not monitored in regular frequency. Can be used for information/ reference only.

Remark (4) Please contact our Technical Support Team for advice.

[◊] The Euroclass rating applies to metallic or solid mineral substrates.

Kaisound 140 Technical Data

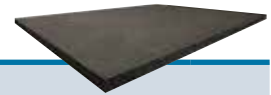
Sound absorption (Typical values)	Practical sound absorption coefficients α_p						Calculated acc. to ISO 10534-1:1996
	Frequency (Hz)	Thickness (mm)					
		6	10	15	20	25	
	250.00	0.05	0.05	0.10	0.15	0.20	0.75
	500.00	0.05	0.15	0.25	0.40	0.65	1.00
	1000.00	0.15	0.35	0.60	0.85	1.00	0.90
	2000.00	0.40	0.75	1.00	1.00	0.90	0.95
	4000.00	0.80	1.00	0.95	0.95	1.00	1.00

Sound absorption (Typical values)	Weighted sound absorption coefficients α_w						Rated acc. to EN ISO 11654
	Thickness (mm)						
	α_w	6	10	15	20	25	50
		0.15 (H)	0.25 (H)	0.30 (MH)	0.40 (MH)	0.50 (MH)	0.95
	Class	E	E	D	D	D	A

Sound absorption (Typical values)	Noise reduction coefficients (NRC)						Calculated acc. to ASTM C423-01
	Thickness (mm)	Thickness (mm)					
		6	10	15	20	25	
	NRC	0.15	0.35	0.50	0.60	0.70	0.95

Sound absorption (Typical values)	Test acc. to ISO 354:2003					
	Graphical representation of sound absorption coefficients vs. frequency (50 Hz to 5000 Hz)					

Kaisound 140 Sheet · pre-cut




Colour: Black

Insulation thickness mm	Sheet · pre-cut 1.20 x 0.84 m (= 1.00 m ²)				Sheet · pre-cut · self-adhesive 1.20 x 0.84 m (= 1.00 m ²)			
	Reference	Order No.	pcs / carton	m ² / carton	Reference	Order No.	pcs / carton	m ² / carton
6	KS140-06-PL-M	4010584 *	16	16	KS140-06-PL-SK-M	4010620 *	16	16
10	KS140-10-PL-M	4010585 *	10	10	KS140-10-PL-SK-M	4010375 *	10	10
15	KS140-15-PL-M	4010586 *	6	6	KS140-15-PL-SK-M	4010621 *	6	6
20	KS140-20-PL-M	4010587 *	5	5	KS140-20-PL-SK-M	4010376 *	5	5
25	KS140-25-PL-M	4010588 *	4	4	KS140-25-PL-SK-M	4010622 *	4	4
50	KS140-50-PL-M	4010589 *	2	2	KS140-50-PL-SK-M	4010623 *	2	2

* No stock item, delivery time on request.

Tape

	Description	Order No.	Width mm	Rolls/ carton
	Protect BLACK Butyl-Tape · 25 m Length	4004685	50	1
		4004686	100	1



NEW: 5 mm Insulation thickness

Thinner than the standard!

Setting limits on noise – with Kaimann’s sound insulation solutions

The sound insulation system named Kaivenience makes a major contribution to the soundproofing of sewage, wastewater and rainwater pipelines and to compliance with technical requirements. Applied to synthetic or cast-iron pipes, Kaivenience prevents vibrations from being transmitted by structures and also attenuates airborne sound. Kaivenience is a multi-layered system based on an acoustic insulation material in combination with various coatings, which is particularly suitable for indoor and outdoor applications. At a water flow of 2 l/s in a light sewage system of plastic, Kaivenience achieves a level reduction of up to 15 dB(A) in the installation space and up to 18 dB(A) in the room behind the installation wall. Just 5 to 10 mm thin, this solution developed by Kaimann is thinner than other systems and is therefore suitable even for very tight spaces. For example, if the pipe shaft is narrow or the line is close to the house wall, this thin and very flexible material can still be quickly and easily applied around the pipes, even when retrofitting as part of renovation. Thanks to its coatings, Kaivenience is less affected by ambient conditions and damage, and integrates harmoniously into its surroundings if installed where visible.

- Multilayer noise protection system for insulation of waste water, rain water and sewage pipes
- Efficient sound insulation and absorption enhances buildings, increases both productivity and users’ well-being while reducing stress-related health risks
- Easy application – high durability
- Smooth waterproof finish, that can be easily cleaned, protects against mechanical impact

Kaivenience AB / AB-ALU Technical Data

Components	Base material	Multilayer system consisting of elastomeric foam, heavy foil and (optional) aluminium covering Open porous, hydrophobic and flexible acoustic insulation material based on synthetic rubber with broad variation of cavity geometries for multi-frequency absorption	
	Heavy foil	Heavy foil based on polymer, lead-free, filled with inorganic materials	
	Covering (Kaivenience AB-ALU only)	Aluminium composite foil with glass-fibre scrim	
Colour	Base material	Black	See remark (1)
	Heavy foil	Anthracite	
	Covering (Kaivenience AB-ALU only)	Silver	
Max. service temperature		+100 °C	
Min. service temperature		-30 °C	See remark (2)
Water vapour permeability	Moisture resistance factor μ	≥ 100000	In acc. with DIN EN 13469 DIN EN 12086
Euroclass [◊]	Kaivenience AB	E	In acc. with EN 13823 EN ISO 11925-2 See remark (3)
	Kaivenience AB-ALU	D-s2, d0 (5 mm) or D-s3, d0 (10 mm)	
Practical fire behaviour		Self-extinguishing	See remark (4)
Density	Base material	>300 kg/m ³	In acc. with ISO 845 ASTM D1622 See remark (4)
	Heavy foil	approx. 2000 kg/m ³	
Health aspects		Fibre free: For high hygiene requirements Free from hazardous substances	In acc. with (EG) Nr. 1907/2006
Shelf life		Material has to be mounted within two years after supply and proper storage. Self-adhesive material within one year.	Store in a dry room away from UV and sunlight at a typical relative humidity (between 50 % and 70 %) and room temperature (between +5 °C and +35 °C)
Outdoor applications	Kaivenience AB-ALU	No additional protection required	

Remark (1) Colour deviations of 15 % may be possible. When used in visible areas, Kaivenience AB can be coated with commercially available alkyd colours or Kaifinish Color.

Remark (2) For temperatures below -30 °C please contact our Technical Support Team for advice.

Remark (3) In-house production control, up to B_s-s2, d0, depending on the application.

Remark (4) In-house production control.

[◊] The Euroclass rating applies to metallic or solid mineral substrates.

Kaivenience AB / AB-ALU Technical Data

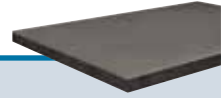
Sound transmission Kaivenience AB	Measurements on pipe type „Plastic Pipe HTEM“ * Volumetric flow: 2,0 l/s		
	Insulation thickness (mm)	Airborne sound reduction in installation room „Basement floor front“	Airborne sound reduction in adjacent room ** „Basement floor back“
		A-noise level reduction (dB)	
	5	12	10
10	14	13	
Insertion attenuation (dB) 			
Test acc. to DIN 4109 or VDI 4100, Setup acc. to DIN EN 14366			
Sound transmission Kaivenience AB-ALU	Measurements on pipe type „Plastic Pipe HTEM“ * Volumetric flow: 2,0 l/s		
	Insulation thickness (mm)	Airborne sound reduction in installation room „Basement floor front“	Airborne sound reduction in adjacent room ** „Basement floor back“
		A-noise level reduction (dB)	
	5	12	11
10	15	13	
Insertion attenuation (dB) 			
Test acc. to DIN 4109 or VDI 4100, Setup acc. to DIN EN 14366			

* Results have been obtained without further shielding, such as plasterboard. The reference measurement to determine the airborne sound reduction in adjacent room was carried out on the waste water system without insulation grouted with mortar in the ceiling opening.

** Reduced transmission of structure-borne sound

For results of measurements on pipe type „Geberit Silent-dB20“ please contact our customer service.

Kaivenience AB Sheet · coated (heavy foil) · pre-cut



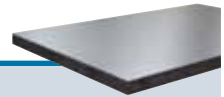
Colour: Black / Anthracite

Insulation thickness mm	Sheet · pre-cut 1.18 x 0.83 m (≈ 1.00 m²)			
	Reference	Order No.	pcs / carton	m²/ carton
5	KVAB-05-PL-S	4013002	3	≈ 3
10	KVAB-10-PL-S	4013000	2	≈ 2

* No stock item, delivery time on request.

Larger packaging units and self-adhesive sheets available on request.

Kaivenience AB-ALU Sheet · coated (heavy foil & aluminium foil) · pre-cut





Colour: Black / Anthracite / Silver

Insulation thickness mm	Sheet · pre-cut 1.18 x 0.83 m (≈ 1.00 m²)			
	Reference	Order No.	pcs / carton	m²/ carton
5	KVABA-05-PL-S	4013012 *	3	≈ 3
10	KVABA-10-PL-S	4013010 *	2	≈ 2

* No stock item, delivery time on request.

Larger packaging units and self-adhesive sheets available on request.

Tapes

	Description	Order No.	Width mm	Rolls/ carton
	Protect BLACK Butyl-Tape · 25 m length	4004685	50	2
		4004686	100	1
	Protect Alu Tape · 25 m length	4004401 *	19	36
	Protect Alu Tape · 50 m length	4004402	50	24
		4004403	100	12

* No stock item, delivery time on request.

Kaiflex[®] RT-ST



Load bearing protection against thermal bridging and corrosion

Kaiflex RT-ST insulated load bearing pipe sections are vapour sealed and prevent condensation, corrosion and energy loss at critical points.

Kaiflex RT-ST consists of high density, compression resistant, PIR foam sections combined with water vapour resistant Kaiflex ST insulation and a protective outer shell covering. Load bearing pipe clamps that would tear or compress standard insulation tubes can be applied directly around Kaiflex RT-ST sections.

Fully compatible with all other Kaiflex products, Kaiflex RT-ST sections feature an interlocking design and represent a durable, reliable and visually attractive solution that prevents avoidable energy loss and helps to keep pipework free of corrosion.

- Reliably prevents thermal bridging
- Vapour barrier in-built
- Reduces energy losses
- Reliable long term performance
- Easy to apply

Kaiflex RT-ST Technical Data

Material		Two PIR bearing segments, embedded in elastomeric foam based on synthetic rubber.	
Covering		PVC	
Colour		Black	
Max. service temperature		+110 °C	
Min. service temperature		-50 °C	See remark (1)
Thermal conductivity		see Kaiflex ST	
Water vapour permeability	Moisture resistance factor μ	see Kaiflex ST No separate vapour barrier required	
Euroclass [°]		Euroclass E _L (as part of a system incl. Kaiflex ST s2 tubes: C _L -s2, d0)	Test acc. to DIN EN 13501-1
Density	Insulation insert	70 kg/m ³	
Compressive strength (compression strain at 10 % compression)	Insulation insert	≥520 kPa	In acc. with EN 826
Other certificates / approvals	Insulation insert	CFC-free	
Shelf life		1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)

Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

[°] The Euroclass rating applies to metallic or solid mineral substrates.



Kaiflex RT-ST Pipe support · self-adhesive

Colour: Black												
Copper pipe Cu			Iron & steel pipe Fe		Max. support interval m	13 mm Insulation thickness			19 mm Insulation thickness			
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm		OD mm	Reference	Order No.	OD mm	Reference	Order No.	
	3/8	10.0			2.00	36.0	RT-ST13x010	4002234	48.0	RT-ST19x010	4002266	
3/8	1/2	12.0			2.00	38.0	RT-ST13x012	4002235	50.0	RT-ST19x012	4002267	
1/2	5/8	15.0			2.00	41.0	RT-ST13x015	4002236	53.0	RT-ST19x015	4002268	
					2.00	44.0	RT-ST13x018	4002237	56.0	RT-ST19x018	4002269	
3/4	7/8	22	1/2	21.3	2.75	48.0	RT-ST13x022	4002238	60.0	RT-ST19x022	4002271	
1	1 1/8	28	3/4	26.9	3.00	54.0	RT-ST13x028	4002240	66.0	RT-ST19x028	4002273	
1 1/4	1 3/8	35	1	33.7	3.50	61.0	RT-ST13x035	4002242	73.0	RT-ST19x035	4002276	
1 1/2	1 5/8	42	1 1/4	42.4	3.75	68.0	RT-ST13x042	4002243	80.0	RT-ST19x042	4002278	
			1 1/2	48.3	4.25	74.0	RT-ST13x048	4002244	86.0	RT-ST19x048	4002279	
2	2 1/8	54			4.25	80.0	RT-ST13x054	4002246	93.0	RT-ST19x054	4002280	
					4.25	83.0	RT-ST13x057	4002247	95.0	RT-ST19x057	4002281	
			2	60.3	4.25	86.0	RT-ST13x060	4002248	98.0	RT-ST19x060	4002282	
					4.75	92.0	RT-ST13x064	4002249	104.0	RT-ST19x064	4002283	
					4.75	98.0	RT-ST13x070	4002251	110.0	RT-ST19x070	4002284	
2 13/16	3	76.1	2 1/2	76.1	4.75	104.0	RT-ST13x076	4002252	116.0	RT-ST19x076	4002285	
			3	88.9	5.50	117.0	RT-ST13x089	4002254	129.0	RT-ST19x089	4002287	
4	4 1/4	108			6.00	136.0	RT-ST13x108	4002256 *	148.0	RT-ST19x108	4002288 *	
			4	114.3	6.00	144.0	RT-ST13x114	4002257	156.0	RT-ST19x114	4002289	
				125.0	6.00							
		133			6.00	163.0	RT-ST13x133	4002259 *	175.0	RT-ST19x133	4002291 *	
			5	139.7	6.00	170.0	RT-ST13x140	4002260	182.0	RT-ST19x140	4002292	
		159			6.00	190.0	RT-ST13x160	4002261	202.0	RT-ST19x160	4002293	
				168.3	6.00	196.0	RT-ST13x168	4004916 *	208.0	RT-ST19x168	4002294	
		219		219.1	6.00	247.0	RT-ST13x219	4002263	259.0	RT-ST19x219	4002296	

Length pipe support: <133 mm: 50 mm · ≥133 mm: 100 mm

Load bearing capacity sufficient as long as mounting distances are applied according to DIN 1988 or shorter.

* No stock item, delivery time on request.



Kaiflex RT-ST Pipe support · self-adhesive

Colour: Black												
Copper pipe Cu			Iron & steel pipe Fe			Max. support interval m	25 mm Insulation thickness			32 mm Insulation thickness		
NB inch	Nom OD inch	Nom OD mm	NB inch	Nom OD mm	OD mm		Reference	Order No.	OD mm	Reference	Order No.	
	3/8	10.0			2.00	60.0	RT-ST25x010	4002301	74.0	RT-ST32x010	4002326	
3/8	1/2	12.0			2.00	62.0	RT-ST25x012	4002302	76.0	RT-ST32x012	4002327	
1/2	5/8	15.0			2.00	65.0	RT-ST25x015	4002303	79.0	RT-ST32x015	4002328	
					2.00	68.0	RT-ST25x018	4002304	82.0	RT-ST32x018	4002329	
3/4	7/8	22	1/2	21.3	2.75	72.0	RT-ST25x022	4002305	86.0	RT-ST32x022	4002330	
1	1 1/8	28	3/4	26.9	3.00	78.0	RT-ST25x028	4002306	92.0	RT-ST32x028	4002331	
1 1/4	1 3/8	35	1	33.7	3.50	85.0	RT-ST25x035	4002307	99.0	RT-ST32x035	4002332	
1 1/2	1 5/8	42	1 1/4	42.4	3.75	92.0	RT-ST25x042	4002308	106.0	RT-ST32x042	4002333	
			1 1/2	48.3	4.25	98.0	RT-ST25x048	4002309	112.0	RT-ST32x048	4002334	
2	2 1/8	54			4.25	104.0	RT-ST25x054	4002310	118.0	RT-ST32x054	4002335	
					4.25				121.0	RT-ST32x057	4005816 *	
			2	60.3	4.25	110.0	RT-ST25x060	4002311	124.0	RT-ST32x060	4002336	
					4.75	116.0	RT-ST25x064	4002312	130.0	RT-ST32x064	4002337	
					4.75				136.0	RT-ST32x070	4002338	
2 13/16	3	76.1	2 1/2	76.1	4.75	128.0	RT-ST25x076	4002313	142.0	RT-ST32x076	4002339	
			3	88.9	5.50	141.0	RT-ST25x089	4002314	155.0	RT-ST32x089	4002341	
4	4 1/4	108			6.00	160.0	RT-ST25x108	4002315 *	174.0	RT-ST32x108	4002343 *	
			4	114.3	6.00	168.0	RT-ST25x114	4002316	182.0	RT-ST32x114	4002344	
									190.0	RT-ST32x125	4006705 *	
		133			6.00		RT-ST25x133	4002317	201.0	RT-ST32x133	4002345 *	
			5	139.7	6.00	194.0	RT-ST25x140	4002318	208.0	RT-ST32x140	4002346	
		159			6.00	214.0	RT-ST25x160	4002319	228.0	RT-ST32x160	4002347	
				168.3	6.00	220.0	RT-ST25x168	4002320	234.0	RT-ST32x168	4002348	
		219		219.1	6.00	271.0	RT-ST25x219	4002322	285.0	RT-ST32x219	4002349	

Length pipe support: <133 mm: 50 mm · ≥133 mm: 100 mm

Load bearing capacity sufficient as long as mounting distances are applied according to DIN 1988 or shorter.

* No stock item, delivery time on request.

Kaiflex FT Technical Data

Material		Load bearing PIR inserts embedded in a layer of elastomeric foam based on synthetic rubber. Covered by a diffusion-tight metallic film	
Colour		Black	
Max. service temperature		+85 °C	
Min. service temperature		-50 °C	See remark (1)
Thermal conductivity		see Kaiflex KKplus s3	
Water vapour permeability	Moisture resistance factor μ	see Kaiflex KKplus s3 No separate vapour barrier required	
Euroclass [°]		E	Test acc. to DIN EN 13501-1
Density	Insulation insert	120 kg/m ³	
Other certificates / approvals	Insulation insert	CFC-free	
	Storage temperature	≥ +10 °C	
	Application temperature	≥ +10 °C	
Shelf life		1 year	Store in a dry room at a typical relative humidity (between 50 % and 70 %) and room temperature (between 0 °C and +35 °C)

Remark (1) For temperatures below -50 °C please contact our Technical Support Team for advice.

[°] The Euroclass rating applies to metallic or solid mineral substrates.

Kaiflex FT Strip support



Colour: Black · Length: 2 m

Reference	Order No.	Insulation Thickness mm	Width mm	m / carton	pcs/ carton
FT-KK+013	4004055 *	13	75	24	12
FT-KK+019	4004056	19	100	20	10
FT-KK+032	4004057	32	100	12	6

* No stock item, delivery time on request.

Load bearing protection against thermal bridging and corrosion

ACCESSORIES








For a professional finish:

Accessories help to provide an optimal finish for all Kaiflex products

- Kaiflex adhesive
- Kaiflex tools
- Kaiflex tapes
- Coltogum®






ACCESSORIES

Adhesive · Cleaner · Protective Coating · Sealing compound

	Description	Order No.	Can content	pcs/ carton
Adhesive				
	Kaiflex Special Adhesive 415	4007232	660 g	20
	Kaiflex Special Adhesive 414 · toluene-free · paintbrush tin	4004706	220 g	24
	Kaiflex Special Adhesive 414 · toluene-free	4004708	660 g	20
	Kaiflex Special Adhesive 414 · toluene-free	4004710	2200 g	6
	Kaiflex Special Adhesive 494 HHF · hexane- and halogenfree	4012616	2200 g	6
	Kaiflex Special Adhesive 515 ECO · solvent-free	4013475	1.000 g	12
	Kaiflex Special Adhesive EPDM · toluene-free	4004699	660 g	20
Cleaner				
	Kaiflex Cleaner	4004732	1.0 l	12
Protective Coating				
	Kaifinish Protective Coating · pure white RAL 9010	4004719	0.75 l	12
	Kaifinish Protective Coating · Grey RAL 7035	4004720	0.75 l	12
	Kaifinish Protective Coating · Black RAL 9005	4004721	0.75 l	12
Sealing compound				
	Coltogum® Heat-resistant sealing compound · rust brown · Cartridge	4004472 *	310 ml	12




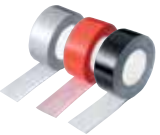

* No stock item, delivery time on request.

Tools

	Description	Order No.	content/ PU
Glue pump			
	Glue pump · long spout · Brush 17 mm	4004718	1
	Glue pump · short spout · Brush 17 mm	4004715	1
	Brush 11 mm	4004716	1
	Brush 17 mm	4004717	1
Knives			
	Ceramic knife · knife with ceramic blade (15 cm) and plastic handle (14 cm)	4004737	1
	Sheet knife	4004735	1
	Set of knives · 3 knives, 1 whetstone	4004736	1
Gel Ink Pen			
	Gel Ink Pen · Silver · for marking on insulation materials	4004730	12

ACCESSORIES


Tapes

	Description	Order No.	Length m	Width mm	Thick- ness	Rolls/ carton
	Kaiflex Tape					
	Kaiflex ST Tape · self-adhesive	4004675	15	50	3	12
	Kaiflex EPDMplus Tape · self-adhesive	4004142	15	50	3	12
	Kaiflex HFplus s2 Tape · self-adhesive	4005135	15	50	3	12
	Alu Tape					
	Alu Tape	4010312	50	50	30 µm	24
	PE Tape					
	PE Tape · self-adhesive · Grey	4004750	10	50	3	10
	PE Tape · self-adhesive · Red	4004751	10	50	2	10
	Fabric Tape					
	Fabric Tape · Silver	4004779	50	50	–	24
	Fabric Tape · Red	4004780	50	50	–	24
	Fabric Tape · Black	4004781 *	50	50	–	24
	PVC Tape					
	PVC Tape · Light grey	4004769	10	30	–	60
		4004770	10	50	–	36
		4004771	25	25	–	36
		4004773	25	30	–	12
	PVC Tape · Black	4004817	10	30	–	60
		4004818 *	10	50	–	36
	PVC Tape · Red	4010309	25	50	–	18
		4004519 *	10	30	–	100
	PVC Tape · Silver	4004752	25	50	–	18
		4004753	10	50	–	36
		4004747	10	30	–	60

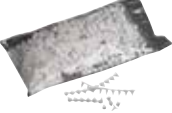

* No stock item, delivery time on request.

ACCESSORIES

Winding/Binding wire

	Description	Order No.	content/ PU
	Winding/Binding wire		
	Winding/Binding wire · Thickness approx. 0.65 mm · about 100 g	4004806	25

Rivets · PE-Clips

	Description	Order No.	content/ bag	bags/ PU
	Rivets			
	Rivets · Grey	4004783	1000	10
	Rivets · White	4004784	1000	10
	PE-Clips			
	PE-Clips · Grey	4004756	100	25

Kaiflex Load

	Description	Order No.	pcs/ carton
	Pipe support section		
	Kaiflex Load Pipe Support · Thickness:19 mm · Diameter: 40 mm · Length: 1 m	4004048	40

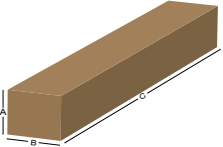
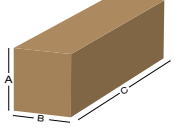
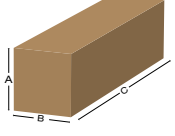
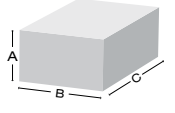
- Delivery in full packing units only.

- Delivery of tubes in shorter length (2 m):
Up to 10 % of carton content may be supplied in length of 1 m. Carton content of less than 20 m tubes of 2 m length may be delivered in two pieces of 1 m length.
(Does not apply for 1.20 m tubes)

- Kaiflex ancillaries are to be used to ensure proper installation.

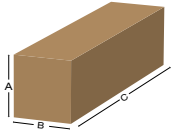
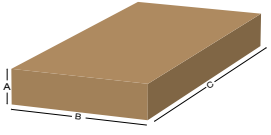
Tube



	Description	A mm	B mm	C mm	ø mm	Volume m³
	Tube - Length: 2 m					
	Kaiflex ST s2, EPDMplus	320	410	2120	–	0.278
	Kaifoam PE	560	460	2110	–	0.544
	Tube - Length: 1.2 m					
	Kaiflex ST s2, HFplus s2	385	400	1230	–	0.189
	Tube - Length: 1 m					
	Kaiflex Protect System	400	400	1060	–	0.170
	Tube - endless					
	Kaiflex ST s2, Solar EPDM	300	500	500	–	0.075

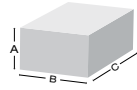
Sheet



	Description	A mm	B mm	C mm	ø mm	Volume m³
	Sheet - endless - 1 m width					
	Kaiflex ST, EPDMplus, HFplus s2	410	410	1060	–	0.178
	Kaiflex ST, Protect System	560	560	1060	–	0.332
	Sheet - pre-cut					
	Kaiflex ST - 2 x 1 m	170	1068	2080	–	0.378
	Kaiflex KKplus s3 - Sheet - pre-cut (Connect)	370	550	1060	–	0.216
		370	700	1060	–	0.275
		370	900	1060	–	0.353
	Kaisound	120	870	1230	–	0.128
Kaivenience	203	203	841	–	0,035	

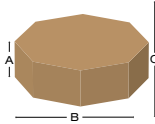
Kaifix EC



	Description	A mm	B mm	C mm	ø mm	Volume m ³
	Kaifix ECplus	110	270	250	–	0.007

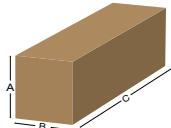
Pre-insulated pipe



	Description	A mm	B mm	C mm	ø mm	Volume m ³
	Kaiflex Solar EPDMplus 2in2 VA	800	800	min. 210 max. 455	–	min. 0.104 max. 0.225

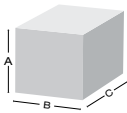
Tapes



	Description	A mm	B mm	C mm	ø mm	Volume m ³
	Kaiflex ST, EPDMplus, HFplus s2	300	300	620	–	0.056

Kaiflex Pyrostar



	Description	A mm	B mm	C mm	ø mm	Volume m ³
	Kaiflex Pyrostar	160	160	160	–	0.004

Tolerances EN 14304:2009+A1:2013 · Flexible Elastomeric Foam (FEF)

Supplied as	Length	Width	Thickness		Perpendicularity	Inner diameter	
			Stated	Limits		$D_i \leq 100$	$D_i > 100$
Tubes	±1.5 %		$d_0 \leq 8$ $8 < d_0 \leq 18$ $18 < d_0 \leq 31$ $d_0 > 31$	±1.0 ±1.5 ±2.5 ±3.0	3.0 mm	$D_{iD} + 1 \leq D_i \leq D_{iD} + 4$	$D_{iD} + 1 \leq D_i \leq D_{iD} + 6$
Flat sheets	±1.5 %	±2.0 %	$d_0 \leq 6$ $6 < d_0 \leq 19$ $d_0 > 19$	±1.0 ±1.5 ±2.0	3.0 mm/m (Length/Width) – 3.0 mm (Thickness)	–	–
Continuous sheets	+5.0 % –1.5 %	±2.0 %	$d_0 \leq 6$ $6 < d_0 \leq 19$ $d_0 > 19$	±1.0 ±1.5 ±2.0	3.0 mm/m (Length/Width) – 3.0 mm (Thickness)	–	–
Tapes	+5.0 % –1.5 %	±2.0 %	$d_0 = 3$	–0.1 +1.5	–	–	–

Measurements in mm · D_i = inner diameter · d_0 = Nominal thickness of product · D_{iD} = Nominal thickness of a tube

Tolerances EN 14313:2009+A1:2013 · Polyethylene Foam (PEF)

Supplied as	Length	Width	Thickness		Perpendicularity	Inner diameter		
			Stated	Limits		$D_i \leq 30$	$35 < D_i \leq 100$	$D_i > 100$
Tubes	–1.5 % +2.5 %	–	$d_0 \leq 6$ $6 < d_0 \leq 10$ $10 < d_0 \leq 15$ $15 < d_0 \leq 30$ $d_0 > 30$	±1.0 ±1.5 ±2.0 ±2.5 ±3.0	5.0 mm for $D_{iD} \leq 60$ mm and 10.0 mm for $60 < D_{iD} \leq 120$ mm	$D_{iD} + 1$ to $D_{iD} + 4$	$D_{iD} + 2$ to $D_{iD} + 6$	$D_{iD} + 3$ to $D_{iD} + 8$
Profiles	–1.5 % +2.5 %	–	$d_0 \leq 6$ $6 < d_0 \leq 10$ $10 < d_0 \leq 15$ $15 < d_0 \leq 30$ $d_0 > 30$	±1.0 ±1.5 ±2.0 ±2.5 ±3.0	5.0 mm for $D_{iD} \leq 60$ mm and 10.0 mm for $60 < D_{iD} \leq 120$ mm	$D_{iD} + 1$ to $D_{iD} + 4$	$D_{iD} + 2$ to $D_{iD} + 6$	$D_{iD} + 3$ to $D_{iD} + 8$
Flat / Continuous sheets	±1.5 %	±1.0 %	$d_0 \leq 6$ $6 < d_0 \leq 19$ $d_0 > 19$	±1.0 ±1.5 ±2.0	10.0 mm/m (Length/Width) –2.0 mm (Thickness)	–	–	–
Tapes	±1.5 %	±2.0 %		+0.5	–	–	–	–

Measurements in mm · D_i = inner diameter · d_0 = Nominal thickness of product · D_{iD} = Nominal thickness of a tube

§ 1 Scope of Application

- (1) All sales and deliveries by Kaimann GmbH ("Seller") to any entrepreneur as defined by section 14 German Civil Code [BGB], any legal entity under public law or any fund under public law ("Buyer") (collectively "the Parties") shall be governed exclusively by the Seller's General Terms and Conditions of Sale and Delivery ("General Terms and Conditions of Sale and Delivery").
- (2) Whether or not these General Terms and Conditions of Sale and Delivery are expressly agreed upon again, they shall apply also to all future sales and deliveries by the Seller to the Buyer. The version current at the time the contract is concluded shall apply in each case. The Seller shall, without undue delay, inform the Buyer of all new versions of these General Terms and Conditions of Sale and Delivery.
- (3) The Seller shall not accept any terms or conditions of the Buyer that conflict with, supplement or deviate from these General Terms and Conditions of Sale and Delivery, unless the Seller has expressly consented to their application. These General Terms and Conditions of Sale and Delivery shall apply even if the Seller unconditionally carries out an order knowing of terms and conditions of the Buyer conflicting with or deviating from these General Terms and Conditions of Sale and Delivery.

§ 2 Quotations, Conclusion of the Contract, Other Declarations

- (1) The Seller's quotations shall always be subject to change without notice. A contract shall come into being, if the Seller accepts an offer from the Buyer by acknowledging the Buyer's order in writing (including email) or by carrying out the Buyer's order. The Buyer shall be bound by its purchase order for 10 days.
- (2) Verbal commitments made by any representatives or other assistants of the Seller shall be binding only if and in so far as the Seller has confirmed the same in writing.
- (3) All legally relevant declarations and notifications required to be made by the Buyer to the Seller or any third party must be in text form.

§ 3 Performance by Third Parties

The Seller hereby reserves the right to appoint third parties to render services owed under the contract. The Buyer's rights against the Seller shall remain unaffected hereby.

§ 4 The Seller's Right of Rescission

- (1) If the Seller itself is not supplied, not supplied correctly or not supplied in due time by its suppliers, the Seller shall be entitled to rescind the contract.
- (2) Furthermore, the Seller shall be entitled to rescind the contract, if the Buyer has filed a petition for the institution of insolvency proceedings concerning its assets or has executed an affirmation in lieu of an oath in accordance with section 807 Code of Civil Procedure (ZPO), or if insolvency proceedings concerning its assets have been instituted or the institution of such proceedings has been dismissed owing to a lack of assets.
- (3) The Seller's other rights of rescission shall remain unaffected.

§ 5 Delivery

- (1) Except where otherwise agreed upon, deliveries shall take place "ex works" Kaimann GmbH Hövelhof (Incoterms 2020).

(2) The delivery period agreed upon in the contract shall apply. In the absence of a contractual agreement in this respect, the delivery period shall be 6 weeks from acknowledgement of the order within the meaning of § 2 (1). In so far as the Buyer is subject to a duty to co-operate, the delivery period shall not begin to run before the buyer has fulfilled such a duty.

(3) If delivery is temporarily delayed owing to force majeure or any other events unforeseeable at the time of the conclusion of the contract (operational disruptions of any kind, even if occurring at third parties appointed by the Seller or at their contractors; bottlenecks in the supply of material; etc.), the delivery period shall be extended accordingly. If such events lead to delivery being deferred by more than four months, both Parties shall be entitled to rescind the contract in respect of the scope of the services concerned. No other claims shall exist, unless the consignee notifies the carrier of the delay in delivery within 21 days after delivery.

(4) Sub-deliveries shall be permissible in so far as reasonable for the Buyer.

(5) The Buyer may assign its claims arising from the contractual relationship only with the Seller's prior consent.

§ 6 Export Control Law

- (1) The Buyer hereby undertakes to refrain from carrying out under any circumstances any of the following transactions:
 - transactions with persons, organisations or institutions listed on the sanctions list under EC Regulations or US export provisions;
 - transactions with UN/EC-embargo states prohibited;
 - transactions for which an essential permit is lacking.

The Buyer shall be liable for all expenditure and loss incurred by the Seller as a result of any violation.

(2) The Seller's contractual obligations shall cease to apply, if and in so far as applicable national or international foreign trade legislation and/or embargos and/or other sanctions conflict therewith.

§ 7 Prices and Payment Terms

- (1) Except where otherwise agreed upon, prices for deliveries shall apply "ex works" Kaimann GmbH in Hövelhof (Incoterms 2020). In particular, such prices shall not include costs for shipping and transportation.
- (2) All prices shall be subject to the addition of value-added tax at the rate prescribed by law at the time the invoice is issued.

(3) The Seller shall be entitled to invoice separately for any permissible sub-deliveries.

(4) The Seller hereby reserves the right to alter its prices accordingly, if costs fall or rise after the conclusion of the contract, particularly as a result of collective bargaining agreements or changes in the price of materials. The Seller shall prove such reductions or increases in costs, if the Buyer so requests.

(5) The amounts invoiced shall be paid within 14 days of the invoice date.

(6) Discountable bills of exchange and cheques shall be accepted by the Seller only by prior agreement and only on account of performance. Payment shall be deemed to have been made only when the bill of exchange or cheque amount has been definitively credited to a bank account of the Seller. All discounting, banking and collection charges, as well as all stamp duty shall be reimbursed by the Buyer.

(7) Payments shall always be credited against the oldest invoice. If charges and interest have already been incurred, payments shall first be credited against charges, then against interest and finally against the

principal claims.

(8) The Buyer shall have a right of set-off only if and in so far as its counterclaims are undisputed or have been determined by a final and non-appealable court judgement or its counterclaims are based on the same contractual relationship. The Buyer shall have a right of retention only if and in so far as its counterclaims are based on the same contractual relationship and are undisputed or have been determined by a final and non-appealable court judgement.

§ 8 Pallets, Packaging

(1) In so far as the Seller delivers the goods on returnable pallets, the Buyer shall return, in exchange on a concurrent basis, the same number of returnable pallets of the same kind and in similar condition. If no proper exchange occurs, the Buyer shall pay rental fees. The type, number of returnable packaging as well as the amount of rental fees will be communicated to the Buyer by the Seller in the course of the order confirmation, at the latest, however, when the invoice is issued.

(2) To keep the selling prices as stable as possible, costs in connection with the recovery and recycling of used packaging are not yet included in the delivery prices. Therefore, the Buyer shall recycle all used packaging independently and on its own account in accordance with the statutory and official requirements. The Buyer shall not be permitted, in this respect, to levy charges or reduce the amounts invoiced.

§ 9 Retention of Title

(1) The Seller shall retain title to the goods delivered until all present and future claims arising from the business relationship with the Buyer have been paid in full ("Goods under Retention of Title"). In the case of a running account, the property under retention of title shall serve to secure the balance claim.

(2) The Buyer shall treat all Goods under Retention of Title with care and shall adequately insure the same against fire damage, water damage and theft on a replacement value basis at its own expense. In so far as servicing and inspection work is necessary, the Buyer shall carry out such work in due time at its own expense.

(3) The Buyer shall be entitled to on-sell Goods under Retention of Title in the ordinary course of its business. However, the Buyer hereby assigns to the Seller all claims accruing to it from or in connection with on-selling against its customers or third parties (including all security and all ancillary rights) up to the sum of the final invoiced amount of the Seller's claims (including value-added tax), regardless of whether the item purchased is on-sold without having been processed or after having been processed. The Buyer shall, even after this assignment of claims, remain authorised to collect such claims. The Seller's right to collect such claims itself shall remain unaffected hereby. However, the Seller undertakes not to make use of this right as long as the Buyer meets its payments out of the proceeds received and has not defaulted on payment, particularly as long as no petition for the institution of insolvency proceedings has been filed and no payments have been suspended. In such cases, the Buyer shall inform the Seller of the claims assigned and the debtors concerned, provide all information necessary for collecting the claims, hand over all relevant documents and give the debtors (third parties) notification of this assignment.

(4) The Buyer shall not be entitled to pledge Goods under Retention of Title assign the same as security or encumber the same with any other third-party rights. The Buyer shall, without undue delay, inform the Seller of all third-party compulsory execution measures con-

cerning Goods under Retention of Title and hand over all documents necessary for any intervention. This shall apply also to impairments of any kind. Notwithstanding the foregoing, the Buyer shall point out to the third parties in advance all rights existing in respect of the Goods under Retention of Title. In so far as the third party is unable to reimburse the costs in connection with any intervention by the Seller, the Buyer shall bear such costs.

(5) Any processing or remodelling of Goods under Retention of Title by the Buyer shall always be deemed to have been carried out on the Seller's behalf. If any Goods under Retention of Title are processed together with other items not belonging to the Seller, the Seller shall acquire joint title to the new item in the ratio of the value of the Goods under Retention of Title (final amount invoiced, including value-added tax) in relation to the other processed items at the time of processing. Moreover, the terms and conditions applicable to Goods under Retention of Title shall apply equally to the item created as a result of processing.

(6) If any Goods under Retention of Title are inseparably mixed with other items not belonging to the Seller, the Seller shall acquire joint title to the new item in the ratio of the value of the Goods under Retention of Title (final amount invoiced, including value-added tax) in relation to the other mixed items at the time of mixing. If such mixing occurs in such a manner that the Buyer's item is to be regarded as the main item, it shall be deemed agreed that the Buyer shall transfer joint title to the Seller on a pro-rata basis. The Buyer shall hold in safekeeping for the Seller the sole or joint property thus created.

(7) As security for the Seller's claims against the Buyer, the Buyer hereby also assigns to the Seller all claims accruing to the Buyer against a third party as a result of Goods under Retention of Title having been connected to any plot of land.

(8) If the Seller is entitled to reclaim possession of Goods under Retention of Title, the Buyer shall bear the cost of such repossession. The Seller shall be authorised to realise such repossessed Goods under Retention of Title on the open market for the best possible price and credit the proceeds, less any appropriate costs in connection with such realisation, against the amounts owed by the Buyer.

(9) If the realisable value of the security exceeds the Seller's claims against the Buyer by more than 10 %, the Seller shall, if the Buyer so requests, release such security to a corresponding extent. The Seller hereby reserves the right to choose the security to be released.

(10) If, in the case of deliveries abroad, this retention of title cannot be agreed upon with the same effect as under German law, yet it is permissible to reserve other rights in the item delivered, the Seller shall be entitled to such rights. The Buyer shall co-operate therewith in every respect.

§ 10 The Seller's Documents

The Seller shall retain any and all rights of title, copyrights and industrial property rights in respect of illustrations, drawings, samples and other documents ("Documents"). This shall apply also to Documents not expressly designated as "confidential". The Buyer shall pass on such Documents to third parties only with the Seller's prior express written consent.

§ 11 Default in Taking Delivery

If the Buyer fails to accept the goods within a set grace period or refuses to take delivery of the goods, the Seller shall be entitled, without prejudice to any other rights, to rescind the contract and claim damages in lieu of performance. The damages in lieu of perfor-

mance shall be a liquidated amount equal to 10 % of the purchase price excluding deductions, unless the Buyer proves that no loss at all was incurred or that the loss incurred was lower than such liquidated damages. The Seller hereby reserves the right to prove a higher loss.

§ 12 Warranty for Defects

(1) The qualities of the goods to be delivered, including their usability for any specific purpose, shall ensue exclusively from the corresponding agreements made between the Parties. Deviations in dimensions and/or weight within the tolerance range customary in the trade shall not constitute a defect. Samples and specimens made available to the Buyer by the Seller shall serve only to approximately describe the goods. No illustrations in catalogues or prospectuses of the Seller shall be binding for execution. The Seller hereby reserves the right to make technical and/or design changes to the goods, in so far as such changes are customary in the trade, do not unreasonably impair the Buyer and do not impair the usability of the goods for the agreed purpose.

(2) The Buyer shall give the Seller notification in text form of any and all obvious defects without undue delay, however no later than within 5 days of delivery. If the Buyer fails to give notification in due time and form, the delivery shall be deemed approved, unless the Seller has fraudulently concealed the defect. Moreover, section 377 German Commercial Code (HGB) shall apply. If the Buyer fails to inspect the relevant characteristics for the intended purpose of use before installing the goods, at least on a spot-check basis (e. g. by means of functional tests or trial installation), he violates the diligence normally used in commercial practice to a considerable extent (gross negligence).

(3) In case of supplementary performance, the Seller hereby reserves the right to choose between eliminating any defect and delivering an item free from defects. This shall not apply in the event of supplier recourse under sections 445a, 445b German Civil Code (BGB), if the last contract within the supply chain is a purchase of consumer goods. Section 439 (3) German Civil Code (BGB) remains unaffected. The Buyer has to state and prove the necessity of expenses to remove defective and install non-defective goods. In order to substantiate these costs actually incurred for the reasonably implemented measure he is obliged to submit a comprehensible list of costs.

(4) The Seller may refuse to provide subsequent performance if the costs of the subsequent performance are disproportionate due to the specific circumstances of the case. The costs are disproportionate, in particular, if the costs of subsequent performance are disproportionate in comparison with the value of a defect-free good or in comparison with the significance of the defect. This shall regularly be the case of the total costs of the subsequent performance required exceed 150 % of the value of the goods invoiced or 200 % of the amount representing the loss of value. This does not apply in the case of the sale of consumer goods. If it concerns a sale of consumer goods according to section 474 ff. German Civil Code (BGB), the Seller may limit the reimbursement of expenses to be paid to the Buyer to an appropriate amount.

(5) The warranty period shall be one year. The statutory time-bar periods in cases of fraudulent concealment, in cases where an item used for a building commensurately with its customary use has caused such a building to become defective and in cases of supplier recourse under sections 445a, 445b German Civil Code (BGB) shall remain unaffected, if the last contract within the supply chain is a purchase of consumer goods.

(6) The Seller shall not assume any guarantees in the legal sense, unless expressly agreed upon.

(7) Damage claims based on any defect not already deemed approved under § 12 (2) shall be governed by § 13.

(8) Buyer's recourse claims according to sections 445a, 445b German Civil Code (BGB) shall only exist insofar as the Purchaser has not entered into any agreements with his customers that go beyond the statutory claims for defects. However, the Buyer's recourse claim shall only exist up to a maximum amount of 150 % of the value of goods invoiced. The latter stipulation does not apply, if the last contract within the supply chain is a purchase of consumer goods.

(9) The limitation period for Buyer's recourse claims according to sections 445a, 445b German Civil Code (BGB) is one year after the statutory limitation period begins, unless the last contract within the supply chain is a purchase of consumer goods. If the last contract within the supply chain is a purchase of consumer goods, the statutory limitation periods shall remain unaffected.

§ 13 Liability for Damages

(1) Unless otherwise stipulated in these General Terms and Conditions of Sale and Delivery, including the following provisions, the Seller shall be liable in the event of a breach of contractual and non-contractual obligations in accordance with the statutory provisions. (2) The Seller shall be liable for damages - on whatever legal grounds - within the scope of liability for culpa in cases of intent and gross negligence. In the event of simple negligence, the Seller shall only be liable subject to a milder standard of liability in accordance with statutory provisions (e.g. for diligence in his own matters) in the case of

- a) damages resulting from injury to life, body or health,
- b) damages arising from a not insignificant breach of a material contractual obligation (obligation whose fulfillment is essential for the proper performance of the contract and on whose compliance the contractual partner regularly relies and may rely); in this case the liability of the Seller is limited to compensation for the foreseeable, typically occurring damage.

(3) The limitations of liability resulting from paragraph 2 shall equally apply to breaches of duty on the part of or in favour of persons whose fault the Seller is responsible for in accordance with statutory provisions. They do not apply if the Seller maliciously concealed a defect or assumed a guarantee for the quality of the goods and for claims of the Buyer under the Product Liability Act.

(4) Due to a breach of duty which does not consist in a defect, the Buyer can only withdraw or terminate if the Seller is responsible for the breach of duty. A free right of termination of the Buyer (in particular according to sections 650, 648 German Civil Code (BGB)) is excluded. In all other respects, the statutory requirements and legal consequences shall apply.

§ 14 Applicable Law, Place of Performance, Place of Jurisdiction

(1) The laws of the Federal Republic of Germany, excluding the UN sales law (CISG), shall apply.

(2) The place where the Seller's registered office is situated shall be the place of performance.

(3) The place where the Seller's registered office is situated shall be the place of jurisdiction. However, the Seller hereby reserves the right to bring an action against the Buyer at the Buyer's place of general jurisdiction.

Kaimann is an active member of the most relevant industry associations locally and on a European level. As part of these associations Kaimann lobbies governments & organisations to recognise the vital role that pipe insulation plays in reducing energy losses and meeting long term energy saving commitments.



CEFEP

CEFEP, the European FEF and PEF interest group, was founded to provide a representative body for European manufacturers of elastomeric and polyethylene foam insulation materials. As a pan-European trade association, CEFEP is focused on promoting the benefits of FEF and PEF insulation regardless of the manufacturer. Kaimann is a founding member of CEFEP.



EiiF

Insulation is one of the most effective energy saving technologies available today, but a high percentage of industrial pipework remains uninsulated. The EiiF is a non-profit organisation dedicated specifically to promoting the energy saving potential of insulation in an industrial setting by conducting in-depth research, lobbying for enhanced energy saving legislation and operating the innovative TIPCHECK scheme, which helps large companies to identify energy saving opportunities on industrial sites. Kaimann is a founding member of the EiiF.

TIMSA

TIMSA, thermal and acoustic manufacturers and suppliers' association, is the UK's long-established trade association for insulation manufacturers and suppliers. Supporting the growth of the market for thermal and acoustic insulation within the UK, TIMSA co-ordinates its members to produce a range of technical literature and continues to promote the benefits of insulation to consumers, businesses and government. Kaimann is an active member of TIMSA.

TICA

TICA, the thermal insulation contractors' association, provides insulation contractors in the UK with the professional support necessary to ensure that standards of pipe insulation within the UK remain at a consistently high level. Kaimann is an associate member of TICA and provides technical support and training for TICA members.



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