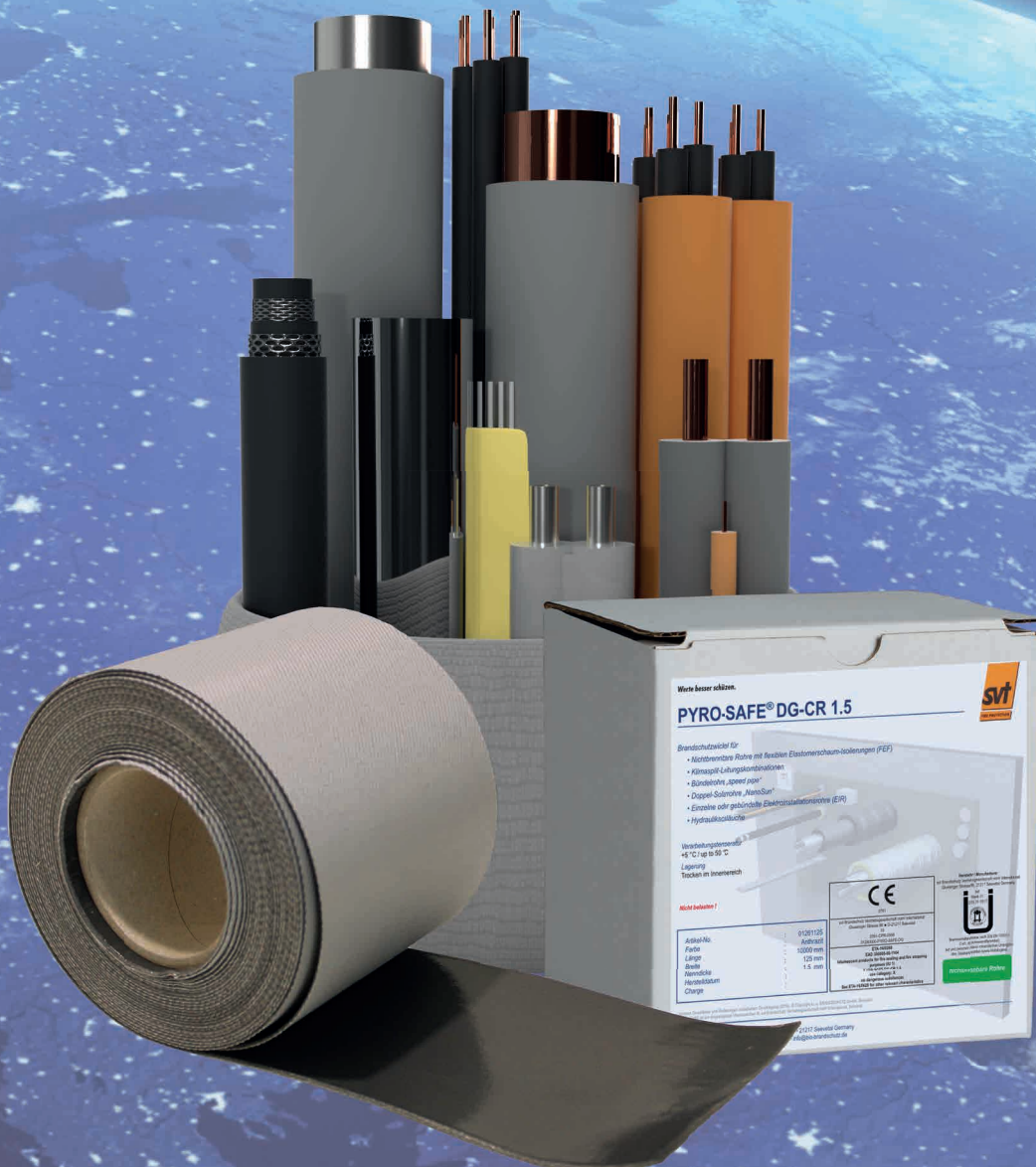


protect your values



PYRO-SAFE® DG-CR 1.5

The fire protection wrap



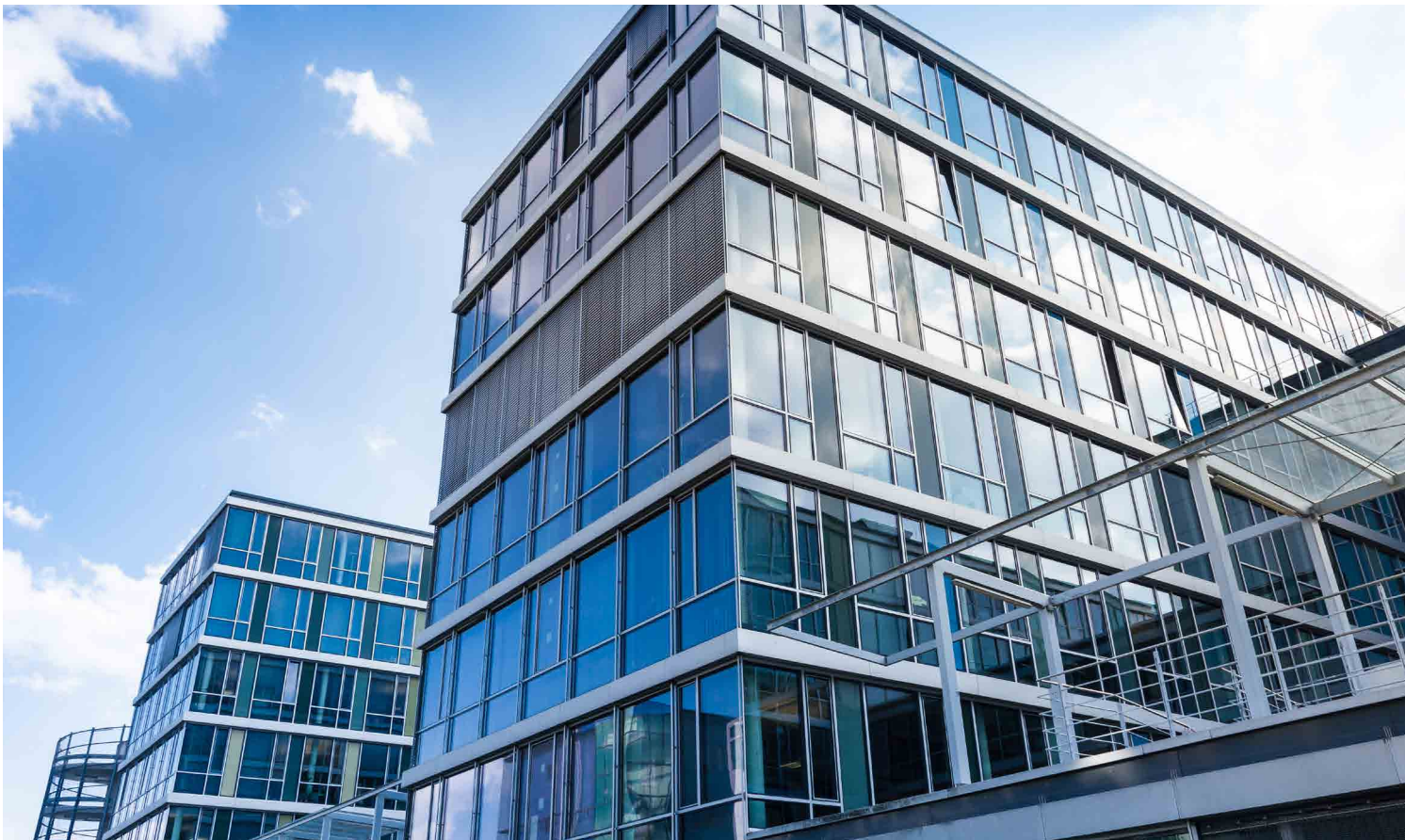
safety via technology

Passive fire protection for

- Non-combustible pipes with flexible FEF-insulation
- HVAC split-line-combinations
- Single or bundled electrical installation conduits (EIC)
- PE-lines „speed pipes“
- Double-solarpipes „NanoSUN²“
- Hydraulic hoses
- Cables, cable bundles and cable trays
(alternatively to the coating in ablative penetration sealing systems)

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In modern buildings, various supply lines are installed over several fire sections:

- Non-combustible pipes with insulations made of flexible elastomeric foam (FEF) are available in a wide range of variations, primarily in the context of heat and cold insulation.
- For the buildings climate control, special HVAC split-line-combinations made of non-combustible pipes with preconfigured combustible FEF or PEF insulations and an additional plastic condensate line as well as one or more electric control lines.
- Fibre optic cables or micro cables are bundled in PE shell pipes and routed through the buildings to realize high-speed data transmission and communication.
- Elevator systems are suited with hydraulic hoses and solar energy systems are connected via special solar pipes.

The various combustible and non-combustible materials of the media lines as well as their insulations make particularly high demands on the used fire protection products.

In case of a fire the combustible materials are melting under the influence of heat and flames and an opening is left through which, smoke and flames can easily reach neighbouring areas.

To solve this problem, the versatile and simple to use fire protection fabric PYRO-SAFE® DG-CR 1.5 was developed. It closes the opening very quickly and safely, this prevents the spread of smoke, flames and heat.

Basis for the fire protection product is an intumescent coating on carrier material which reacts under thermal impact and builds a heat insulating foam.

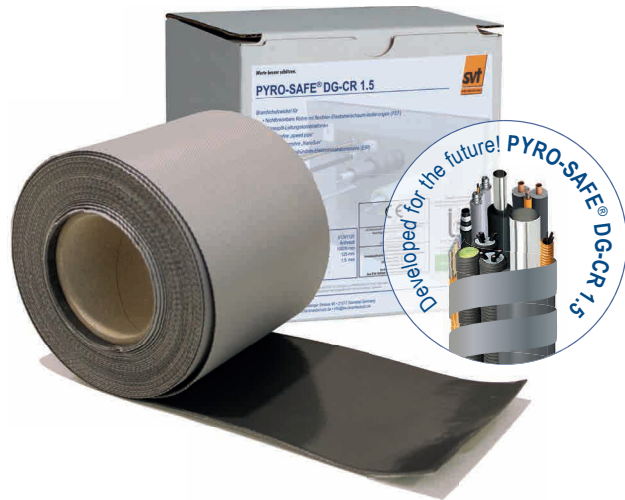
PYRO-SAFE® DG-CR 1.5 – the fire protection wrap

PYRO-SAFE® DG-CR 1.5 is a fire protection fabric made of a fibre optic filament fabric as carrier, which is coated on the inside with PYRO-SAFE® DG as active intumescent ingredient. The machine production process ensures evenly-defined material strength and quality.

In the event of a fire, the product forms an intumescent foam layer under the effect of heat, which by definition, occupies the free space between the component to be protected and the fabric, and limits the propagation of the fire.
PYRO-SAFE® DG-CR 1.5 is suitable for indoor and outdoor use.

Product benefits

- Suitable for indoor and outdoor applications
- Has no effect on other materials like polyethylene (PE) and polyvinyl chloride (PVC) in accordance with EOTA TR 024
- Coatable with approved paints based on acrylic dispersion, alkyd resin, polyurethane acryl and epoxy resin in accordance with EOTA TR 024
- Moisture-, weather- and UV-resistant
- Tensile strength
- Foaming reaction at approx. 150 °C
- Also available in an adhesive version



Product properties

Colour	Outside grey, inside anthracite
Form	Fabric coated with intumescent fire protection paint on the inside
Weight per unit area	2000 g/m²

Storage and packaging

- Product shall be stored dry and indoor
- Protect against pressure loads

Product	Packaging	Length x Width [m x mm]	Weight per piece [kg]	Qty. per pallet [n]	Weight per pallet [kg]	Product-No.
PYRO-SAFE® DG-CR 1.5	Box	10 x 125	approx. 3	128	approx. 404	01261125

Mode of action

The used intumescent fabric on a base of exfoliated graphite foams with high expansion pressure. Consequently it is capable of closing the opening, by the fire load which melts away the construction materials and therewith ensures the component is classified fire-proof.

Graphite is a naturally occurring crystalline type of carbon. Exfoliated graphite is formed due to the deposits of certain chemical compounds between the carbon layers. When the reaction temperature is reached, the layers are suddenly dispersed, and the volume of the graphite particles thus rapidly multiplies.
In this manner, a carbon network is established on the exfoliated graphite. This foam adheres due to other compounds of the intumescent fabric, and forms an insulating foam layer.

Permissible services

Installation location				Plasterboard wall, solid wall/floor
Thickness of the structural element [mm]				≥ 100 / 150 (wall) ≥ 150 (floor)
Thickness of the penetration sealing [mm]				≥ 100 - 150 (wall) ≥ 150 (floor)
Cables		●	no limitation ^{1,2}	-
Cable bundles		●	bundle-Ø ≤ 100 / cable-Ø ≤ 21 ¹	
Cable trays		●	aluminium, steel, plastic ¹	
EIC single		●	Ø ≤ 63	
EIC bundled		●	bundle-Ø ≤ 100 / EIC-Ø ≤ 32	
Non-combustible pipes with FEF-Insulation		●	Ø ≤ 170 (steel) Ø ≤ 108 (copper)	possibly lamella mat is required
HVAC split-line-combinations		●	2x Ø 10/18 Cu + PEF 9.0 Ø 25 PVC + 2 cables Ø ≤ 14	-
Double-solarpipes „NanoSUN ^{2u} “		●	Ø ≤ DN 40	possibly lamella mat is required
PE-lines „speed pipes“		●	24x Ø ≤ 7.0; 7x Ø ≤ 10.0; 5x Ø ≤ 12.0	-
Hydraulic hoses		⊕	Ø ≤ 55.9	lamella mat is required
Certificate of usability				ETA-16/0268 and together with ETA-14/0418 or ETA-16/0132

¹: Wrap width = 200 mm if used alternatively for the coating in the PYRO-SAFE® Flammotect double layer penetration sealing system

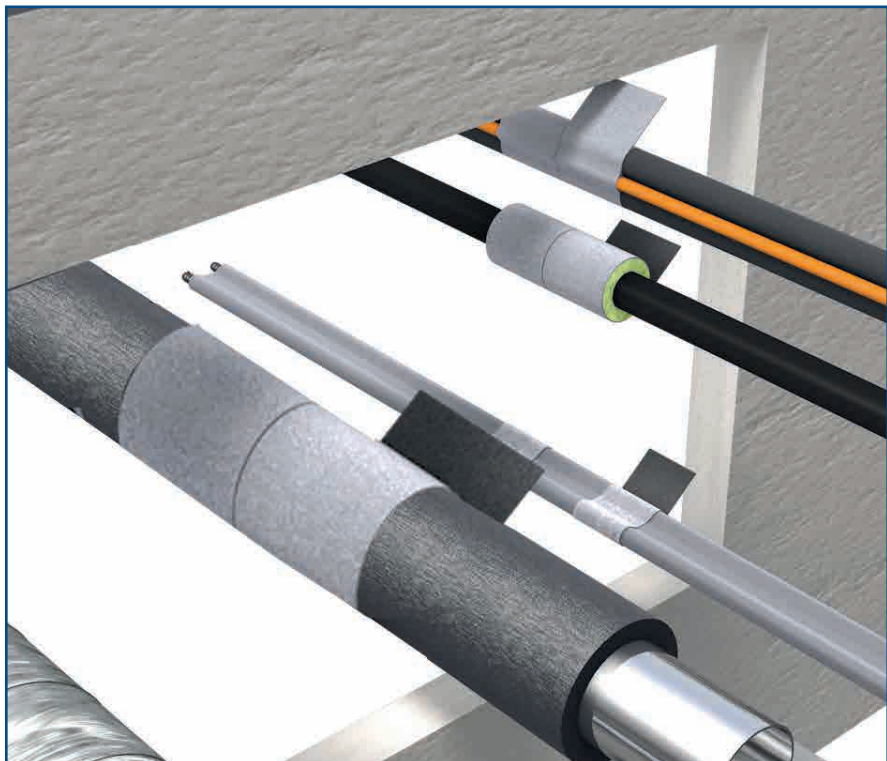
²: Wrap width = 150 mm for cables > 50 - ≤ 80 mm to reach EI120 in the PYRO-SAFE® Novasit BM penetration sealing system

Dimensions in mm

For details see the installation instructions

● without additional measures

⊕ with additional measures



Easy assembly and low space requirement make the fire protection wrap a cost-effective fire protection technology for non-combustible pipes with combustible insulation and cables (alternatively to a coating) in sealing systems or as individual implementations.

The fire protection wrap PYRO-SAFE® DG-CR 1.5 meets these required protection objectives and can be installed easy and quick in cramped conditions.

Fields of application

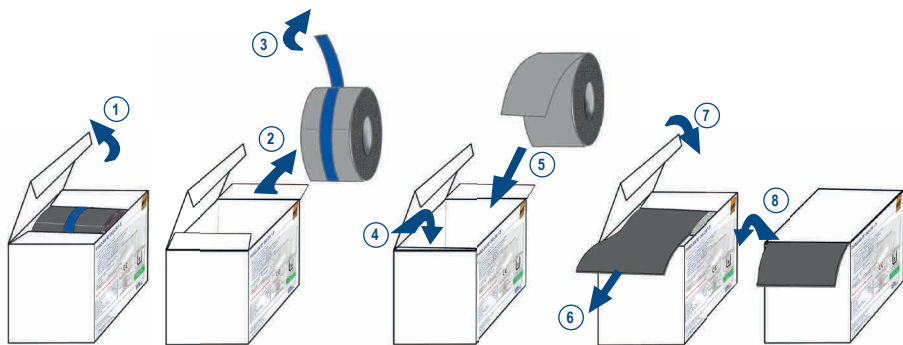
Application as single penetration sealing, annular gap closing with fire protection mortar PYRO-SAFE® NOVASIT BM or mineral fibre wool/ boards and PYRO-SAFE® FLAMMOTECT-A. The wrap may also be used in our combined penetration sealing systems.

Certificates of usability

ETA-16/0268 (PYRO-SAFE® DG-CR), gap filling with products PYRO-SAFE® FLAMMOTECT-A (ETA-14/0418) or PYRO-SAFE® NOVASIT BM (ETA-16/0132).

Handling

- (Pre-)cut with standard cutting tools, e.g. scissors or utility knives.
- The PYRO-SAFE® DG-CR 1.5 fire protection wrap is coated and covered with a protective film on one side. Before installation the protective film shall be removed, the coated side has to be inside. Fixation of the wrap with steel wires.
- Annular gap closing with mineral-fibre wool and sealing with PYRO-SAFE® FLAMMOTECT-A or with mortar, e.g. the fire protection mortar PYRO-SAFE® NOVASIT BM.



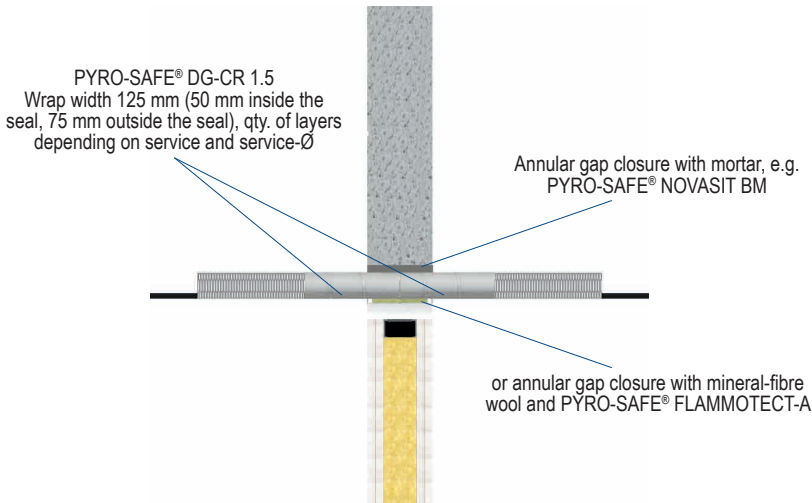
Example for required wrap lengths

per side on non-combustible pipes with insulation made of FEF (two layers without overlapping)

Pipe outside-Ø		18 mm	22 mm	28 mm	35 mm	42 mm	48 mm	54 mm	76 mm	89 mm	108 mm	133 mm	168 mm	219 mm
FEF (Insulation thickness)	9 mm	30 cm	33 cm	37 cm	41 cm	46 cm	49 cm	53 cm	67 cm	75 cm	87 cm	103 cm	125 cm	157 cm
	19 mm	43 cm	46 cm	49 cm	54 cm	58 cm	62 cm	66 cm	79 cm	88 cm	100 cm	115 cm	137 cm	169 cm
	25 mm	51 cm	53 cm	57 cm	61 cm	66 cm	69 cm	73 cm	87 cm	95 cm	107 cm	123 cm	145 cm	177 cm
	32 mm	59 cm	62 cm	66 cm	70 cm	74 cm	78 cm	82 cm	96 cm	104 cm	116 cm	132 cm	154 cm	186 cm

Example for the arrangement

on electrical installation conduits



For details see the installation instructions



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