

protect your values



PYRO-SAFE[®] DG CR 0.7

intumescent cable bandage

Cables



Table of contents

Topic		Page
	Cable systems	
	Fire protection for cable systems	3
	Intumescent fireproof fabric	4
	Handling, Product properties	5
	Certifications and tests	6
1.	Preliminary notes / overview	6
1.1	Target group	6
1.2	Using the manual	6
1.3	Safety information	6
1.4	Field of application	7
2.	Permissible uses	7
3.	Usable products	7
4.	Regulations for implementation and variations	8
5.	Installation steps	9
5.1	Backing in the suspension area	9
5.2	Wrapping cable trays	10-11
5.3	Wrapping the cables in trays	12
5.4	Cable systems mounted directly on solid structural components	13
5.5	Cable systems with clips or mounted on brackets	14
5.6	Cable entries or outlets	15

Cable systems

Fire protection for cable systems

Cable systems of various sizes and types are found in buildings today.

These systems are numerous in public buildings, industrial facilities and power stations etc., as are their uses.

Cable systems run over all floors and supply almost every room. They are usually located on cable support systems behind floors and wall coverings.

Their fundamental role is the distribution and interconnection of energy supplies along with data and communication technology.

Alongside the cables used purely for supplying energy, it is the wiring used for information and communication technology which has significantly increased in quantity.

Thanks to the cable structure, all kinds of different material compositions are found in these systems. Many insulations and cable sheaths are flammable.

From a fire prevention perspective, unprotected cable systems are a potential hazard which should not be underestimated.

In the event of a fire, electrical cables and cable trays can act like a fuse, allowing the fire to spread in an uncontrolled manner.

The combustible cable jacket may result in burning droplets, and also a release of toxic fumes which can lead to life-threatening smoke inhalation.

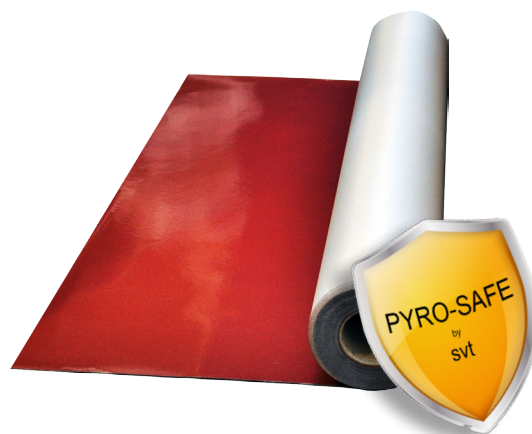
These fumes can be highly corrosive and can have a destructive impact on technical facilities and other materials.



In order to eliminate fire hazards, cable systems can be successfully protected with a fire retardant bandage.

In many countries these kinds of measures are mandatory.

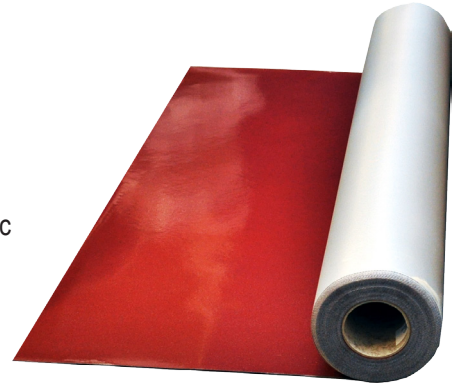
An effective and economic product for protecting cables against fire has been developed by svt in the form of its intumescent fireproof bandage PYRO-SAFE DG CR 0.7



PYRO-SAFE DG CR 0.7

Intumescent fireproof fabric

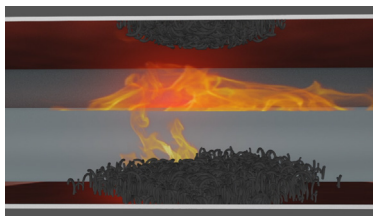
PYRO-SAFE DG-CR 0.7 is a flexible composite fibre glass fabric with grey external PU coating and an internal intumescent coating of PYRO-SAFE DG based on a synthetic dispersion. The product is weather and UV resistant, flexible and, in the event of a fire, thermal exposure causes it to form a heat-insulating foam layer on the inside which fills the free space between the structural component to be protected and the fabric thereby preventing the fire from spreading.



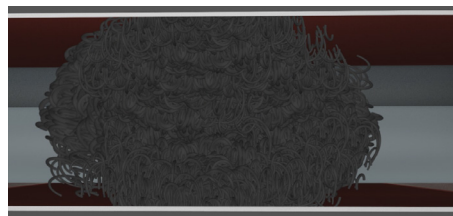
Product benefits

- Very quick reaction with a strong foaming pressure
- **No cleaning** of the cable systems required
- easy to retrofit cables
- easy to handle - no special equipment is required
- no film thickness measuring necessary
- intumescent paint on one side only - exposed side easy to clean
- weather resistant - suitable for indoor and outdoor applications
- resistant against moisture, freeze-thaw cycles, UV radiation and various oils and chemicals
- solvent-free, contains no halogens
- does not contain asbestos, lead, mercury, hexavalent chromium or polybrominated biphenyl
- does not release toxic fumes
- no explosion protection required for the application
- non-hazardous material in accordance with GefStoffV [Gefahrstoffverordnung: German regulation on hazardous substances]

Fire protection



Bandage begins to foam



Cross-section foamed up

When exposed to heat, the intumescent product PYRO-SAFE DG-CR 0.7 (which is based on exfoliating graphite) begins to foam up. When a reaction temperature of approximately 150 °C is reached under high pressure (the so-called expansion pressure point) the exfoliating graphite foams up to many times its original volume. Through additional components in the intumescent layer, this causes the formation of an insulating coating which lies densely around the cable and seals off the cable tray cross-section. The fire is extinguished.

- creation of intumescent layer through chemical reaction
- protective layer (foam-like, carbon matrix)

PYRO-SAFE DG CR 0.7

Intumescent fireproof fabric

Handling


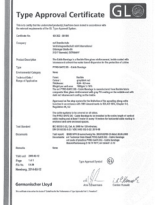




PYRO-SAFE DG CR 0.7	
Handling temperature	+ 5 °C – + 50 °C, < + 5 °C reduction in flexibility, < 85 % rel. humidity
Equipment required	With standard cutting tools such as scissors or cutting knife
Preparatory work	none
Special protective measures	none

Product properties

PYRO-SAFE DG CR 0.7	
Colour	external grey, internal red
Design	internally coated with intumescent fabric
Thickness	0.64 - 0.9 mm
Foaming factor	$15.5 \text{ fold} \leq f_{\text{ex}} \leq 22.0 \text{ fold}$ (tested on 2 mm thick samples at 550 °C over 30 min. with weights applied)
Expansion pressure	$1.00 \text{ N/mm}^2 \leq p_{\text{ex}} \leq 1.65 \text{ N/mm}^2$
Surface weight	$1000 \text{ g/m}^2 \pm 10 \%$
Product code	01260201

Intumescent fireproof fabric

Certifications and tests

	<p>GL Certificate</p> <p>GL Certificate No. .60 352-09 HH</p> <p><i>Test</i></p> <p>IEC 60332-3, Cat.A:2009 for 120 min.;</p> <p>DIN EN 60332-3-22 / VDE 0482-322-3-22; 201-08</p>	
	<p>ETA-13/0100</p>	
	<p>General building control approval Z-19.11-1917</p>	

1. Preliminary notes / overview

1.1 Target group

- The installation manual is aimed exclusively at people with professional fire proofing training.

1.1 Using the manual

- Read this manual thoroughly first before beginning work. Pay particular attention to the following safety information.
- the authorisation holder assumes no liability for damages which arise through a failure to comply with this guide.
- pictorial representations serve purely as examples. Installation results may differ visually.

1.1 Safety information



Personal protective equipment:



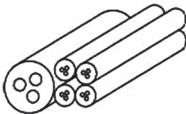
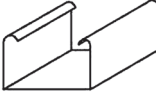
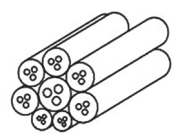
body protection
wear protective work clothing and non-slip shoes

Cable fire protection with PYRO-SAFE DG CR 0.7

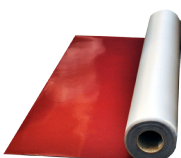


1.2 Area of application

The fire protective fabric PYRO-SAFE DG-CR 0.7 for wrapping electrical wires (cables) or circuit systems (cable systems) must be used in accordance with the applicable building regulations.

2. Permissible uses


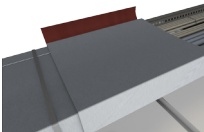
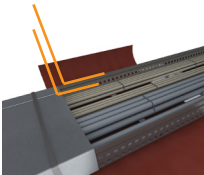
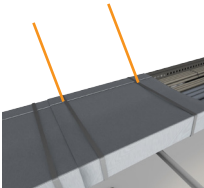
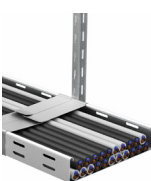
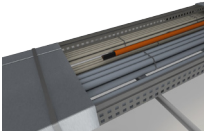
	All types of electric cables and wiring (including fibre optic cables) with the exception of “wave guide” cables Without any restriction on the size of the overall cross-section of the individual cable. Vertically, horizontally or diagonally arranged.		Cable support structures Non-flammable cable trays or cable ladders with classes A1 and A2-s1, d0 in accordance with DIN EN 13501-1 vertically, horizontally or diagonally arranged.
	Cable bundles Without any restriction on the size of the overall cross-section of the individual cable. Vertically, horizontally or diagonally arranged.		

3. Usable products

	PYRO-SAFE DG CR 0.7 Fire protection fabric Product No. 01260201		Recommended equipment: <ul style="list-style-type: none">• tape measure• steel angle• cutting knife / scissors• possibly film, folding ladder• wire pliers, metal tensioning belt (Ø 1 mm)• locking clamps• svt - mounting brackets
	Description label Product No. 01229000		

Cable fire protection with PYRO-SAFE DG CR 0.7

4. Regulation for implementation and variations

	Before installing the fire protection fabric, remove the protective film from the coated side (red)!
	The pieces cut from the PYRO-SAFE DG-CR 0.7 fire protection fabric are to be wrapped around the cable system so that it is completely enveloped. When doing this, the red side (the coated side which will foam up in the event of a fire) must always face in towards the cables.
	When wrapping the cable, the individual pieces cut from the PYRO-SAFE DG-CR 0.7 fire protection fabric must overlap by ≥ 50 mm at the vertical and horizontal joins. <i>In order to ensure there is the option of retrofitting, the lengthways overlaps should be designed to be larger.</i>
	The fire protection fabric must be fixed in place using metal fixing materials at intervals of no more than 500 mm. Metal strips, wire or staples may be used as fixing materials. For one-sided coverage, the fire protection fabric may also be fixed to solid mineral walls and floors using metal bars and screws.
	The fire protection fabric is to be arranged around the cables or cable bundles and the cable trays or cable ladders (possibly also any connection areas, e.g. suspensions or mounts) in such a way that there are no joins, cracks or other openings. Where there are any cantilevers, brackets or suspensions, the cable trays must first be fitted with at least 100 mm wide cut strips as a backing for the fire protection fabric and e.g. fixed in place using wire or metal brackets.
	Retrofitting When opening up the PYRO-SAFE DG-CR 0.7 fire protection fabric for retrofitting or adjusting the configuration, care must be taken that the fire protection fabric will not be damaged. After completing the retrofitting or adjustments, checks must be carried out to establish whether the condition of the fire protection fabric is fit for purpose in terms of the approved installation requirements.

Cable fire protection with PYRO-SAFE DG CR 0.7

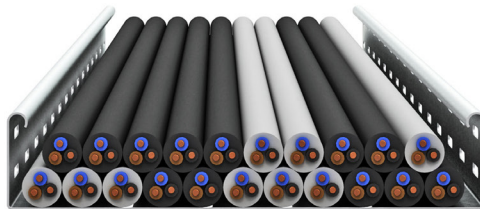
5. Installation steps

5.1 Backing in the suspension area

Where there are any cantilevers, brackets or suspensions, the cable trays must first be fitted with at least 100 mm wide cut strips as a backing for the fire protection fabric and e.g. fixed in place using wire or metal brackets.

1. Remove the protective film from the coated side. Cut out strips for backing (at least 100 mm wide).

Length $\geq 2 \times \text{tray width} + 2 \times \text{bar height} + 50 \text{ mm overlap}$



2. Cut strips of the required length.



3. Lay the strips closely together (coated side facing inwards).



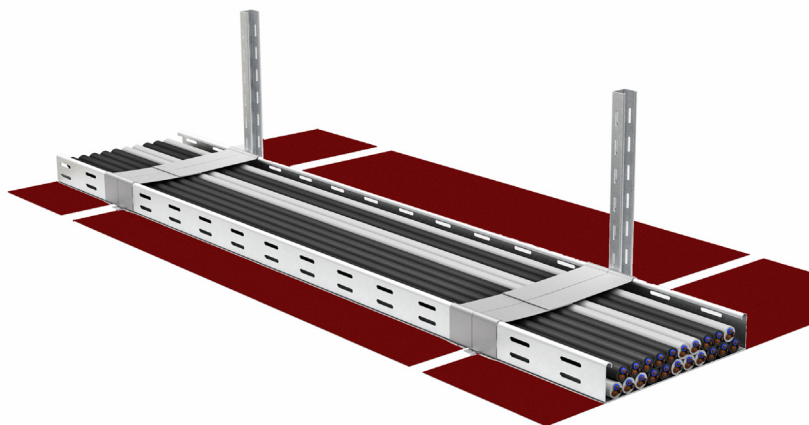
Cable fire protection with PYRO-SAFE DG CR 0.7

5.2 Wrapping cable trays

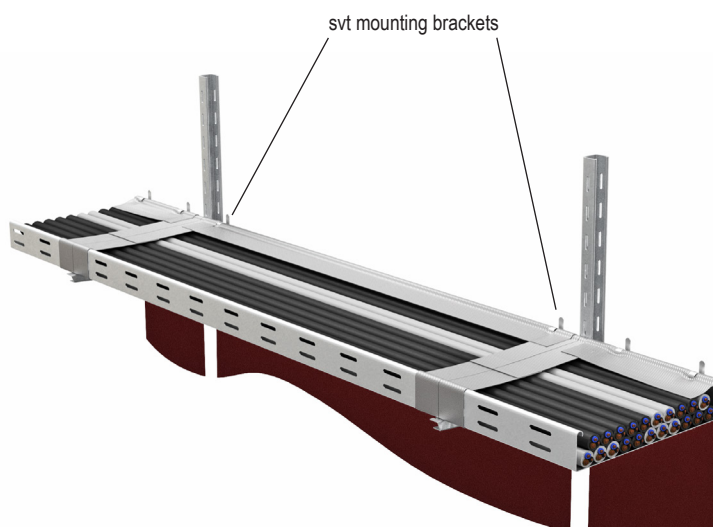
All other areas of the cable tray are to be lined along their entire length with sections of the fire protection fabric with at least 50 mm overlaps with the backing strips. Fixing the pieces to the rear tray rail with the svt mounting bracket will make the installation more straightforward. svt mounting brackets must be set in place so that neither the fire protection fabric nor the cabling are damaged. Once installation is complete they can be removed and used again.

- 4. Remove the protective film from the coated side. Cut strips.**
Fix in place with 50 mm overlap to the backing (coated side inwards).

Length $\geq 2 \times \text{tray width} + 2 \times \text{bar height} + 50 \text{ mm overlap}$



- 5. Installation facilitated by the svt mounting brackets.**



Cable fire protection with PYRO-SAFE DG CR 0.7

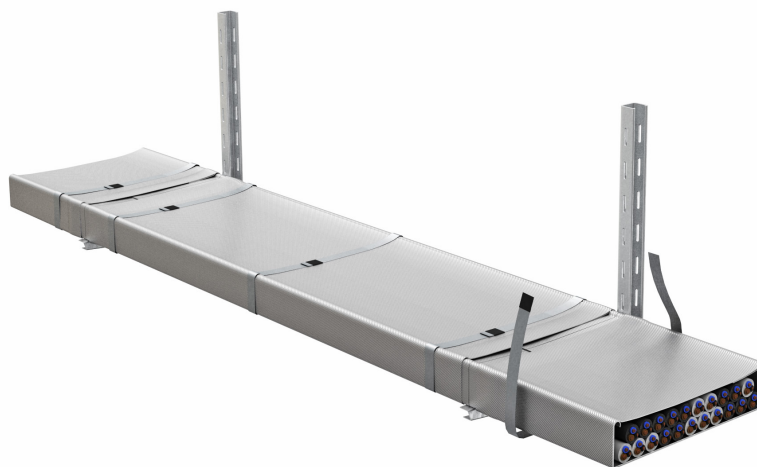
5.2 Wrapping cable trays

Finally, the free end of the fire protection fabric is folded over the cable tray and fixed in place all the way round with a steel band/ wire at intervals of ≤ 500 mm (at least two times for each section of fabric) . The lengthways overlap must be ≥ 50 mm.

6. Lay the free end over the cable tray.



7. Fix the fabric in place with steel band / wire.



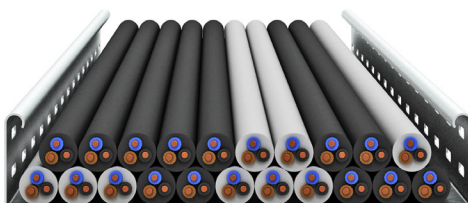
Cable fire protection with PYRO-SAFE DG CR 0.7

5.3 Wrapping cables in trays

The fire protection fabric must be completely wrapped around the cabling. The vertical and horizontal joins in the fire protection fabric must overlap by at least 50 mm. The fabric must be fixed in place at intervals of ≤ 500 mm using metal tightening straps, wire or staples.

1. Remove the protective film from the coated side. Cut strips and wrap them completely around the cabling (coated side inwards).

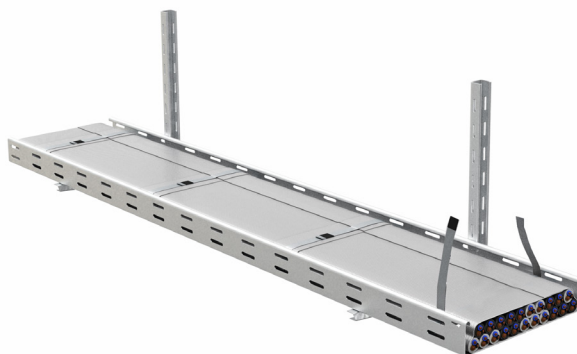
Length $\geq 2 \times$ configuration width + $2 \times$ configuration height + 50 mm overlap



2. Vertical and horizontal joins must have at least a 50 mm overlap.



3. Fix the fabric in place with steel band / wire.

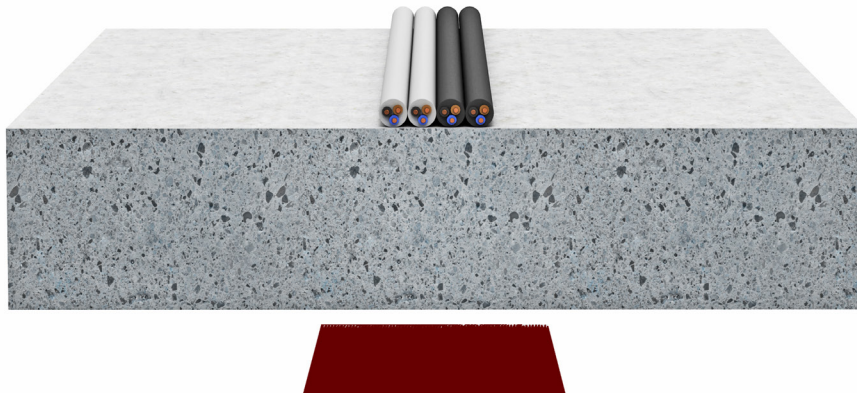


Cable fire protection with PYRO-SAFE DG CR 0.7

5.4 Cable systems, mounted directly on solid structural components

Bandaging cable systems which are attached to solid mineral substrates is done with sections cut from the PYRO-SAFE DG-CR 0.7 fire protection fabric and using rails screwed into the solid structural element.

1. Remove the protective film from the coated side. Cut strips and place these onto the cables in close contact with the solid structural component with the coated side facing inwards.



2. Attach fire protection fabric with metal rails onto the solid structural component (coated side inwards).



3. Arrange the next layer with ≥ 50 mm overlap.

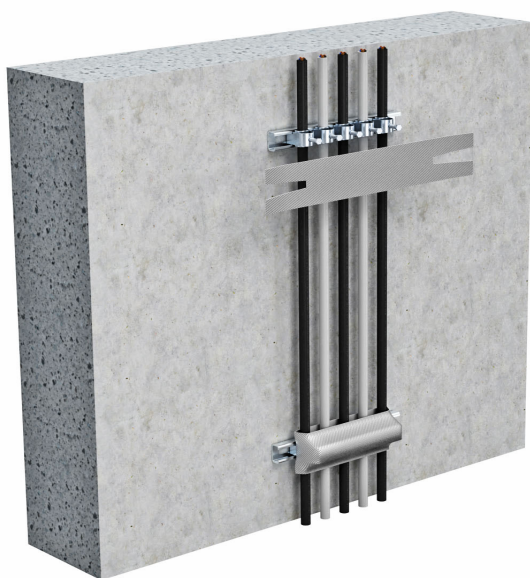


Cable fire protection with PYRO-SAFE DG CR 0.7

5.5 Cable systems with clips or mounted on brackets

Vertical cable systems are usually mounted via clips onto brackets or profile rails. With agreement on the construction side there is the option of removing individual clips and arranging a backing strip made of the fire protection fabric under the clip and around the cabling. Then the clip must be screwed back tightly as intended and the cable is bandaged with a ≥ 50 mm overlap at the vertical and horizontal join.

1. Remove the protective film from the coated side. Cut strips and trim to the required length.



2. Adjust the strips and lay them with the coated side facing inwards.



3. Fix the strips in place with steel band / wire.



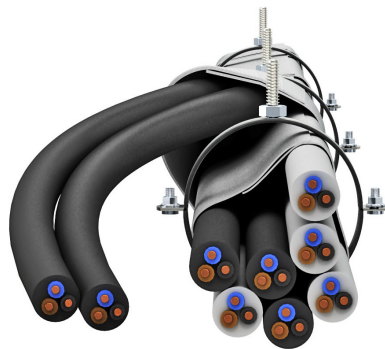
Cable fire protection with PYRO-SAFE DG CR 0.7

5.6 Cable entries or outlets

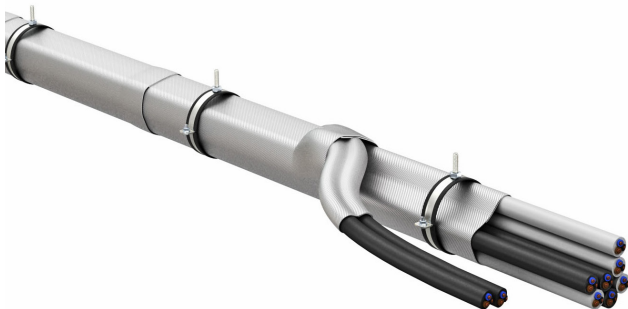
Design of cable entries or outlets

Where cables lead in or out of the fireproof covering, they must be encased in the cable bandage over a minimum length of 300 mm, if there are no additional fire protection requirements in place for this cabling.

1. Remove the protective film from the coated side. Cut strips and insert them with an overlap ≥ 50 mm into the tray wrapping.



2. Wrap external cables over a length of ≥ 300 mm (coated side facing inwards).



3. Secure the bandage at the cable outlet area with tightening straps, wire or staples.



