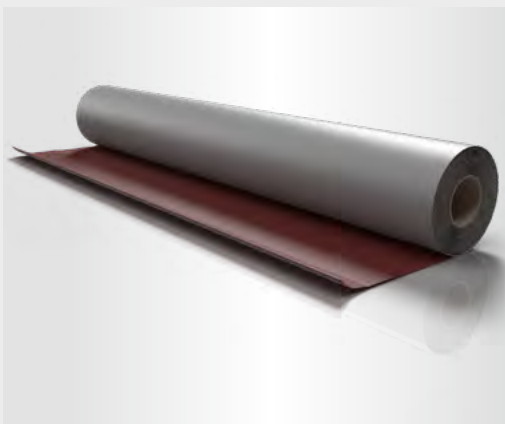


DG-CR 0.7 Cable bandage

Intumescent fire protection cable bandage for cables and cable support systems





FLAMRO® – the svt quality brand for preventive structural fire protection

The svt Group of Companies is recognised worldwide as a premier manufacturer and supplier of preventive fire protection solutions. As experts in passive structural fire protection, Flamro has been on the market for 30 years and has been part of the svt Group since 2018. FLAMRO® is now establishing itself internationally as the quality brand for the construction sector.

Together, svt and Flamro ensure increased safety in case of fire and boast Europe's largest and most diversified portfolio of state-of-the-art fire protection products and applications. Flamro's various types of cable and pipe penetration seals, cable ducts with special fitting pieces as well as cable bandages and coatings reliably ensure continuous, uninterrupted building and plant safety in case of fire – not only in Germany, but worldwide.

Made in Germany – with international certifications

Limiting property damage, preventing operational failures, avoiding environmental damage, and – above all – protecting human lives, health, and property; these are our goals, which can only be achieved with uncompromising quality. At Flamro, we manufacture all of our products in-house and adapt them to various international standards. This includes, for example, solutions certified according to UL 1479/ASTM E814, UL 2079/ASTM E1966, FM 3971, and EN 1366.

The high standards of our FLAMRO® products and systems are achieved through meticulous preliminary testing at our own fire testing facilities in Germany and recognised certification from renowned and accredited testing laboratories. In short: with Flamro, you can trust in "Made in Germany" quality.

Increased safety – through our own research and development

As part of the formidable svt Group of Companies, Flamro stands for innovation. Based on the latest findings of current research, all FLAMRO® products and systems do not only undergo rigorous fire protection tests, but are also constantly further developed. Besides safety, a diverse product range and practical user-friendliness also play an important role.

At Flamro, research and development therefore always go hand in hand in a forward-looking direction. This is why Flamro is now one of the world's major manufacturers in the field of passive structural fire protection. We can offer you both certified standard products and customised fire protection solutions.

With Flamro, you are always on the safe side.

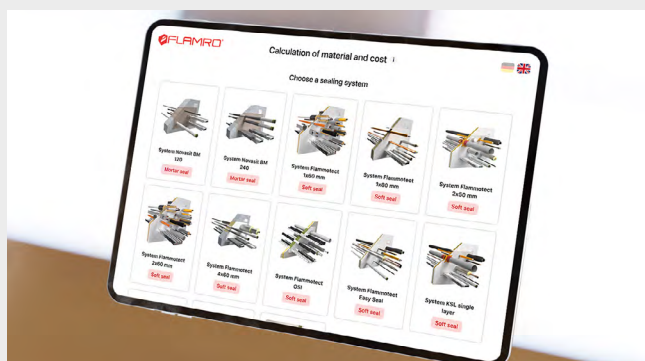
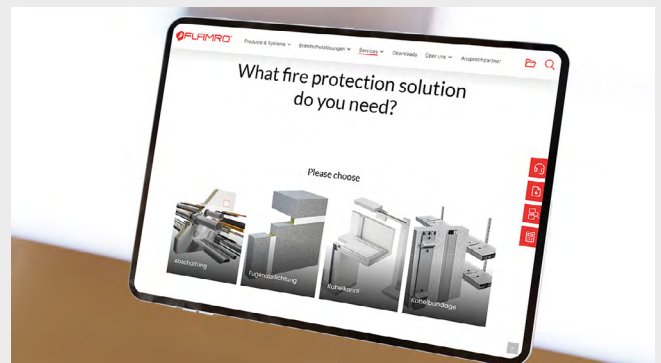
Our Services for you

FLAMRO® is the svt Group's quality brand for products and applications for passive structural fire protection. We offer customised solutions for penetration sealing, cable ducts, cable bandages and coatings as well as practical training for you and your employees. Using our know-how, we will assist you with any questions or issues you may have regarding preventive structural fire protection.

FLAMRO® Product Guide

In just a few clicks, you will quickly find the best passive fire protection solution for your construction project.

The FLAMRO® Product Guide is available at:
flamro.com/eu/services/product-guide



FLAMRO® Calculator

Provide just a few details to find out what material quantities you need to install a FLAMRO® penetration sealing system.

The FLAMRO® Material & Cost Calculator is available at:
calc.flamro.com



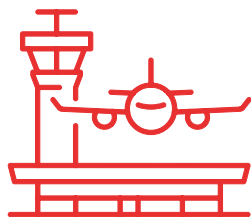
DG-CR 0.7 – Areas of application

Cable systems with a wide range of functionalities and sizes are part of any building. Especially in public buildings, industrial sites and power plants these systems are installed in great numbers – often without cover, on cable support systems, in cable tunnels or behind wall and floor panelling. They are used to supply practically every single room on every floor.

DG-CR 0.7 is a product that is successfully used worldwide to protect cable systems in building construction, industrial plants and offshore facilities. This includes hospitals, railway stations and airports, power plants and electrical substations as well as heavy industry and nuclear facilities.



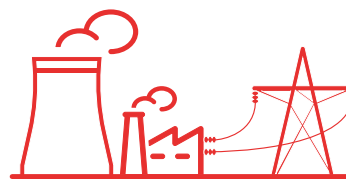
Industrial sites



Infrastructure projects



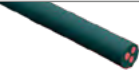


Public buildings



Energy supply & distribution

DG-CR 0.7 is used for wrapping cables and conductors of all types without any limit to the size of the total conductor cross-section of the individual cables. It is possible to apply the bandage to single cables and cable bundles, which can be arranged vertically, horizontally or at an angle. The bandage can also be used to protect cable support systems (trays or ladders). Likewise it is possible to apply it to cables which are freely suspended or directly attached to the building element.

Areas of application

Services		Application
	Electrical , data and telecommunication cables of all types	Without limit to the size of the total conductor cross-section of the individual cables. Installed or arranged vertically, horizontally or at an angle.
	Cable bundles	
	Cable support systems	Non-combustible cable trays or cable ladders with construction material class DIN 4102-A or classes A1 and A2-s1, d0 in accordance with DIN EN 13501-1. Installed or arranged vertically, horizontally or at an angle.

DG-CR 0.7 is always a valuable solution when it takes great effort or when it is not possible at all to clean the cables. With the bandage applied to the cables, cleaning them will not be necessary anymore.

Likewise DG-CR 0.7 is particularly efficient when cables need to be frequently changed. Subsequent installations, removals or substitution of cables is made easy by simply opening the bandage. Special applications such as airless devices will not be necessary.

These and many other benefits make DG-CR 0.7 a highly useful application for many specific requirements and also a perfect alternative to conventional cable coating.

Fire protection for cable systems

Overheating and short circuits may cause electrical cables to combust spontaneously. They can also catch fire due to external circumstances. Since cable sheathing and insulation is generally combustible, the fire may spread along the cables with enormous speed.

Combustion of plastic insulation causes flaming droplets and releases fire gases which in turn can lead to potentially fatal smoke inhalation injuries. Moreover these gases have a highly corrosive effect and can destroy technical equipment and other material. Efficient protection is necessary to keep damage to a minimum.



Comparison of fire damage to cable support systems
(from left to right):

Coating FLAMMOTECT-A,
wrapping with DG-CR 0.7, unprotected cables

DG-CR 0.7 is widely certified and approved for a large scope of applications in various countries and industries.



DNV·GL



DIN

Highlights at a glance

Easy and clean application

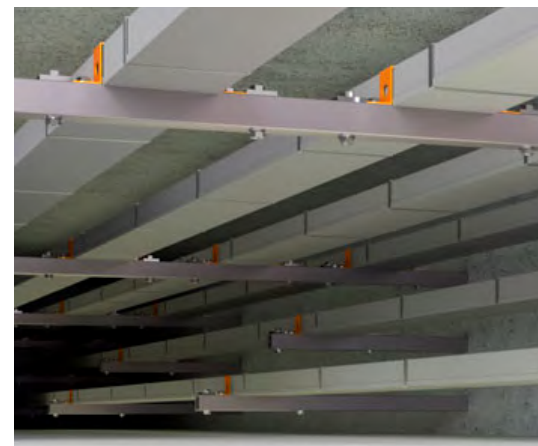
- ✓ No need for time-consuming measures to protect the working environment
- ✓ No prior cleaning of cable systems required
- ✓ Only one workstep necessary – no need to observe drying times
- ✓ Simple application has a positive effect on installation quality and safety – no risk of a coating that might be too thin
- ✓ No need to measure film thickness
- ✓ No need for special equipment such as airless devices
- ✓ Subsequent installation, removal or change of cables made easy by simply opening the bandage

High resilience

- ✓ High resistance to weathering – suitable for indoor and outdoor use
- ✓ Resistance to moisture, freeze-thaw cycles, UV radiation as well as various oils and chemicals

High quality fire protection product – Made in Germany

- ✓ Solvent-free, halogen-free
- ✓ Free of asbestos, lead, mercury, hexavalent chromium and polybrominated biphenyl ether
- ✓ Does not release toxic fumes
- ✓ Non-hazardous material in acc. with the German Ordinance on Hazardous Substances (GefStoffV)
- ✓ Supervised by national and international accredited certification bodies



References

Tanjong Kiderong Power Plant Malaysia

Project: 400 MW combined cycle gas turbine plant
Product: DG-CR 0.7 cable bandage
Application: Strengthening of high and medium voltage cables
Standard: IEC 60332-3-22



Exchange 106 Tower, Kuala Lumpur Malaysia

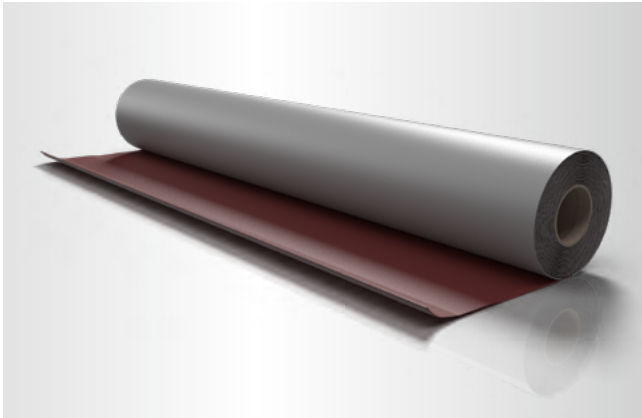
Project: Construction of a skyscraper with 106 floors
Product: DG-CR 0.7 cable bandage
Application: Strengthening of high and medium voltage cables
as well as control cables
Standard: IEC 60332-3-22



DG-CR 0.7 – Product data, tests and certificates

The intumescent material DG-CR 0.7 is based on expandable graphite. When exposed to reaction temperature (starting from 150 °C) it will expand with high pressure and substantially increase its volume. Additional components form an insulating layer, which will wrap itself tightly around the cables, seal the cross section of the support system and extinguish the fire.

Product data



Delivery and packaging






Product name	Item number	Form of delivery	Rolls/pallet	Net weight/pallet
DG-CR 0.7	01260201	20 m roll (22 m ²), width 110 cm	22 pcs.	572 kg
Metal strap	01234000	100 m roll, width 15 mm, thickness 0.2 mm	–	–
Locking clamp	01234100	1000 pcs. box	–	–

- Store indoors in a dry place.
- Horizontal rolls must be protected from pressure loads.
- Unlimited storage is possible as long as appropriate conditions are observed.

Basic physical and chemical properties

Colour	grey outside / red inside
Material	fabric coated on the inside with intumescent layer
Nominal thickness	0.7 mm
Weight per unit area	approx. 700 – 950 g/m ²
Reaction temperature	from approx. 150 °C
Expansion rate	15.5 to 22.0 times (tested on 2 mm thick samples at 550 °C for 30 min. with superimposed load)
Expansion pressure	1.00 N/mm ² to 1.65 N/mm ²

Design variants

	Wrapping for entire cable support structures		Wrapping for cables in support structures
	Wrapping for cable systems placed directly on solid components		Wrapping for cable systems fastened with clamps or on brackets
	Wrapping for freely suspended cable systems		

Fire protection and reaction to fire

Reaction to fire	Class B-s1, d0	<ul style="list-style-type: none"> • in acc. with EN 13501-1
Flame spread	Cat. A: 2018 für 120 min.	<ul style="list-style-type: none"> • in acc. with IEC 60332-3-22 (DNV GL Certificate No. TAE00003BR)
	Cat. A: 2018 für 120 min.	<ul style="list-style-type: none"> • GOST IEC 60332-3-22
Maintenance of functional integrity	Tests up to 180 min. for various cable types and voltage ranges.	<ul style="list-style-type: none"> • in acc. with IEC 60331-21
Smoke density	$D_s(4) = 12$, VOF4 = 31 min., $D_s(\max) = 18$	<ul style="list-style-type: none"> • in acc. with DIN EN ISO 5659-2
Smoke toxicity	CITG = 0.20 (Conventional Index of Toxicity) No HCl, HF, HBr or HCN emission	<ul style="list-style-type: none"> • EN 45545-2 Annex C and ISO 5659-2

Resistances

Ageing resistance	Ageing does not have an effect on the general properties of DG-CR 0.7	
	Artificial ageing without impairment Indoor/outdoor areas: extreme temperature changing from +71 °C to -40 °C, UV radiation and humidity	<ul style="list-style-type: none"> • in acc. with FM 3971 • in acc. with EOTA TR024
	Long-term ageing without impairment Indoor areas: the material was stored for 10 years in an indoor area without any resulting changes in its reaction to fire (MPA Braunschweig (notified body 0761), report no. 3224/821/11).	
Weather resistance	Use category X (product suitable for use in areas exposed to weathering).	<ul style="list-style-type: none"> • in acc. with EOTA TR024
Chemical resistance	Exposure to solvents (butyl acetate, butanol, white spirit and heating oil). Exposure to subsequently applied coatings (acrylic dispersions, alkyd resins, polyurethane acrylic and epoxy resins).	<ul style="list-style-type: none"> • in acc. with EOTA TR024

Installation steps



Measure the cable support system and cut the bandage to fit support areas. Allow for the bandage overlapping by ≥ 50 mm in longitudinal and transverse directions.



Wrap the bandage strips with the coated side facing inwards around the support system in the supported areas and restrain them temporarily with duct tape.



Wrap the bandage around protruding cables.



Wrap the bandage around all other areas.



Secure the bandage with metal straps against slipping. Use at least two straps per bandage strip.



Clean the workplace and attach a label if required.

Installation video

Watch the full installation **video** for DG-CR 0.7 and other fire protection systems.



We welcome your inquiries!

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