PYRO-SAFE®

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Intumescent Cable Bandage

svt – Your Full-Service Provider for Passive Structural Fire Protection

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The svt Group of Companies has been one of the leading full-service providers in the area of passive structural fire protection for more than 50 years. We offer an extensive portfolio of state-of-the-art fire protection products and applications worldwide. This includes both simple penetration sealing solutions and complex mixed penetration seals as well as solutions for fire protection joints or protecting entire cable systems.

Our own research & development, production and furnaces at four locations as well as international branches and a partner network covering 50 countries make comprehensive support possible on the basis of certified fire prevention solutions, which can be tailored to your individual market requirements if required.

This makes us a powerful partner for your success!

In-House **Research**

In-House **Production**

svt
Products
GmbH

Source: FeuerTrutz Network GmbH

In-House **Fire Testing**

In-House **Development**

The svt Product Guide

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Find the right fire protection solution quickly and directly online.
With the svt Product Guide, we offer you a practical tool to simplify the complex decision-making process relating to passive structural fire protection and guide you step by step to the right fire protection system for your individual requirements

You can find the svt Product Guide at: **www.svt-global.com/de/productguide**

Contents

Fire Protection on Cable Systems

Cable systems of the most diverse orientations and dimensions can be found in every building today. These systems are numerous in public buildings, industrial plants, power stations etc., depending on their use. Cable systems run across all floors and usually supply every room. They often lie open behind floor and wall panelling on cable support systems.

They are essentially used for the distribution and networking of energy supply as well as data and communication technology. In addition to cables for pure power supply, it is precisely the cables for information and communication technology that have greatly increased in number. A multitude of different material compositions come together here due to the cable structure. Many insulations and cable sheaths are combustible.

From a fire protection point of view, unprotected cable systems are a source of danger that should not be underestimated. In case of fire, electrical cables and cable support structures can spread the fire like wildfire and lead to uncontrolled spreading.

The burning of plastic cable insulation causes burning dripping and also the release of toxic fire gases that can lead to life-threatening smoke poisoning. These fumes can be highly corrosive and destructive to technical systems and other materials.

In order to exclude fire hazards, cable systems can be effectively reinforced with a fire protection bandage. In many countries, such measures are mandatory.

Functional Principle of the PYRO-SAFE®

PYRO-SAFE® DG-CR 0.7 is an intumescent sealing material based on expandable graphite that works on the following princi-ple: Once the reaction temperature (approx. 150 °C) is reached, the material foams up and swells with high pressure to many times its original volume. The active ingredients of the intumescent cause an insulation layer to form that closes tightly around the cables and reliably seals off the perimeter of the cable support structure. The fire is thus starved of oxygen and extinguishes.
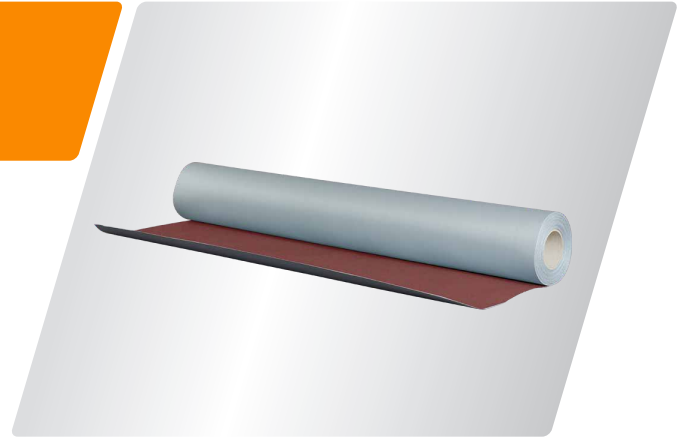
• Chemically triggered insulation layer formation

• Protective layer (foam-like, carbon matrix)

PYRO-SAFE®

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PYRO-SAFE® is a flexible building material made of glass filament fabric. Its outside surface features a grey PU coating whe-reas its inside surface is designed with an intumescent coating. The product offers many benefits: It is not only flexible, but also resistant to weathering and UV radiation. When exposed to thermal load from a fire, its inside surface forms a heat-insulating foam layer that fills the cavity between cables and the fabric, thus confining fire spread.

Product Data

Product Features

Colour	Grey outside surface, red inside surface
Type of material	Fabric designed with an intumescent-coated inside surface
Building material class	B-s1,d0 in accordance with EN 13501-1
Nominal thickness	0.7 mm
Reaction temperature	Starting at approx. 150 °C
Foaming factor	15.5-fold ≤ fex ≤ 22.0-fold (tested on samples of 2 mm thickness each, at a temperature of 550 °C, for a period of 30 minutes, with a top load)
Expansion pressure	$1.00 \text{ N/mm}^2 \le p_{ex} \le 1.65 \text{ N/mm}^2$
Weight per unit area	700 - 950 g/m²
Application (at min. + 5 °C / < 85% relative air humidity)	With a cutting tool, e.g. a scissor or a cutter knife
Storage	• To be stored in dry indoor areas • Horizontally stored rolls must be protected against compressive loads

Delivery and Packaging

Length	Roll per 20 m (22 m²)
Fabric width	1100 mm
Article No.	01260201

Your Benefits

Easy to Use for a Wide Range of Applications

✓ Fast foaming action – high expansion pressure

✓ No pre-cleaning of cable support structures required

✓ Convenient retrofitting without any need for reworking or post-treatment

✓ Application with standard tools – no special equipment required

✓ No need for layer thickness measurement

High Product Resistance

✓ Resistant to weathering – suitable for indoor and outdoor use

✓ Resistant 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

✓ Application does not require explosion protection measures to be taken

✓ Non-hazardous material according to the German Ordinance on Hazardous Substances (GefStoffV)

Application

Approvals and Tests

IEC 60332-3-22

DIN EN 60332-3-22 / VDE 0482-332-3-22

Testing of flame spread: Cat. A: 2018 for 120 min.
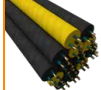DNV GL Certificate No. TAE00003BR

DNV·GL

IEC 60331-21

DIN IEC 60331-21 / VDE 0482-331-21:2017-06

Testing of the functional integrity: Successfully completed various tests for up to 60 minutes on different cable types and voltage ranges. Further information on request.

Fields of Application

Media lines		Application
	Electrical cables and conductors of all types	Without limiting the size of the total conductor cross-section of the single cables. Vertical, horizontal or diagonally laid or arranged.
	Cable bundles	
	Cable support structures	Non-combustible cable trays or cable ladders with construction material class DIN 4102-A or classes A1 and A2-s1, d0 according to DIN EN 13501-1 Installed or arranged vertically, horizontally or at an angle.

Fire protection fabric PYRO-SAFE® designed for wrap-sealing electrical lines (cables) and line systems.
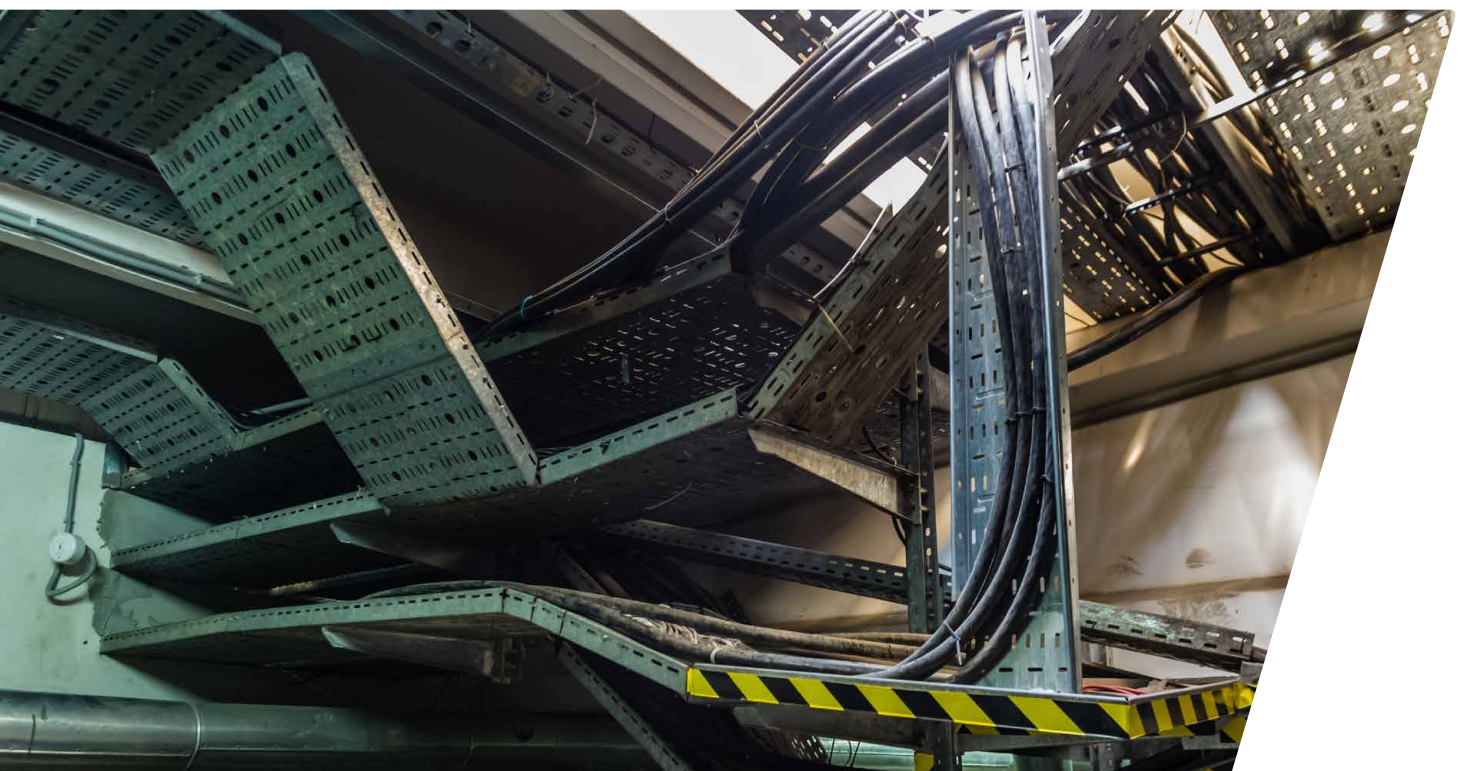
Design Regulations and Notes

Design regulations:

✓ Remove the protective film from the coated side (red).

✓ Cut pieces of the required size from the PYRO-SAFE® fire protection fabric and wrap them around the cable system so that it is completely enveloped. In doing so, make sure that the red side (the coated side which will foam up in the event of a fire) faces in towards the cables.

✓ Apply the bandage such that the individual pieces cut from the PYRO-SAFE® fire protection fabric overlap by ≥ 50 mm each at the longitudinal and transverse joints. In order to allow for subsequent retrofitting, remember to provide for larger lengthwise overlaps.

✓ Fix the fire protection fabric in place using metal fasteners (metal strips, wire or staples are suitable fasteners) at a distance of no more than 500 mm from each other. For one-sided wrap-sealing, metal bars and screws can also be used to fix the fire protection fabric to solid mineral walls and floors.

✓ Arrange the fire protection fabric tightly around the cables or cable bundles and around the cable trays or cable ladders (if applicable, also include their respective connection areas, e.g. suspensions or mounts) so that no open joints, gaps nor any other orifices are left.

✓ If cantilever arms, brackets or suspensions are used to support cable trays, be sure to prepare the cable trays in these supported areas by applying to them cut strips of the fire protection fabric (each strip with a width of no less than 100 mm) and then fixing them in place with e.g. wire or metal brackets; these cut strips serve as a backing for the large-surface fire protection wrap-seal fabric to be applied in the next step.

✓ When opening up the PYRO-SAFE® fire protection wrap at a later point in time, either for retrofit purposes or for adjusting the configuration of penetrants, take care to not damage the fire protection fabric. After completing the retro-fitting or adjustment process, be sure to restore the functional integrity of the fire protection fabric in accordance with the prescribed installation requirements.

Notes:

The installation instructions are intended exclusively for persons trained in fire protection. Read through these installation instructions in full before starting work. Pay particular attention to the following safety instructions. The approval holder accepts no liability for damage caused by non-observance of these instructions. Pictorial representations serve only as examples. Assembly results may differ visually.

Safety Notice

Personal protective equipment:

Body protection
Wear protective work clothing and non-slip shoes

Installation Steps

Wrap-Sealing of Cable Support Structures

If cantilever arms, brackets or suspensions are used to cable support structures, be sure to prepare the cable trays in these supported areas by applying to them cut strips of the fire protection fabric (each strip with a width of no less than 100 mm) and then fixing them in place with e.g. wire or metal brackets; these cut strips serve as a backing for the large-surface fire protection wrap-seal fabric to be applied in the next step.

Note:

Length ≥ 2 x tray width, 2 x side height and 50 mm overlap
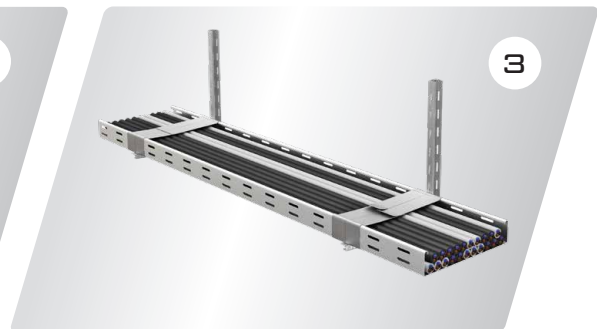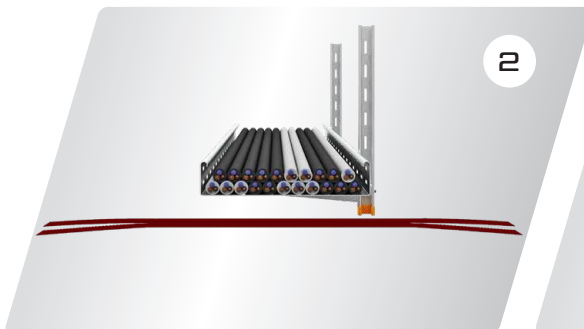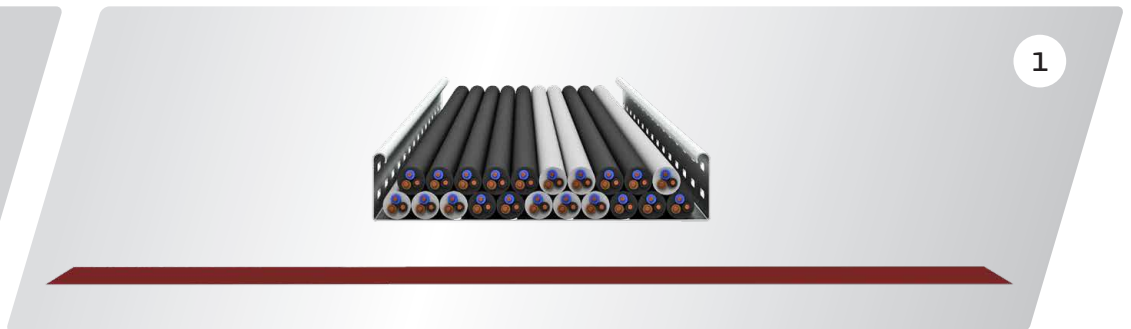
1. Remove the protective film from the coated side. Cut out strips for backing (each strip with a width of at least 100 mm).

2. Slit the strips lengthwise as required

3. Fit the strips tightly in place (with the coated side facing inwards).

Wrap-Sealing of Cable Support Structures

Further cut pieces of the fire protection fabric must be applied to all further tray areas over their entire length in such a way that they overlap with the backing strips by at least 50 mm.

Note:
Length ≥ 2 x tray width, 2 x side height and 50 mm overlap
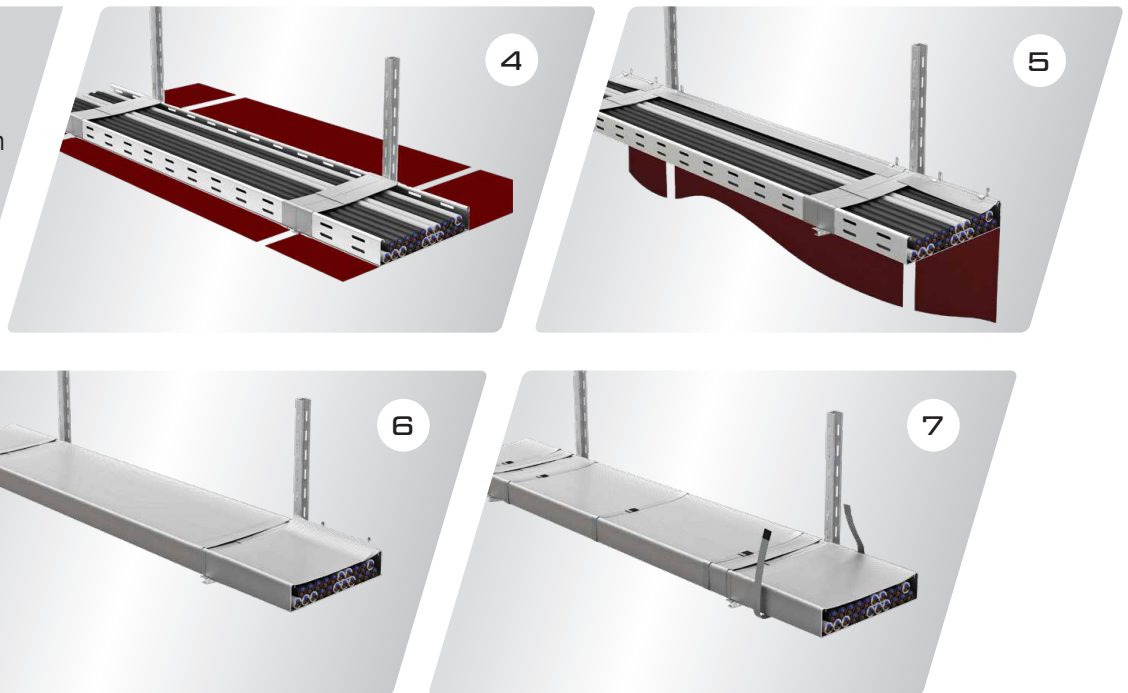
4. Remove the protective film from the coated side. Cut strips as required. Apply the strips with 50 mm overlap to the backing (with the coated side facing inwards).
5. For ease of installation, fix the fire protection fabric with clamps to the cable support structures.
6. Fold the free end of the fire protection fabric over the cable tray and fix it in place circumferentially with steel bands/wires at a distance of ≤ 500 mm from each other (at least twice for each fabric section). The lengthwise overlap must be ≥ 50 mm.
7. Fix the fabric in place with steel band / wire.

Installation Steps

Wrap-Sealing of Cables Routed in Trays

The fire protection fabric must be completely wrapped around the cable lines. The longitudinal and transversal joints of the fire protection fabric must overlap by at least 50 mm. The bandage must be fixed in place with metal tightening straps, wire or staples to be arranged at a distance of ≤ 500 mm from each other.

Note:
Length ≥ 2 x tray width, 2 x side height and 50 mm overlap
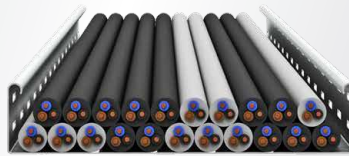
1. Remove the protective film from the coated side. Cut strips as required and wrap them completely around the cable lines (with the coated side facing inwards).

2. Longitudinal and transversal joints must overlap by no less than a 50 mm.

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

Cable Systems – Mounted Directly to Solid Structural Elements

Cable systems attached to solid mineral substrates can be wrap-sealed with cut pieces from fire protection fabric PYRO-SAFE® DG-CR 0.7 and by means of rails screwed into the solid structural element.
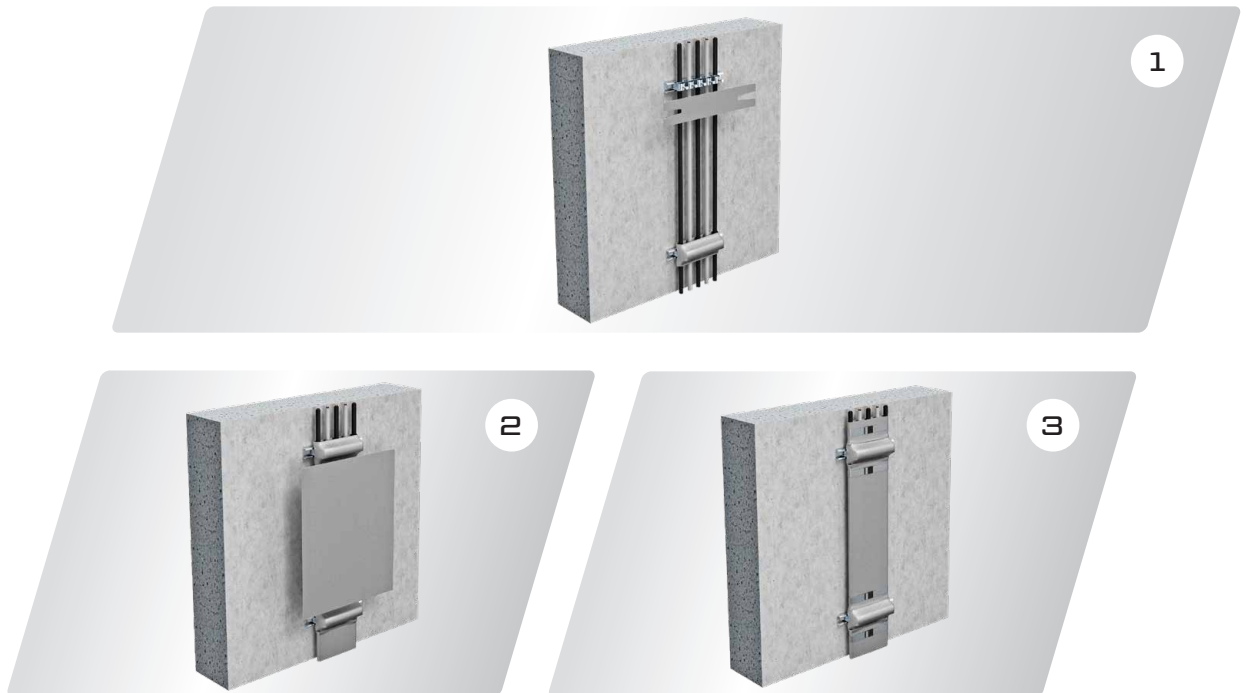

1. Remove the protective film from the coated side. Cut strips to the required size and place these onto the cables in close contact with the solid structural component with the coated side facing inwards.

2. Use metal rails to attach the fire protection fabric to the solid structural element (with the coated side facing inwards).

3. Arrange the next layer of strips with overlaps of ≥ 50 mm.

Installation Steps

## Cable Systems - Fixed with Clips or Mounted on Brackets

Vertical cable systems are usually mounted to brackets or profile rails by means of clips. It may be agreed with the construction owners/builders in charge to temporarily remove some of the clips in order to arrange, underneath the clip around the cabling, a backing strip made of fire protection fabric. Once the backing strip has been fixed in place, the clip must be screwed back tightly as prescribed. The cable must be bandaged with a ≥ 50 mm overlap in the transversal and longitudinal joint areas.

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

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

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

Cable Inlets and Outlets

Where cables are led into or out of the fire protection wrapping, they must be encased in the cable bandage over a minimum length of 300 mm, subject to the proviso that no further fire protection requirements must be met for these cables.
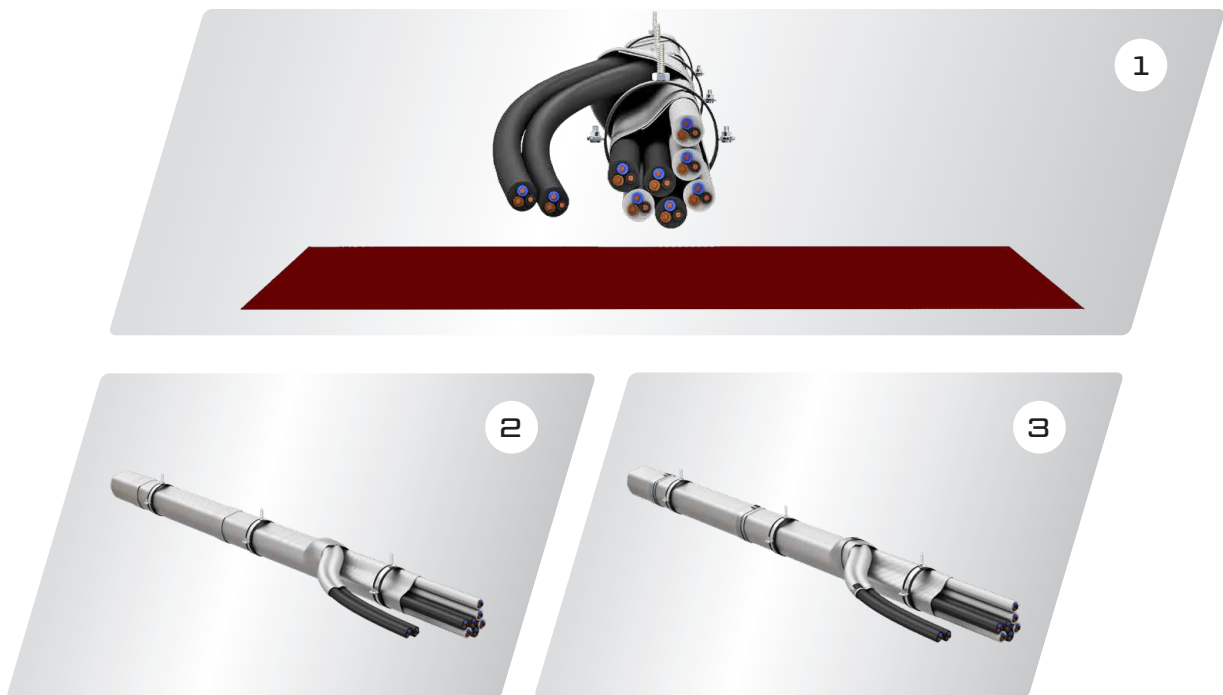
1. Remove the protective film from the coated side. Cut strips and insert them with an overlap of ≥ 50 mm into the tray wrap.

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

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

Please contact us for further information:

✉ sales@tgroup.com.au   📞 1800 888 174

Protect your values.