

PYROWRAP® Wet FSB-WLS cable bandage
PYROWRAP® Wet FSB-WB cable bandage

Mounting instructions



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1 About these instructions

1.1 Target group

These instructions are aimed at installation engineers trained in fire protection and charged with the installation of the PYROWRAP® Wet FSB cable bandage.

1.2 Relevance of these instructions

- These instructions are based on the standards valid at the time of compilation (July 2017).
- All the documents supplied with the product must be stored in an easily accessible location, so as to be available when information is required.
- We will not accept any warranty claims for damage caused through non-observance of these instructions.
- Any images are intended merely as examples. Mounting results may look different.
- In these instructions, cables and lines are referred to simply as cables.
- To find out more about planning and mounting the product, we recommend a comprehensive training course.

1.3 Types of warning information



Type of risk!

Shows a possibly risky situation. If the situation is not avoided, then light or minor injury may result.

Note! *Indicates important information or assistance.*

1.4 Correct use

The PYROWRAP® Wet FSB cable bandage is a fire protection mesh to surround electrical cable or cable systems.

If there is a fire on the outside, the PYROWRAP® Wet FSB cable bandage fulfils the requirements for flame-retardant materials (material class B1 to DIN 4102) and low smoke development.

If there is a case of spontaneous ignition of the electrical cables and cable systems through a short-circuit or overheating, the PYROWRAP® Wet FSB cable bandage prevents the spread and creation of the fire.

The PYROWRAP® Wet FSB cable bandage must always be installed between components closing off rooms.

The system is not designed for any other purpose than the one described here. If the system is installed and used for another purpose, any liability, warranty or damage claims shall be rendered null and void.

1.5 Improper use

The PYROWRAP® Wet FSB cable bandage must not be run through openings in neighbouring components. These openings must be closed off with approved cable insulation.

1.6 Applicable documents

- Declaration of conformity

- Safety data sheet "SDBI_material to form an insulating layer_FSB_EN"
- Declaration of performance 2013/05-CPR/008-DR in the appropriate national language

1.7 Basic standards and regulations

- EN 13501-2:2010-02
- EN 13501-1:2007
- DIN 4102-1/2
- EN 1366-3: 2009-07
- ETAG 026-2
- EOT A TR 024

1.8 General safety information

Observe the following general safety information on handling the system:

- When creating the cable bandage in the European Union (EU), the Technical Approvals of Deutsches Institut für Bautechnik apply, see documents
„2.2.1 PYROWRAP® Wet FSB WLS cable bandage“ on page 6 and
„2.2.2 PYROWRAP® Wet FSB WB cable bandage“ on page 7.
- All the technical specifications such as the approved installations and their version, etc. must be complied with.
- The fastening of the cables to the adjacent component on both sides must take place according to the appropriate regulations, meaning that an additional mechanical load of the insulation cannot occur if there is a fire.
- All the appropriate regulations and technical regulations of other units, in particular those for electrical engineering, must be complied with.
- Observe the safety data sheets of the products, which can be obtained online at www.obo-bettermann.com.

2 Product description PYROWRAP® Wet FSB

2.1 Basic principles

The PYROWRAP® Wet FSB-WLS cable bandage is the ideal solution to prevent fire spread through large cable bundles or cable support systems within the fire sections.

The mesh possesses a fire protection coating, which stops a fire in its tracks at an early stage, e.g. triggered by a short-circuit. If there is fire coming in from the outside, the material is not involved in the course of the fire, effectively preventing the spread of the fire, both in vertical and horizontal directions.

If there is a fire, the fire protection coating foams up and closes up the cables to the non-combustible parts of the cables. This safely prevents the spread of fire and smoke, should a fire occur.

The PYROWRAP® Wet FSB cable bandage is offered in two versions.

- PYROWRAP® Wet FSB WLS cable bandage
- PYROWRAP® Wet FSB WB cable bandage

2.2 System components

The outer side of the PYROWRAP® Wet FSB is made of glass filament mesh and the inner side has a coating, which foams up when subjected to heat.

2.2.1 PYROWRAP® Wet FSB WLS cable bandage

Note! *The surface of the fire protection mesh may not be given additional coatings, paints or the like.*

The PYROWRAP® Wet FSB WLS cable bandage is approved for interior areas.

The cables and cable systems surrounded with the fire protection mesh fulfil the requirements for cables with an improved fire behaviour and can be used in building Classes 1 to 3, whose units of use do not exceed an area of 200 m² each and which are not special buildings.

Note! *Use in emergency and escape routes of building Classes 4 and 5 and in special buildings may require the approval of the construction supervision, e.g. through a fire protection concept.*

Proof of application	Application approval of DIBt Berlin Material approval of DIBt Berlin
Documents	Z-56.217-3600 Z-19.11-2183
Prevention of fire spread	Min. 90 minutes
Material properties	Exterior grey (glass filament mesh), interior anthracite materials class C-s2,d0 according to EN 13501-1 – hardly flammable

2.2.2 PYROWRAP® Wet FSB WB cable bandage

The PYROWRAP® Wet FSB WB cable bandage is approved for interior and exterior areas. It can be used in aggressive environments, for example in offshore plants and power stations. It is resistant to various chemicals and oils.

Note! *The use of photovoltaic cables over fire walls may require the approval of the local construction authorities. A positive special report is available.*

Proof of application	IEC test report of the iBMB MPA materials testing institute, Braunschweig National and European material approval of DIBt Berlin
Documents	IEC-3630/081/10-AR Z-19.11-1971 ETA-13/0158
Prevention of fire spread	Min. 120 minutes
Material properties	Exterior grey, interior red Materials class B-s1, d0 to EN 13501-1 – hardly flammable Weather-resistant, resistant to various chemicals and oils

2.3 Accessories

Depending on national requirements, besides the wrapped cables and/or cable support systems, a completed identification plate must be mounted.

3 Installation regulations PYROWRAP® Wet FSB

3.1 General information

The PYROWRAP® Wet FSB cable bandage may be mounted on:

- Individual cables and cable bundles or
- Individual cables and cable bundles on non-combustible cable trays and ladders

Note! *The cable bandage may not be used with hollow conductor cables.*

The cable trays and ladders must meet the material class DIN 4102-A2 or classes A1 and A2-s1, d0 according to DIN EN 13501-11.

Cables can be routed vertically, horizontally or slanting.

The arrangement can be freely suspended or on solid, mineral substrates.

The size of the cables or cable bundles or their overall conductor cross-section, as well as the size of the cable support structures, must be selected according to the standard requirements.

3.1.1 Fastening

The PYROWRAP® Wet FSB cable bandage must be fastened using suitable metallic fastening agents, e.g. tightening straps, clamps or wire. The fastening spacings may be a maximum of 0.5 m.

3.2 Design regulations and variants

The cut-outs of the fire protection mesh must be wound around the cable system in such a way that it is completely surrounded. Avoid joints, gaps or other openings.

The foaming side of the coating must always point towards the cables.

During jacketing of the cable system, the individual cut-outs of the fire protection mesh must overlap the straight and transverse joints by ≥ 50 mm.

The fire protection mesh must be fixed using metallic fastening agents at a distance of maximum 500 mm.

With a single-sided cover, the fire protection mesh may also be fastened over metallic rails and screws on solid, mineral walls and ceilings.

In the area of brackets, panels or suspensions, cut-out strips of at least 100 mm width are arranged on the cable routes in advance as a backing to the fire protection mesh and should be fixed with wire or metal staples, for example.

If cable trays or ladders are not fully filled and if the distance of the fire protection mesh to the cable surface > 30 mm, then the cables must additionally be covered with an intermediate layer of fire protection mesh.

Each created variant of the cable bandage must be labelled permanently with an identification plate. The plate must be fastened to a solid component next to the cable bandage. With multiple cable bandages created at the same time in an area between components closing off a room, one identification plate is sufficient.

3.2.1 Connections to neighbouring components

Routing must be between components closing off a room. The fire protection mesh must bluntly abut the appropriate component. There may be no joints or gaps.

3.2.2 Wall and ceiling mounting

The fire protection mesh may be attached to walls or ceilings. The walls or ceilings must fulfil at least the requirements for fire-retardant (30 minutes), highly fire-retardant (60 minutes) or fire-resistant (90 minutes) components, in accordance with "Construction Rules List A Part 1, Appendix 0.1ff." in the appropriate valid version.

3.2.3 Cable entrances/cable exits

Note! *If the cable bandage is used in sections requiring flame-retardant materials (necessary corridors in buildings of building Classes 1 to 3), no cables may be run out of the fire protection jacketing.*

If cables are run out of the fire protection jacketing, then they must be surrounded with the cable bandage over a minimum length of 300 mm.

3.3 Declaration of agreement

The tradesperson who installed the item(s) relating to the approval must compile a confirmation of agreement for each construction project. With the form, they confirm that the work they have carried out meets the regulations of the general construction approval. This confirmation must be given to the builder for forwarding, if necessary, to the responsible construction supervisory board.

3.4 Regulations for use, maintenance and retrofitting

3.4.1 Use and maintenance

In each version, the contractor must indicate in writing to the client that the fire protection action of the approved item is only guaranteed at length when it is always kept in the proper state.

3.4.2 Retrofitting

Subsequent changes to the cable assignment may be carried out.

If the cable bandage is opened for retrofitting or changing the assignment, then the fire protection mesh may not be damaged.

After an assignment change or retrofitting, the correct state of the cable bandage must be restored.

4 Mounting the cable bandage

Depending on local conditions, there are three options for mounting the cable bandage:

- Mounting with metal rails directly on solid walls and ceilings
- Complete encasement of the cables in a cable route
- Complete encasement of a cable route without lid



Personal protective equipment

Although no acute toxicity is known, the following precautionary measures must be observed:

Wear protective clothing.

Before and after work, grease exposed parts of the body with skin protection cream.

After completing work, wash uncovered parts of the body with soap and water. Do not eat, drink or smoke during work.

If ingested, obtain medical advice immediately.

When creating the cable bandages, the approvals and the appropriate national regulations are of primary importance.

Recommended tools

- Tape measure
- Steel bracket
- Cutter/shears/metal cutters
- Wire cutters/spring chuck

4.1 Mounting the cable bandage with metal rails

If the cables are mounted directly on the wall or under the ceiling with single clips, then the cable bandage can be mounted directly on the wall or ceiling with metal rails.

- The metal rails must be screwed on to the wall or ceiling at a distance of 500 mm.
- The cable bandage must be mounted with an overlap of 50 mm.

Note! *If the cable bandage is fastened with metal rails, then the first metal rail must be shortened by the overlap area, in order to create the overlap. Only the last metal rail ends flush to the cable bandage.*

Length of cable bandage \geq route width + 2 x route height + 2 x width of the metal rail

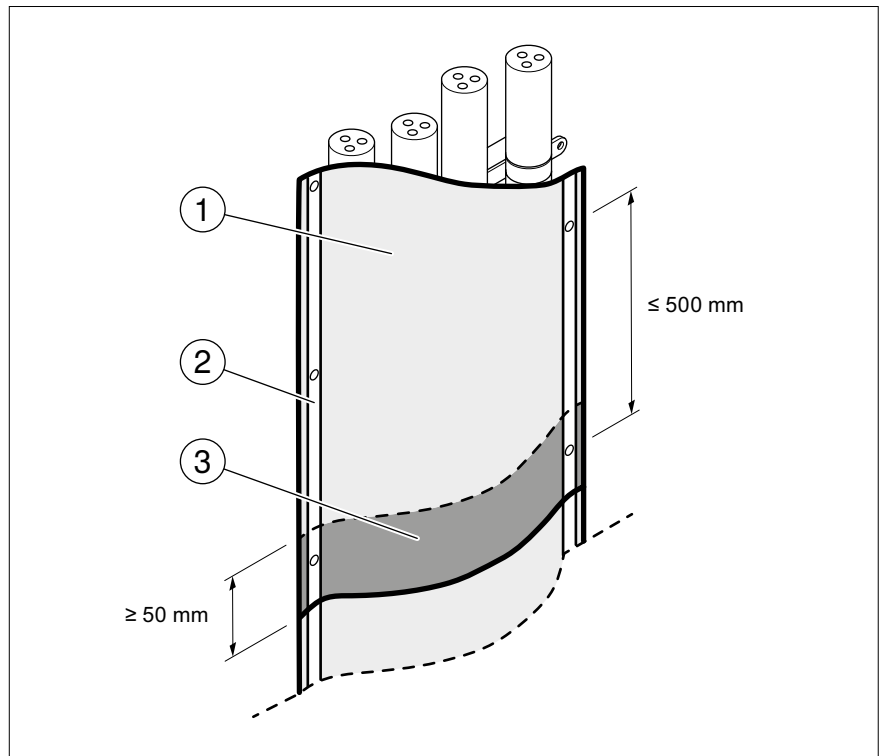


Figure 1: Wall and ceiling mounting of fire protection mesh

- ① Cable bandage
- ② Metal rail
- ③ Overlapping of the cable bandage \geq 50 mm

- Remove the protective film from the coated side of the cable bandage.
- Cut the cable bandage to the right length.
- Lay the first cable bandage tightly around the cables (coated side pointing towards the cables) and screw it to the wall at a distance of 500 mm, leaving the overlap area free.
- Apply the next cable bandage with an overlap and screw it to the wall with metal rails.
- Screw on the last cable bandage with metal rails up to the wall end.

4.2 Mounting the cable bandage in cable routes

With correct planning, the cable bandage can also be applied within the cable tray.

Length of the cable bandage $\geq 2 \times$ section width + $2 \times$ section height + 50 mm overlap

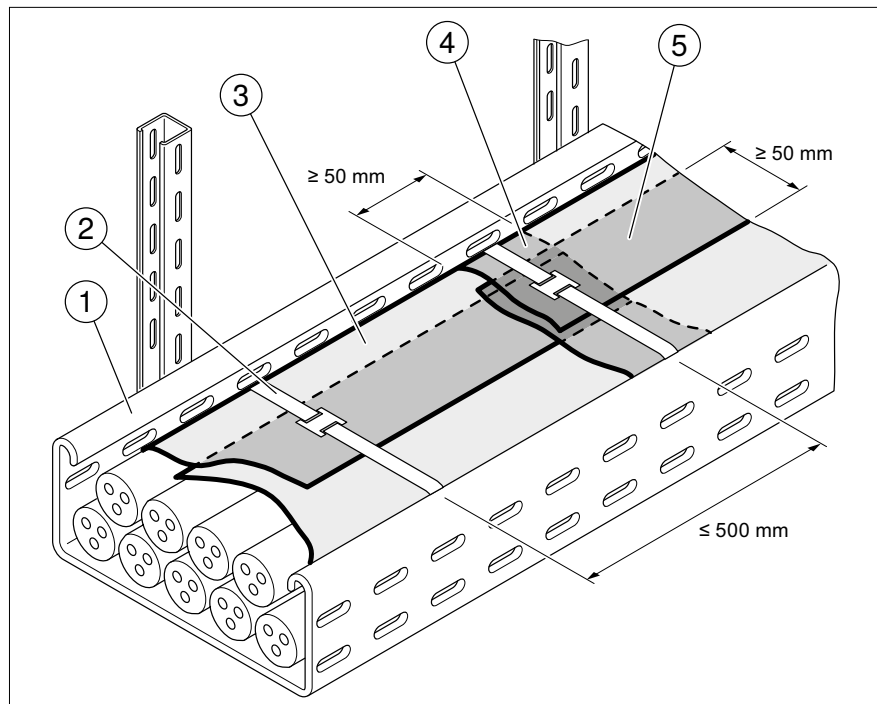


Figure 2: Cable bandage in cable route

- ① Cable route
- ② Fixing with steel strip at a distance ≤ 500 mm
- ③ Cable bandage
- ④ Lengthwise overlap ≥ 50 mm
- ⑤ Transverse overlap ≥ 50 mm

- Remove the protective film from the coated side of the cable bandage.
- Insert steel strip/wire in the cable tray as a fixing.
- Cut the cable bandage to the right length.
- Insert the cable bandage in the cable tray with lengthwise overlaps (coated side pointing towards the cables).
- Route the cables.
- Overlay the ends of the cable bandage tightly.
- Fix the cable bandage with steel strip/wire.

4.3 Mounting the cable bandage around cable routes

If cable bandages are run around cable trays or ladders, then backings must be mounted first in the area of brackets, panels or suspensions. Cut out the backings in such a way that they are recessed for cable ladders and cable tray brackets during winding but are still tight against them.

Length of the cable bandage/backing $\geq 2 \times$ section width + $2 \times$ section height + 50 mm overlap

Wide backing $\geq 2 \times 50$ mm overlap

4.3.1 Backings

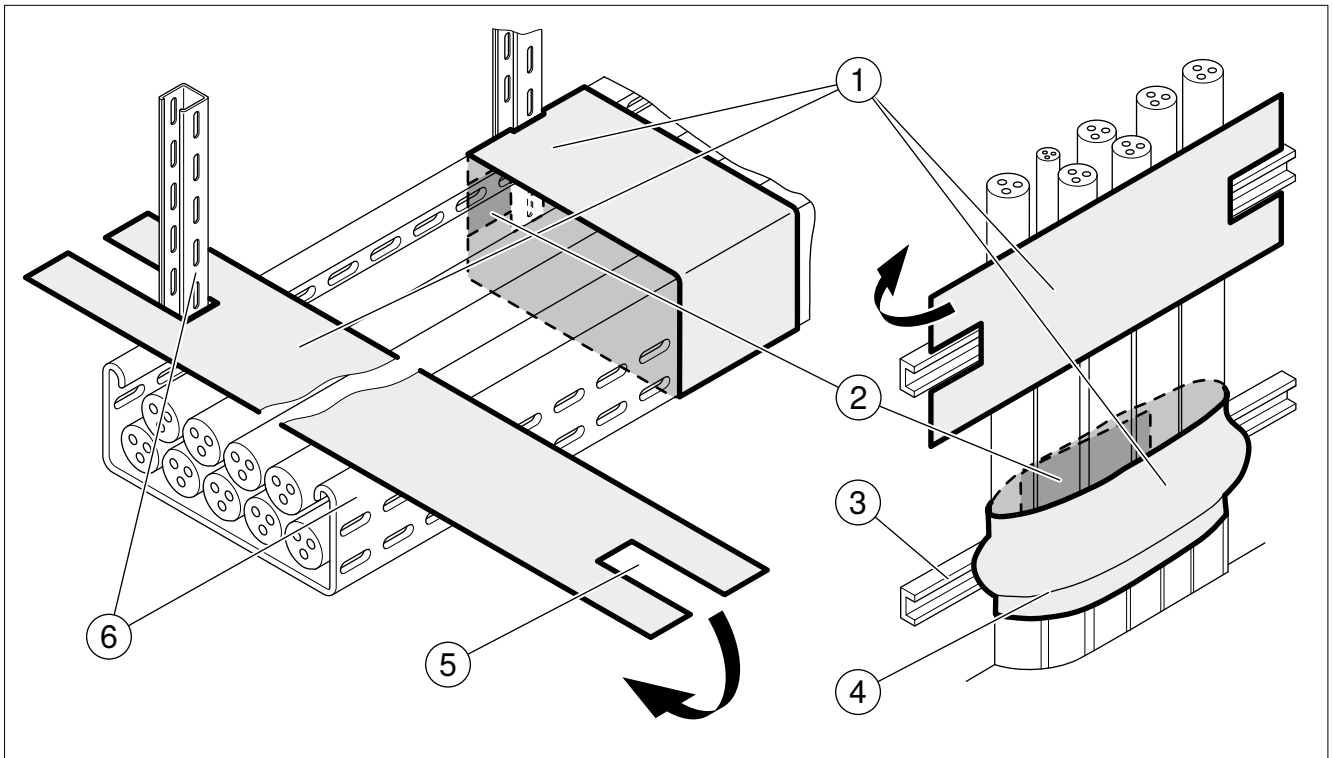


Figure 3: Backing on cable duct and ladders

- ① Backing
- ② Overlap of ≥ 50 mm cable tray and ladder
- ③ Cable ladder with cable clips
- ④ Fixing with steel wire
- ⑤ Cut-out
- ⑥ Cable tray with U support

- Remove the protective film from the coated side of the fire protection mesh.
- Cut the cable bandage for the backing.
- Apply the backing tightly (coated side towards the cables).
- If necessary, fix the backing.

4.3.2 Cable bandages and cable routes

All other route areas must be arranged along the entire length with cut-outs of the fire protection mesh with an overlap of at least 50 mm to the backing strips.

If cable trays or ladders are not full, meaning that the distance of the fire protection mesh to the cable surface ≥ 30 mm, an intermediate layer of the fire protection mesh must be placed on the cable surface. The intermediate layer must be fixed in the case of non-horizontal routing.

Length of the cable bandage $\geq 2 \times$ section width $+ 2 \times$ section height $+ 50$ mm overlap

Intermediate layer

Length of the intermediate layer \geq route width $+ 2 \times$ height of the cable assignment

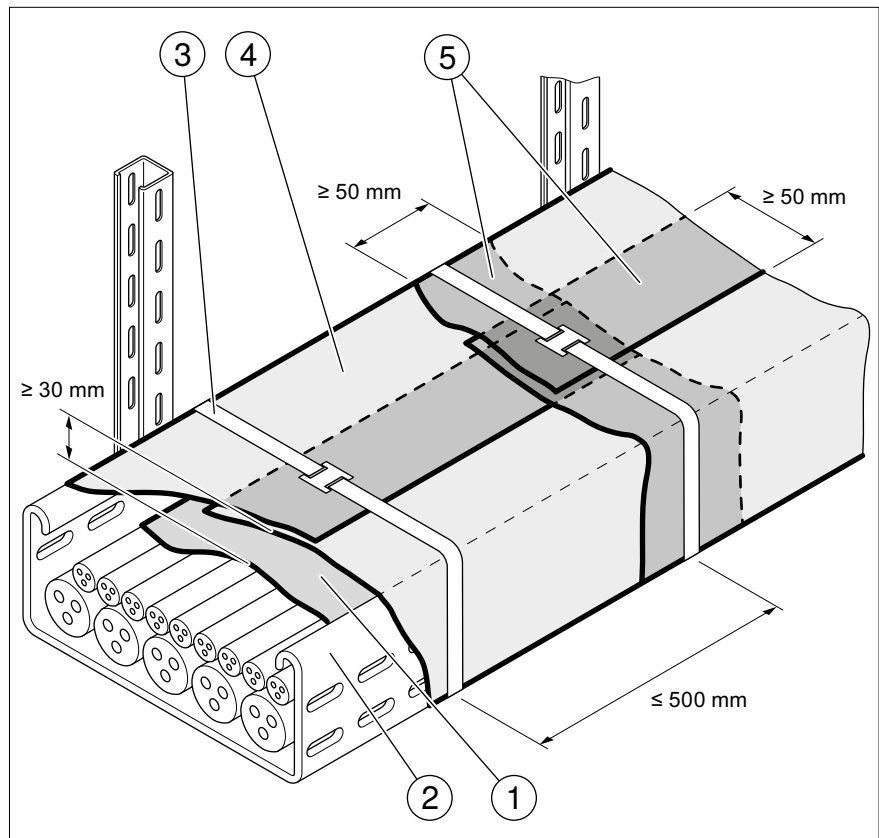


Figure 4: Cable bandage around a cable tray

- ① Intermediate layer with fire protection mesh
- ② Cable tray
- ③ Fixing with steel strip at a distance ≤ 500 mm
- ④ Cable bandage
- ⑤ Overlap (straight/transverse) ≥ 50 mm

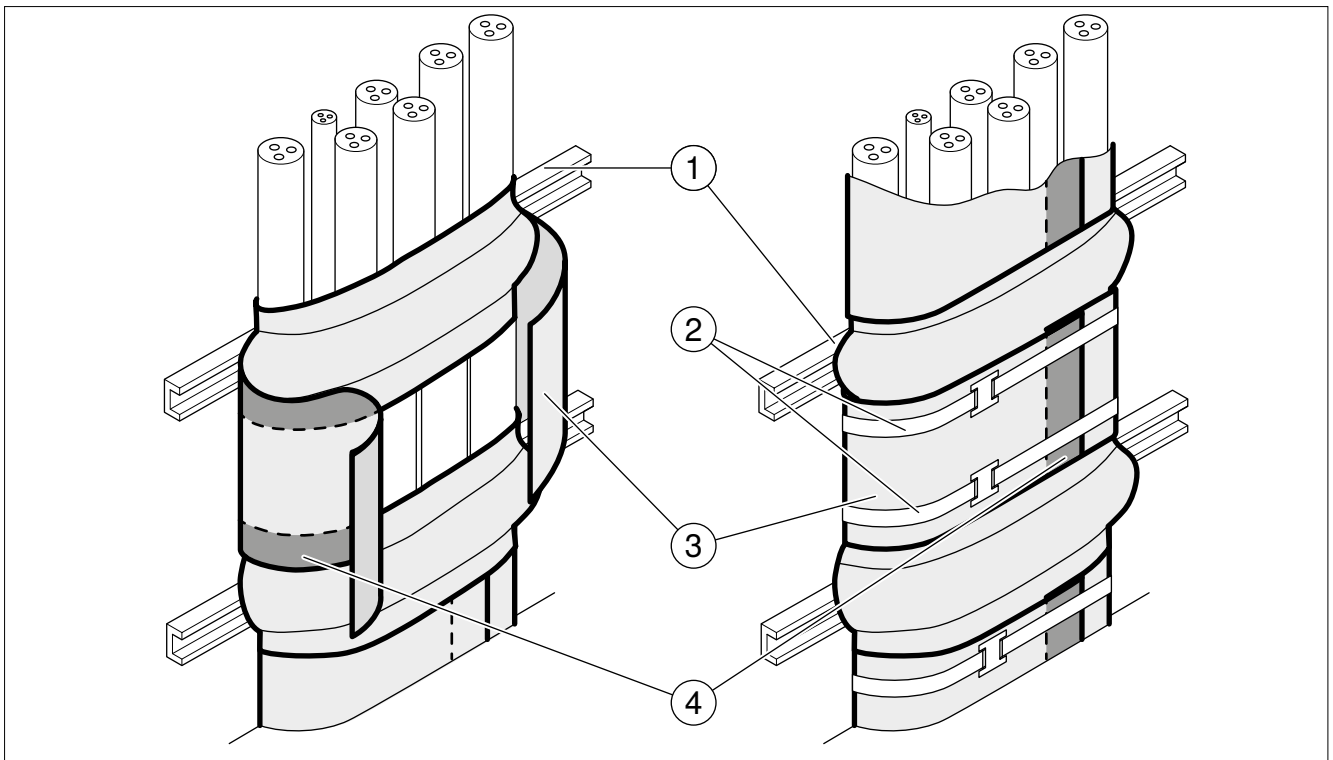


Figure 5: Cable bandage around cable ladder

- ① Cable ladder
- ② Fixing with steel strip at a distance ≤ 500 mm
- ③ Cable bandage
- ④ Overlap (straight/transverse) ≥ 50 mm

- Remove the protective film from the coated side of the fire protection mesh.
- If necessary, cut the intermediate layer to size.
- If necessary, lay the intermediate layer on the cables and fix it.
- Cut the cable bandage to the right length.
- Apply the cable bandage tightly (coated side towards the cables).
- Fix the cable bandage with steel strip/wire.

4.4 Jacketing the cable entrances/cable exits

If cables are run out of the fire protection jacketing, then they must be surrounded with the cable bandage over a minimum length of 300 mm if no other fire protection requirements are placed on these cables.

Length of cable bandage at cable exit ≥ 300 mm + 50 mm overlap with cable bandage, cable route

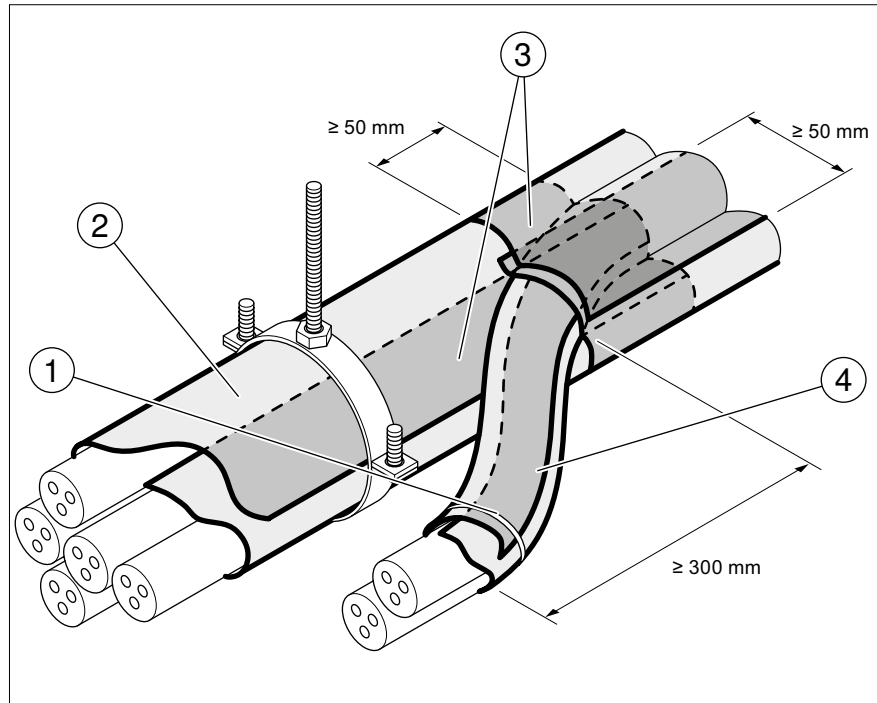


Figure 6: Cable entrances and exits

- ① Metallic tightening strips, wire or staples
- ② Cable bandage in cable route
- ③ Overlapping (straight/transverse) ≥ 50 mm cable bandage in cable route
- ④ Cable bandage at cable exit (overlap ≥ 50 mm)

- Remove the protective film from the coated side.
- Cut the cable bandage of the cable exit to the right length.
- Apply the cable exit cable bandage tightly (coated side towards the cables).
- Fix the cable outlet cable bandage with steel strip/wire.
- Lay the cable route cable bandage around the cable exit with an overlap.
- Fix the cable route cable bandage with steel strip/wire in the area of the cable exit.

4.5 Attaching the identification plate

- Fill out the identification plate for cable bandages clearly with a permanent marker and attach it permanently to a wall next to the cable bandage.

5 National requirements

Note! *Outside Germany or Austria, please note that other country-specific requirements may exist, in addition to the national construction law.*

Germany/Austria

- The wound cables and/or cable support systems must be labelled with a completed identification plate. The plate must be permanently attached to the wall next to the installation.
- After work has been completed, the client must be presented with a written declaration of conformity.

6 Maintenance

The PYROWRAP® Wet FSB cable bandage is maintenance-free. Nonetheless, we recommend carrying out a visual inspection of the cable bandages at regular intervals, as part of the inspection of the electrical systems:

- Check that all the component parts of the cable bandage are tightly sealed.
- Rework any joints or gaps.

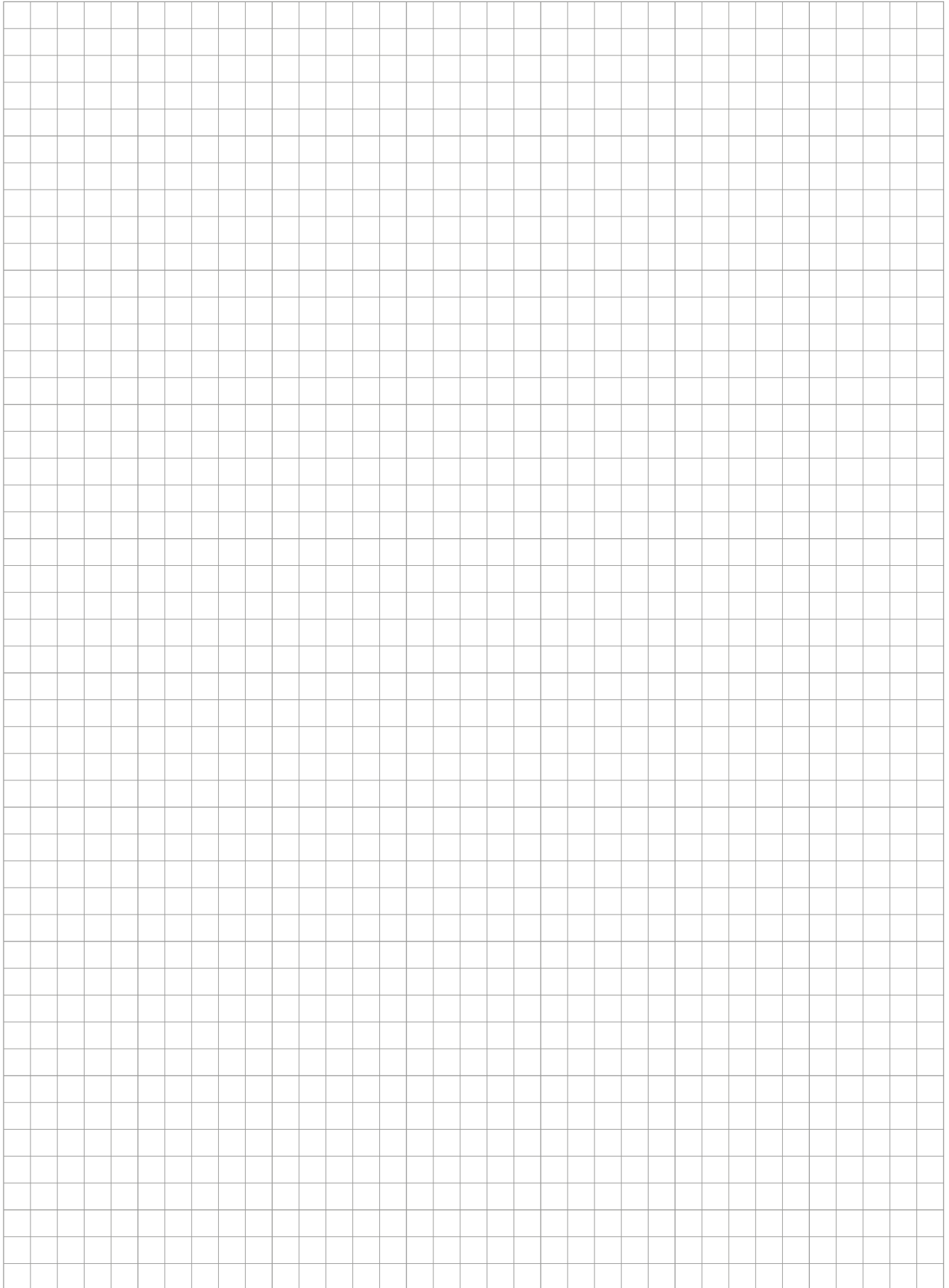
7 Disposal

National laws and regulations must be observed for disposal.

- Material: As household waste
- Packaging: As household waste

After a fire, we recommend disposing of affected material according to EAK 080112 as hardened paint and varnish waste.

Own notes



8 Appendix – Declaration of conformity (sample)

Declaration of agreement

Name and address of the company which erected the cable bandages

Building site or building with address

Date of erection

Approval item: PYROWRAP® Wet FSB cable bandage

PYROWRAP® Wet FSB WSL cable bandage

Application according to general building inspectorate approval no. Z-56.217-3600 according to section 1.2.1 a)
or

Application according to general building inspectorate approval no. Z-56.217-3600 according to section 1.2.1 b)

PYROWRAP® Wet FSB WB cable bandage

Application according to general building inspectorate approval no. Z-19.11-1971 or ETA-13/0158

(Delete as applicable)

This is confirmation that

– The cable bandage(s) **PYROWRAP® Wet FSB** _____ was/were installed and labelled correctly, taking all individual circumstances into account, and subject to all the conditions of the general building inspectorate approval no.: _____ of Deutsches Institut für Bautechnik dated _____.

Place, date

Stamp and signature

This confirmation must be given to the builder for forwarding, if necessary, to the responsible construction supervisory board.



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