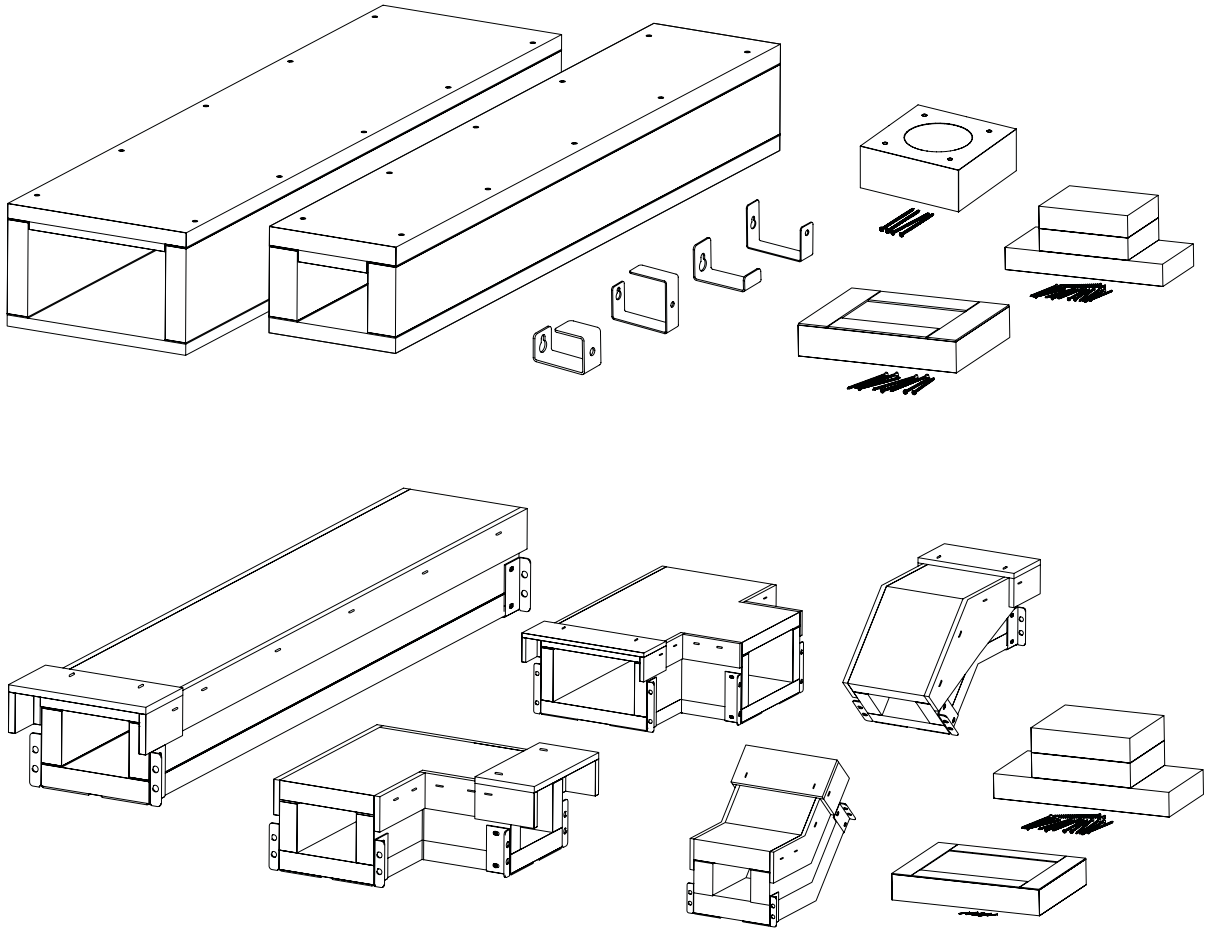

Mounting instructions

PYROLINE® Con PLC fire protection duct
EI30-EI90 classification according to EN 13501-2

OBO BETTERMANN

OBO Bettermann Holding GmbH & Co. KG

PYROLINE® Con PLC fire protection duct
Mounting instructions

All the personal designations used in the document are to be considered gender-neutral.

Table of contents

1 About these instructions

1.1 Target group

These instructions are intended for specialists and/or instructed technical personnel (e.g. engineers, architects, heads of construction, and mounting and installation engineers) who have had fire protection training and are charged with the installation of the fire protection duct.

1.2 Relevance of these instructions

- These instructions are based on the standards valid at the time of compilation (March 2023).
- Follow these instructions to ensure correct and safe use.
- Any images are intended merely as examples. Mounting results may look different.
- We will not accept any warranty claims for damage caused through non-observance of these instructions.
- In these instructions, cables and lines are referred to simply as cables.
- These instructions describe standard solutions for mounting the PYROLINE® Con PLC fire protection duct. Special solutions for special structural conditions are possible, but must be planned on-site with the authorities.
- To find out more about planning and mounting the product, we recommend a comprehensive training course.

1.3 Types of warning information

WARNING

Type of risk!
Shows a risky situation. If the warning information is not observed, then serious or fatal injuries may occur.

CAUTION

Type of risk!
Shows a risky situation. If the warning information is not observed, then medium or minor injuries may occur.

ATTENTION

Type of risk!
Shows a possibly damaging situation. If the safety instruction is not observed, then damage to the product or the surroundings may occur.

Note! *Indicates important information or assistance.*

1.4 Correct use

The PYROLINE® Con PLC fire protection duct is used for the installation and guidance of cables in escape and rescue routes in interior areas of buildings. It protects these emergency and escape routes against the

impacts of a cable fire. The PYROLINE® Con PLC fire protection duct can be mounted on solid walls and ceilings, either directly or with a support system.

Mounting must take place with fastening material with fire protection testing. Ceiling and walls at the mounting location must be made of masonry, concrete, reinforced concrete or porous concrete, and have a minimum thickness of 10 cm (walls) or 15 cm (ceilings). Only then can the correct function of the fire protection duct be guaranteed.

The PYROLINE® Con PLC fire protection duct is not suitable for any purpose other than that stated here.

The fire protection duct is not designed to support walls in wall penetrations. Ensure that the wall penetrations can support themselves. Mounting of the fire protection duct on dry or lightweight construction walls or suspended ceilings shall not be considered proper. The use of the fire protection duct in the maintenance of electrical function is also not permitted.

1.5 Applicable documents

– European Technical Assessment ETA 21/0755

– Declaration of performance FC-0055

– Safety data sheets of the products (www.obo-bettermann.com)

1.6 Basic standards and regulations

– DIN EN 1363-1: 2012-10
Fire resistance tests – Part 1: General requirements

– DIN EN 1366-5: 2010-06
Fire resistance tests for service installations – Part 5: Service ducts and shafts

– EN 13501-2, 2007 + A1:2009
Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services

– DIN EN 13501-2: 2016-12
Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services

– DIN 4102-4: 2016-05
Fire behaviour of building materials and building components – Part 4: Synopsis and application of classified building materials, components and special components

– EU construction products regulation

2 Safety

2.1 General safety information

Observe the following basic safety information on handling the PYROLINE® Con PLC fire protection duct:

– All the appropriate regulations and technical regulations of other units, in particular those for electrical engineering, must be complied with.

– The fire protection duct may not be subjected to heavy weights or used as a support.

– The maximum permitted cable load should be selected according to the total weight of the fire protection duct. The approved cable load may not be exceeded, as otherwise the support and function capability is no longer guaranteed.

2.2 Personal protective equipment

List of personal protective equipment to be used:

Wear safety shoes!
The weight of the fire protection duct can lead to contusions. Wear suitable safety shoes during transport and mounting, in order to avoid contusions or crushing injuries.

Wear head protection!
The weight of the fire protection duct can lead to head injuries when working overhead. Wear a safety helmet when performing overhead work.

Wear breathing protection!
If there is a fire, burning cable insulation can create corrosive gases. When disposing of fire protection ducts which have been subjected to a fire, wear breathing protection.

3 Necessary tools

List of required tools:

– Mounting lift, if the spatial conditions permit it

– Standard hand or coping saw with coarse saw blade, also suitable for metal, to process the fire protection duct

– Manual machines with the option of connecting a vacuum cleaner for automatic suction

– Drill

4 Product description, PYROLINE® Con PLC fire protection duct

4.1 Product features

The PYROLINE® Con PLC is installed on interior walls and ceilings, to route cables within. The fire-resistant material of the PYROLINE® Con PLC fire protection duct fulfils the existing fire protection requirements and, if there is a fire, prevents toxic smoke gases from spreading in rooms and escape routes.

The PYROLINE® Con PLC fire protection duct stands out through the following properties:

– PYROLINE® Con D PLC version for direct wall or ceiling mounting

– PYROLINE® Con S PLC version, for wall and ceiling mounting with a support system of wall brackets or suspended supports and brackets or threaded rods and support rails

– Fire load encapsulation up to 90 minutes (EI30–EI90 classification)

– Material made of non-combustible fibre glass lightweight concrete, water and frost-resistant, non-electrically conductive

– Hard, smooth and anti-friction compacted surface

– PYROLINE® Con D PLC version, primed at the factory, surface refinement possible through plastering, wallpapering, painting

– Processing with standard tools such as hand saw or coping saw

– Fittings for corner connection, T and cross connection for the PYROLINE® Con S PLC version

– Simple creation of standard and special fittings according to individual requirements with the PYROLINE® Con D PLC version

– Mounting on OBO support systems

– Simple inspection and retrofitting

4.2 Product overview

4.2.1 PYROLINE® Con D PLC for direct wall or ceiling mounting

The PYROLINE® Con D PLC product version is mounted directly on the wall or ceiling and consists of the following product elements:

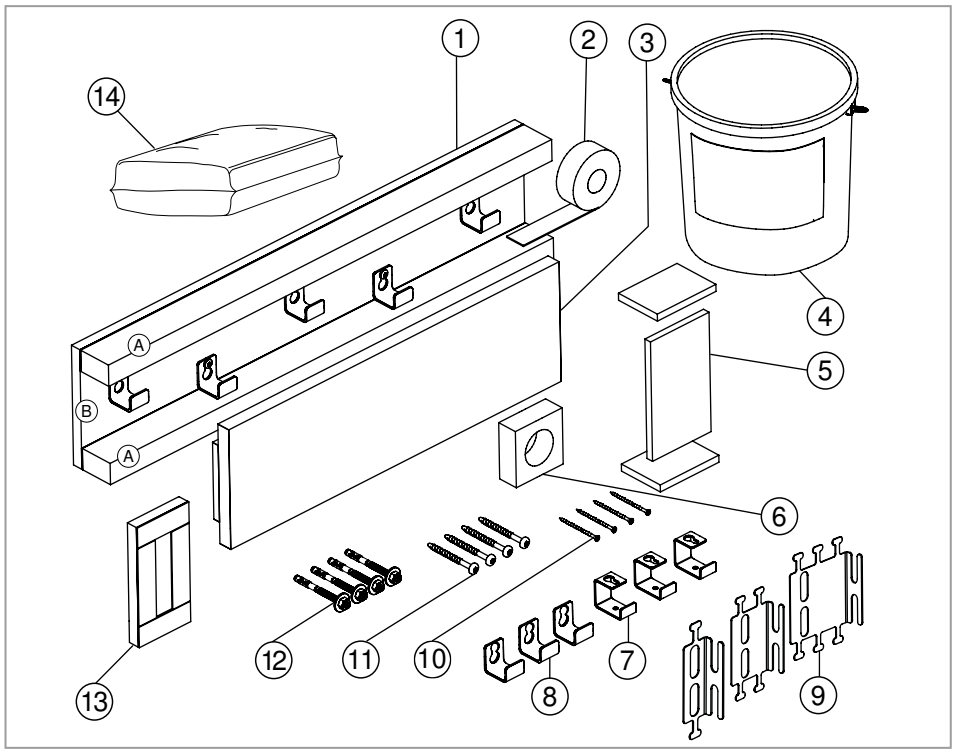

Fig. 1: Product overview, PYROLINE® Con D PLC

No.	Product element	Function
①	Duct trough made up of duct walls Ⓐ and duct base Ⓑ	Cable seat, connection with wall or ceiling
②	Sealing strip	Sealing of joints and duct cover
③	Duct cover	(Straight) connection of the fire protection duct
④	KTM mortar	Sealing of connection joints and cracks
⑤	Wall connection collar	Doubling on walls for wall penetration
⑥	Doubler	Necessary for exits of individual cables and cable bundles
⑦	Separating clamp	To accept cables for the mounting of the fire protection duct under ceilings
⑧	Separating bracket	To accept cables for the mounting of the fire protection duct on walls
⑨	Cable fixing device vertical	To accept cables for the vertical mounting of the fire protection duct
⑩	Counter-sunk head screw	Fastening of doubler and cover on duct trough
⑪	MMS bolt tie for masonry	Screwing of the fire protection duct to wall or ceiling
⑫	Bolt tie for concrete	
⑬	End piece	End closure of the fire protection duct
⑭	MIW-S mineral wool	Sealing of wall penetrations

Tab. 1: Product elements, PYROLINE® Con D PLC

4.2.2 PYROLINE® Con S PLC for mounting with a support system

The PYROLINE® Con S PLC product version is mounted directly on the wall or ceiling and consists of the following product elements:

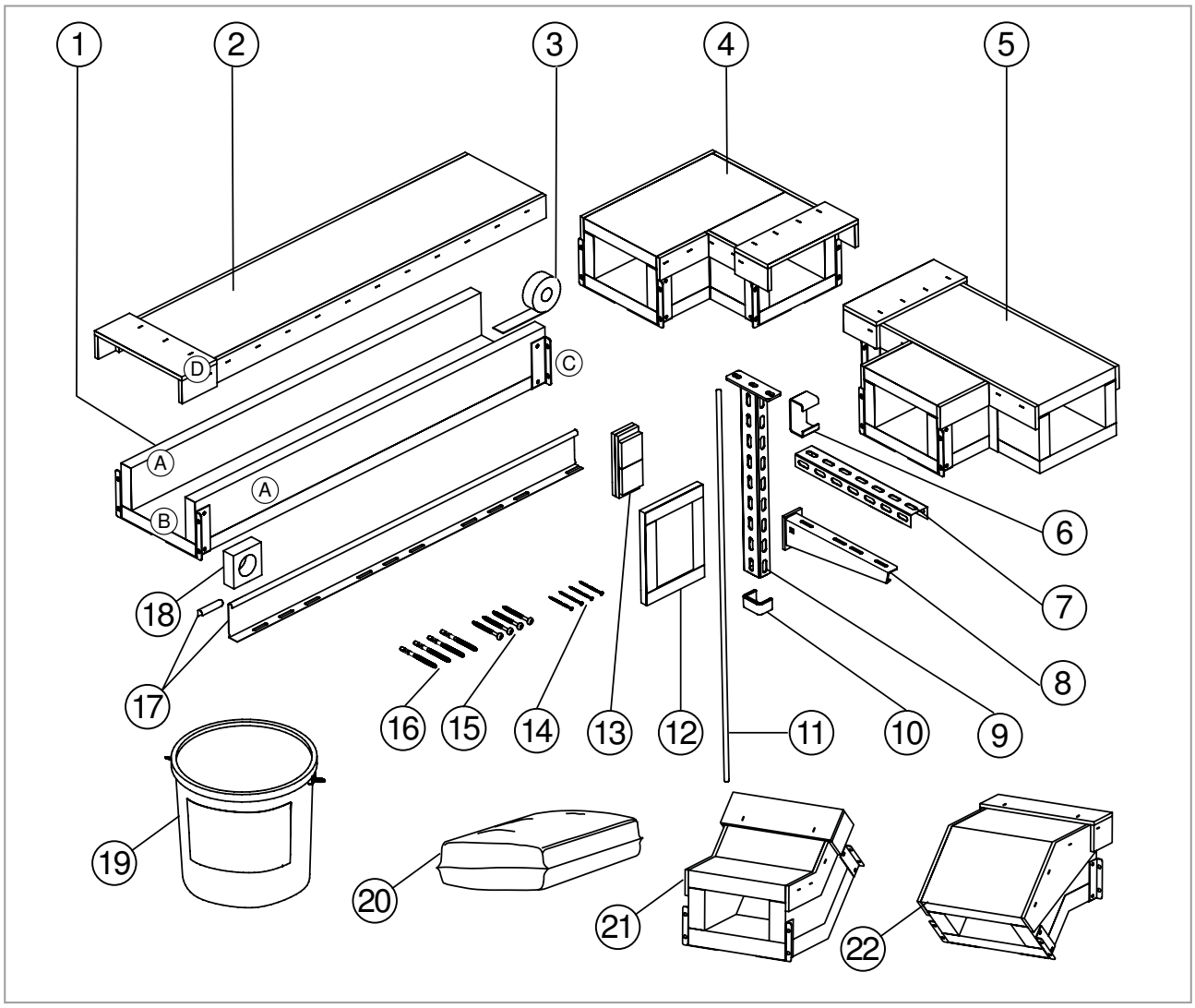

Fig. 2: Product overview, PYROLINE® Con S PLC

No.	Product element	Function
①	Duct trough made up of duct walls Ⓐ and duct base Ⓑ	Cable seat, support on support system
	With connector Ⓒ	Connection of the joints of two fire protection duct troughs
②	Duct cover with side and joint overlap Ⓓ	(Straight) connection of the fire protection duct
③	Sealing strip	Sealing of joints and duct cover
④	90° bend	Creation of corner connections
⑤	T piece	Creation of cable branches
⑥	Spacer	Stiffening of suspended support
⑦	Support rail	Support for fire protection duct, mounting with threaded rods
⑧	Wall bracket and support bracket	Mounting on wall or on suspended support, support for fire protection duct
⑨	Support	Mounting on ceiling, support of the bracket
⑩	Protective cap for support	Edge protection
⑪	Threaded rod	Suspension for support rail
⑫	End piece	End closure of the fire protection duct
⑬	Wall connection collar	Doubling for wall penetration
⑭	Counter-sunk head screw	Fastening of doubler Optional fastening of duct covers
⑮	MMS bolt tie for masonry	Fastening of wall brackets
⑯	Bolt tie for concrete	Fastening of wall brackets, suspended supports or threaded rods
⑰	Separating retainer with	Separation of cables of different voltages or functions
	separating retainer connector	Connection and stabilisation of the joints of separating retainers
⑱	Doubler	Necessary for exits of individual cables and cable bundles
⑲	KTM mortar	Sealing of connection joints and cracks
⑳	MIW-S mineral wool	Sealing of wall penetrations
㉑	Vertical bend, rising	Vertical direction changes
㉒	Vertical bend, falling	Vertical direction changes

Tab. 2: Product elements, PYROLINE® Con S PLC

5 Selecting the fire protection duct

Depending on the required classification, fire protection ducts with different wall thicknesses and mounting systems are used.

5.1 Fire protection duct for direct wall/ceiling mounting

Direct wall and ceiling mounting is particularly appropriate when no pipes need to be refitted, buildings refurbished or surface refinement is required, in order to integrate the duct visually into the appearance of the room. The duct covers are screwed to the duct trough.

Classification	Duct type PYROLINE® Con D PLC	Internal dimensions h x w in mm	External dimensions h x w in mm	Weight/m in kg without cable assignment
EI30–EI60	PLCD D060810	80 x 100	125 x 160	10.0
EI30–EI60	PLCD D061220	120 x 200	165 x 260	15.7
EI90	PLCD D090810	80 x 100	140 x 180	13.7
EI90	PLCD D091220	120 x 200	180 x 280	21.0

Tab. 3: Fire protection ducts for direct wall/ceiling mounting for EI30–EI60 and EI90 classification

5.2 Fire protection duct for mounting with a support system

Mounting with a support system is particularly useful if obstacles such as heating, ventilation or water pipes or joists must be refitted. The support system can consist of

– wall supports,

– suspended supports with support brackets and threaded rods

– or threaded rods and support rails.

With wall supports, it is possible to compensate for larger unevennesses in walls or avoid vertical cables or pipelines. Support systems with a suspended support and support bracket are easier to fill with cables. If suspended with threaded rods, a smaller mounting area under the ceiling is required. The selection of the support system is aligned to the local conditions.

The duct covers are not screwed to the duct trough, thus allowing rapid inspection and refilling.

Classification	Duct type PYROLINE® Con S PLC	Internal dimensions h x w in mm	External dimensions h x w in mm	Weight/m in kg without cable assignment
EI30–EI60	PLCS D060810	80 x 100	140 x 160	13.7
EI30–EI60	PLCS D061220	120 x 200	180 x 260	19.9
EI90	PLCS D090810	80 x 100	180 x 200	24.6
EI90	PLCS D091220	120 x 200	220 x 300	37.8

Tab. 4: Fire protection ducts with support system for EI30–EI60 and EI90 classification

6 Planning an installation

To ensure the functionality of the fire protection duct, installations and installation locations must fulfil technical and structural requirements.

6.1 Structural conditions

If there are uncertainties about the load capacity of walls and ceilings, then a structural engineer must be consulted.

– Walls must be made of concrete, reinforced concrete or masonry (e.g. calcareous sandstone, porous calcareous sandstone, full brick) with a minimum thickness of 10 cm.

– Ceilings must be made of concrete, reinforced concrete or porous concrete with a minimum thickness of 15 cm.

– Lightweight walls/partitions and wooden ceilings, as well as steel structures and trapezoidal roofs, are not suitable for the mounting of fire protection ducts.

– Walls and ceilings serving as a mounting surface must have at least the same fire resistance length as the mounted fire protection duct.

– Mounting surfaces must be flat to avoid crack formation in the fire protection ducts during mounting.

– If various electrical voltage levels are to be separated in a fire protection duct, the spacing of the various electrical voltage levels must be at least 10 mm. Choose a fire protection duct with the appropriate width/height and use separating clamps or brackets.

6.2 Approved fastening materials

Installed fastening materials must be fire protection-tested and certified:

– for direct wall/ceiling mounting, e.g. OBO bolt ties, type MMS-plus P 7.5x80, or similar with a rounded head, to avoid damage to the cables.

– for mounting on support systems, select the fastening material according to the substrate and the requirements of the fire protection duct to be fulfilled.

6.3 Approved cables

PYROLINE® Con PLC fire protection duct for fire encapsulation (EI30–EI60, EI90)

All standard cable types can be routed.

Note! *When dimensioning the cables, note that the electrical resistance of the conductors in the cable is increased through heating. A larger conductor cross-section may be required.*

Comply with the maximum approved cable load (see Table 5). The approved cable load is independent of the fire resistance class and the dimension of the fire protection ducts:

Duct type	Wall/ceiling mounting		Mounting with support system	Cable load
	Cable directly on top	Cable mounting with separating bracket/separating clamp		
PYROLINE® Con D PLC	x	–	–	≤ 10.0 kg/m
PYROLINE® Con D PLC	–	x	–	≤ 15.3 kg/m
PYROLINE® Con S PLC	–	–	x	≤ 31.5 kg/m

Tab. 5: Maximum approved cable load

7 Mounting PYROLINE® Con D PLC on a wall/ceiling

The PYROLINE® Con D PLC fire protection duct is mounted directly on the wall in conjunction with separating brackets or under the ceiling with separating clamps. The cables are later routed on the separating brackets and separating clamps.

WARNING

Danger of heavy components!
Fire protection ducts are very heavy and can cause serious injuries if they fall on your head or other parts of the body.
Always work with a partner or work with mounting aids, such as scaffolding or a mounting lift. Wear safety shoes. If mounting on the ceiling, wear protective helmets.

CAUTION

Danger of cracking!
If the walls/ceilings are uneven, this can cause crack formations in the duct trough if the fire protection ties are too tight and the duct trough becomes warped. Eliminate or compensate for unevennesses in the mounting substrate before mounting.

Note! *When shortening or notching out duct sections, take the width of a max. 3 mm joint with sealing strip into account.*

7.1 Mounting the duct trough

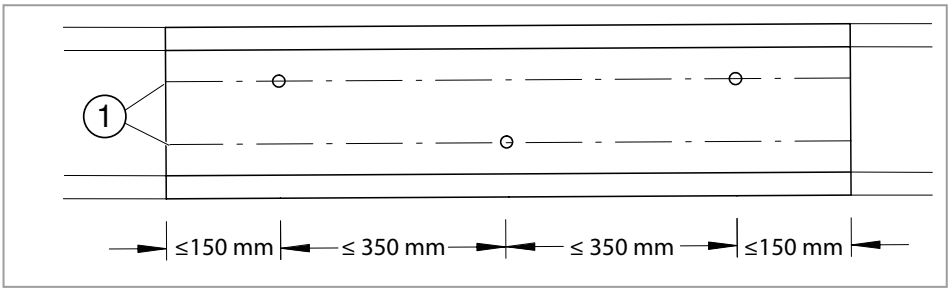

Fig. 3: Drill hole spacings for wall/ceiling mounting

1. Drill three holes in the duct trough base along the marking lines ①. The diameter of the drill hole is dependent on the selected means of fastening, e.g. Ø 8 mm for the MMS-plus P 7.5x80 bolt tie. Drill the holes alternately on the top and bottom marking line. Drill a hole halfway along and the two other holes at a maximum of 150 mm to the end of the duct section.

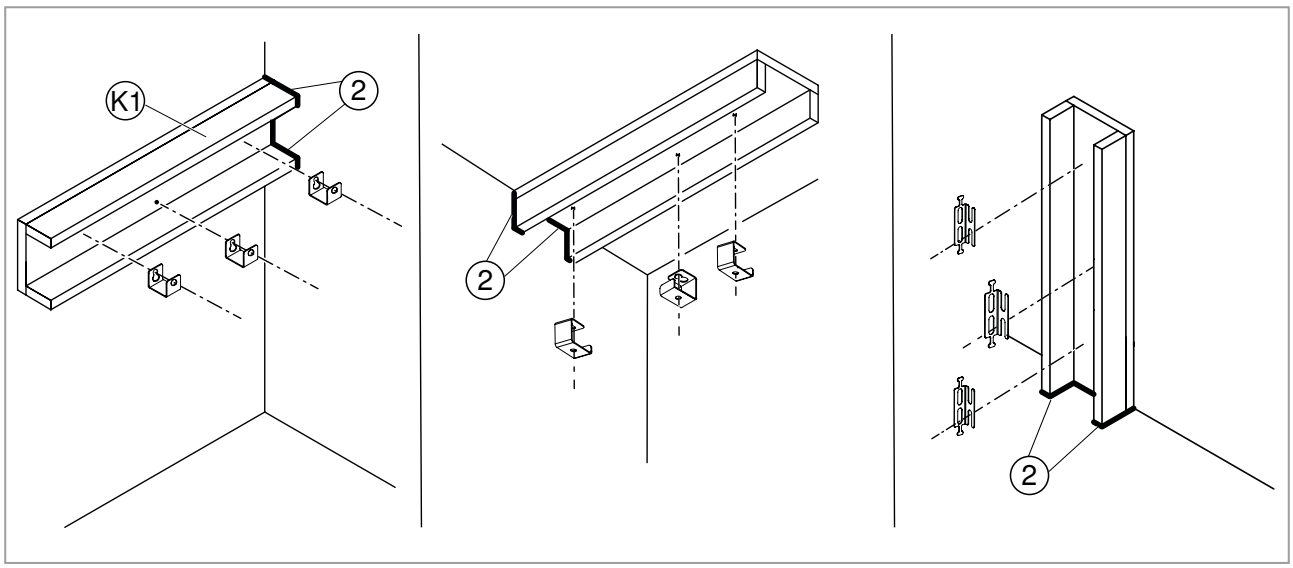

Fig. 4: Duct trough mounting

2. Place the first duct trough Ⓚ1 directly on the wall at the end of the room.
3. Draw the drill holes.
4. Drill holes in the wall/ceiling according to the selected means of fastening (dimensions at least M6), e.g. for the MMS-plus P 7.5x80 bolt tie with Ø 6 mm.
5. Apply sealing strips ② to the front side of the duct trough Ⓚ1.

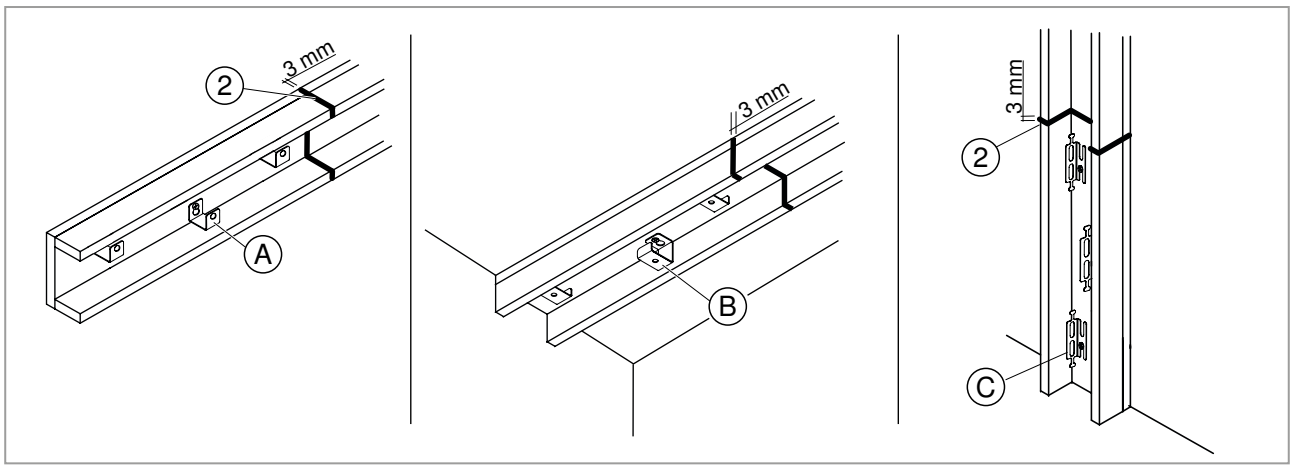

Fig. 5: Wall mounting with separating brackets Ⓐ, ceiling mounting with separating clamps Ⓑ, vertical mounting with cable fixing device Ⓒ

6. Mount the duct trough in conjunction with the separating bracket Ⓐ/ separating clamp Ⓑ/cable fixing device Ⓒ and MMS bolt tie. During mounting, compress sealing strips ② to a maximum of 3 mm.
7. Attach the duct trough to the end of the duct trough Ⓚ1 and mount in the manner described in points 3–6.
8. Shorten the last duct trough to the wall with a hand or coping saw, removing 3 mm from the residual length for the necessary joints.
9. Apply sealing strips to both front ends of the last duct trough.

10. Mount the last duct trough and ensure a joint of 3 mm to the previous duct trough.

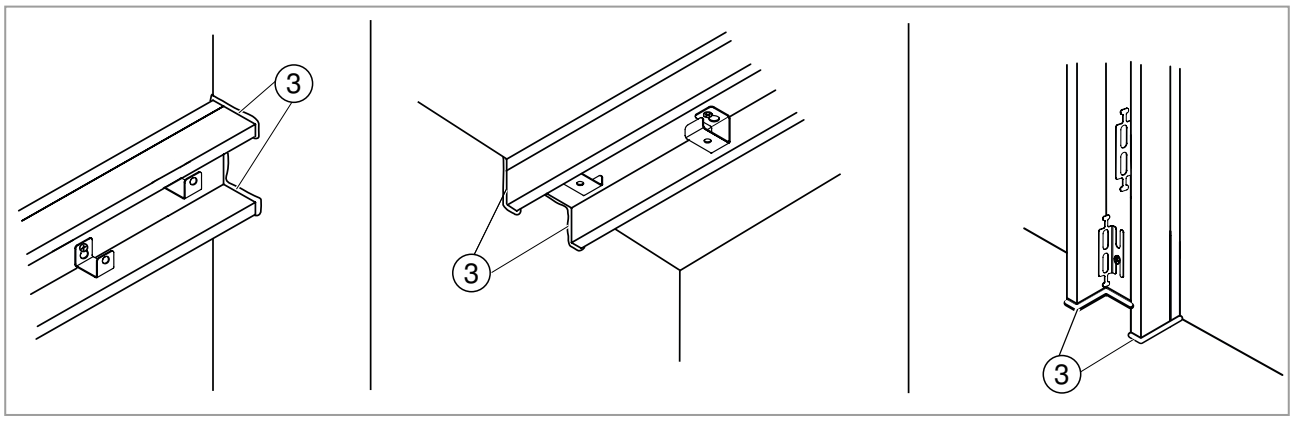

Fig. 6: Wall connection

11. Fully close the joint to the wall with KTM mortar ③.
12. Close off joints between two duct troughs which are insufficiently compressed or tight with KTM mortar.
13. Close off joints between the duct base and the wall with KTM mortar.

The cables can be routed when the duct troughs are fully mounted.

Note! Use cable ties or the slots to fasten cables with the vertical cable fixing device.

7.2 Mounting the duct cover

Before the duct cover is mounted, all the necessary fittings must be created and mounted and the cables routed. Mounting of the duct cover can deviate when fittings are used, see also chapter 7.3 - 7.7.

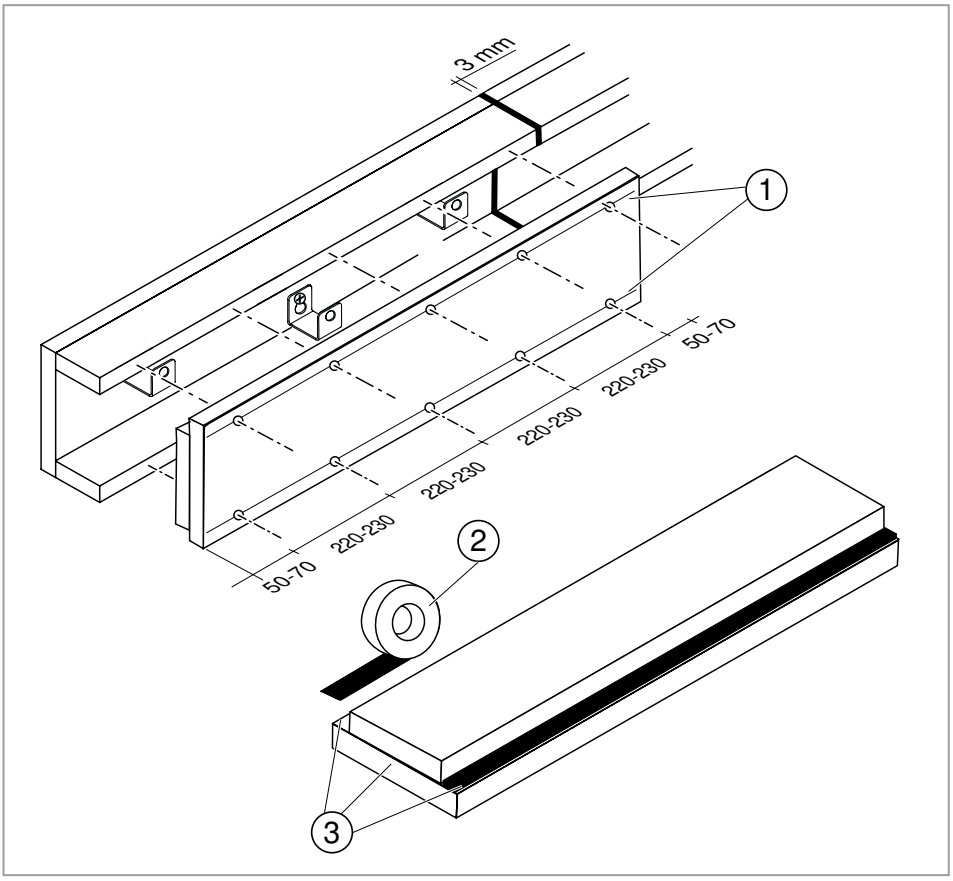

Fig. 7: Duct cover mounting

1. Stick the sealing strip ② all along the support surface and one front side ③ of the duct cover.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

2. Mount the duct cover along the marking lines ① with counter-sunk head screws on the duct trough. Mount the counter-sunk head screws at a spacing of 220–230 mm and the spacing of the joints may be a maximum of 50–70 mm.
3. Fully close joints to the wall ③ with KTM mortar.
4. Close off joints between two duct covers which are insufficiently compressed or tight with KTM mortar.

The fire protection duct is fully mounted. If the fire protection duct is run through the wall or meets it, then a wall connection collar must be mounted, see chapter “7.10 Creating a wall connection” on page 32.

7.3 Creating a corner connection

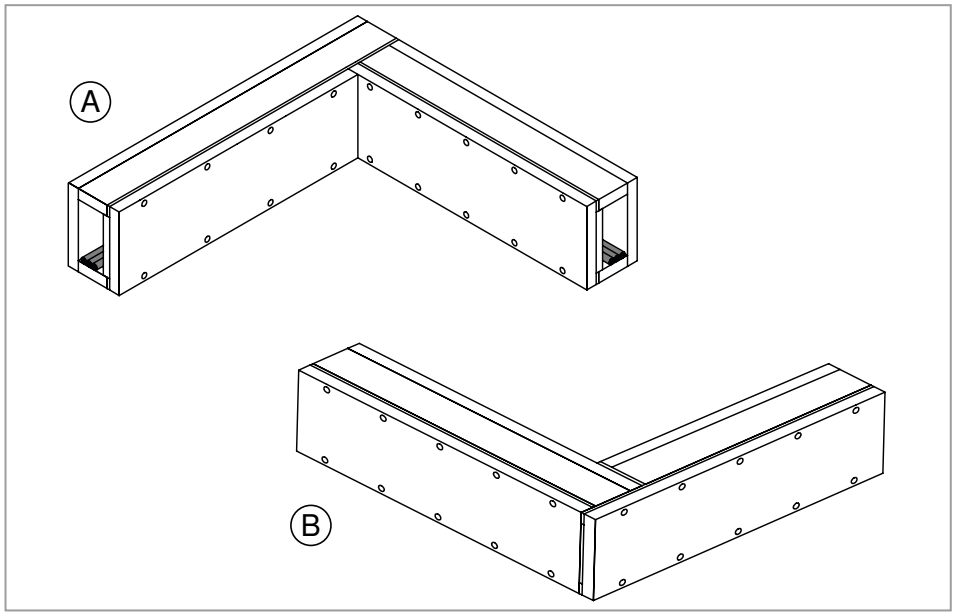

Fig. 8: Ⓐ 90° internal corner, Ⓑ 90° external corner

To run cables round room corners, it is possible to create 90° internal and external corners with the PYROLINE® Con D PLC product version. During mounting, proceed as described in “7.1 Mounting the duct trough” on page 15. The cables must be routed before the duct cover is mounted.

7.3.1 90° internal corner

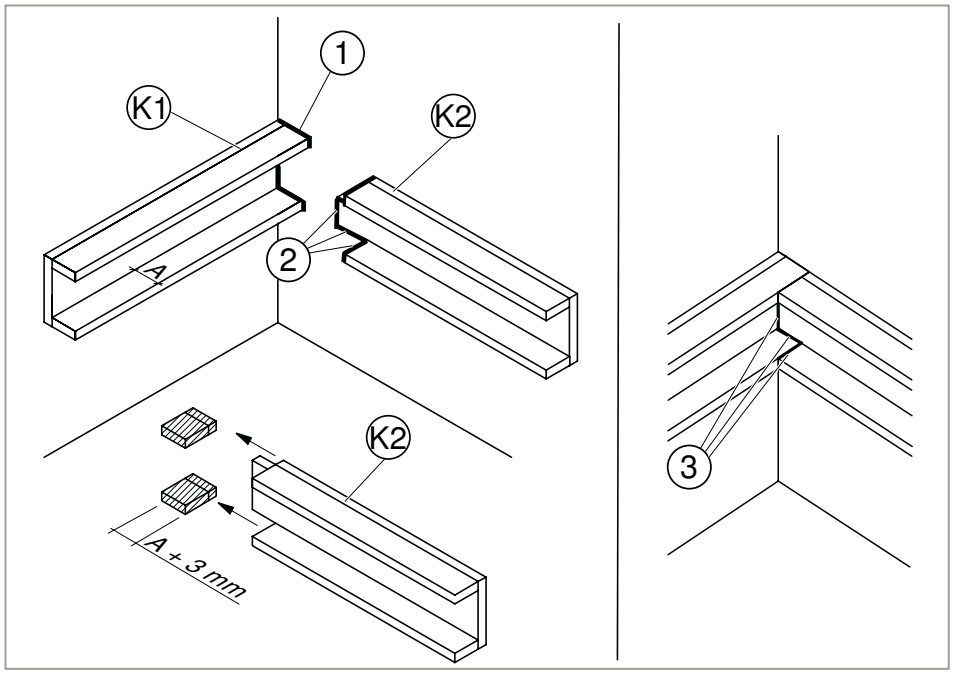

Fig. 9: 90° internal corner duct trough mounting

1. Mount the duct trough Ⓚ1 with sealing strips ① bluntly against the wall.
2. Shorten the duct walls of the duct trough Ⓚ2, which is supposed to continue at a 90° angle, by dimension A plus 3 mm (inner height of duct walls plus sealing strip).

3. Stick sealing strips to the cut areas ② and front side ② of the duct base.
4. Mount the duct trough Ⓚ2 on the wall/ceiling, compressing the joint to the duct trough Ⓚ1 to a maximum of 3 mm.
5. Fully close the interior of the created joint with KTM mortar ③.

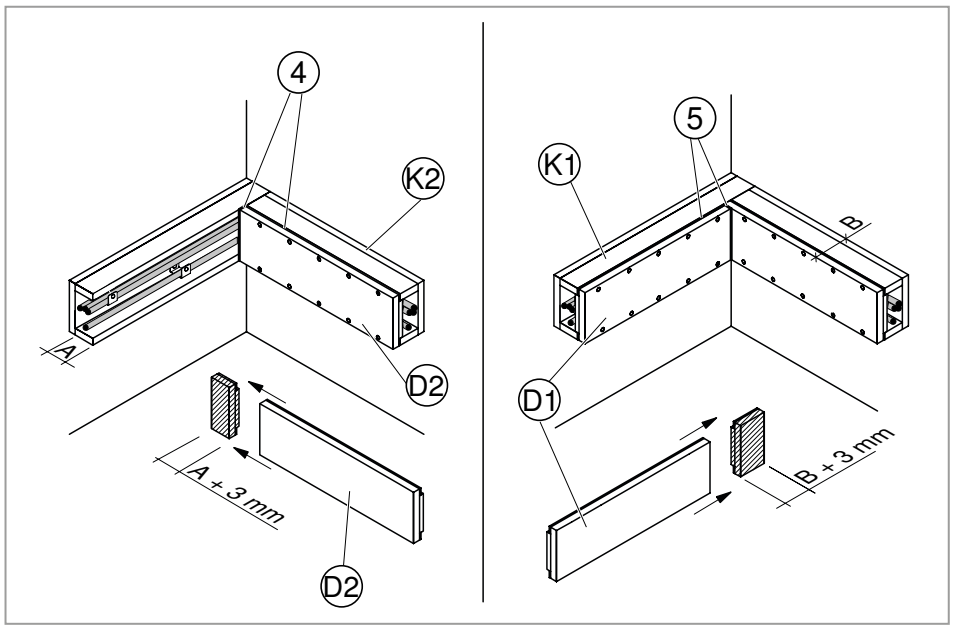

Fig. 10: 90° internal corner duct cover mounting

6. Shorten the duct cover Ⓓ2 for the duct trough Ⓚ2 by dimension A plus 3 mm (inner height of duct walls plus sealing strip).
7. Stick the sealing strip all along the support surface and shortened front side ④ of the duct cover Ⓓ2.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

8. Mount the duct cover Ⓓ2 along the marking lines with counter-sunk head screws on the duct trough Ⓚ2.
9. Shorten the duct cover Ⓓ1 by dimension B plus 3 mm (width of the duct plus sealing strip).
10. Stick the sealing strip all along the support surface and the shortened front side ⑤ of the duct cover Ⓓ1.
11. Mount the duct cover Ⓓ1 along the marking lines with counter-sunk head screws on the duct trough Ⓚ1.

7.3.2 90° external corner

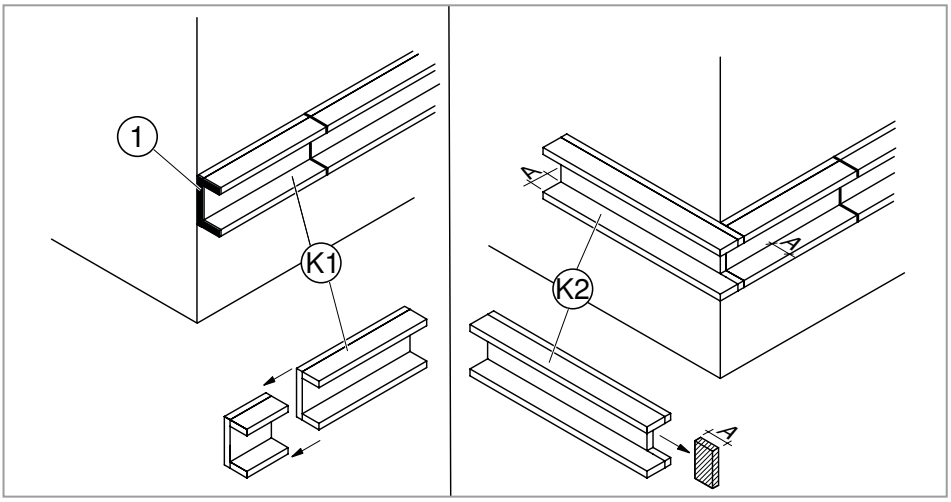

Fig. 11: 90° external corner duct trough mounting

1. Shorten the duct trough Ⓚ1 to the necessary dimension, so that they end flush to the wall corner. Take the maximum 3 mm joint with the sealing strip into account.
2. Stick the sealing strip ① on the shortened front side.
3. Mount the duct trough Ⓚ1 flush with the wall corner.
4. Notch out the duct base of the duct trough Ⓚ2, which is supposed to continue at a 90° angle, by dimension A (inner height of duct walls).
5. Mount the duct trough Ⓚ2 in such a way that it ends flush with the other duct trough Ⓚ1.

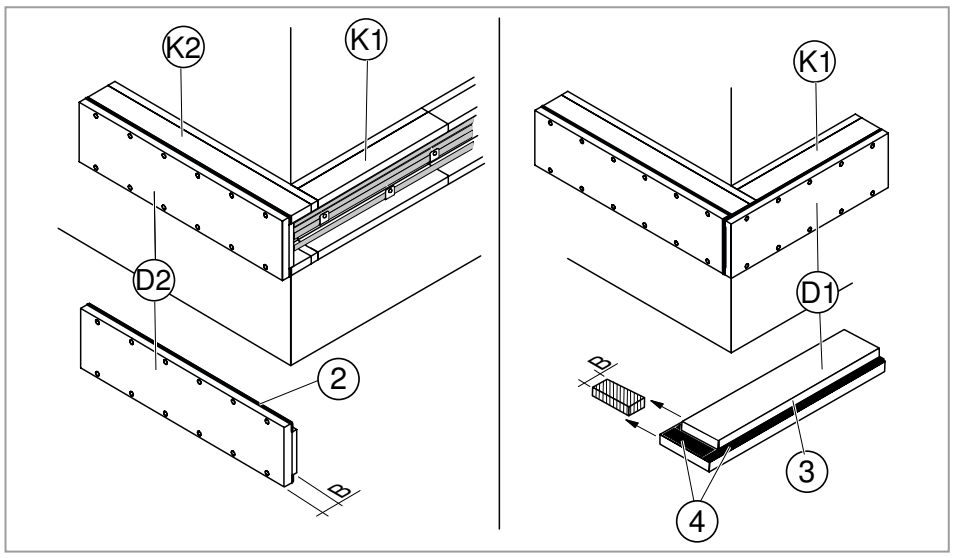

Fig. 12: 90° external corner duct cover mounting

6. Stick the sealing strip all along the support surface ② of the duct cover Ⓓ②.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

7. Mount the duct cover Ⓓ② along the marking lines with counter-sunk head screws on the duct trough.
8. Notch out the doubler ③ of the duct cover Ⓓ① on the front side by the dimension B (duct cover thickness).
9. Stick the sealing strip all along the support surface and at the notched out point ④ of the duct cover Ⓓ①.
10. Mount the duct cover Ⓓ① along the marking lines with counter-sunk head screws on the duct trough Ⓚ①.

7.4 Creating a 90° flat angle

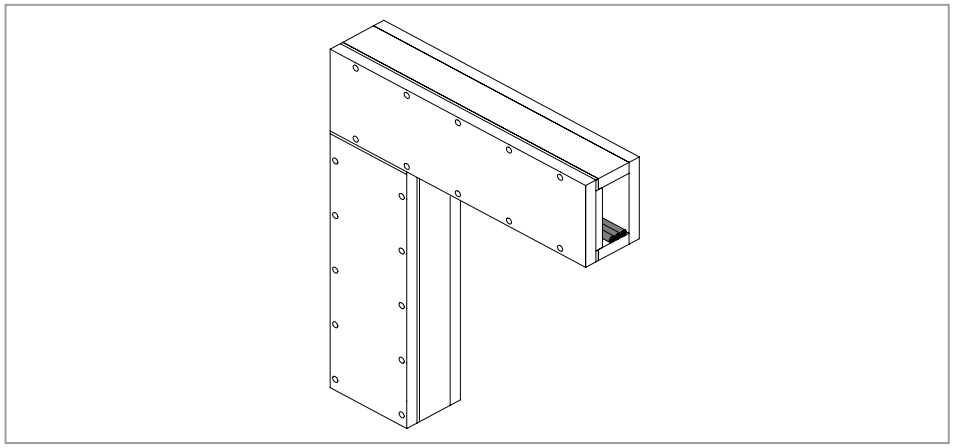

Fig. 13: 90° flat angle

To run cables on at a 90° angle, it is possible to create 90° flat angles with the PYROLINE® Con D PLC product version. During mounting, proceed as described in chapter “7.1 Mounting the duct trough” on page 15. The cables must be routed before the duct cover is mounted.

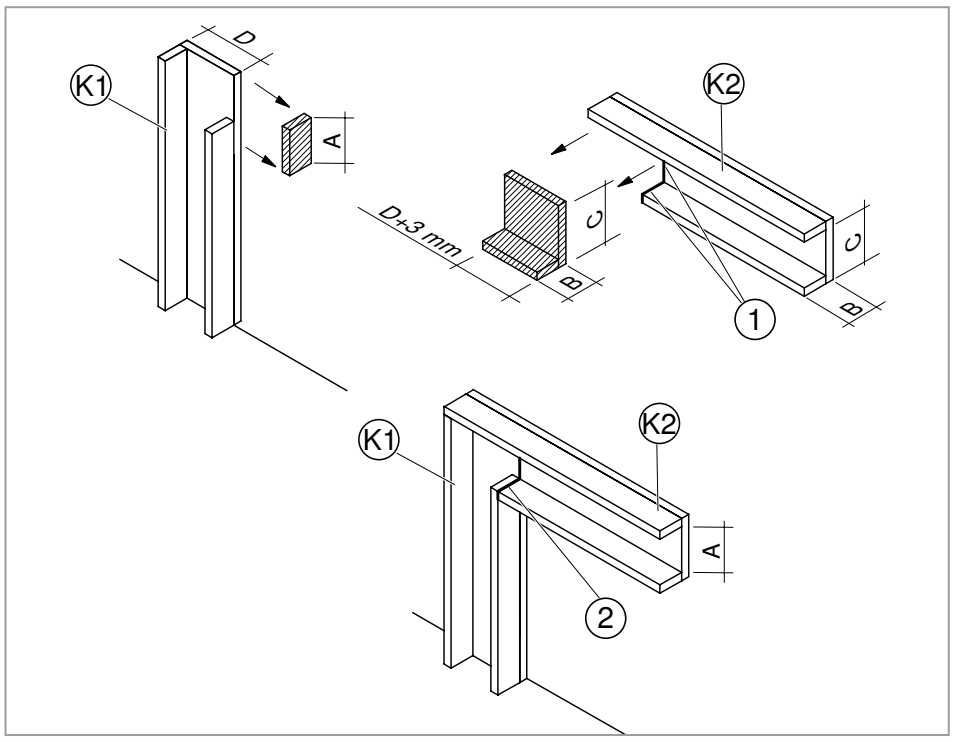

Fig. 14: 90° flat angle duct trough mounting

1. Notch out the inner side section of the duct trough Ⓚ1 by dimension A (duct interior width).
2. Stick sealing strips to the remaining front surface ①.
3. Mount the duct trough Ⓚ1.
4. On the duct trough Ⓚ2, which is supposed to connect at a 90° angle, notch out the lower duct wall and duct base by dimensions B (inner duct width plus a duct wall thickness), C (duct base width minus duct wall thickness) and D (duct base width) plus 3 mm sealing strip.

5. Stick sealing strips to the cut edges of the duct trough Ⓚ2.
6. Mount the duct trough Ⓚ2 on the wall/ceiling, compressing the joint ② to the duct trough Ⓚ1 to a maximum of 3 mm.

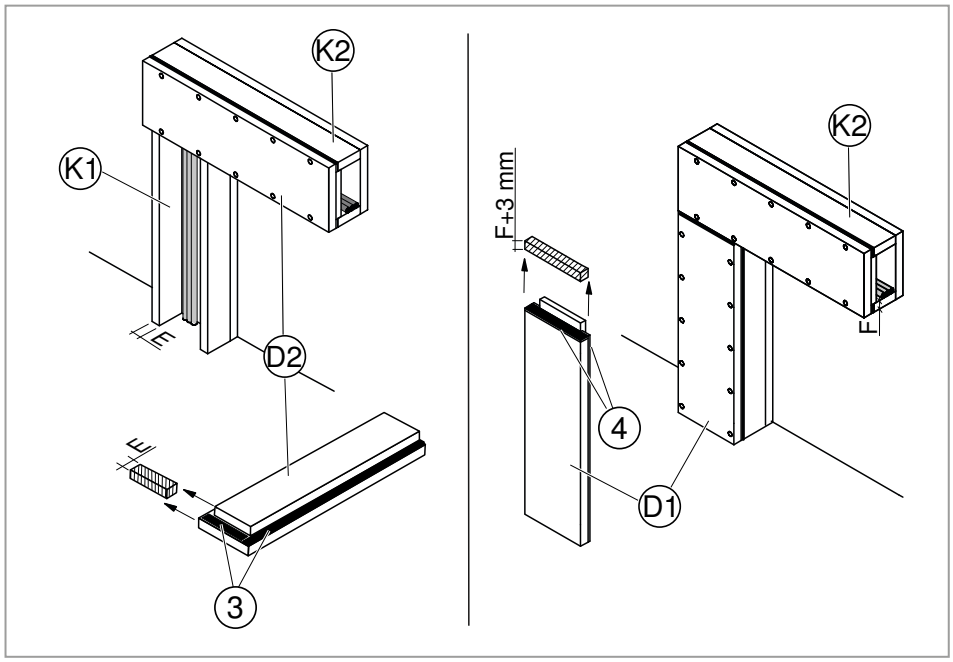

Fig. 15: 90° flat angle duct cover mounting

7. Notch out the doubler of the duct cover Ⓓ2 on the front side by the dimension E (duct wall thickness).
8. Stick the sealing strip all along the support surface and notched points ③ of the duct cover Ⓓ2.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

9. Mount the duct cover Ⓓ2 along the marking lines with counter-sunk head screws on the duct trough Ⓚ2.
10. Notch out the top plate of the duct cover Ⓓ1 on the front side by the dimension F (duct wall thickness) plus 3 mm for the sealing strip.
11. Stick the sealing strip all along the support surface and on the shortened front side ④ of the duct cover Ⓓ1.
12. Mount the duct cover Ⓓ1 along the marking lines with counter-sunk head screws on the duct trough Ⓚ1.

7.5 Creating a T connection

To branch off cables, it is possible to create T connections with the PYROLINE® Con D PLC product version. During mounting, proceed as described in chapter “7.1 Mounting the duct trough” on page 15. The cables must be routed before the duct cover is mounted.

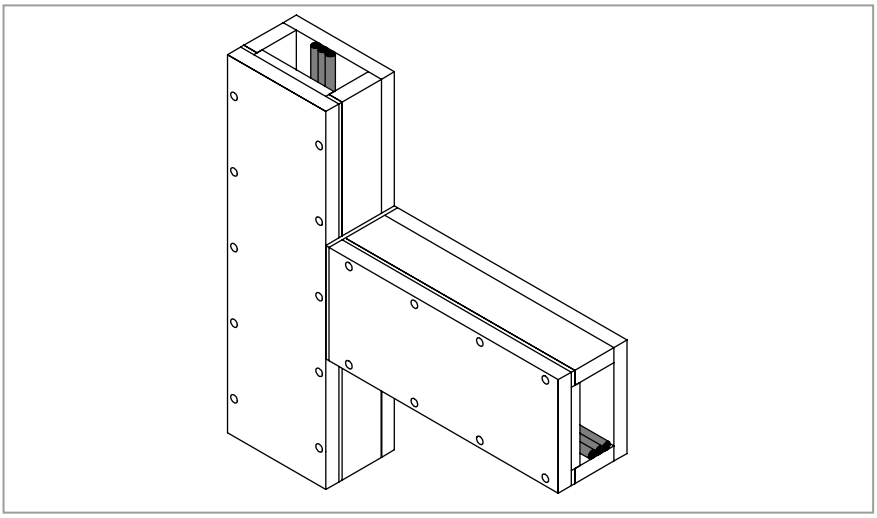

Fig. 16: T connection

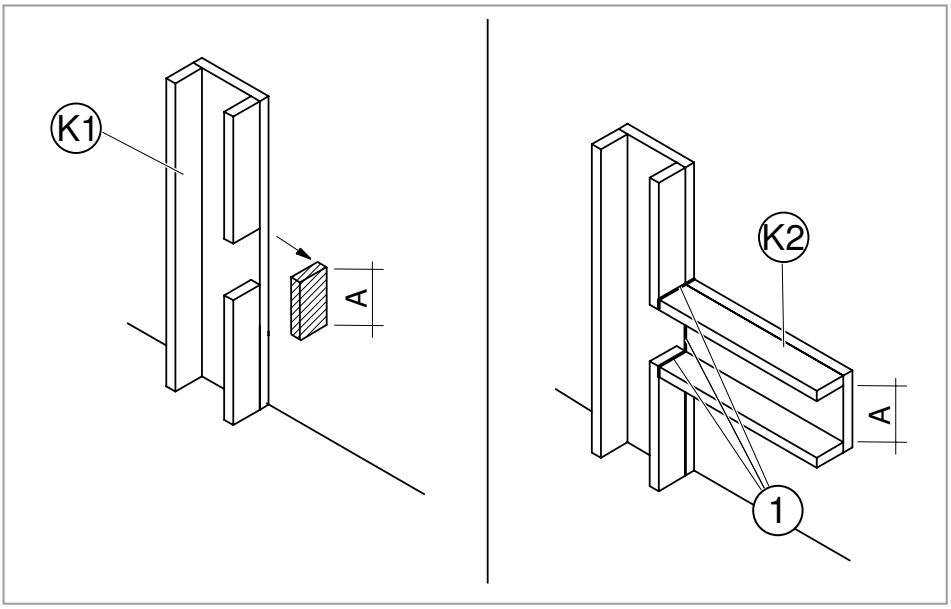

Fig. 17: T connection, duct trough mounting

1. Notch out the internal duct wall of the duct trough Ⓚ1 by dimension A (internal duct width).
2. Mount the duct trough Ⓚ1.
3. On the front side ① of the duct trough Ⓚ2, stick on the sealing strip.
4. Mount the duct trough Ⓚ2 on the wall/ceiling at a 90° angle to the duct trough Ⓚ1, compressing the joint ① to a maximum of 3 mm.

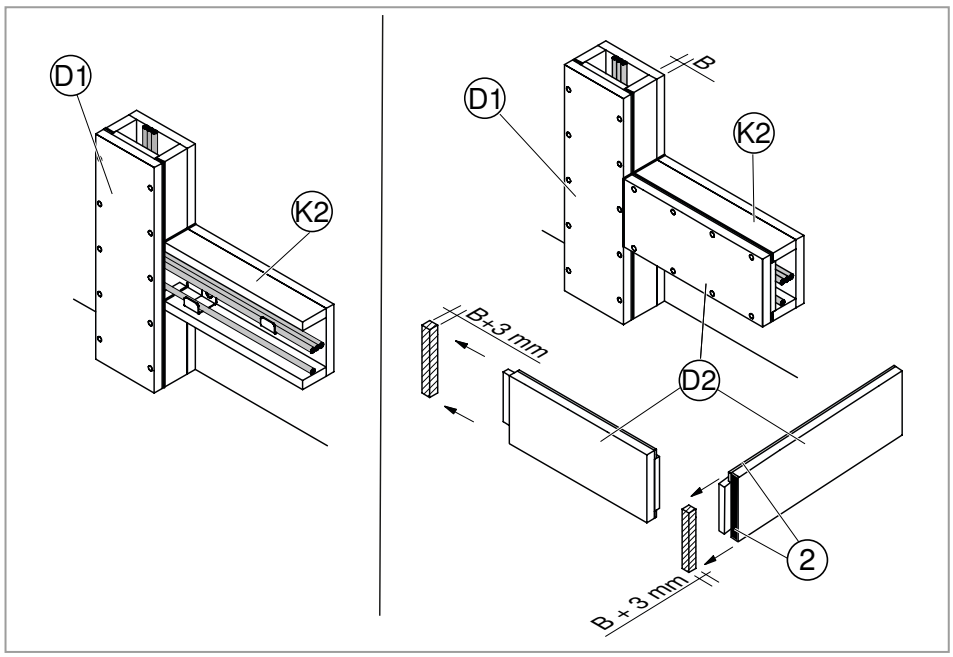

Fig. 18: T connection duct cover mounting

5. Notch out the top doubler of the duct cover Ⓓ② on a front side by the dimension B (duct wall thickness plus 3 mm sealing strip).
6. Stick the sealing strip all along the support surface and notched front side ② of the duct cover Ⓓ②.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

7. Mount the duct cover Ⓓ② along the marking lines with counter-sunk head screws on the duct trough Ⓚ②.

7.6 Creating a cross-connection

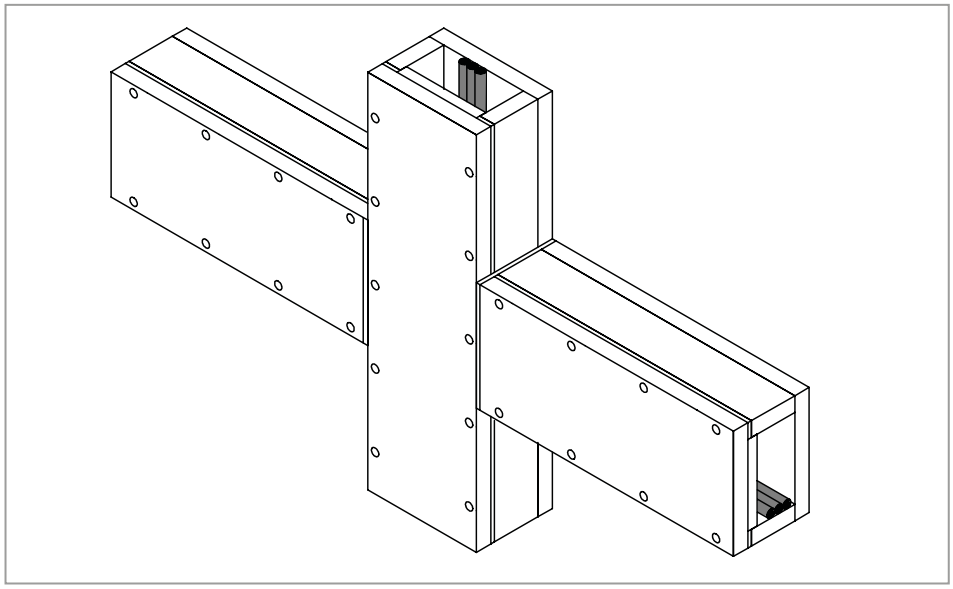

Fig. 19: Cross-connection

To branch off cables in multiple directions, it is possible to create cross-connections with the PYROLINE® Con D PLC product version. During mounting, proceed as described in chapter “7.1 Mounting the duct trough” on page 15. The cables must be routed before the duct cover is mounted.

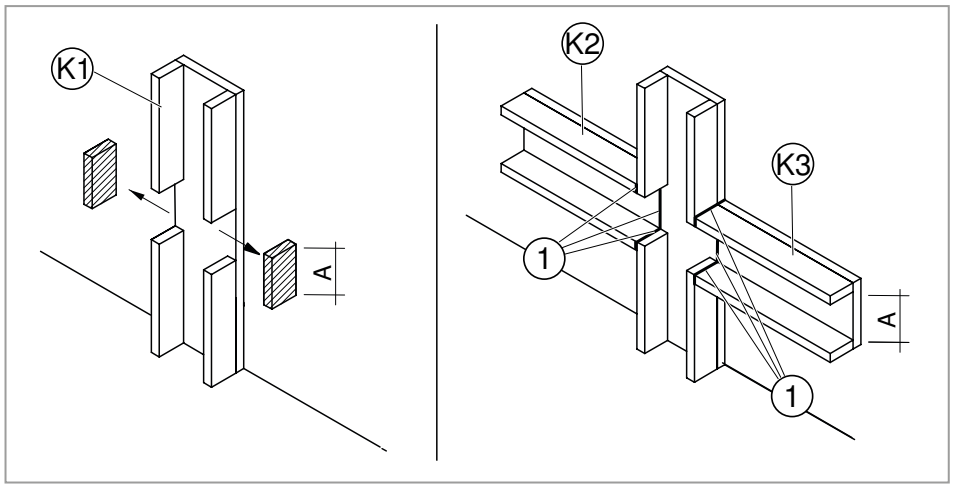

Fig. 20: Cross-connection, duct trough mounting

1. Notch the duct walls of the duct trough Ⓚ1 by dimension A (internal duct width).
2. Mount the duct trough Ⓚ1.
3. On the front sides ① of the duct trough Ⓚ2 and Ⓚ3, stick on the sealing strip.
4. Mount the duct trough Ⓚ2 and Ⓚ3 in alignment on the wall/ceiling at a 90° angle to the duct trough Ⓚ1, compressing the joint ① to a maximum of 3 mm.

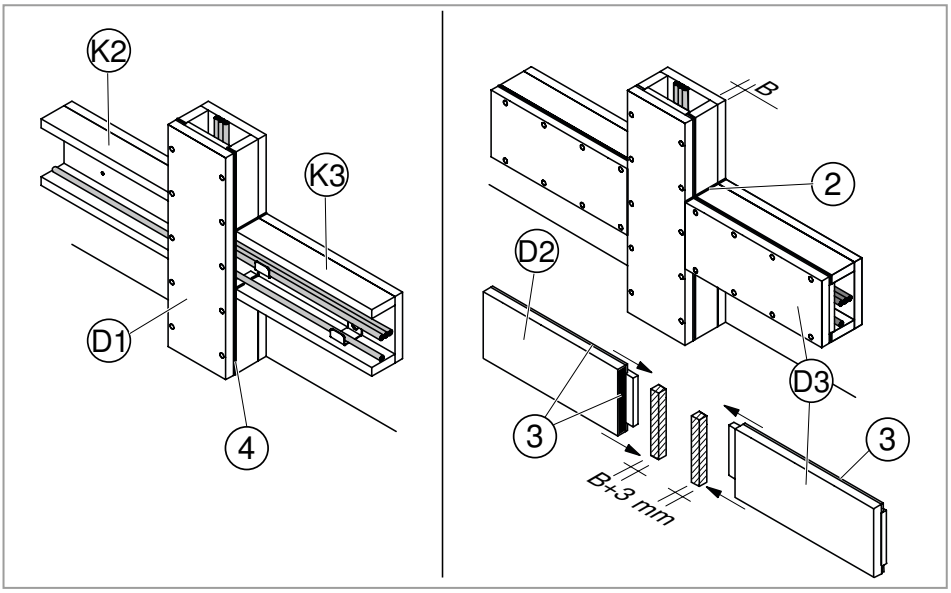

Fig. 21: Cross-connection, duct cover mounting

5. Stick the sealing strip all along the support surface ④ of the duct cover Ⓓ①.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

6. Mount the duct cover Ⓓ① along the marking lines with counter-sunk head screws on the duct trough Ⓚ①.
7. Notch out the top doubler of the duct covers Ⓓ② and Ⓓ③ on a front side by the dimension B (duct wall thickness plus 3 mm sealing strip).
8. Stick the sealing strip all along the support surface and front ends ③ of the duct covers Ⓓ② and Ⓓ③.
9. Mount the duct covers Ⓓ② and Ⓓ③ along the marking lines with counter-sunk head screws to the duct trough Ⓚ② and Ⓚ③, compressing the joints ② to a maximum of 3 mm.

7.7 Creating other fittings

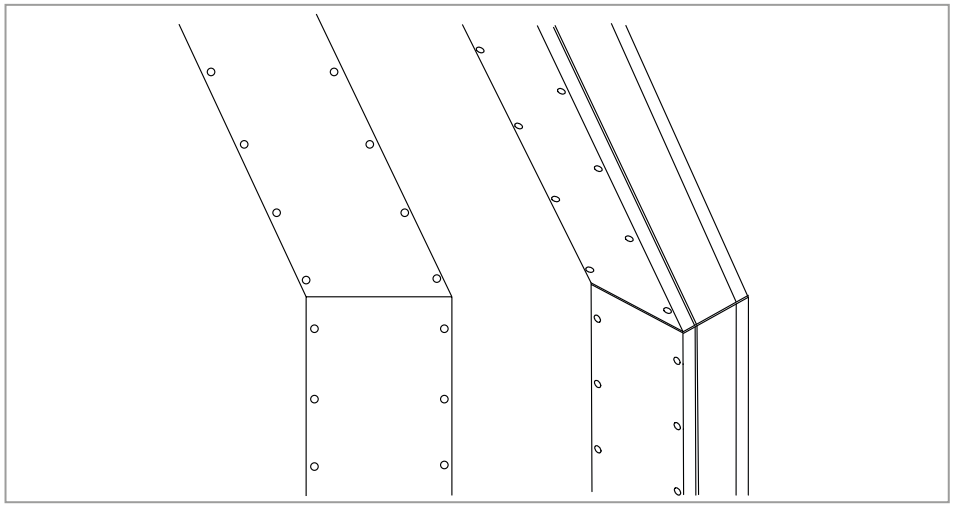

Fig. 22: Fitting with angle > 90°

To branch off cables or run the duct past obstacles, with the PYROLINE® Con D PLC product version, fittings with mitre angles of greater than 90° can be created. During mounting, proceed as described in chapter “7.1 Mounting the duct trough” on page 15 and chapter “7.2 Mounting the duct cover” on page 18. The cables must be routed before the duct cover is mounted.

1. Cut mitres on duct troughs and duct covers which abut each other. The mitres meet each other bluntly and without overlaps.
2. Stick sealing strips on the mitre on one of the two duct troughs.
3. Mount the duct troughs, compressing joints to a maximum of 3 mm.
4. Stick the sealing strip all along the support surface of the duct covers.
5. Stick the sealing strip to the front end of a duct cover.

ATTENTION

Risk of damage!
The cover edge may be damaged while screwing it to the duct. Pre-drill the duct cover before mounting.

6. Mount the duct cover along the marking lines with counter-sunk head screws, compressing the joint to a maximum of 3 mm.
7. Seal the mitre joint with KTM mortar.

7.8 Mounting an end piece

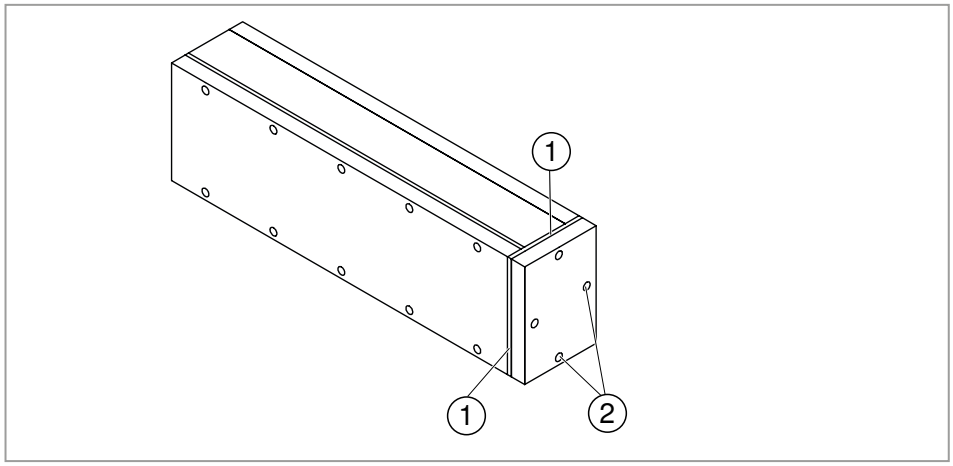

Fig. 23: End piece mounting

The fire protection duct must be tightly closed to prevent fire from spreading to the cables or smoke gases from escaping during a cable fire. Open cable ends are closed off with an end piece suitable for the fire protection duct.

1. Stick the sealing strip on the front side ① of the mounted fire protection duct.
2. Mount the end piece in front of the end of the duct with at least 4 counter-sunk head screws ②.

7.9 Running a cable out of the fire protection duct

Individual cables or cable bundles can be run out of the fire protection duct. In the area of the cable exit, doublers are always required, irrespective of the classification of the fire protection duct.

Individual cable

– Cable diameter ≤ 21 mm

– KAD-8040 doubler

Cable bundle

– Bundle diameter ≤ 45 mm

– KAD-10040 doubler

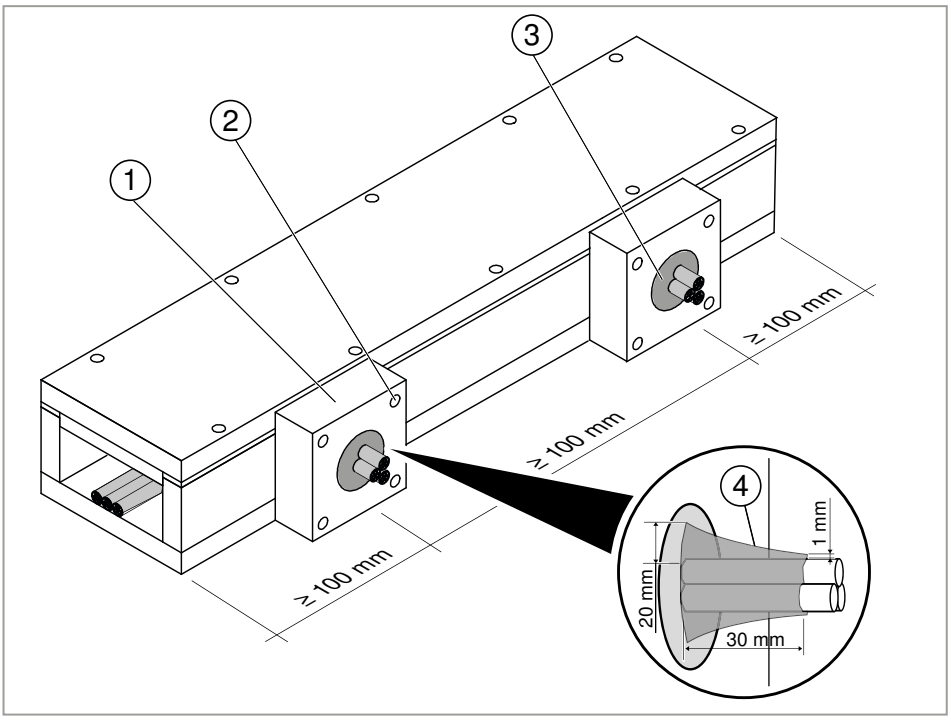

Fig. 24: Cable outlets with doubler

1. Drill a hole for the cable gland in the wall of the fire protection duct. The diameter of the drill hole may be a maximum of 2 mm for individual cables and a maximum of 5 mm for cable bundles greater than the diameter of the individual cable/cable bundle.
2. Place the doubler ① accordingly over the drill hole and screw it on with 4 screws ②.
3. Pass the cables through.
4. Seal the ring gap with DSX fire protection filler ③.
5. Coat the exited single cable/cable bundle to a length of 30 mm in front of the doubler with DSX fire protection filler. At the doubler, let the layer thickness of 20 mm run down to 1 mm dry layer thickness ④.
6. With further doublers, ensure a minimum distance of 100 mm between cable exits and at least 100 mm between the cable exit and the end of the duct (maximum of three cable exits per running metre).

7.10 Creating a wall connection

If the fire protection duct is run through the wall, or meets the wall and only the cables are run through, the wall connection must be designed according to the mounting situation.

Mounting situation		Mounting version (p. 34–36)
Duct	Classification period of the wall/ ceiling in comparison with the duct	PYROLINE® Con D PLC
Ends in front of solid wall	Equal or higher	Ⓐ
	Less	Ⓐ
	None	Not approved
Passes through solid wall	Equal or higher	Ⓑ
	Less	Ⓑ
	None	Ⓒ
Ends in front of light-duty partition	Equal, higher, less or none	Not approved
Passes through light-duty partition wall	Equal or higher	Ⓑ
	Less	Ⓑ
	None	Ⓒ
Ends under the ceiling	Equal or higher	Ⓐ
	Less	Not approved
	None	Not approved
Passes through ceiling	Equal or higher	Ⓑ
	Less	Not approved
	None	Not approved

Tab. 6: Mounting situations, wall connections

PYROLINE® Con D PLC wall connection collar

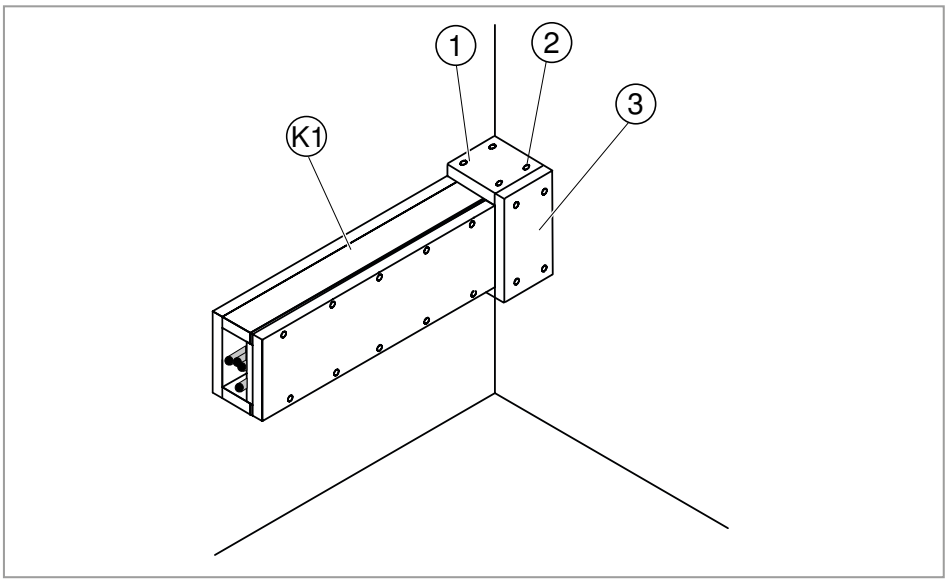

Fig. 25: Overview, PYROLINE® Con D PLC wall connection collar

Ⓚ1 Fire protection duct

① Short plate wall connection collar

② Counter-sunk head screws

③ Long plate wall connection collar

Pre-drilling wall connection collar

Note! *For simpler mounting of the wall connection collar, pre-drill the drill holes before mounting.*

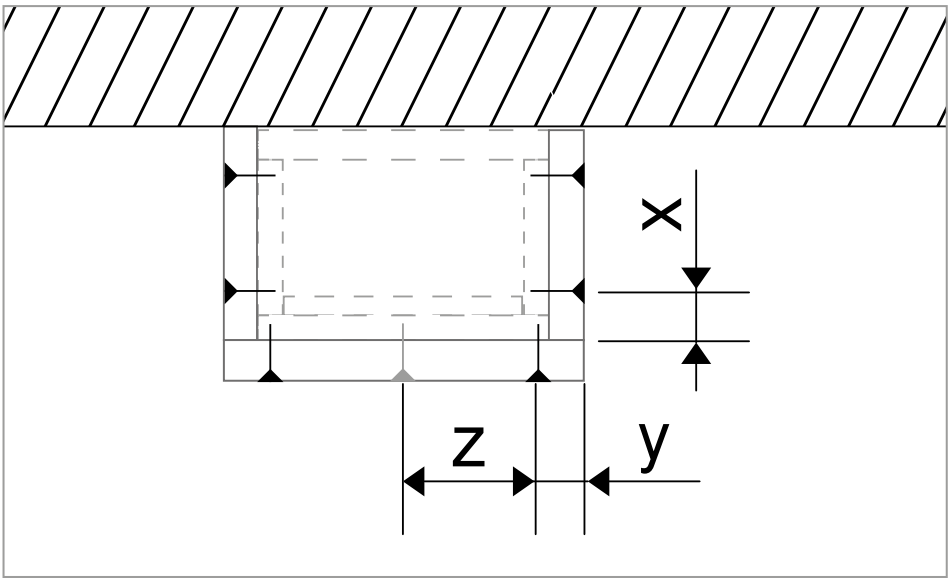

Fig. 26: Position of drilling holes for PLCD... wall connection collar

Duct type	x	y	z
PLCD D060810	50 mm	60 mm	–
PLCD D061220	50 mm	60 mm	101 mm
PLCD D090810	50 mm	70 mm	–
PLCD D091220	50 mm	70 mm	111 mm

Mounting version Ⓐ

– Cable gland, single-sided wall connection collar

Note! *The mounting version shown applies in the same way for ceiling penetrations.*

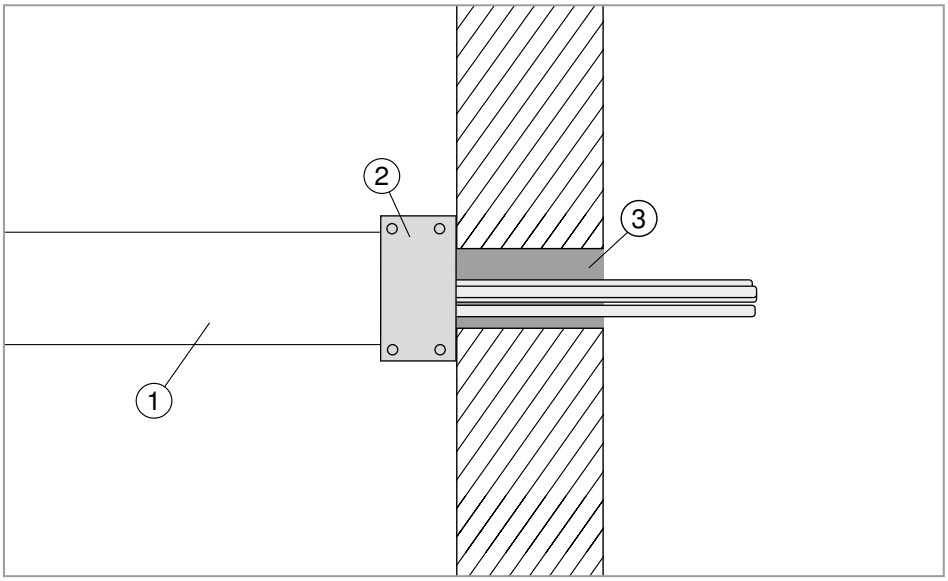

Fig. 27: Wall connection mounting version Ⓐ

1. Create a wall opening for the cable gland.
   Note! *Wall opening ≤ internal duct dimensions.*
2. Mount the fire protection duct bluntly in front of the wall ①, see also “7.1 Mounting the duct trough” on page 15.
3. Mount plates directly on the wall abutting the fire protection duct with counter-sunk head screws ②.
4. Close the wall opening with a classified insulation (recommended system PYROSIT® NG fire protection foam) ③.

Mounting version Ⓑ

– Uncut duct penetration, wall connection collar on both sides

Note! *The mounting version shown applies in the same way for ceiling penetrations.*

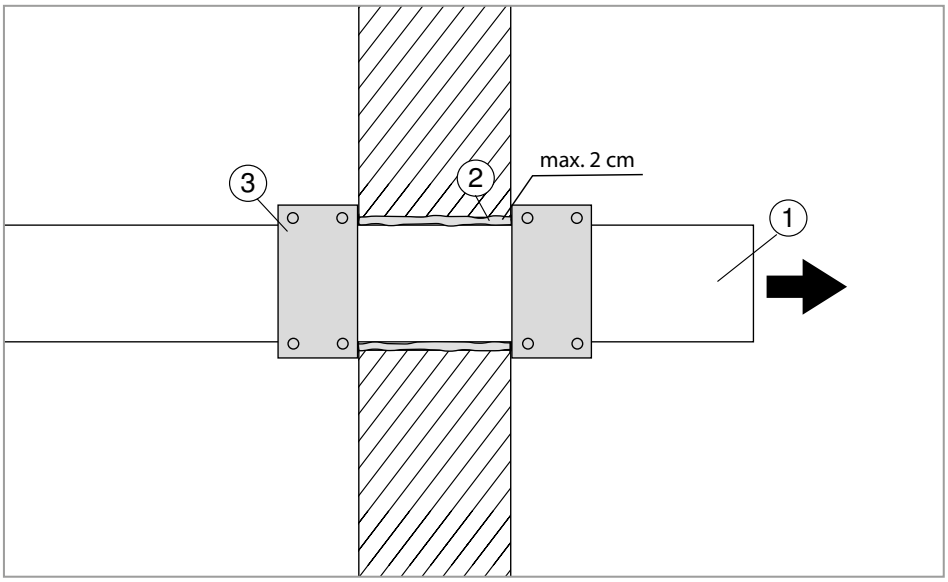

Fig. 28: Wall connection mounting version Ⓑ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Run the fire protection duct through the wall opening and mount it on the wall ①, see also “7.1 Mounting the duct trough” on page 15.
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.

Mount a wall connection collar on both sides of the wall ③:

5. Mount plates directly on the wall abutting the fire protection duct with counter-sunk head screws.

Mounting version Ⓒ

– Uncut duct penetration, no wall connection collar

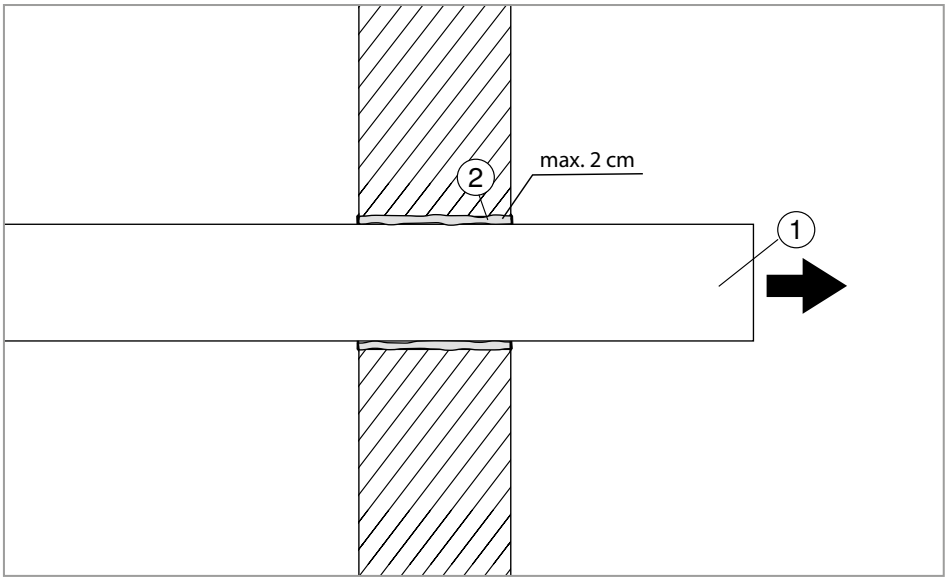

Fig. 29: Wall connection mounting version Ⓒ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Run the fire protection duct through the wall opening and mount it on the wall ①, see also “7.1 Mounting the duct trough” on page 15.
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.

8 Mounting PYROLINE® Con S PLC with a support system

The PYROLINE® Con S PLC fire protection duct is mounted with support systems, which are mounted on the wall or the ceiling, depending on the ambient conditions and wall structure. Wall brackets are mounted on the wall, suspended supports with brackets are mounted on the ceiling or threaded rods with support rails.

WARNING

Danger of heavy components!
Fire protection ducts are very heavy and can cause serious injuries if they fall on your head or other parts of the body.
Always work with a partner or work with mounting aids, such as scaffolding or a mounting lift. Wear protective work clothing, such as safety shoes. If mounting on the ceiling, wear protective helmets.

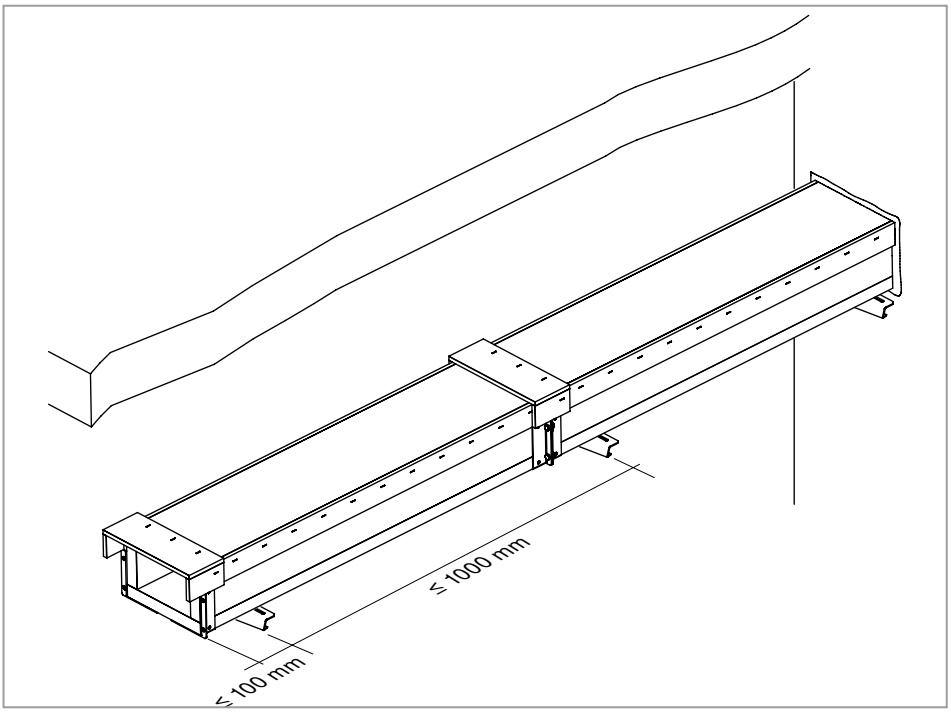

Fig. 30: Support points, fire protection duct

The maximum distance between two brackets may be 1,000 mm. The distance from the front end of a fire protection duct to the next bracket may be a maximum of 100 mm.

8.1 Mounting the wall bracket

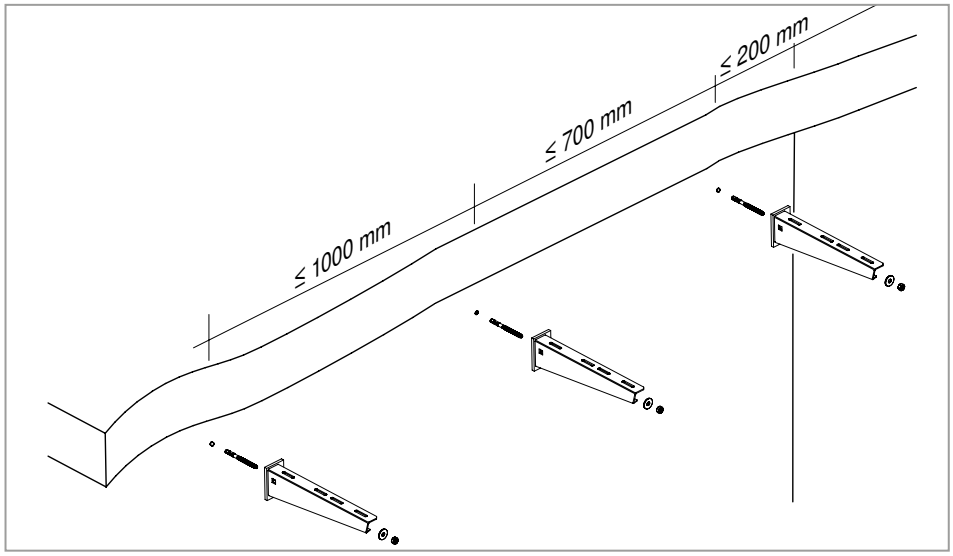

Fig. 31: Wall bracket mounting

1. Have the right wall bracket to hand. The wall bracket must be sufficiently long for the fire protection duct to be supported over its full area.
2. Draw the drill holes for the wall brackets:
   - A maximum of 200 mm away from the wall for the first wall bracket.
   - 900 mm away from the wall for the second wall bracket.
   - 1,000 mm spacing between all further wall brackets.

Note! *The data relates to a complete duct length. If the fire protection duct is shortened, adjust the spacing of the second wall bracket accordingly.*

3. Drill the drill holes.
4. Mount the wall bracket with bolt ties for masonry and concrete.

8.2 Mounting the suspended support and bracket

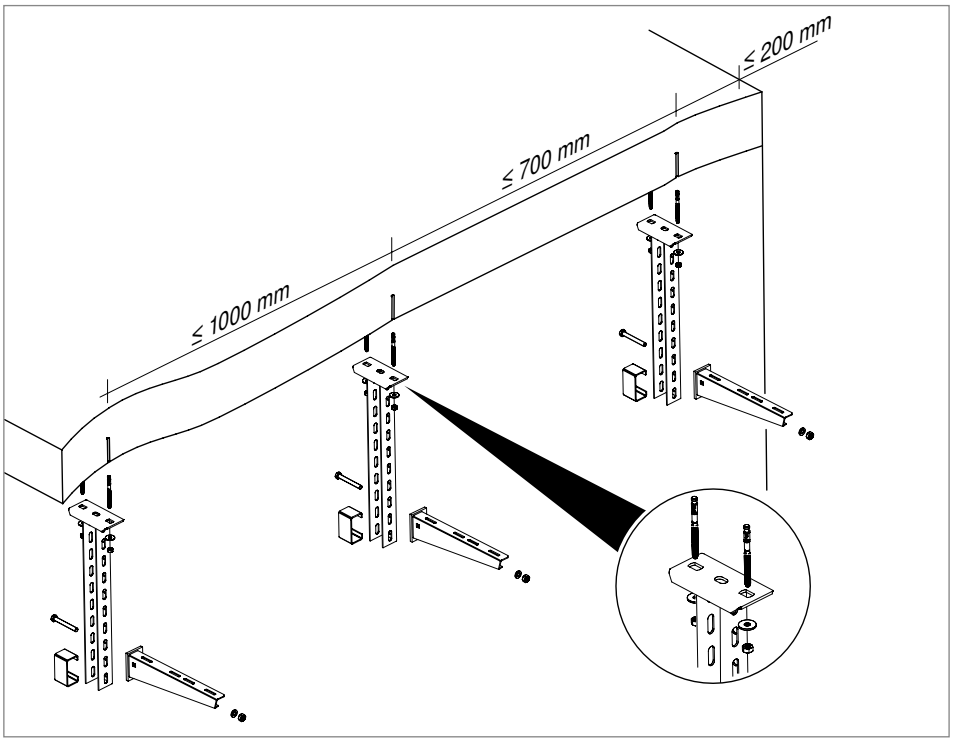

Fig. 32: Suspended support and bracket mounting under the ceiling

1. Have the right suspended support and bracket to hand. The bracket must be sufficiently long for the fire protection duct to be supported over its full area.
2. Draw the drill holes for suspended supports:
   - A maximum of 200 mm away from the wall for the first suspended support.
   - 900 mm away from the wall for the second suspended support.
   - 1,000 mm spacing between all further suspended supports.

Note! *The data relates to a complete duct length. If the fire protection duct is shortened, adjust the spacing of the second suspended support accordingly.*

3. Drill the drill holes.
4. Mount the suspended supports with bolt ties.
5. Mount the bracket on suspended supports with spacers and hexagonal bolts.

8.3 Mounting the threaded rod and support rail

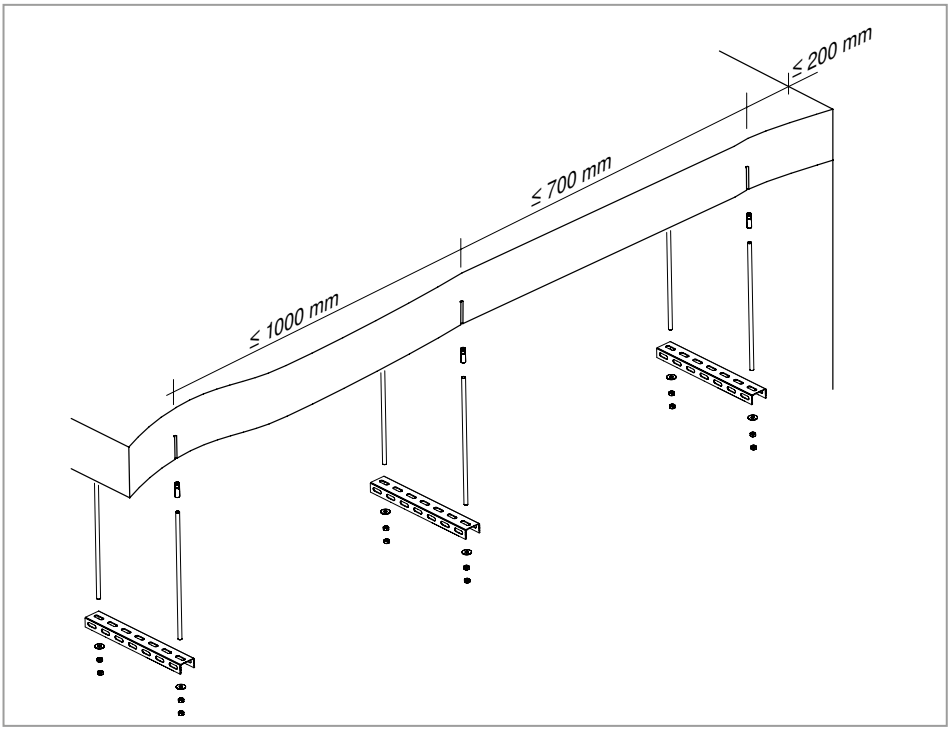

Fig. 33: Threaded rods and support rails under the ceiling

1. Draw the drill holes for the threaded rods:
   - A maximum of 200 mm away from the wall for the first pair of threaded rods.
   - 900 mm away from the wall for the second pair of threaded rods.
   - 1,000 mm spacing between all further pairs of threaded rods.

Note! *The data relates to a complete duct length. If the fire protection duct is shortened, adjust the spacing of the second pair of threaded rods accordingly.*

2. Drill the drill holes.
3. Mount the bolt tie under the ceiling.
4. Screw the M10 threaded rods into the bolt tie.
5. Mount the support rail on the threaded rod with washers and hexagonal nuts.
6. Lock the hexagonal nuts with a second hexagonal nut.

8.4 Mounting the duct trough

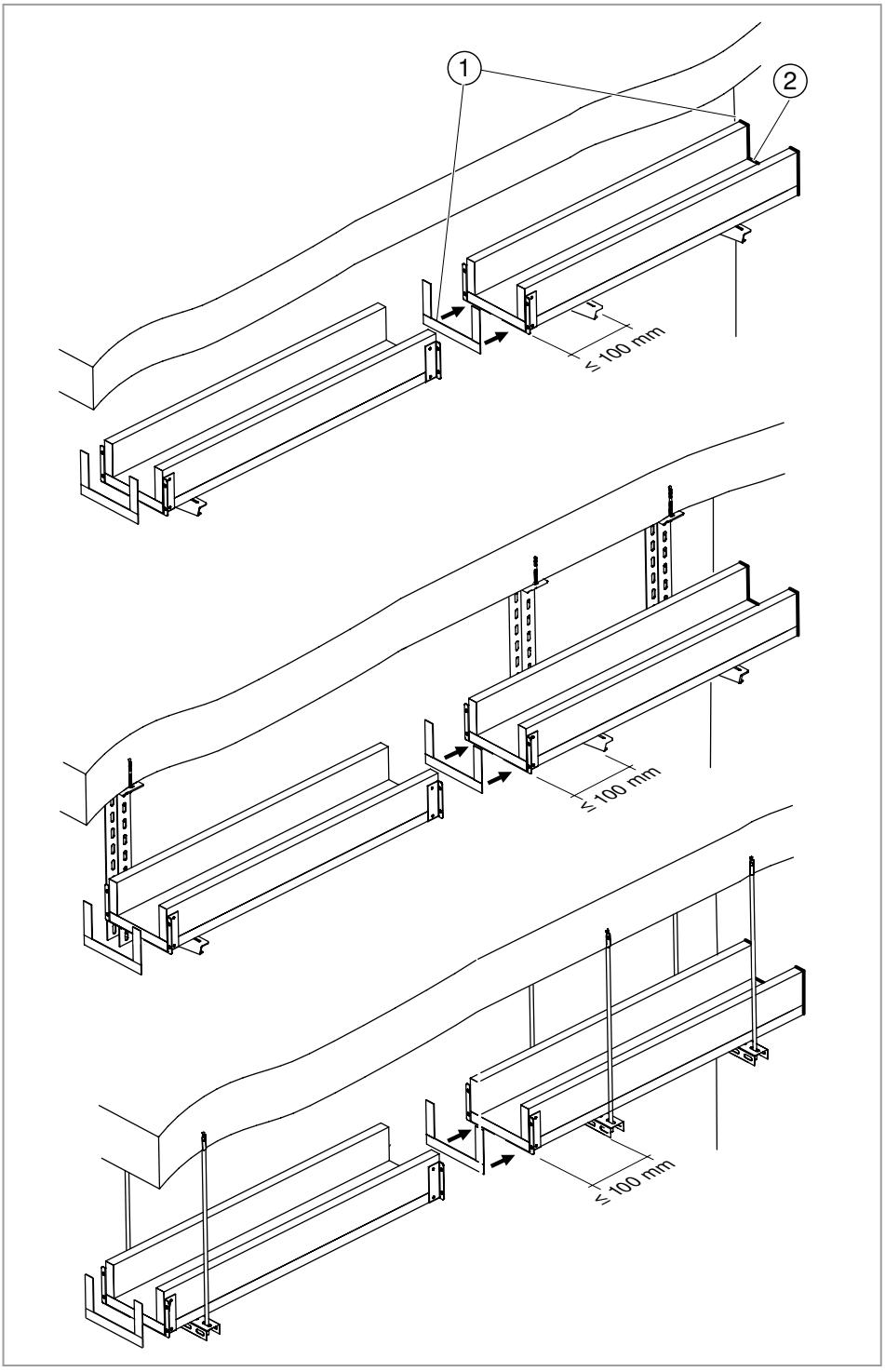

Fig. 34: Spacings of suspension points and joints

1. Apply sealing strips ① to both ends of the duct trough.
2. Locate the duct trough from the wall or wall penetration in such a way that the front side has a maximum distance of 100 mm to the support surface of the bracket or the support rail. With a wall connection, ensure a joint of maximum 3 mm ②.

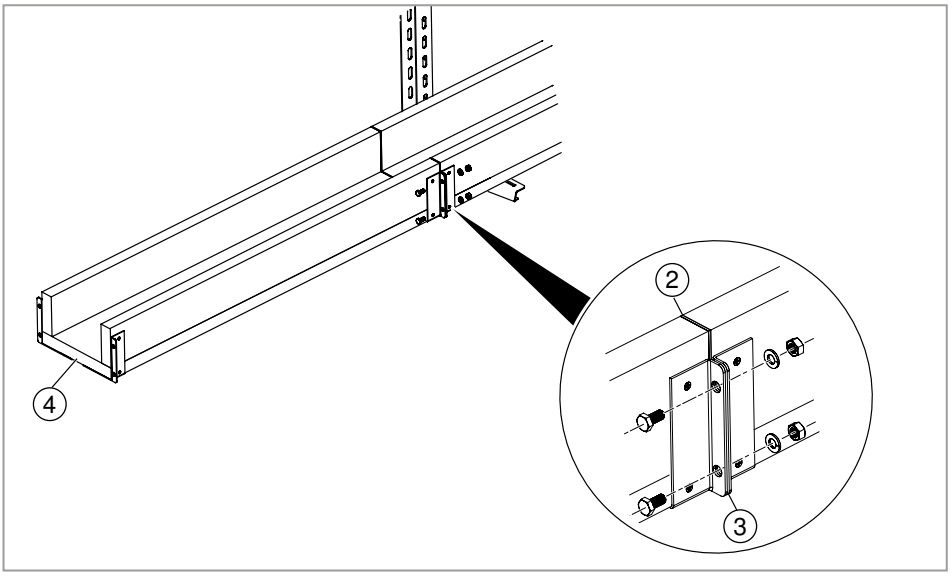

Fig. 35: Duct trough mounting

3. Directly connect the next duct trough and ensure a joint ② of max. 3 mm.
4. Screw the pre-mounted connectors ③ to the ends of the duct trough.
5. Apply sealing strips ④ to the front side of the duct trough.
6. Fix the position of the duct trough using a KRS 6x30 screw through the bracket.
7. Repeat steps 3–6 until the duct troughs are completely mounted. If necessary, mount fittings as described in chapter “8.6 Mounting fittings” on page 44.
8. If necessary, shorten the fire protection duct at the end without joint overlapping using a hand or coping saw.
9. Dismantle the connector from the waste piece and remount on the newly created end.

The cables can be routed when the duct troughs and any necessary fittings are fully mounted.

8.5 Mounting the duct cover

Before the duct cover is mounted, all the necessary fittings and separating retainers must be mounted and the cables routed. Mounting of the duct cover can deviate when fittings are used, refer to the appropriate chapters.

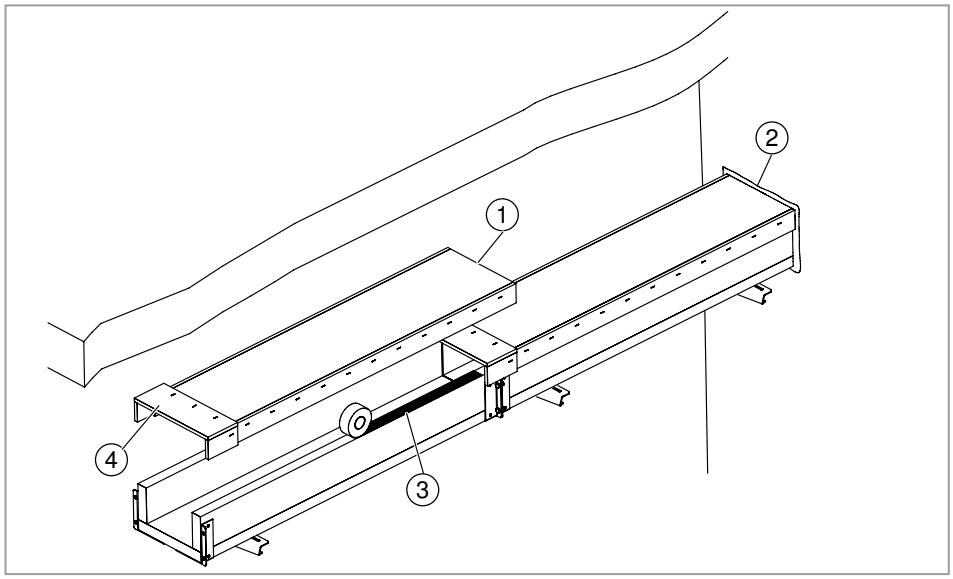

Fig. 36: Duct cover mounting

1. Stick the sealing strip all along the support surface ③ and one end of the duct cover ①.
2. Place the duct cover on the duct trough so that the joint overlap ④ is located on the following duct trough. It is not necessary to screw it to the duct trough.
3. Fully close joints to the wall ② with KTM mortar.

The fire protection duct is fully mounted. The wall connection must be made according to the mounting situation. See also chapter “8.10 Creating a wall connection” on page 49.

8.6 Mounting fittings

The PYROLINE® Con S PLC product version offers prefabricated fittings for various cable routing requirements:

– 90° bend to run cables around a corner

– T piece to branch a cable off

– Vertical bend, rising/falling, in order to route the cable upwards/downwards in a slanting manner

Fittings must be supported by additional brackets. The cables must be routed before the duct cover is mounted.

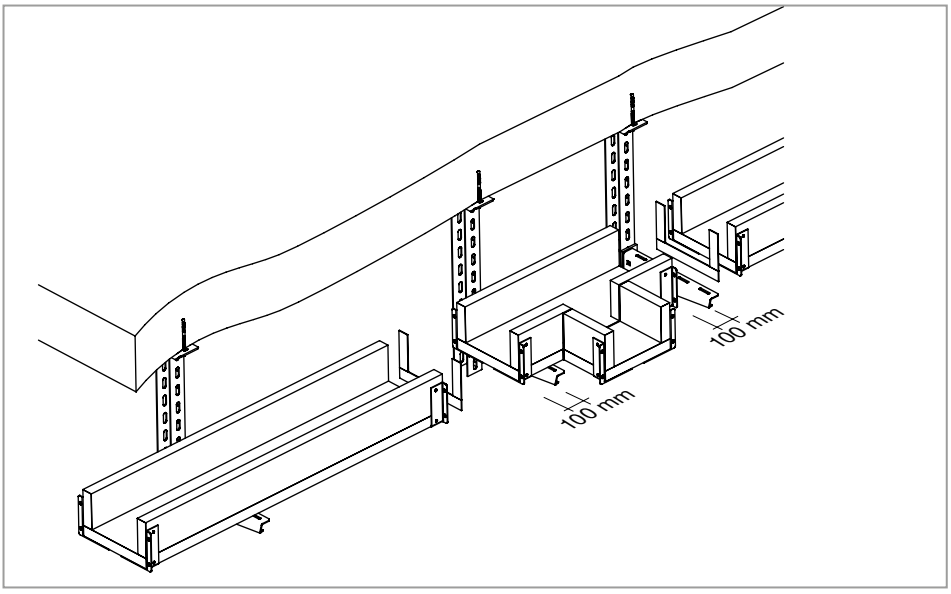

Fig. 37: Support on fittings

1. Draw the drill holes for wall brackets, suspended support or threaded rods, so that the brackets have a maximum spacing of 100 mm to the joints of the fitting.
2. Draw on the drill holes and mount the brackets, suspended support or threaded rods (see chapter “8.1 Mounting the wall bracket” on page 38, “8.2 Mounting the suspended support and bracket” on page 39 or “8.3 Mounting the threaded rod and support rail” on page 40).
3. Apply sealing strips to the joints of the fitting if there is no sealing strip on the joining cable troughs yet.

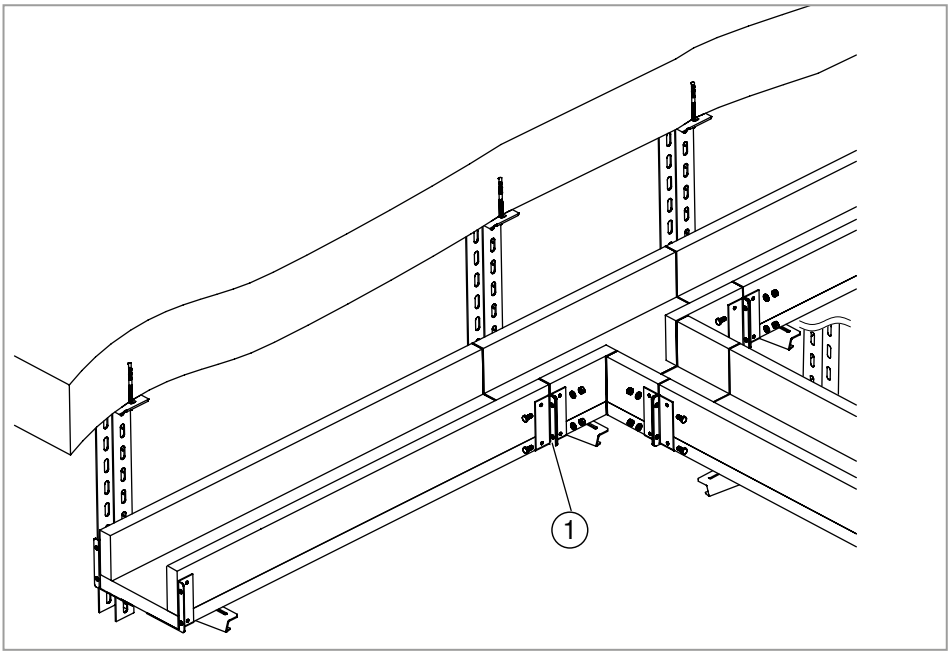

Fig. 38: Connection of fittings

4. Place the fitting on the bracket or support rail.
   Note! *When using a vertical bend and a vertical rising/falling cable guide, the fire protection duct must be mounted in this area with the GMS connection bracket on the support rail or the bracket. See also "8.6.1 Mounting a vertical bend on a bracket or support rail" on page 46.*
5. Screw the pre-mounted connectors ① to the end of the duct trough and the fitting.

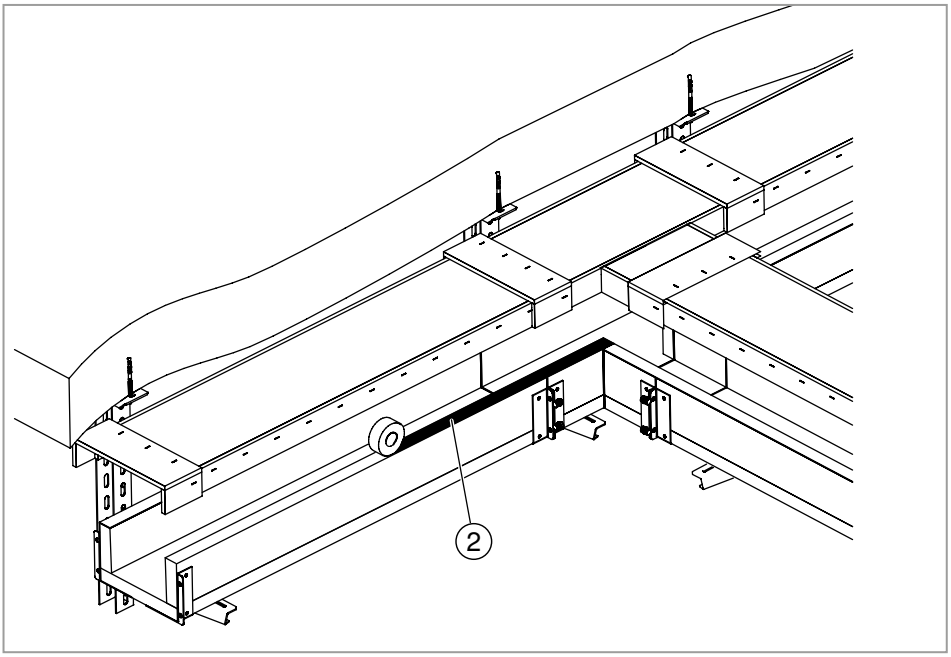

Fig. 39: Fittings, duct cover mounting

6. Stick the sealing strip ② all along the support surface and one front side of the duct cover.
7. Place the duct cover on the duct trough so that the joint overlap is located on the following duct trough.

8.6.1 Mounting a vertical bend on a bracket or support rail

With a vertical duct route, the fire protection duct must additionally be mounted on the brackets or support rails with the GMS connection bracket.

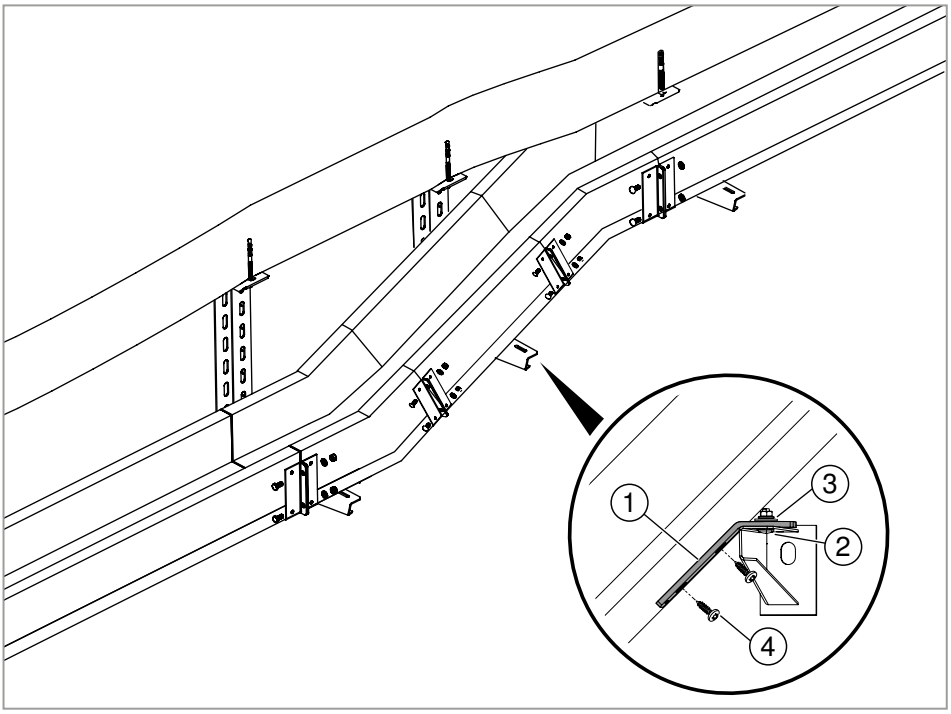

Fig. 40: Mounting on brackets or support rails with vertical bend

1. Mount the GMS connection bracket ① with an M6 truss-head bolt ② and a corresponding large washer ③ on the bracket.
   Note! *In the case of mounting on support rails, the angle must be fastened with a hexagonal bolt M10 and a corresponding large washer.*
2. Lay the fire protection duct on the GMS connection bracket and fix with two screws of type KRS 6x30 ④.

8.7 Mounting separating retainers

If cables with different functions or voltages are routed in the PYROLINE® Con PLC fire protection duct, they must be separated by separating retainers to avoid malfunctions or interference.

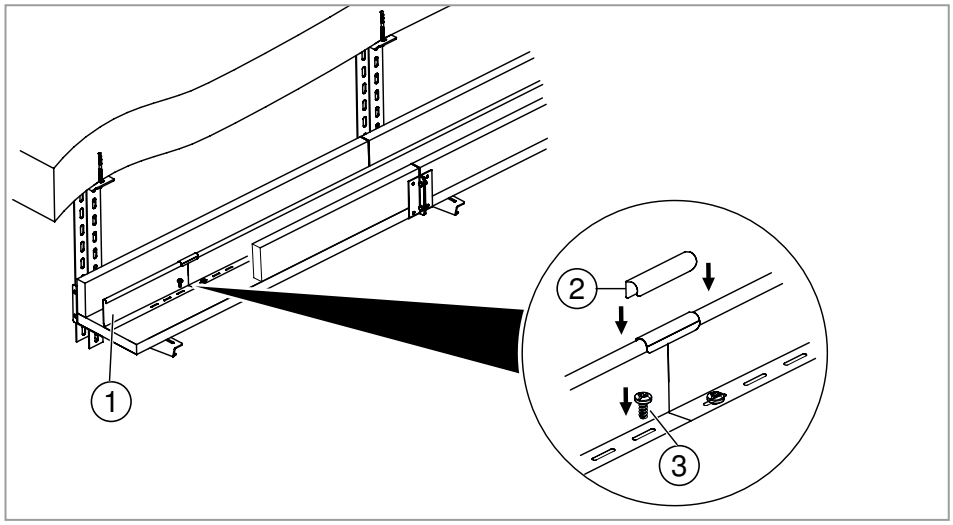

Fig. 41: Separating retainer mounting

1. Mount the separating retainer ① on the duct base with the KRS 6x30 screw ③.
2. Mount additional separating retainers flush with the previous separating retainer.
3. Attach separating retainer connectors ② at the joints of the separating retainer.

8.8 Mounting an end piece

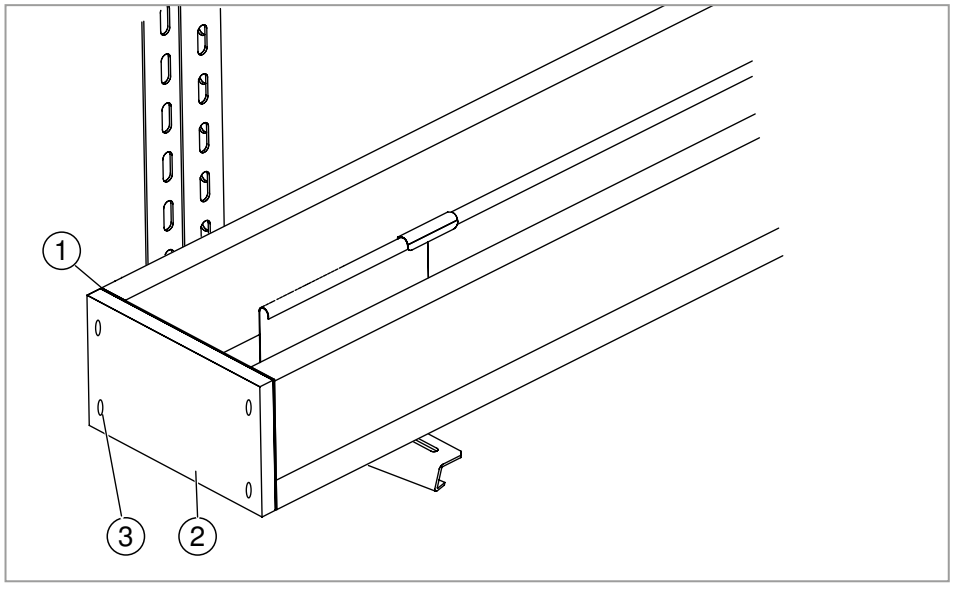

Fig. 42: End piece mounting

The fire protection duct must be tightly closed to prevent smoke gases from escaping during a cable fire. Open cable ends are closed off with an end piece suitable for the fire protection duct.

1. Stick the sealing strip on the front side ① of the previously mounted duct trough.
2. Mount the end piece ② in front of the front side with at least 4 counter-sunk head screws ③.

8.9 Running a cable out of the fire protection duct

Individual cables or cable bundles can be run out of the fire protection duct. In the area of the cable exit, doublers are always required, irrespective of the classification of the fire protection duct.

Individual cable

– Cable diameter ≤ 21 mm

– KAD-8040 doubler

Cable bundle

– Bundle diameter ≤ 45 mm

– KAD-10040 doubler

Note! *In order to mount KAD-10040 with the fire protection ducts PLCS D060810 and PLCS D090810, notch out the side of the duct cover in the area of the cable outlet.*

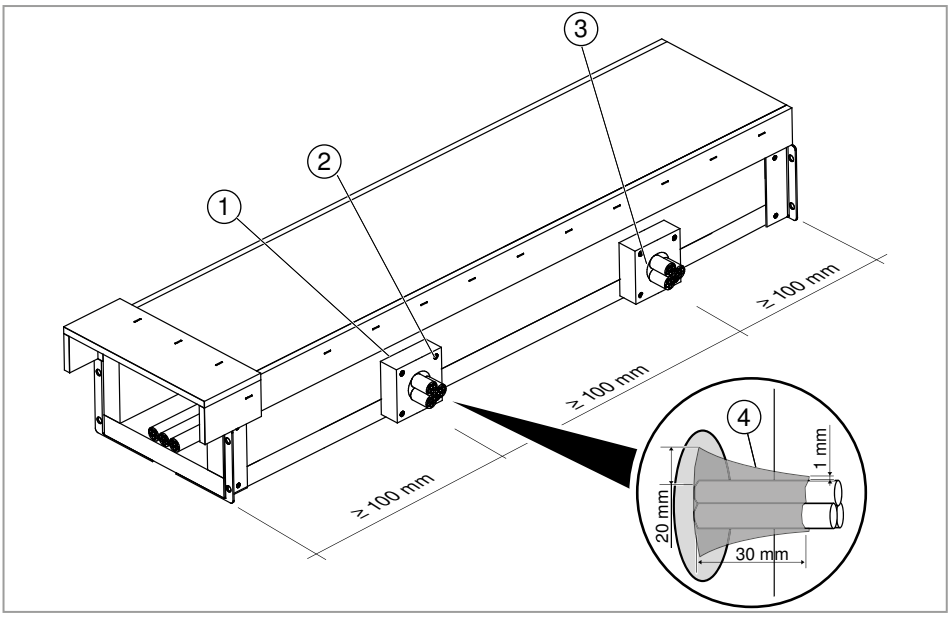

Fig. 43: Cable outlet with doubler

1. Drill a hole for the cable gland in the wall of the fire protection duct. The diameter of the drill hole may be a maximum of 2 mm for individual cables and a maximum of 5 mm for cable bundles greater than the diameter of the individual cable/cable bundle.
2. Place the doubler ① accordingly over the drill hole and screw it on with 4 screws ②.
3. Pass the cables through.
4. Seal the ring gap with DSX fire protection filler ③.
5. Coat the exited single cable/cable bundle to a length of 30 mm in front of the doubler with DSX fire protection filler. At the doubler, let the layer thickness of 20 mm run down to 1 mm dry layer thickness ④.
6. With further doublers, ensure a minimum distance of 100 mm between cable exits and at least 100 mm between the cable exit and the end of the duct (maximum of three cable exits per running metre).

8.10 Creating a wall connection

If the fire protection duct is run through the wall, or meets the wall and only the cables are run through, the wall connection must be designed according to the mounting situation.

Mounting situation		Mounting version (p. 51–56)
Duct	Classification period of the wall/ ceiling in comparison with the duct	PYROLINE® Con S PLC
Ends in front of solid wall	Equal or higher	Ⓓ
	Less	Ⓓ
	None	Not approved
Passes through solid wall	Equal or higher	Ⓔ
	Less	Ⓑ
	None	Ⓒ
Ends in front of light-duty partition	Equal, higher, less or none	Not approved
Passes through light-duty partition wall	Equal or higher	Ⓕ
	Less	Ⓖ
	None	Ⓒ

Tab. 7: Mounting situations, wall connections

PYROLINE® Con S PLC wall connection collar

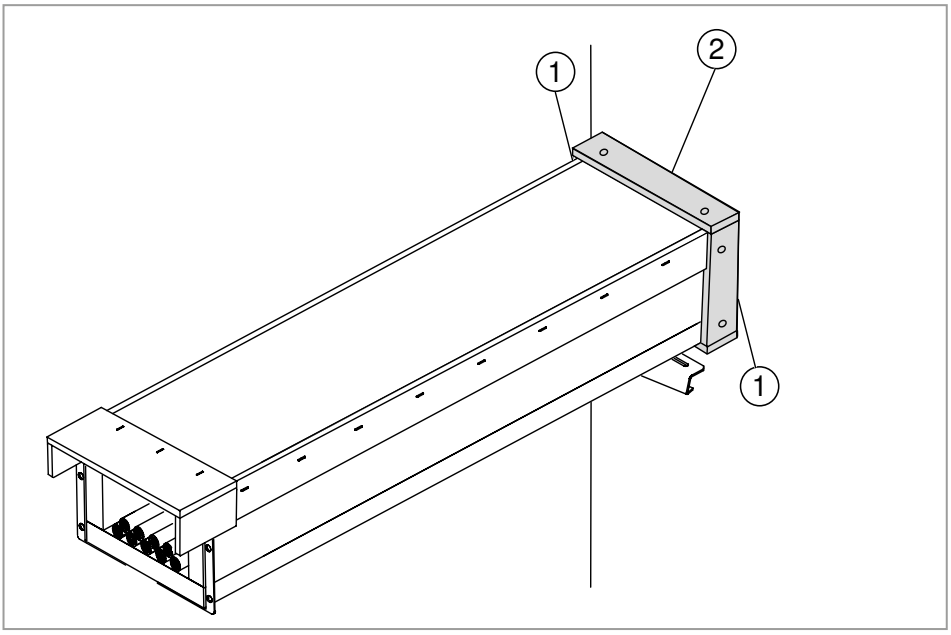

Fig. 44: Overview, PYROLINE® Con S PLC wall connection collar

① Shorter plates of the wall connection collar
② Longer plates of the wall connection collar

Pre-drilling wall connection collar

Note! *For simpler mounting of the wall connection collar, pre-drill the drill holes before mounting.*

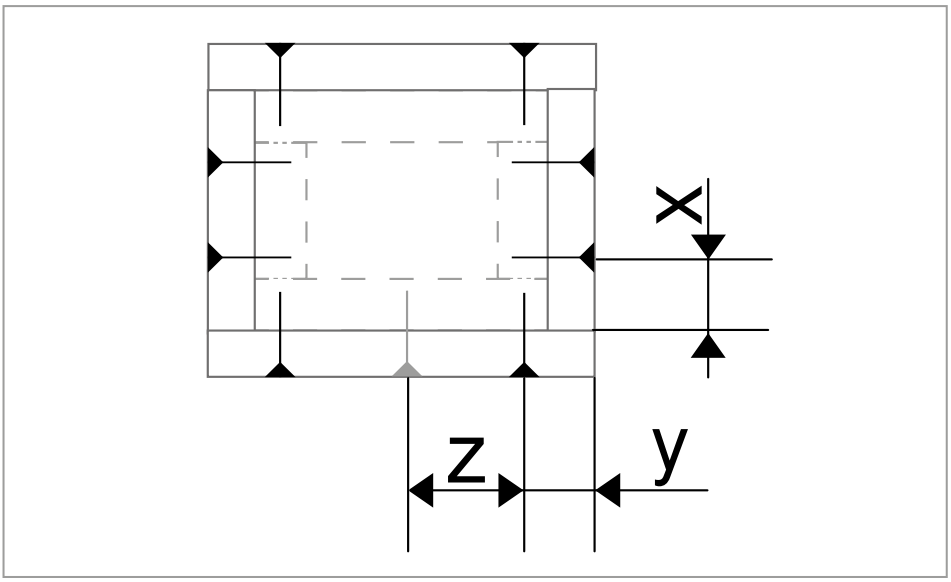

Fig. 45: Position of drilling holes for PLCS... wall connection collar

Duct type	x	y	z
PLCS D060810	50 mm	50 mm	60 mm
PLCS D061220	50 mm	50 mm	110 mm
PLCS D090810	70 mm	70 mm	60 mm
PLCS D091220	70 mm	80 mm	100 mm

Mounting version Ⓑ

– Uncut duct penetration, wall connection collar on both sides

Note! *If the fire protection duct is mounted with wall brackets, then the rear plate of the wall connection collar, which is pointed at the wall, must be mounted before the duct is run through as otherwise mounting is no longer possible.*

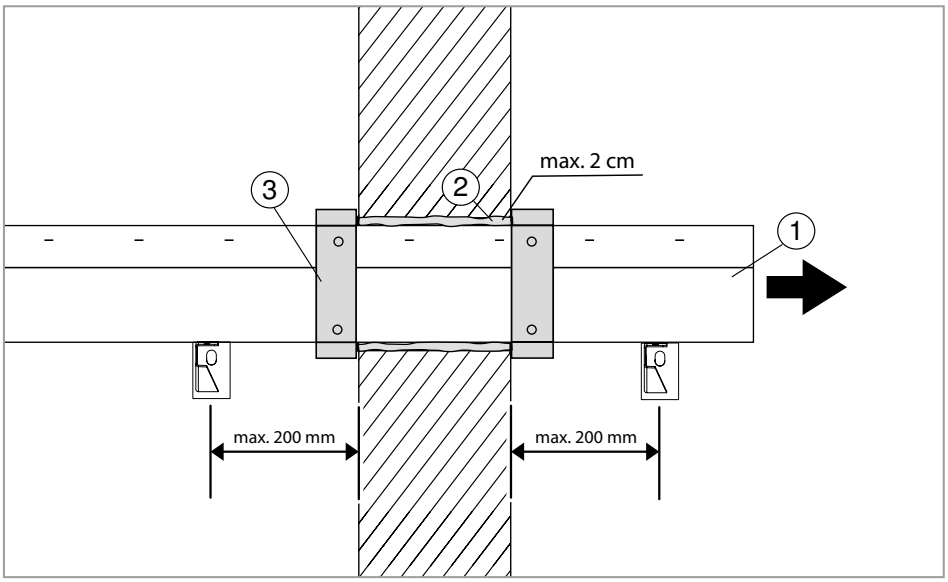

Fig. 46: Wall connection, mounting version Ⓑ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Run the fire protection duct through the wall opening and mount it ①, see also 8.1 on page 38 to 8.4 on page 41.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.
5. Notch out the duct cover in the area of the side wall connection collar.

Mount wall connection collars on both sides of the wall ③:

6. Mount plates directly on the wall abutting the fire protection duct with counter-sunk head screws.

Mounting version Ⓒ

– Uncut duct penetration, no wall connection collar

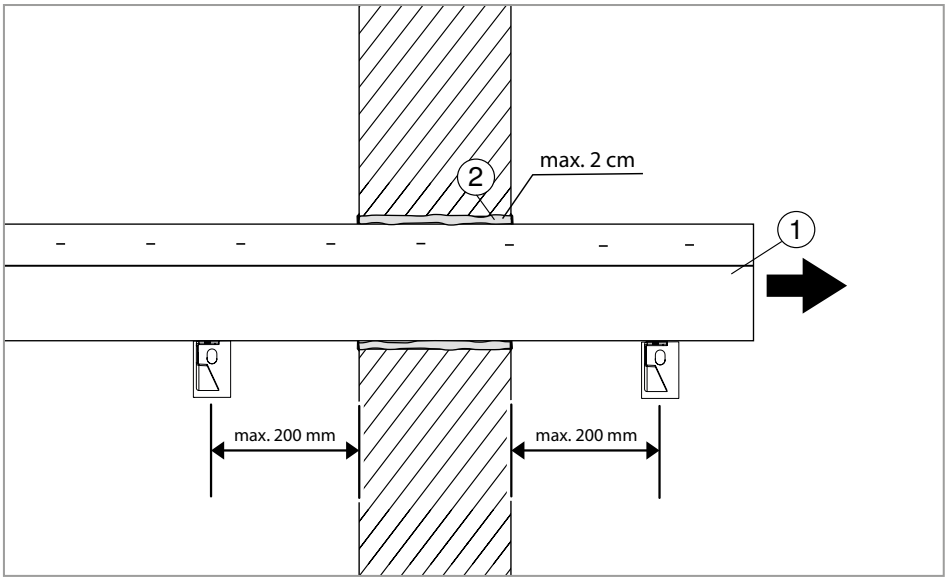

Fig. 47: Wall connection mounting version Ⓒ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Run the fire protection duct through the wall opening and mount it ①, see also 8.1 on page 38 to 8.4 on page 41.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.

Mounting version Ⓓ

– Cable gland, single-sided wall connection collar

Note! *If the fire protection duct is mounted with wall brackets, then the rear plate of the wall connection collar, which is pointed at the wall, must be mounted before the duct is run through as otherwise mounting is no longer possible.*

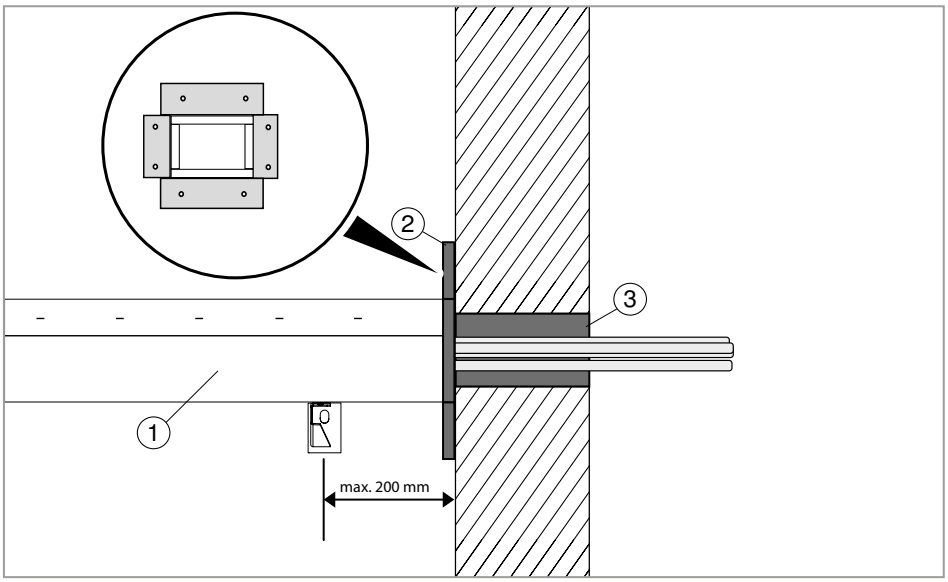

Fig. 48: Wall connection mounting version Ⓓ

1. Create a wall opening for the cable gland.
   Note! *Wall opening ≤ internal duct dimensions.*
2. Mount the fire protection duct bluntly in front of the wall, see also 8.1 on page 38 to 8.4 on page 41.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Notch out the duct cover in the area of the side wall connection collar.
4. Mount the plates of the wall connection collar on the wall, directly adjoining the duct, with appropriate fastening material (diameter ≥ 4 mm, not included in the scope of delivery) ②.
5. Close the wall opening with a classified insulation (recommended system PYROSIT® NG fire protection foam) ③.

Mounting version Ⓔ

– Cut duct penetration, wall connection collar on both sides

Note! *If the fire protection duct is mounted with wall brackets, then the rear plate of the wall connection collar, which is pointed at the wall, must be mounted before the duct is run through as otherwise mounting is no longer possible.*

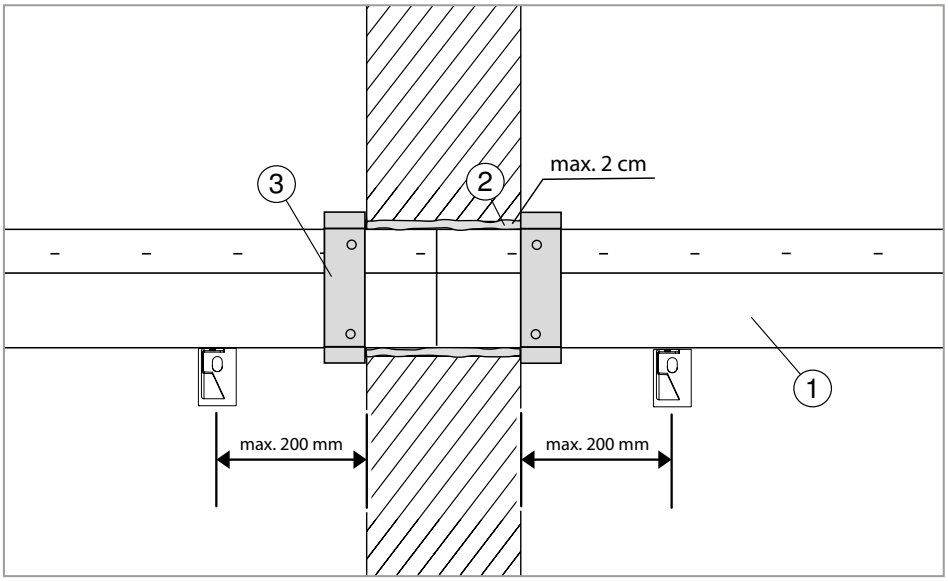

Fig. 49: Wall connection mounting version Ⓔ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Let the fire protection ducts abut in the wall opening and mount them ①, see also 8.1 on page 38 to 8.4 on page 41. Joint, maximum 3 mm.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.
5. Notch out the duct cover in the area of the side wall connection collar.

Mount wall connection collars on both sides of the wall ③:

6. Mount plates directly on the wall abutting the fire protection duct with counter-sunk head screws.

Mounting version Ⓕ

– Cut duct penetration, wall connection collar on both sides with additional frame

Note! *If the fire protection duct is mounted with wall brackets, then the rear plate of the wall connection collar, which is pointed at the wall, must be mounted before the duct is run through as otherwise mounting is no longer possible.*

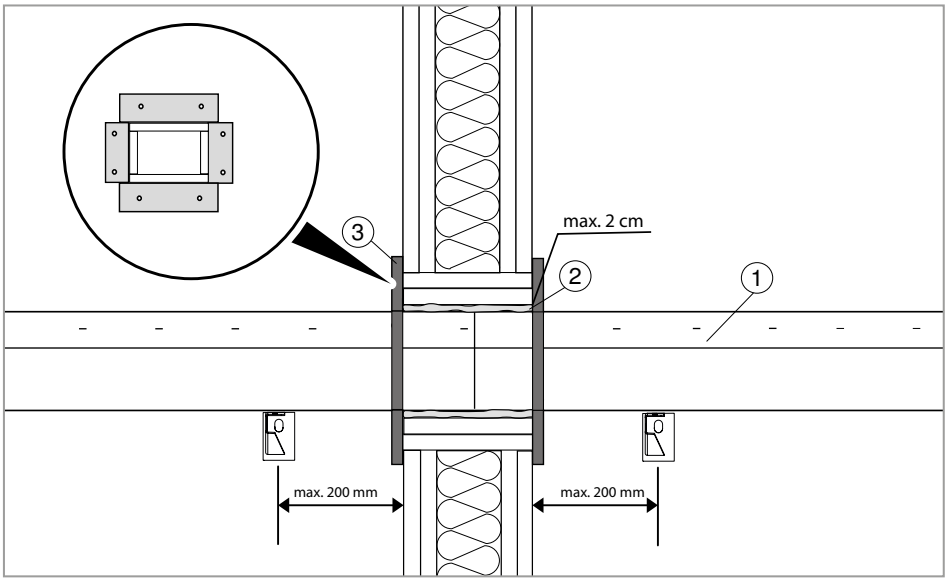

Fig. 50: Wall connection mounting version Ⓕ

1. Create a wall opening for the duct penetration.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Let the fire protection ducts abut in the wall opening and mount them ①, see also 8.1 on page 38 to 8.4 on page 41. Joint, maximum 3 mm.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.
5. Notch out the duct cover in the area of the side wall connection collar.
6. Mount the plates of the wall connection collar on the wall, directly adjoining the duct, with appropriate fastening material (diameter ≥ 4 mm, not included in the scope of delivery) ③.

Mounting version Ⓖ

– Duct penetration, wall connection frame on both sides with additional frame

Note! *If the fire protection duct is mounted with wall brackets, then the rear plate of the wall connection collar, which is pointed at the wall, must be mounted before the duct is run through as otherwise mounting is no longer possible.*

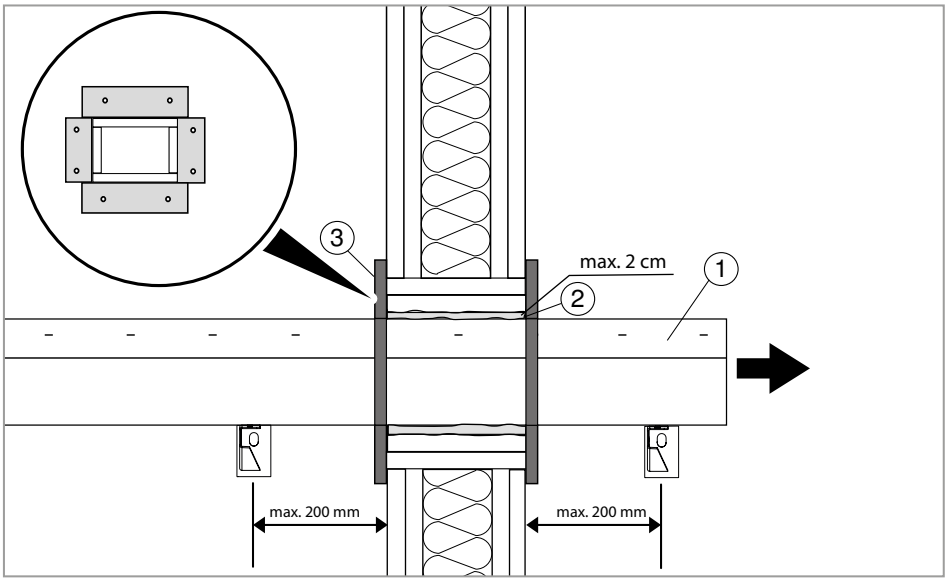

Fig. 51: Wall connection mounting version Ⓖ

1. Create a wall opening for the cable gland.
   Note! *Wall opening max. 2 cm > external duct dimensions.*
2. Run the fire protection duct through the wall opening and mount it on the wall ①, see also 8.1 on page 38 to 8.4 on page 41.
   Note! *The last suspension may be a maximum of 200 mm from the wall.*
3. Close the ring gap around the duct with MIW-S mineral wool ②.
4. Seal the mineral wool with non-combustible material, e.g. plaster.
5. Notch out the duct cover in the area of the side wall connection collar.
6. Mount the plates of the wall connection collar on the wall, directly adjoining the duct, with appropriate fastening material (diameter ≥ 4 mm, not included in the scope of delivery) ③.

8.11 Combining PYROLINE® Con S PLC with PYROLINE® Con D PLC

The fire protection duct PYROLINE® Con S PLC on a support system can be combined with the PYROLINE® Con D PLC fire protection duct mounted on the wall. The fire protection duct on the support system runs bluntly up to the wall and is fastened with brackets.

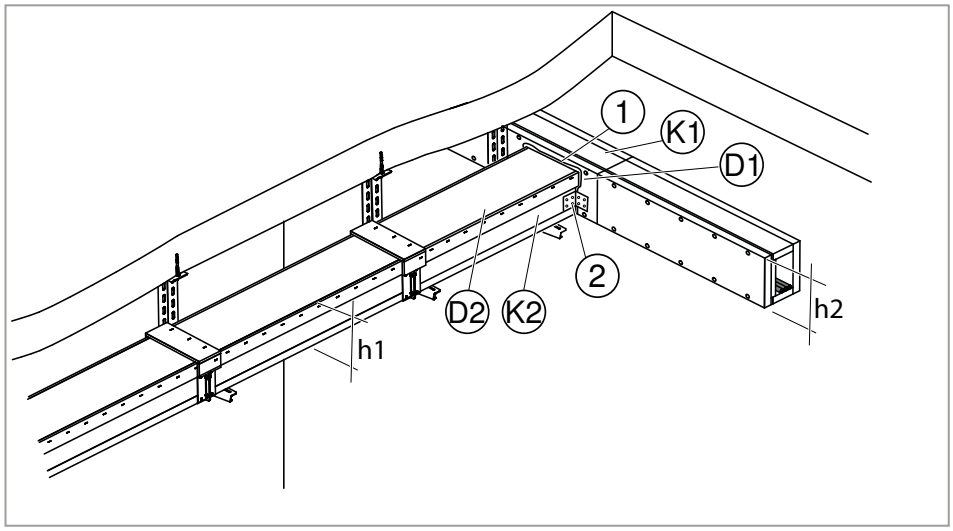

Fig. 52: Combination of suspended fire protection duct and wall duct

Note! *The fire protection duct on the support system may at most be as high as the wall duct (h1 ≤ h2).*

1. Create an opening in the duct cover Ⓓ① of the wall duct.
2. Shorten the duct trough Ⓚ② and duct cover Ⓓ② appropriately.
3. Stick sealing strips to the joints to the wall duct Ⓚ①.
4. Place the duct trough on the support bracket and, on both sides, mount it on the wall duct Ⓚ① using standard steel or metal brackets ②.
5. After cable filling, stick sealing strips to the duct cover and place it on the duct trough.
6. Seal the joints to the wall duct with KTM mortar ①.

9 Retrofitting

If cables are inserted later in the PYROLINE® Con PLC fire protection duct,

– then the proper construction, as described in these instructions, must be maintained,

– and the approved cable load may not be exceeded (see table).

Duct type	Wall/ceiling mounting		Mounting with support system	Cable load
	Cable directly on top	Cable mounting with separating bracket/separating clamp		
PYROLINE® Con D PLC	x	–	–	≤ 10.0 kg/m
PYROLINE® Con D PLC	–	x	–	≤ 15.3 kg/m
PYROLINE® Con S PLC	–	–	x	≤ 31.5 kg/m

Tab. 8: Approved cable load

10 Maintenance

The PYROLINE® Con PLC fire protection duct does not require maintenance. However, it should be inspected regularly for possible damage, which must be repaired with KTM mortar.

11 Dismantling PYROLINE® Con PLC

WARNING

Danger of heavy components!
Fire protection ducts are very heavy and can cause serious injuries if they fall on your head or other parts of the body.
Do not work alone or only work with mounting aids, such as scaffolding or a mounting lift. Wear protective work clothing, such as safety shoes and helmets.

11.1 Dismantling PYROLINE® Con D PLC

1. Dismantle the wall connection collar.
2. Slacken the duct cover connections and remove the duct cover.
3. Remove the cables.
4. Slacken the connection of a duct trough and remove the duct trough.
5. Repeat steps 2–3 until the duct troughs and fittings have been dismantled.

11.2 Dismantling PYROLINE® Con S PLC

1. Dismantle the wall connection collar.
2. Remove the duct cover.
3. Remove the cables.
4. Dismantle the separating retainers.
5. Slacken the connection of the connectors.
6. Slacken the securing screws.
7. Remove the duct troughs from the support system.
8. Dismantle the suspended supports and brackets or threaded rods and support rails or wall brackets.

12 Disposal

National laws and regulations must be observed for disposal.

Disposal during mounting

– The residual material of the fire protection duct and the mortar can be disposed of as mixed construction site waste.

– Dispose of the residual material of the support system, as well as separating retainers, separating clamps and brackets, in the same way as scrap metal.

Disposal during building demolition

– The fire protection ducts must be disposed of as a mixed construction waste.

– The support systems, as well as separating retainers, separating clamps and brackets, must be disposed of in the same way as scrap metal.

Disposal after a fire

WARNING

Danger of falling components!
If there is a fire, support systems and fastenings of the fire protection duct can be massively impaired in their function and can fall. Falling components can cause serious injuries. During disposal, proceed with extreme caution and before dismantling, check components for instability. Wear safety shoes and a helmet.

CAUTION

Irritant effect!
If there is a fire, burning cable insulation can create corrosive gases, which have an irritant and corrosive effect. When disposing of fire protection ducts which have been subjected to a fire, wear breathing protection and protective clothing.

If the PYROLINE® Con fire protection duct was subjected to fire damage, then the complete fire protection duct must be replaced. If the fire damage occurred in a duct, then check whether a replacement of the support system is necessary. In all other cases, the support system must be replaced.

We recommend obtaining the advice of the local fire damage restorer during disposal.

13 Technical data

Type	Item no.	Designation	Suitable for
PYROLINE® Con D PLC			
PLCD D060810	7215800	EI60 fire protection duct	–
PLCD D061220	7215804	EI60 fire protection duct	–
PLCD D090810	7215810	EI90 fire protection duct	–
PLCD D091220	7215814	EI90 fire protection duct	–
PLCD W060810	7215820	EI60 wall connection collar	PLCD D060810
PLCD W061220	7215824	EI60 wall connection collar	PLCD D061220
PLCD W090810	7215830	EI90 wall connection collar	PLCD D090810
PLCD W091220	7215834	EI90 wall connection collar	PLCD D091220
PLCD E060810	7215840	EI60 end piece	PLCD D060810
PLCD E061220	7215844	EI60 end piece	PLCD D061220
PLCD E090810	7215850	EI90 end piece	PLCD D090810
PLCD E091220	7215854	EI90 end piece	PLCD D091220
PLCD-SB0810	7215480	Separating bracket	PLCD D060810, PLCD D090810
PLCD-SB1220	7215484	Separating bracket	PLCD D061220, PLCD D091220
PLCD-SC0810	7215490	Separating clamp	PLCD D061220, PLCD D091220
PLCD-SC1220	7215494	Separating clamp	PLCD D061220, PLCD D091220
PYROLINE® Con S PLC			
PLCS D060810	7217860	EI60 fire protection duct	–
PLCS D061220	7217864	EI60 fire protection duct	–
PLCS D090810	7217870	EI90 fire protection duct	–
PLCS D091220	7217874	EI90 fire protection duct	–
PLCS B060810	7217880	EI60 90° bend	PLCS D060810
PLCS B061220	7217884	EI60 90° bend	PLCS D061220
PLCS B090810	7217890	EI90 90° bend	PLCS D090810
PLCS B091220	7217894	EI90 90° bend	PLCS D091220
PLCS T060810	7217900	EI60 T piece	PLCS D060810
PLCS T061220	7217904	EI60 T piece	PLCS D061220
PLCS T090810	7217910	EI90 T piece	PLCS D090810
PLCS T091220	7217914	EI90 T piece	PLCS D091220
PLCS VR060810	7217920	EI60 vertical bend, rising	PLCS D060810
PLCS VR061220	7217924	EI60 vertical bend, rising	PLCS D061220
PLCS VR090810	7217930	EI90 vertical bend, rising	PLCS D090810
PLCS VR091220	7217934	EI90 vertical bend, rising	PLCS D091220

PLCS VF060810	7217940	EI60 vertical bend, falling	PLCS D060810
PLCS VF061220	7217944	EI60 vertical bend, falling	PLCS D061220
PLCS VF090810	7217950	EI90 vertical bend, falling	PLCS D090810
PLCS VF091220	7217954	EI90 vertical bend, falling	PLCS D091220
PLCS W060810	7217960	EI60 wall connection collar	PLCS ...060810
PLCS W061220	7217964	EI60 wall connection collar	PLCS ...061220
PLCS W090810	7217970	EI90 wall connection collar	PLCS ...090810
PLCS W091220	7217974	EI90 wall connection collar	PLCS ...091220
PLCS E060810	7217980	EI60 end piece	PLCS ...060810
PLCS E061220	7217984	EI60 end piece	PLCS ...061220
PLCS E090810	7217990	EI90 end piece	PLCS ...090810
PLCS E091220	7217994	EI90 end piece	PLCS ...091220
KVS-2	7215383	Connection set	PLCS ...060810, PLCS ...090810
KVS-4	7215389	Connection set	PLCS ...061220 and PLCS ...091220
Accessories			
LHS 20	7215288	Cable brackets, vertical	–
LHS 40	7215290	Cable brackets, vertical	–
LHS 60	7215292	Cable brackets, vertical	–
KDS-30	7215434	Sealing strip	–
KDS-40	7215436	Sealing strip	–
KDS-60	7215438	Sealing strip	–
KAD-10040	7215462	Doubler	–
KAD-8040	7215464	Doubler	–
WIM-S	7202306	Mineral wool	–
KTM	7215500	Fire protection duct mortar	–
DSX-K	7202300	Insulation layer creator in a cartridge	–
KRS 6x30	3498100	Bolt	–

Notes

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OBORD 200297 03/2023

Building Connections