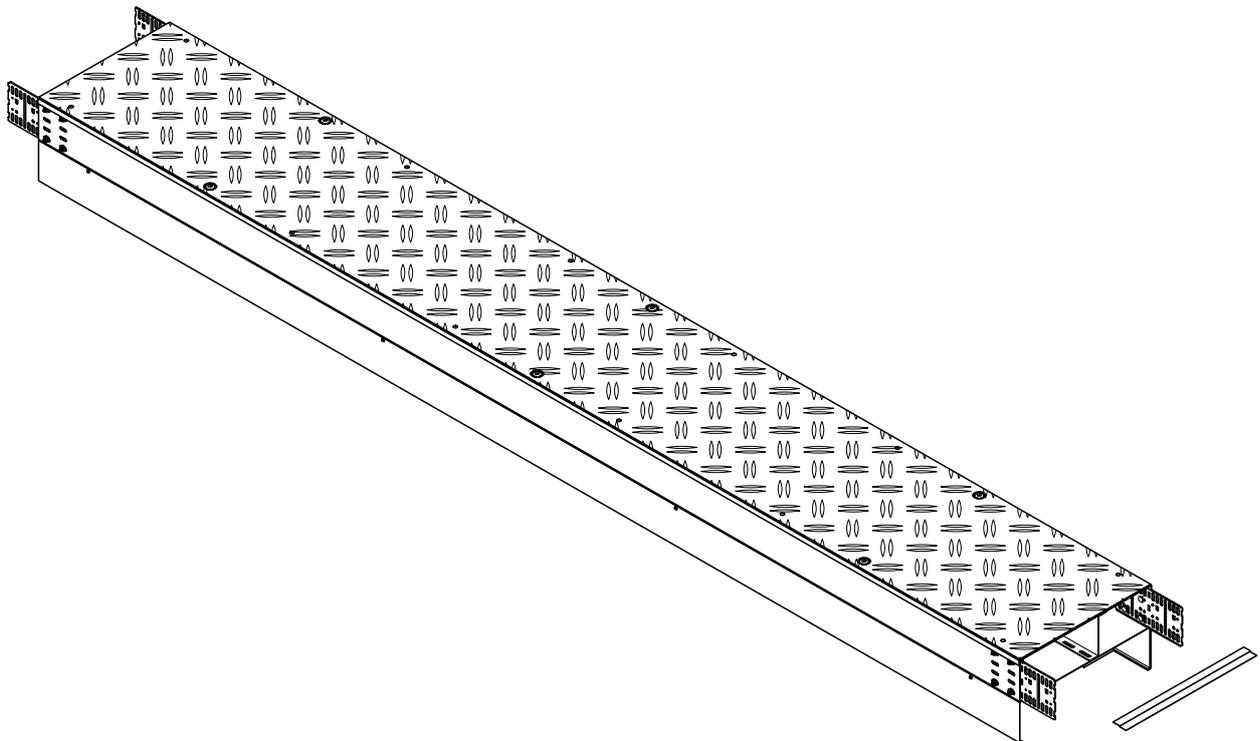


BKRS walkable cable tray systems
Mounting instructions



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Mounting instructions

Table of contents

1	General information4
1.1	Target group	4
1.2	Using these instructions	4
1.3	Types of safety information	4
1.4	Correct use	4
1.5	Basic standards.	4
2	General safety information5
3	Product description5
1.6	Product features	5
1.7	Product overview	6
4	Mounting.8
1.8	Mounting the support profiles.	8
1.9	Mounting the support brackets	9
1.10	Mounting the support elements.	10
1.11	Mounting the cable trays	11
1.11.1	Mounting the cable trays directly on the floor	11
1.11.2	Mounting the cable trays on support profiles.	12
1.11.3	Mounting the cable trays on support brackets	12
1.12	Connecting cable trays	13
1.12.1	Connecting cable trays	13
1.12.2	Connecting cable trays as a corner	14
1.12.3	Connecting cable trays as an intersection	15
1.12.4	Changing the cable tray width	16
1.12.5	Closing the open ends of the cable trays.	17
1.13	Mounting Z-shaped barrier strips	18
1.14	Mounting protective panels	19
1.15	Creating equipotential bonding	19
1.16	Mounting the cover	21
1.16.1	Mounting the cover support	21
1.16.2	Mounting the section cover.	23
1.16.3	Mounting the cover on a corner connection	24
1.16.4	Mounting the cover on an intersection connection	25
5	Maintenance	26
6	Dismantling	26
7	Disposal	26

1 General information

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) charged with the planning and installation of the BKRS walkable cable tray system.

1.2 Using these instructions

- These instructions are based on the standards valid at the time of compilation (March 2017).
- Before commencing work, read these instructions through once completely. In particular, please observe the safety instructions.
- Keep all the documents supplied with the BKRS walk-on cable tray system safe, so that the information is available should you need it.
- 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.

1.3 Types of safety information



Type of risk!

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



Type of risk!

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



Type of risk!

Shows a possibly hazardous situation. If the situation is not avoided, then damage to the product or the surroundings may occur.

Note! *Indicates important information or assistance!*

1.4 Correct use

The BKRS cable tray systems are walk-on cable tray systems for direct floor mounting or raised mounting on support brackets or support profiles. They are used to install and protect power and data cables in industrial areas.

The BKRS cable tray systems are suitable for use at ambient temperatures of $-20\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$. At temperatures below $-20\text{ }^{\circ}\text{C}$, the metal will become brittle and may not be processed further.

1.5 Basic standards

The BKRS walkable cable tray systems correspond to the standards:

- IEC 61537 – Cable management
- Based on DIN EN 50085 – Cable ducting systems for electrical installations
- DIN EN 50174 – Information technology – Cabling installation (EMC)

2 General safety information

Observe the following general safety information on handling the BKRS walkable cable tray systems:

- Wear protective gloves during any mechanical mounting work.
- The BKRS walkable cable tray systems must be included in the protection measures and/or the equipotential bonding.
- The inclusion in the equipotential bonding of the overall system must be performed by specialist personnel.

3 Product description

3.1 Product features

The BKRS walkable cable tray systems are characterised by the following product features:

- Three installation options: Direct floor mounting, raised mounting on support profiles, mounting on support brackets for additional installation space
- Walkable thanks to solid cover
- Footfall load up to 9 kN through material thicknesses of up to 6 mm and Z barrier strips
- Walkable and non-slip thanks to chequer plate
- With base perforation for ventilation, as water drainage and for more flexible mounting
- Resistant to dirt and dust through protection plates and dust protection elements
- EMC-compatible separation of power and data cables through barrier strips
- Side heights 100 mm and 110 mm
- Self-supporting, no screwing with machines required

Item	Designation	Function
①	Cover with chequer plate	Walkable cover of the cable tray
②	Dust protection element	Protection against dust and chips at the cover joints
③	Truss-head screw	Mounting of barrier strips
④	Z-shaped barrier strip	Cover support for cable tray widths of > 200 mm
⑤	Straight and angle connector	Connection of cable trays
⑥	Support bracket	Raised cable tray mounting with simultaneous installation of cable trays, enabling additional media to be routed under the cable tray
⑦	Support profile	Raised mounting of the cable tray
⑧	Support element	Additional support for the support bracket Support elements must be used with support brackets for widths above 400 millimetres, if the stated load limits are to be achieved (approved loads under "BKRS cable tray" at www.obo.de).
⑨	Equipotential busbar	Connection of the cable tray system with the equipotential bonding of the overall system
⑩	Earthing terminal	
⑪	Cover support	Support of covers and fitting covers in intersection areas
⑫	Reducing bracket/end closure 100 mm	Closure of open points, if cable trays of different widths are connected, as well as closure of cable tray ends
⑬	Reducing bracket/end closure 110 mm	
⑭	Drilling screw	Fastening of the cable trays to support brackets or cover supports, fastening of the protective panels to cable trays
⑮	Protective panel	Side protection of the installations against kicking and dirt (only with support bracket mounting)
⑯	Hexagonal nut with flange	Connection of the cable trays with support profiles, straight and angle connectors, reducing brackets/end closures, barrier strips
⑰	Cable tray	Acceptance of the power and data cables
⑱	Anti-slip strip	Securing of attached cover which is not yet screwed on
⑲	Turn buckle	Fastening of the cover to the cable tray

4 Mounting

The ducts are suitable for floor mounting or can be mounted raised using support profiles or support brackets.

The maximum spacing of the support profiles or support brackets must be 1.2 m, if the stated load limits are to be achieved (approved loads under "BKRS cable tray" at www.obo.de).

Note! *Depending on the circumstances on the construction site, the sequence of mounting steps for the BKRS walkable tray system may change!*

4.1 Mounting the support profiles

Note! *The support profiles (Z profiles) must be installed in an alternating manner under the cable tray.*

Note! *When mounting the support profiles, it is helpful to use the base perforation of the cable tray.*

The support profiles are screwed to the floor with the M8 bolt ties and nuts or with Ø 7.5 mm bolt ties.

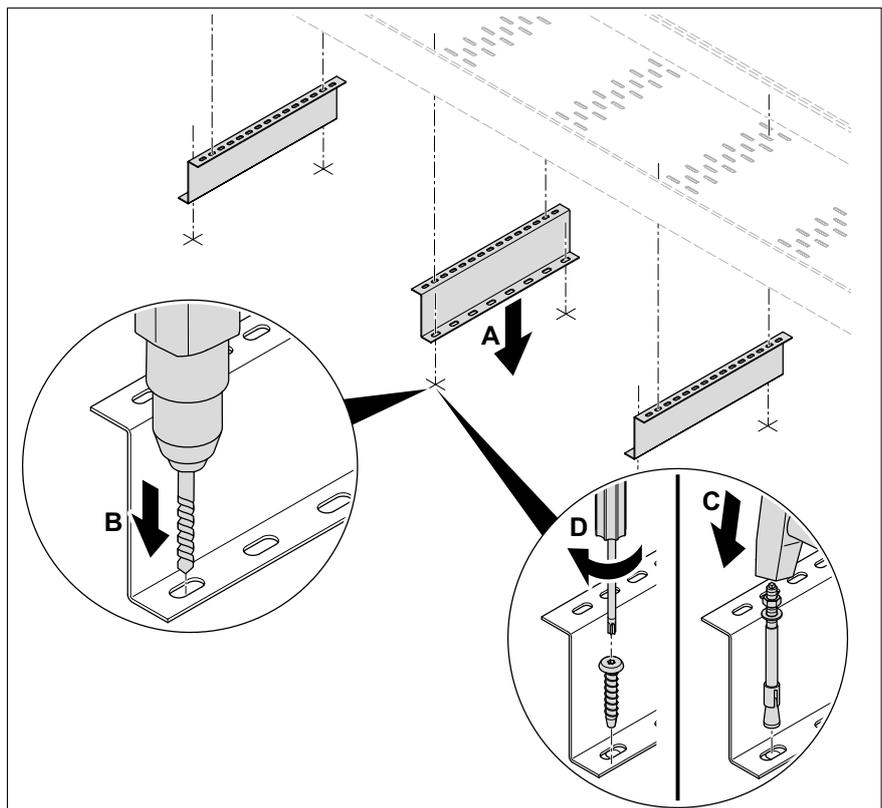


Figure 2: Mounting of support profiles

1. Align the support profiles so that they are suitable for floor mounting (A).
2. Drill a hole for the bolt tie through the slot on the support profile (B).
3. Knock the bolt tie in with a hammer (C) and screw the support profile tight with a nut.
4. Alternatively: Turn in the bolt tie (D) and screw the support profile tight.

4.2 Mounting the support brackets

Note! *Support elements must be used with support brackets for widths above 400 mm, if the stated load limits are to be achieved (approved loads under "BKRS cable tray" at www.obo.de).*

Note! *When mounting the support brackets, it is helpful to use the base perforation of the cable tray.*

The support brackets are screwed to the floor with the M12 bolt ties and nuts.

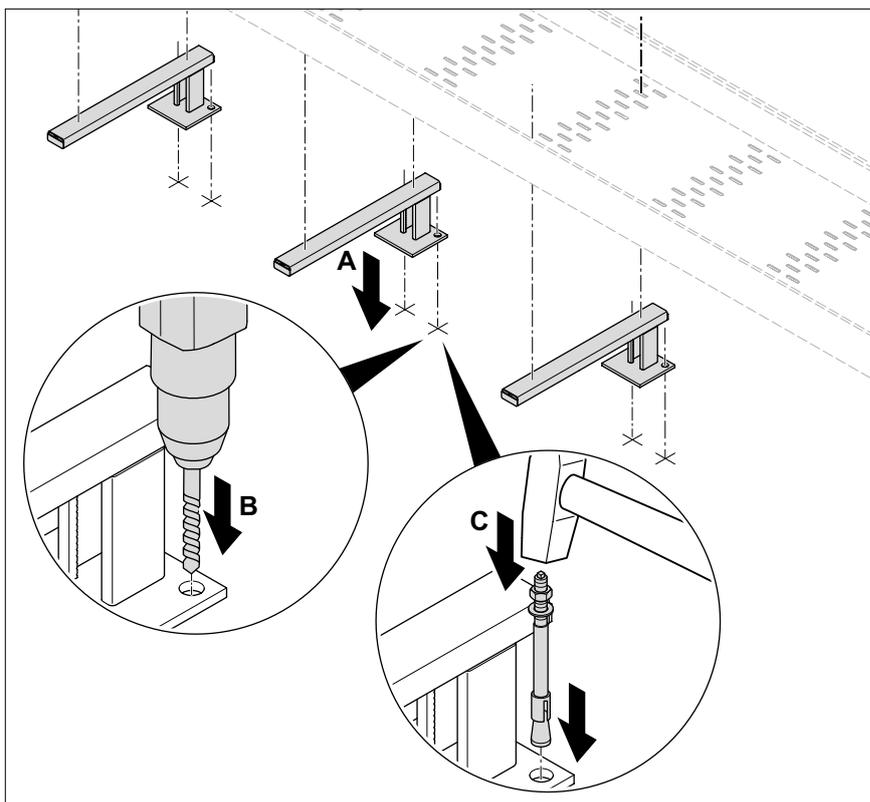


Figure 3: Mounting of support brackets

1. Align the support brackets so that they are suitable for floor mounting (A).
2. Drill the hole for the bolt tie through the corner hole of the base plate of the support bracket (B).
3. Knock the bolt tie in with a hammer (C) and screw the support bracket tight with a nut.

4.3 Mounting the support elements

The support elements must be used with support bracket widths above 400 mm, if the stated load limits are to be achieved (approved loads under "BKRS cable tray" at www.obo.de). They are turned into the support bracket from below.

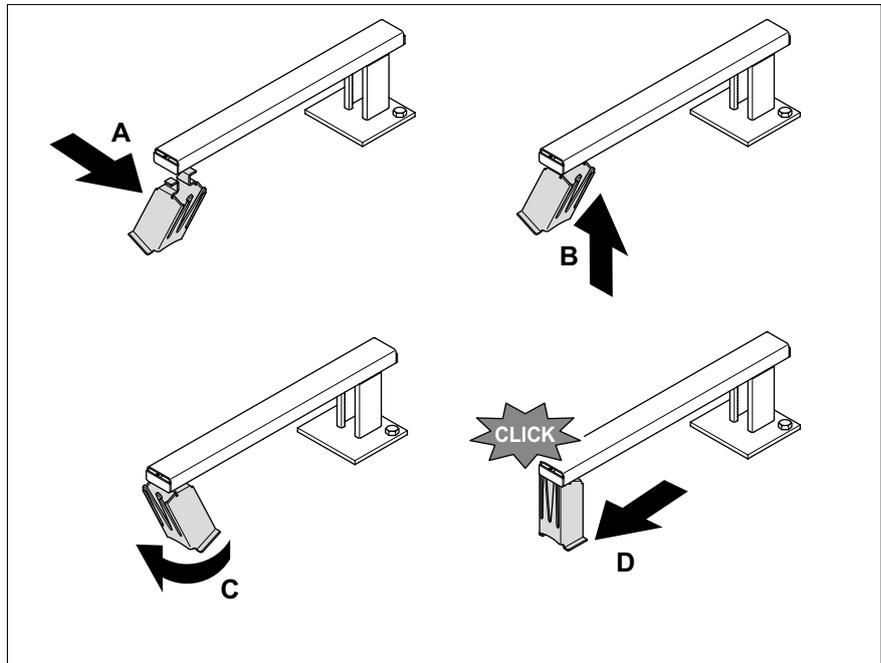


Figure 4: Mounting the support elements

1. Turn the support elements in according to the figure.

4.4 Mounting the cable trays

The cable trays can be shortened or extended to any length. If, after shortening the cable trays, slots for further mounting are missing, then suitable fastening holes must be drilled in the cable trays.

4.4.1 Mounting the cable trays directly on the floor

The cable trays are mounted on the floor with knock-in anchors $\varnothing 6$ mm or bolt ties $\varnothing 6$ mm.

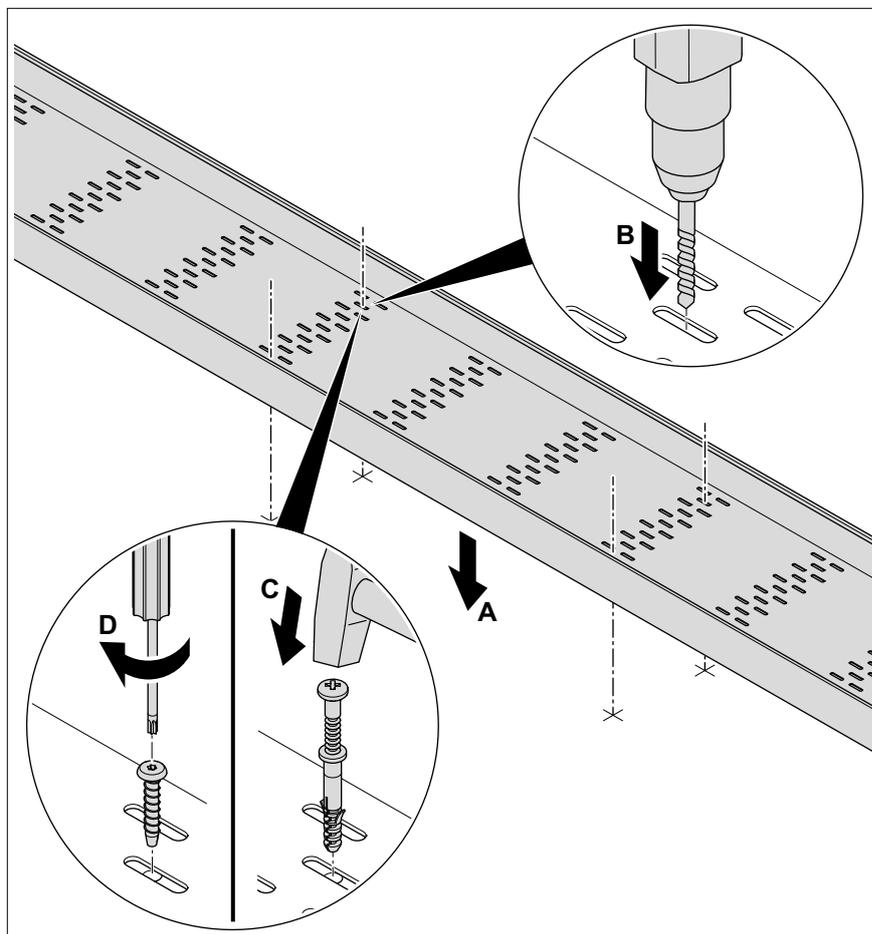


Figure 5: Mounting directly on the ground

1. Align the cable tray so that it is suitable for floor mounting (A).
2. Drill a hole for the knock-in anchor or bolt tie through the slot in the cable tray (B).
3. Knock the knock-in anchor in using a hammer (C) and screw the cable tray tight
4. Alternatively: Turn in the bolt tie (D) and screw the cable tray tight.

4.4.2 Mounting the cable trays on support profiles

The cable trays are mounted on the support profiles through the slots in the base of the cable trays with truss-head screws and hexagonal nuts with a flange (M6).

Note! *Corner connections or intersections of cable trays must also be supported with support profiles.*

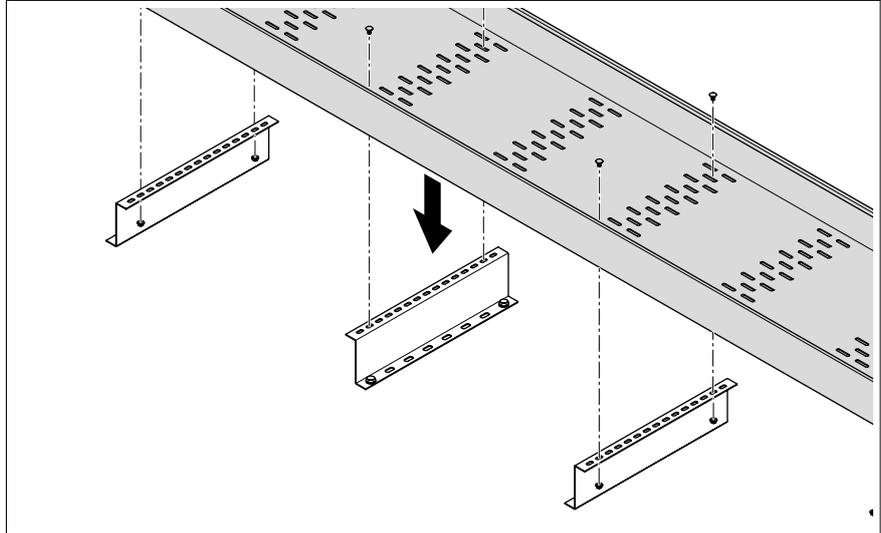


Figure 6: Mounting on support profiles

1. Mount the cable trays.

4.4.3 Mounting the cable trays on support brackets

The cable trays are mounted on the support brackets through the slots in the base of the cable trays with drilling screws and washers.

Note! *Corner connections or intersections of cable trays must also be supported with support brackets.*

Note! Support elements must be used with support bracket widths above 400 mm, if the stated load limits are to be achieved (approved loads under "BKRS cable tray" at www.obo.de).

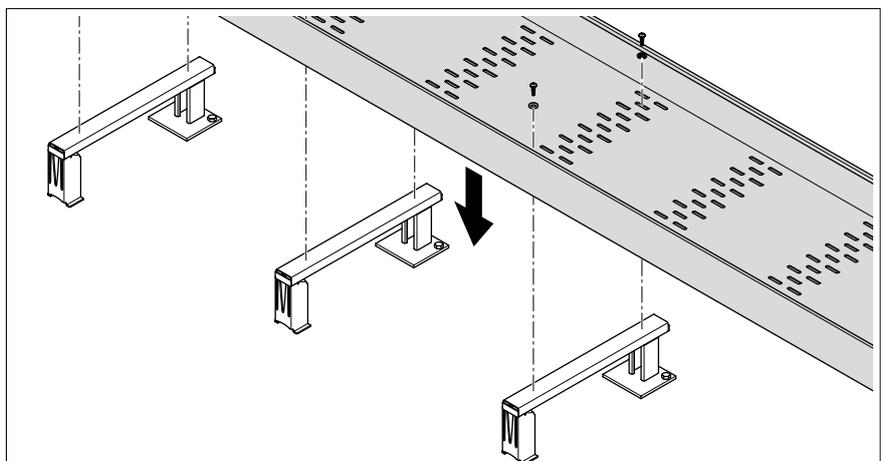


Figure 7: Mounting on support brackets

1. Mount the cable trays.

4.5 Connecting cable trays

Cable trays are connected using straight and angle connectors.

The straight and angle connectors are screwed to the sides of the cable trays using the supplied fastening material.

Connect the cable trays so that they abut.

Note! *The straight and angle connectors are mounted on the inside. The nuts are screwed on to the outside.*

4.5.1 Connecting cable trays

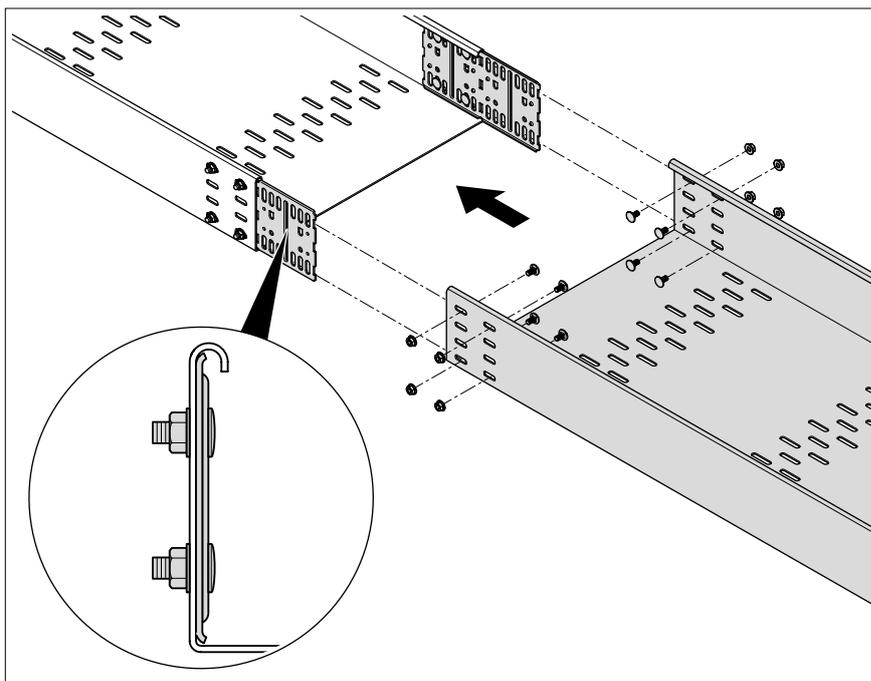


Figure 8: Straight connection

1. If necessary, create fastening holes (4 x \varnothing 8 mm) for the connectors on the side sections of the cable trays.
2. Screw two straight and angle connectors to the first cable tray.
3. Push the second cable tray over the straight and angle connectors of the first cable tray.
4. Screw the second cable tray to the straight and angle connectors.

4.5.2 Connecting cable trays as a corner

Note! *With corner connections, the cable trays are mounted so that they overlap.*

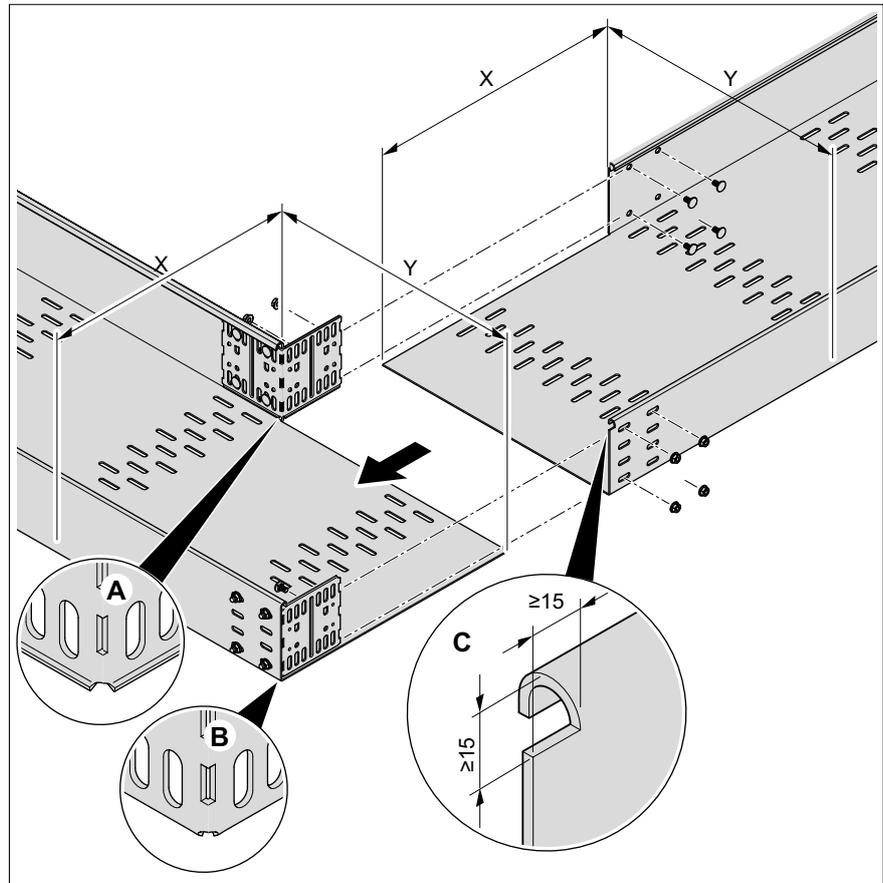


Figure 9: Corner connection

1. Cut out the side parts of the cable trays by the dimensions x and y.
2. Notch out the corner (C).
3. Deburr cut edges to avoid cable damage.
4. If necessary, create fastening holes (4 x $\varnothing 8$ mm) for the connectors on the side sections of the cable trays.
5. Bend the straight and angle connector through a 90° angle.

Note! *Straight and angle connector
1 x bent edge on the inside (B),
1 x bent edge on the outside (A).*

6. Screw the angle connector to the first cable tray.
7. Push the second cable tray over the straight and angle connectors of the first cable tray.
8. Screw the straight and angle connector to the second cable tray.

4.5.3 Connecting cable trays as an intersection

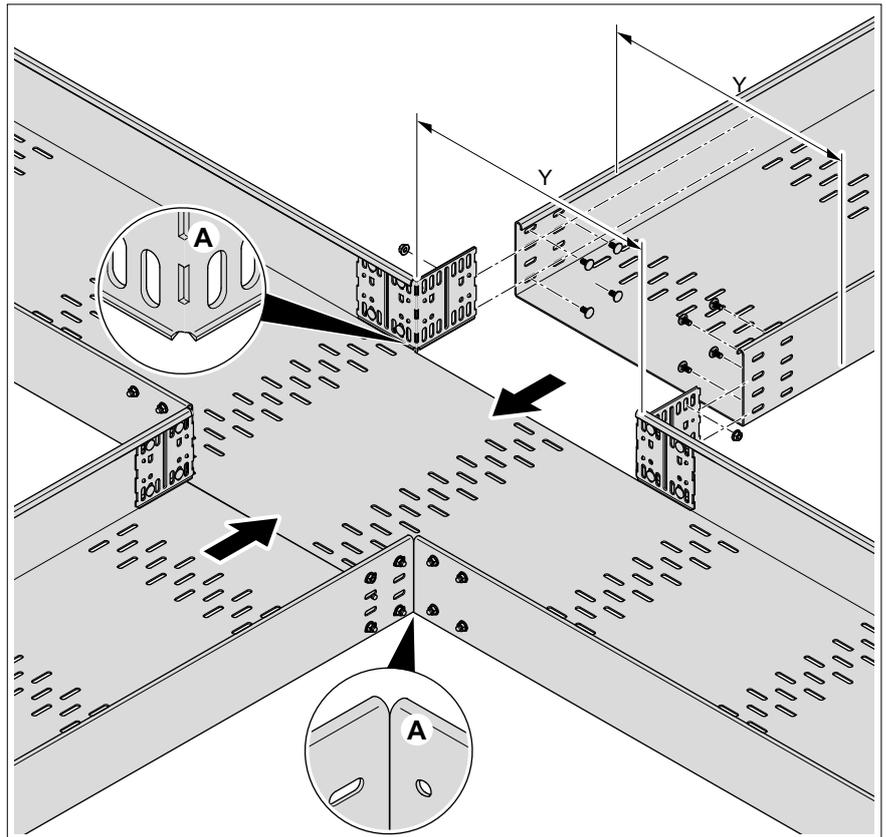


Figure 10: Cross-connection

1. Cut out the side parts of the cable trays.
2. Deburr cut edges to avoid cable damage.
3. If necessary, create fastening holes (4 x ø8 mm) for the connectors.
4. Bend the straight and angle connector through a 90° angle.

Note!

*Straight and angle connector:
Bent edge on the outside (A).*

5. Screw the angle connector to the first cable tray.
6. Push the second cable tray over the straight and angle connectors of the first cable tray.
7. Screw the straight and angle connector to the second cable tray.

4.5.4 Changing the cable tray width

If two cable trays with different widths are connected, then a straight and angle connector is replaced by a reducing bracket/end closure.

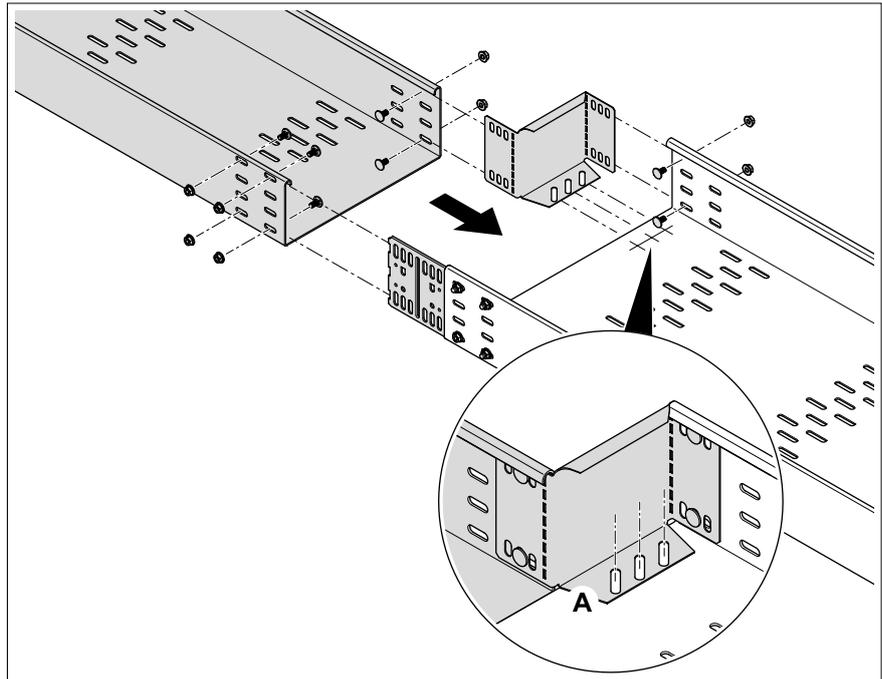


Figure 11: Changing the cable tray width

1. Screw the first cable tray to the straight and angle connector on one side.
2. Bend the straps of the reducing bracket/end closure through a 90° angle.

Note! *The lower flange (A) points into the cable tray during mounting.*

Note! *At widths above 150 mm, reducing bracket/end closures for 110 mm cable trays have perforation in the lower flange, which can be used for screwing to the cable tray.*

3. Screw the reducing bracket/end closure to the first cable tray.
4. Push the second cable tray over the straight and angle connector and the reducing bracket/end closure of the first cable tray and screw it tight.
5. If necessary, screw the base of the cable tray to the lower flange of the reducing bracket/end closure.

4.5.5 Closing the open ends of the cable trays

The open ends of the cable trays are closed with a reducing bracket/end closure.

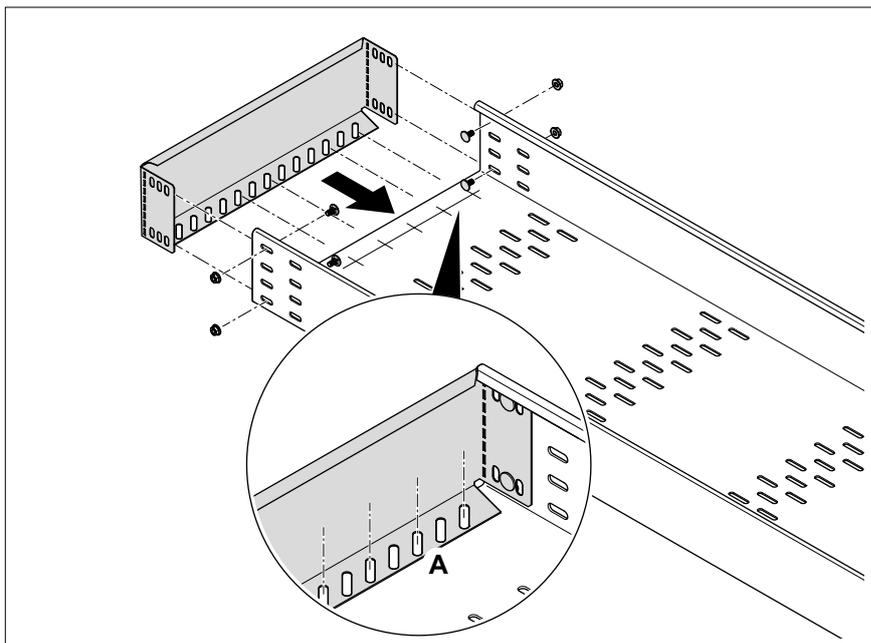


Figure 12: Closure of open ends

1. If necessary, create fastening holes (2 x $\varnothing 8$ mm on each side) for the connectors on the side sections of the cable trays.
2. Bend the straps of the reducing bracket/end closure through a 90° angle.

Note!

The lower flange (A) points into the cable tray during mounting.

3. Push the reducing bracket/end closure into the cable tray.
4. Screw the reducing bracket/end closure to the cable tray.
5. If necessary, screw the base of the cable tray to the lower flange of the reducing bracket/end closure.

4.6 Mounting Z-shaped barrier strips

In order to archive the maximum permitted load, Z-shaped barrier strips must be placed in cable trays with a width > 200 mm. The distance between the barrier strips and the side wall or the next barrier strip may not exceed 220 mm.

The barrier strips can be shortened to any length.

Note! *The cable tray is divided asymmetrically by the barrier strips.*

Note! *Intersection areas must be free of barrier strips.*

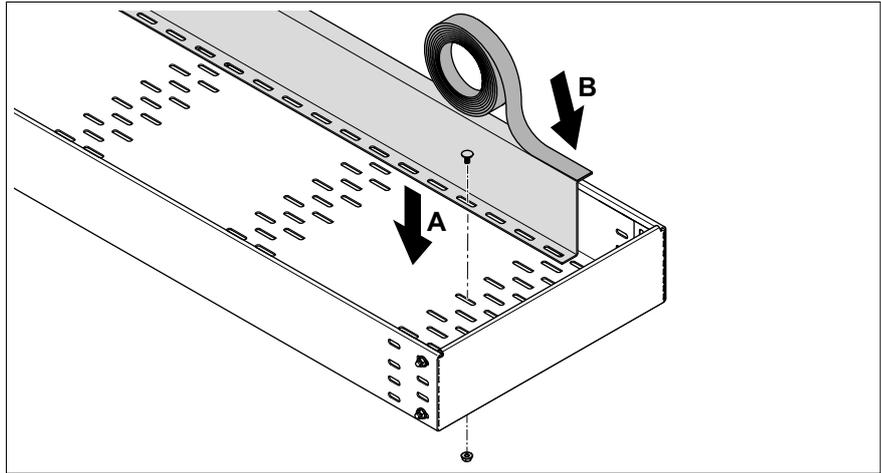


Figure 13: Barrier strip mounting

1. If necessary, cut the barrier strips to size.
2. Screw on the barrier strips through the base perforation of the cable tray (A) using truss-head screws and hexagonal nuts.
3. Stick anti-slip strips to the barrier strips (B).

Note! *With floor mounting, the barrier strip is mounted with knock-in anchors.*

4.7 Mounting protective panels

If the cable trays are mounted on support brackets, then the space between the cable trays can be closed off with protective panels.

The protective panels can be shortened to any length.

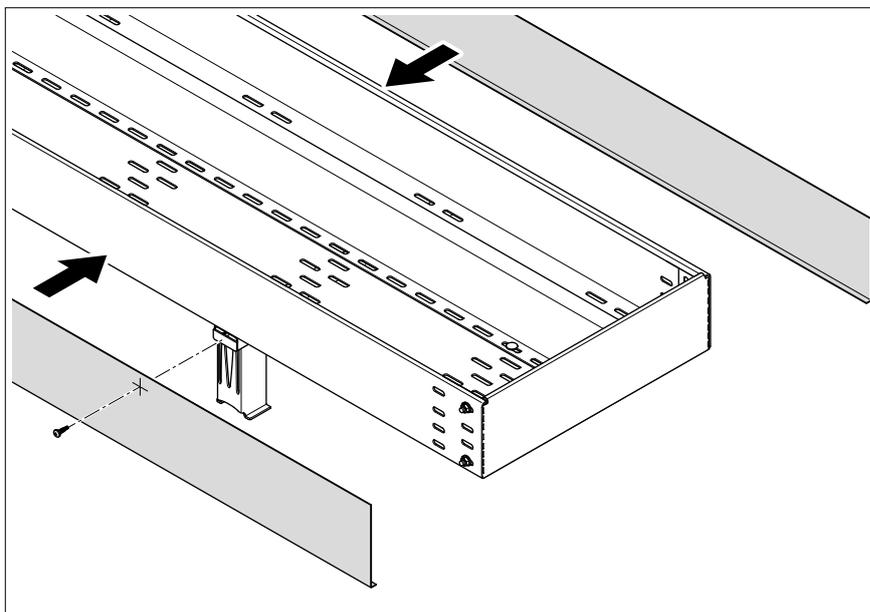


Figure 14: Protective panel mounting

1. If necessary, cut the protective panels to size.
2. Screw the protective panels to the support brackets with drilling screws.

4.8 Creating equipotential bonding



WARNING

Risk of electric shock!

Contact with electrical current can lead to an electric shock. Fatal or serious injuries are possible.

Work on the electrical system may only be performed by electrical specialists.

Note!

When mounting the system components, the screw connections automatically create continuous equipotential bonding of the entire walkable cable tray system. The system must be connected to the equipotential bonding of the overall system at least once.

With larger systems, we recommend the connection to the equipotential bonding at the start and the end of the BKRS walkable cable tray system.

Method 1:

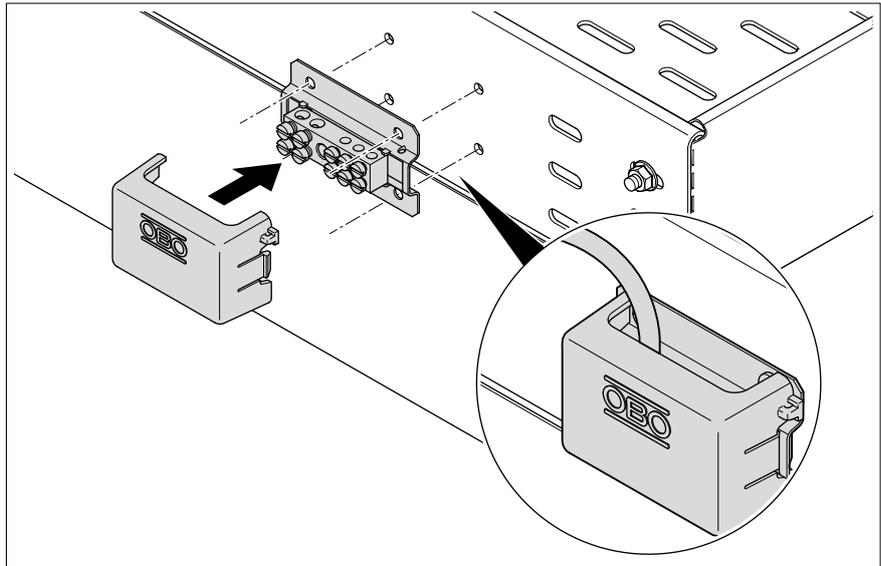


Figure 15: Mounting of the equipotential busbar

1. Drill holes in the side section of the cable tray.
2. Fasten the equipotential busbar to the cable tray with suitable fastening material.
3. Electrically connect the equipotential busbar to the overall equipotential bonding.
4. Attach the protective cap.

Method 2:

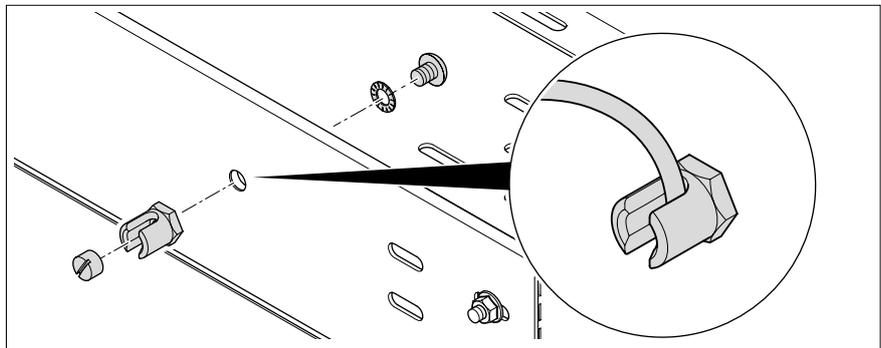


Figure 16: Mounting of the earthing terminal

1. Drill a hole in the side section of the cable tray.
2. Screw the earthing terminal into the side section of the cable tray.
3. Electrically connect the earthing terminal to the overall equipotential bonding.

4.9 Mounting the cover

The covers can be shortened to any length.

The covers are always cut straight and not with a mitre.

4.9.1 Mounting the cover support

In intersection and corner areas, a cover support can be mounted instead of the missing barrier strip. This is always mounted in the centre of the intersection or corner area.

There are two different fastening types for raised mounting on support profiles or support brackets or for direct floor mounting.

For raised mounting:

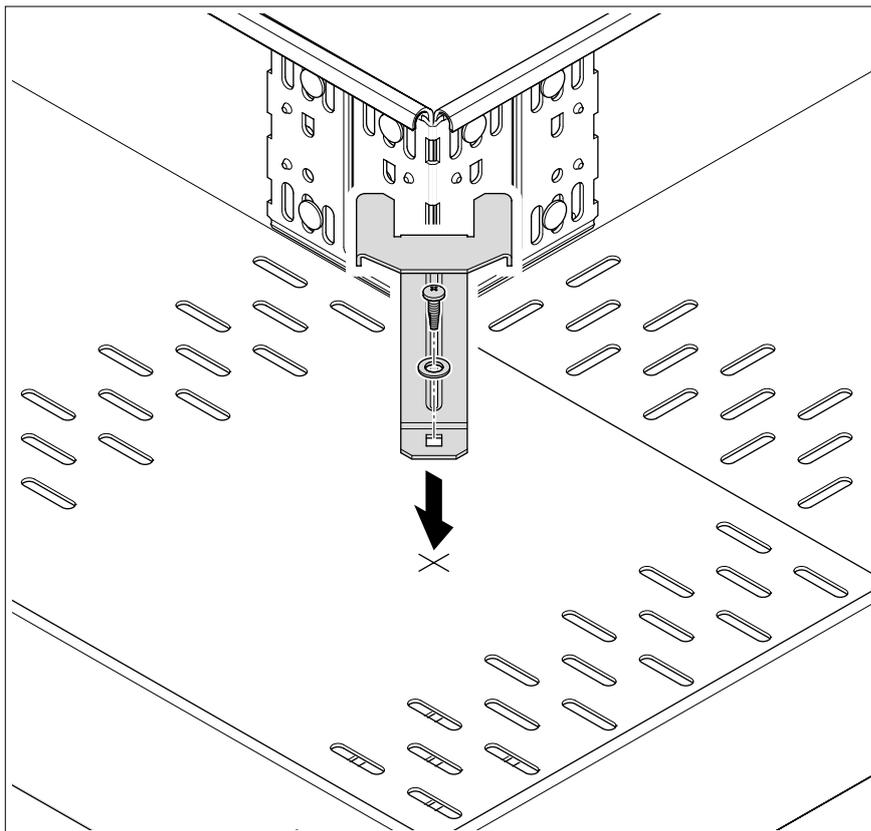


Figure 17: Raised mounting of cover support

1. Screw the cover support to the base of the cable tray with a drilling screw and washer.

Note!

If a base perforation is located in the intersection area, then the cover support can alternatively be screwed on with a truss-head screw and hexagonal nut through the base perforation of the cable tray.

For direct floor mounting:

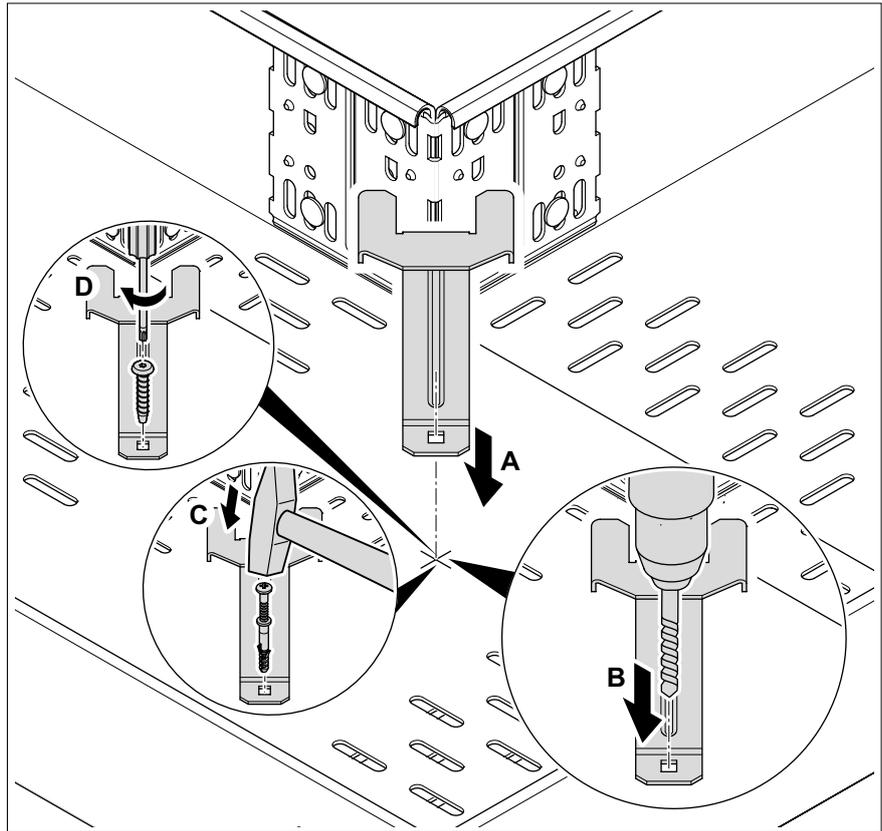


Figure 18: Direct floor mounting of the cover support

1. Attach the cover support at a suitable position (A).
2. Drill a hole for the knock-in anchor \varnothing 6 mm or bolt tie \varnothing 6 mm through the cable tray (B).
3. Knock the knock-in anchor in using a hammer (C) and screw the cover support tight through the base of the cable tray.
4. Alternatively: Turn in the bolt tie (D) and screw the cover support tight through the base of the cable tray.

4.9.2 Mounting the section cover

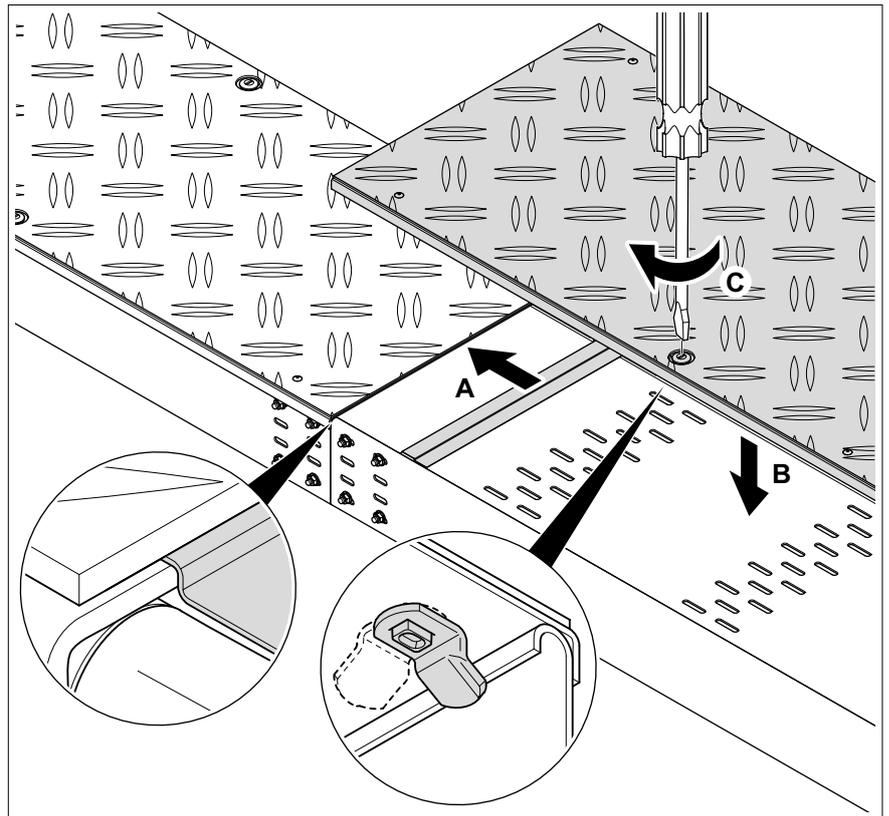


Figure 19: Mounting the section cover

1. Attach the first cover.
2. Fasten the cover to the cable tray with turn buckles (C).

Note!

The aluminium chequerplate and base cover are connected with rivets. If the covers are shortened too close to the rivet area, then it may be that no dust protection element can be pushed in.

3. Push the duct protection element between the aluminium chequerplate and the base cover (A).
4. Attach the next cover (B) so that it is flush with the dust protection element and fasten it (C).

4.9.3 Mounting the cover on a corner connection

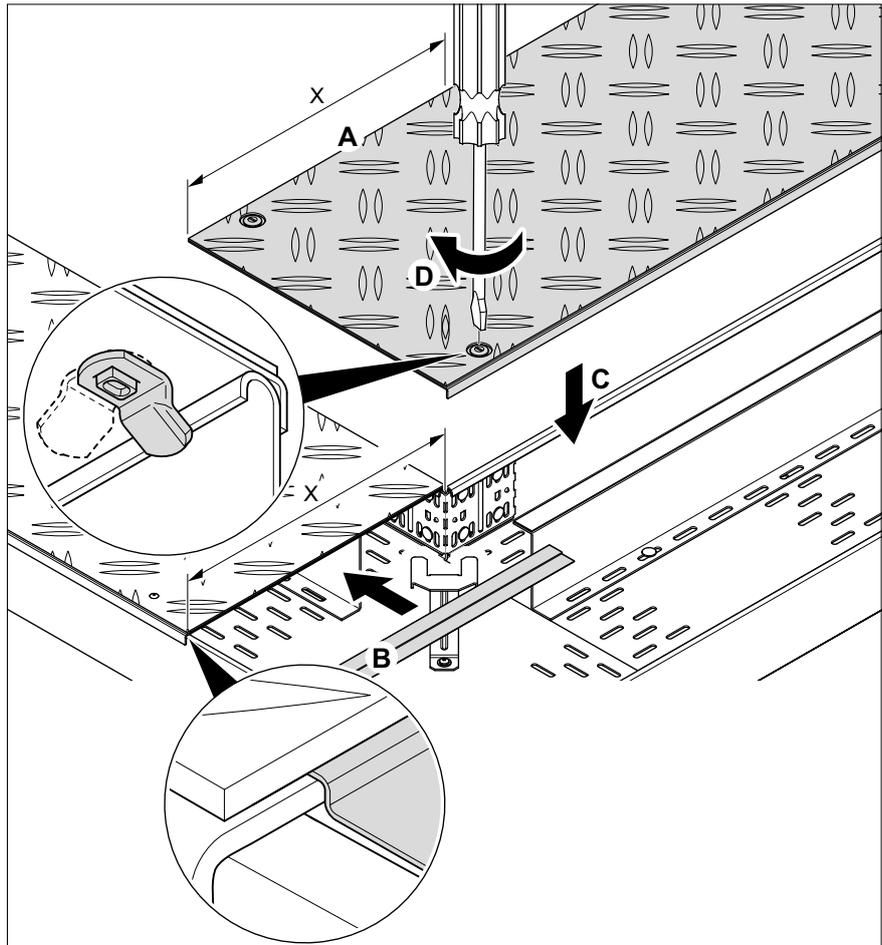


Figure 20: Mounting the cover on a corner connection

1. If necessary, cut the cover to size.
2. Notch out the joint edge of the cover along length x (A).
3. Push the duct protection element between the aluminium chequerplate and the base cover (B).
4. Attach the cover (C).
5. Fasten the cover to the cable tray with turn buckles (D).

4.9.4 Mounting the cover on an intersection connection

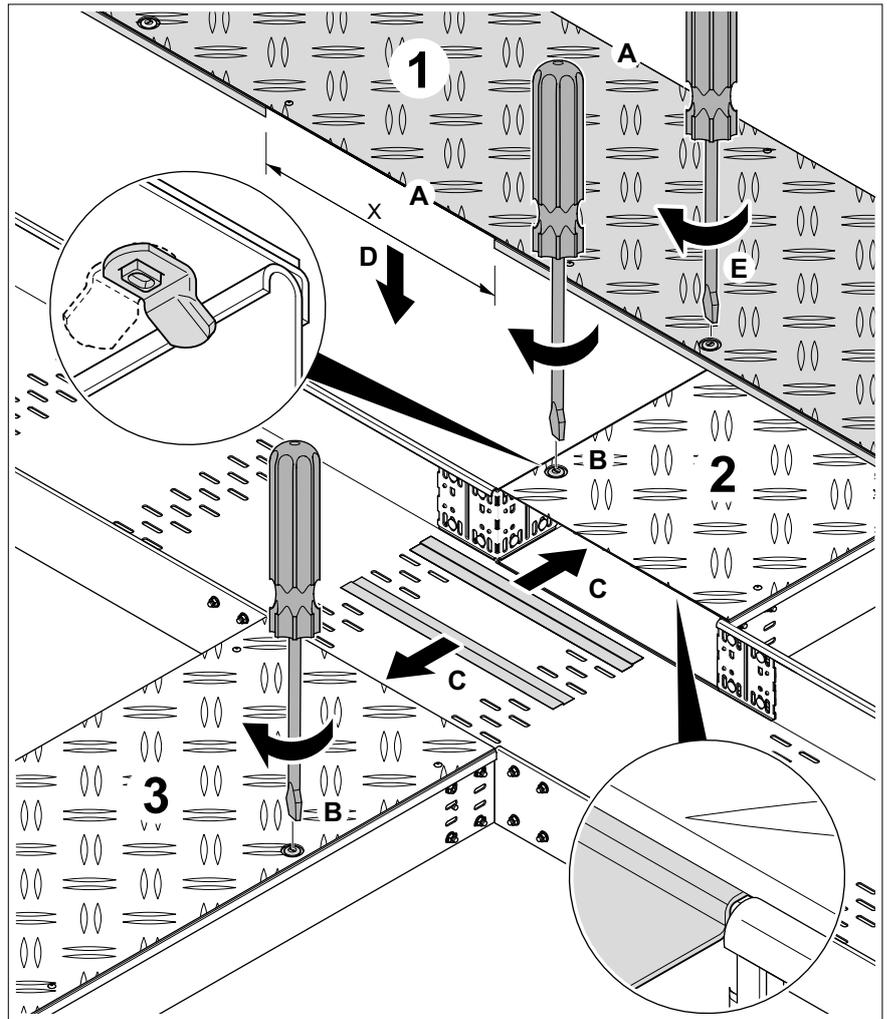


Figure 21: Mounting the cover on an intersection connection

1. If necessary, cut the cover to size.
2. Notch out the joint edge of cover 1 on both sides along length x (A).
3. Deburr cut edges to avoid cable damage.
4. Fasten covers 2 and 3 to the cable tray with turn buckles (B).
5. Push the duct protection elements between the aluminium chequerplate and the base cover of covers 2 and 3 (C).
6. Attach cover 1 (D).
7. Fasten cover 1 to the cable tray with turn buckles (E).

5 Maintenance

The stability and function of the BKRS walkable cable tray systems can be impaired by external influences, such as damage or machine vibrations.

Loose connection elements must be retightened and damaged parts replaced. In addition, we recommend regular checks to see if the connection to the overall equipotential bonding is still intact.

6 Dismantling

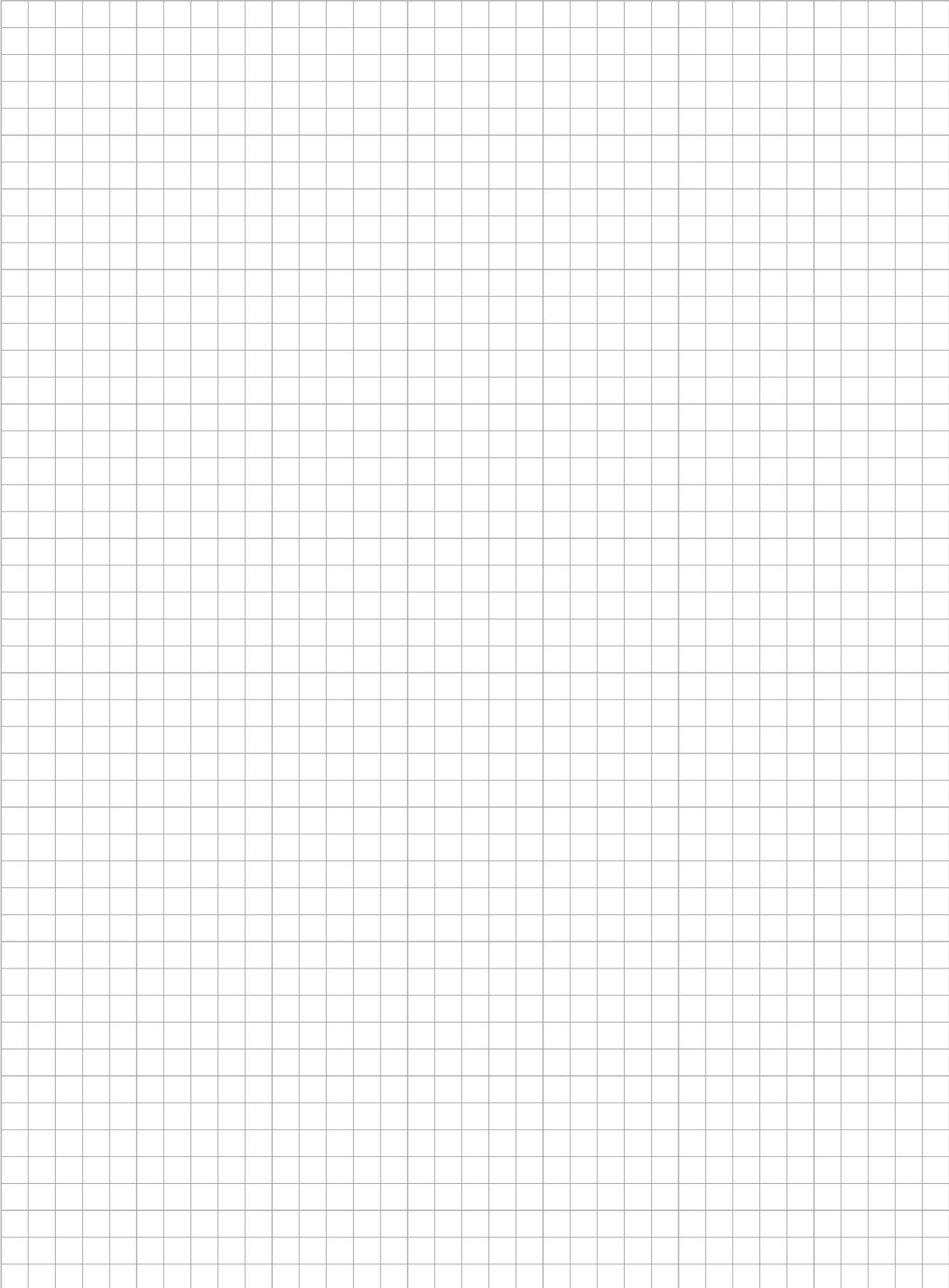
The BKRS walkable cable tray system is dismantled in the reverse order to mounting.

7 Disposal

1. Residual metal: As scrap metal
2. Packaging: As household waste

Comply with the local waste disposal regulations.

Own notes



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