FINELCOMP®

SMART FROM EVERY ANGLE

ASSEMBLY INSTRUCTIONS AND PART LIST

E SERIE

LOW VOLTAGE CELL CENTRE SYSTEMS

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E-SERIE: LOW VOLTAGE CELL CENTRE SYSTEM

The flexible modular structure can be extended in all three dimensions and is perfect for enclosing distribution boards and control and automation centres. The cell centre system can be made one-sided or two-sided and the units can be fixed or removable.

Cell centre systems can include both horizontal and vertical bus bars. The bus bars can be installed at any height, either in the middle part or at the back of the centre. When installed in the middle, the bus bars allow for constructing a two-sided structure.

The cell centre system is compatible with the F-series insulating flanges designed for low voltages (sizes 10x10-10x50mm) or E-series insulating flanges recommended for higher voltages (sizes 10x20-10x120mm). The bus bars can be made either of aluminium or copper. A cable tray can be installed inside the base structure, either for the entire length of the centre or at selected sections.

Type-tested sliding or removable units have been designed for easy maintenance and replacement. The unit structure is equipped with ventilation and locking and has a separate compartment for cables and connections. Any pressure caused by an arc short-circuiting is released via the opening ceiling structure.

E-SERIE ASSEMBLY INSTRUCTIONS AND PART LIST

1 GENERAL

The E-serie is an enclosure system for low-voltage switchgear and controlgear assemblies, primarily intended for distribution, control, and automation centres to protect the equipment against mechanical impact, foreign material, dust, and humidity in indoor and outdoor installations. The enclosure also protects users from getting into contact with live components or current conductors.

The E-serie enclosure system is a so-called cell centre and it has been tested and certified, and meets the requirements set in the IEC/EN 61439-1 and IEC/EN 62208 Standards.

The E-serie cell centre is modular in all three dimensions: depth, height, and width. Table 1.1 shows the modular sizes of the E-serie cell centre system.

The system is assembled using assembly screws, usually self-tapping M5x10mm screws. Table 1.2 shows the screws used in the system.

The technical data of the E-serie system is shown in a table in Chapter 6.

Widths [mm]	200, 300, 450, 600, 750, 900 and 1050
Depths [mm]	385 and 610
Frame heights [mm]	1680 and 1960
Modular heights [mm]	70 mm height modules

Table 1.1. Nominal modular sizes of the E-serie cell centre system.

An E-serie electric enclosure is made up of two or three modules, depending on the nominal depth. The depth modules of a deeper enclosure are busbar space, frame plate space, and instrument space. The nominal depth of busbar and device spaces is 220 mm, and 170 mm for frame plate space (Fig. 1.1).

Smaller E-serie enclosures, so-called light enclosures, consist of two depth modules. In this case, the busbar system is also installed in the frame plate space while the instrument space is of the same depth as with the deeper enclosures.

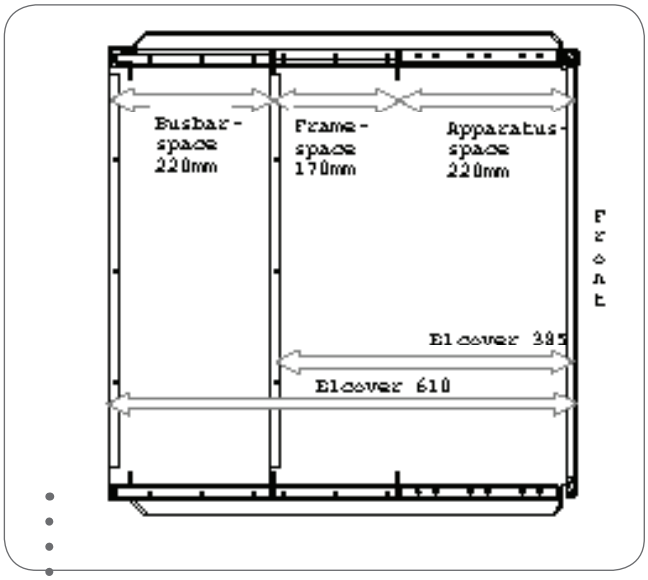


Fig. 1.1. *The E-serie enclosures are made up of two or three depth modules. The frame plate space of the smaller enclosure, with 385 mm depth, also acts as the busbar space.*

Screw	Application
50059052 Assembly screw M5x10	Assembly and fastening of base, frame, top, side and mounting panels, fastening of insulating flanges
50059053 Hinge screw M5x8 Taptite	For fastening doors to front profiles / side plates
Lifting loop DIN580 M12	Lifting, fastened to lifting lug
50059069 Plate screw 4,8x25	Fastening of insulator end
Hex. head screw M8x20 DIN933 + nut DIN934	For fastening lifting lug to frame plate
50059051 Levyruuvi 5,5*25 DIN7981	For fastening F-serie busbar insulators+busbar insulator ends to the frame plate/busbar insulator adapter

Table 1.2. *Assembly screws used for the E-serie system.*

2 ASSEMBLY INSTRUCTIONS

The assembly of the E-serie system is started with the base and then the preassembled frame plate packages are installed. With the frame plates fastened, the structure is completed with roof plates and front and rear profiles. The frame structure is now in principle ready for component installation.

2.1 Base

The assembly of the base is started by arranging the parts of the enclosure in question according to the desired field arrangement. The parts of the base structure are fitted together and joined using assembly screws. There are two alternative base heights: 40 mm and 140 mm. No cable conduit can be installed in the 40 mm base.

The 610 mm deep base has symmetric modular depth, which means that the instrument and busbar spaces have equal nominal depths. Due to this symmetrical structure, it is easy to construct two-sided electric enclosures. Symmetric base end plates can be used in either end of the base.

The base with 385 mm nominal depth, on the other hand, consists of two parts in the depth direction, as already explained. The end plates of the base are asymmetric and, therefore, you need to have the correct end plate for each end.

Base 610

It is advisable to leave the bottom holes of the back (1) and front (2) panels for the possible installation of base fixing lugs. In particular you must remember to use intermediate beads (5) on top of the end (3) and divider (4) plates of the base. At this stage you can also install a cable conduit (6) for carrying cables, for instance. See Fig. 2.1.

If necessary, instrument compartment (7) and intermediate bottom plates (8) are installed to the base (Fig. 2.2).

Base 385

The assembly of the base is started the same way as with the deeper version. In this case, the intermediate beads (5) are inserted under the back panel (1). The other parts of the base in Fig. 2.3 are the front plate (2), the end plate (3), and the divider (4).

The instrument compartment of a light cell centre can be covered using an instrument compartment bottom (6), Fig. 2.4.

The base is fastened to a transport frame using base fastening lugs (1). The transport frame can be made using, for instance, 50x100 mm timber as shown in Fig. 2.5.

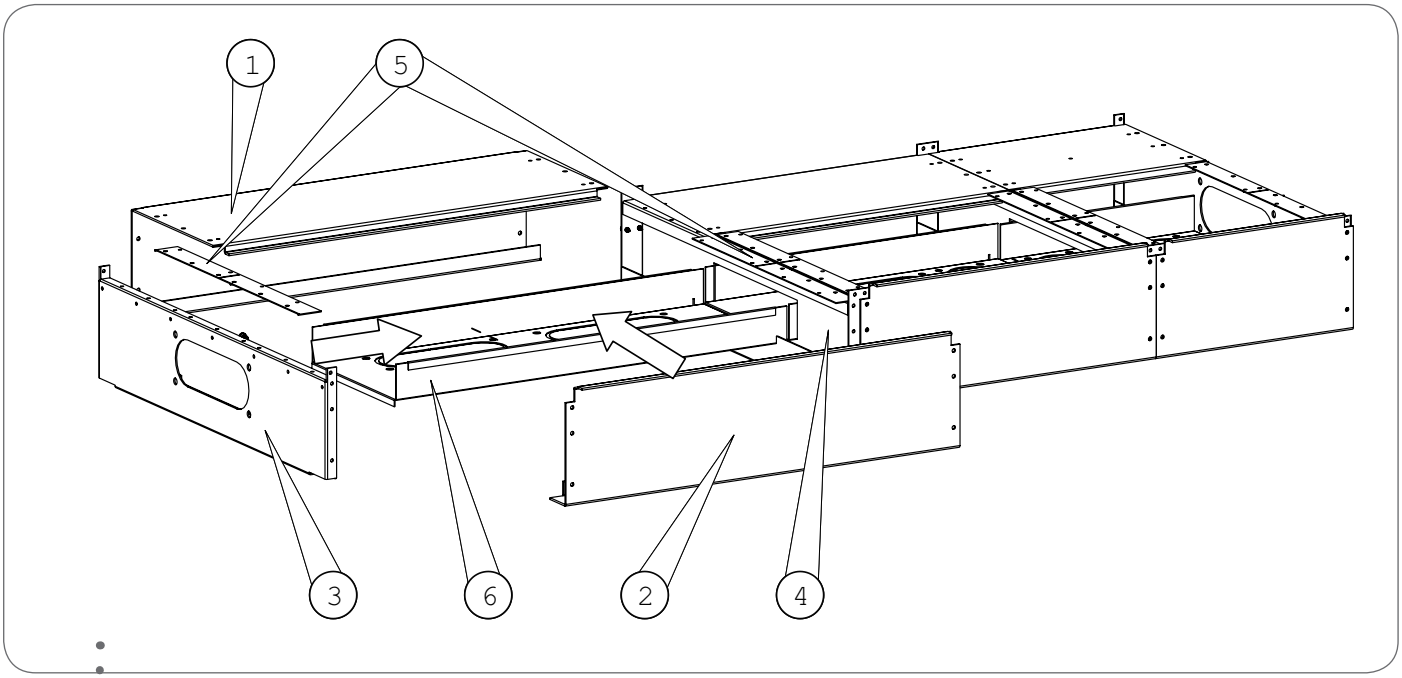


Fig. 2.1. *Assembling a cell centre base with 610 mm nominal depth.*

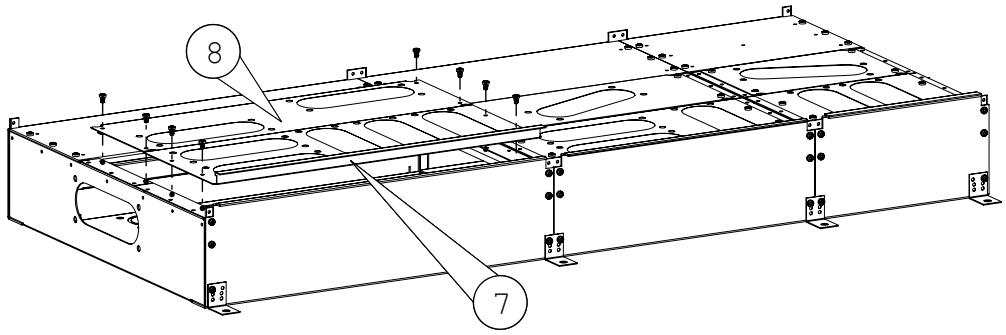


Fig. 2.2. *The enclosure base can be fitted with intermediate and instrument compartment bottom plates.*

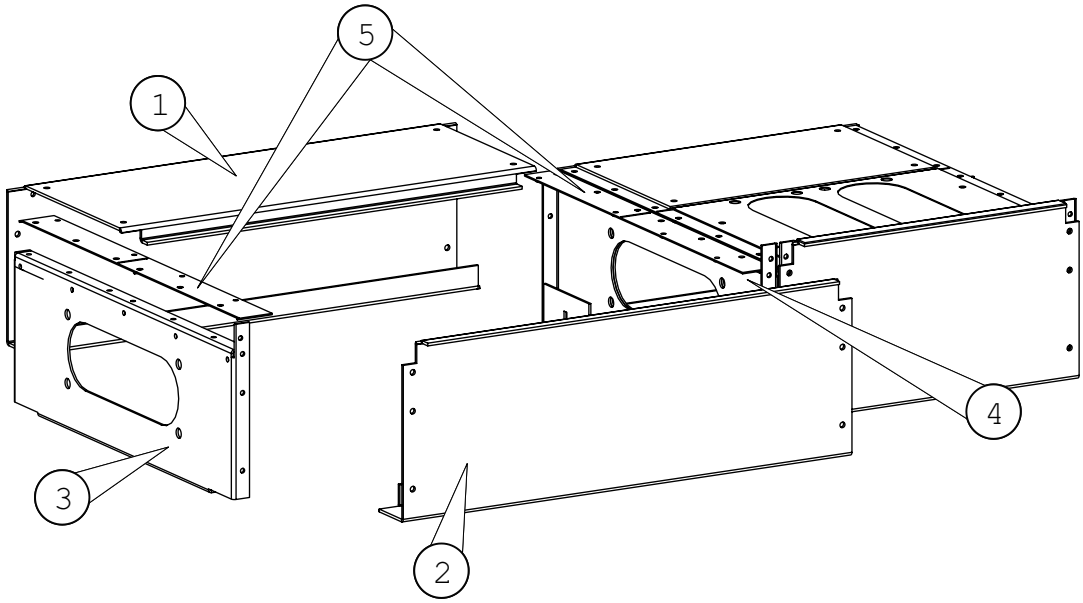


Fig. 2.3. *Assembling the base of a so-called light cell centre.*

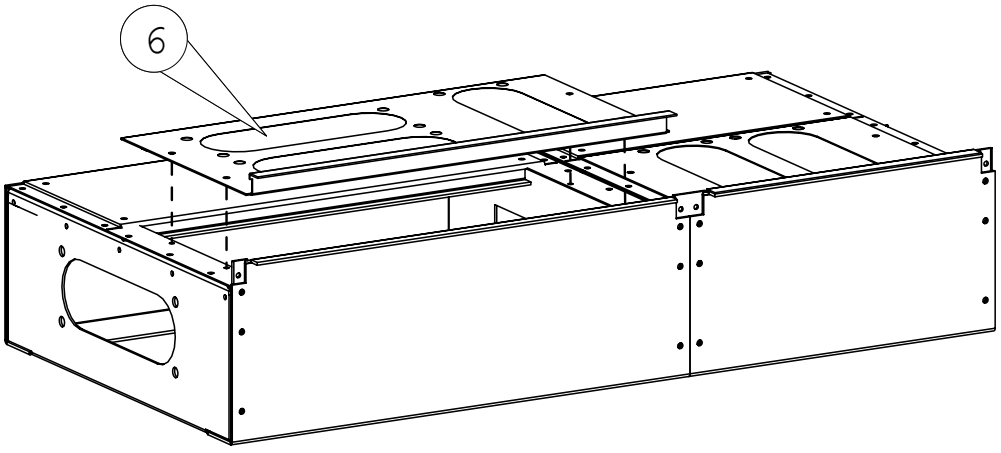


Fig. 2.4. *Installing instrument compartment bottom to the base of a light cell centre.*

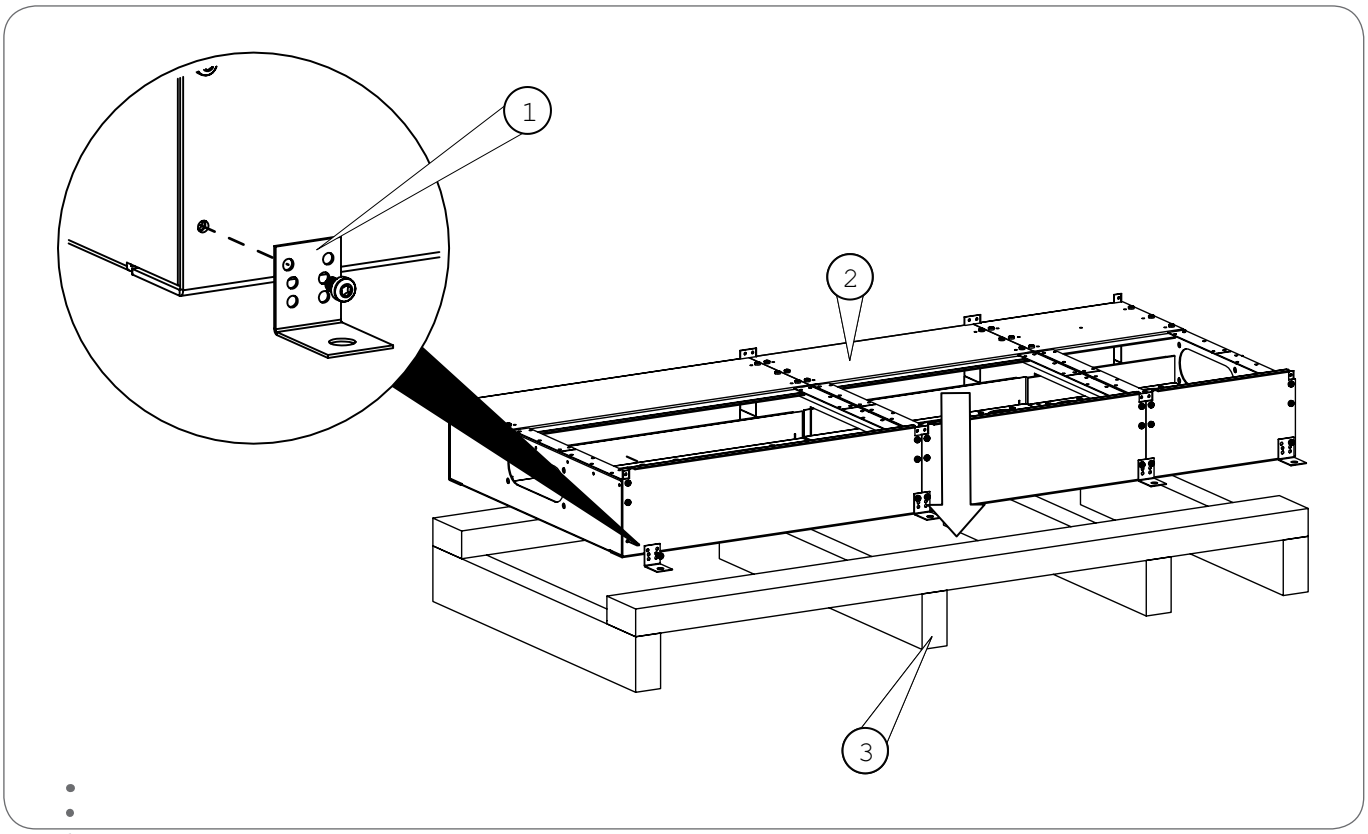


Fig. 2.5. *Fastening the base to a wooden transport frame with base fastening lugs.*

2.2 Frame

2.2.1 Assembling frame plates

It is advisable to install the busbar insulators at this stage before fastening the frame plates in place.

At the busbar system end, insulators (4) and also end flash barriers (1), insulator ends (2) and flash barriers (5) are installed to the frame plates. The whole assembly is fastened from the outside using long (4.8x25 mm) plate screws, Fig. 2.6. Insulators (4) only are installed to the frame plates / frame plate packages that are not at busbar end.

The frame plates have the busbar insulator openings opened halfway up, and the remaining ones have blanks that can be easily sawn out. The frame plate packages are assembled on an assembly table. The frame plates (3) are placed back to back and fixed together using assembly screws (1) or pop-rivets, Fig. 2.7..

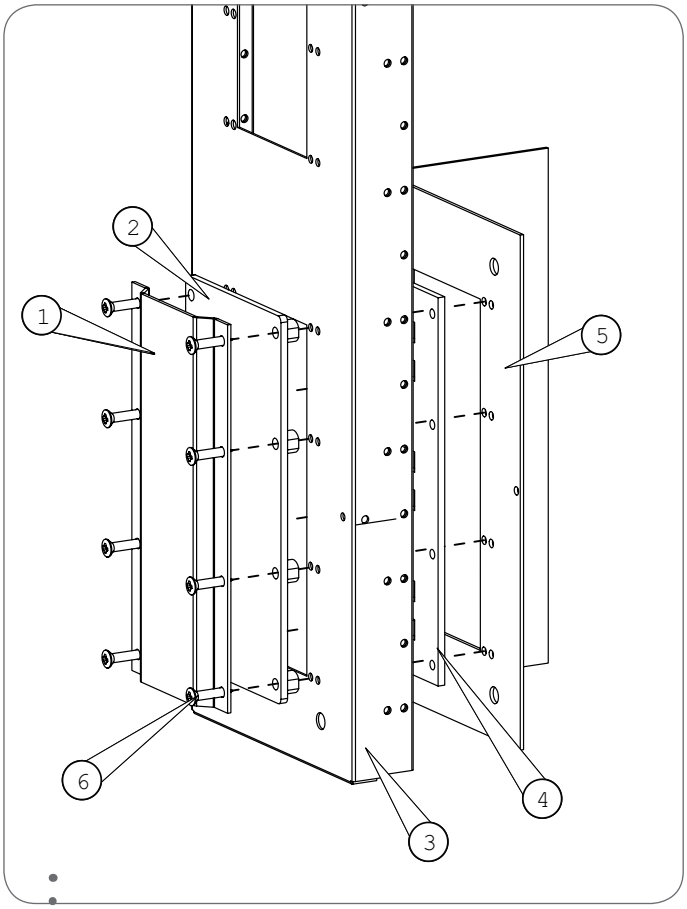


Fig. 2.6. *Installing insulator component assembly to frame plate at busbar end. Just an insulating flange is installed to frame plates not at busbar end.*

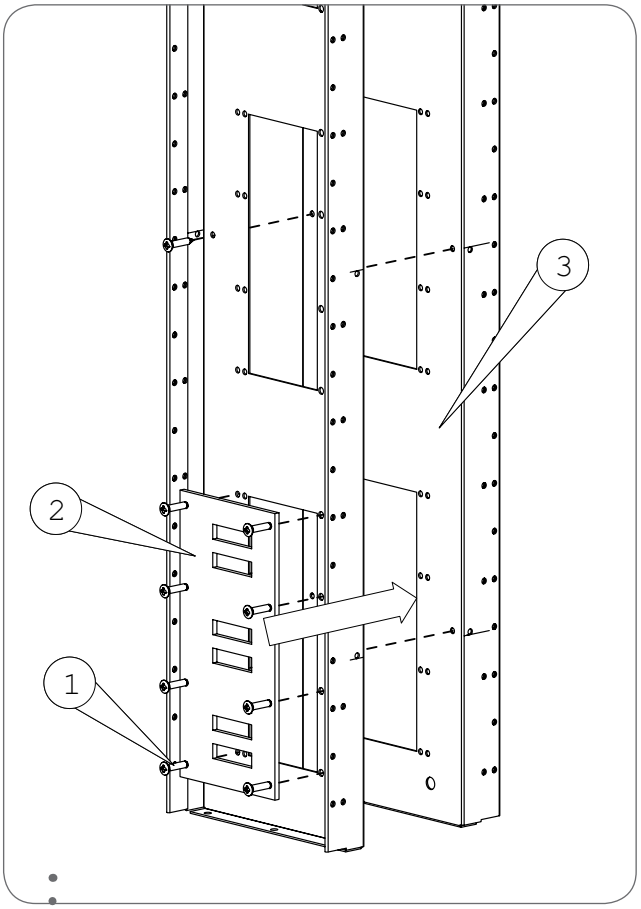


Fig. 2.7. *Assembling a frame plate package. The frame plates are fastened together using screws or rivets and insulators are installed as necessary.*

2.2.2 Erecting the frame

The completed frame plates (1) and frame plate packages (2) are fastened to the base structure (3) at the rear of the base (385) or at the centre (600) using assembly screws, Fig. 2.8 a) and b).

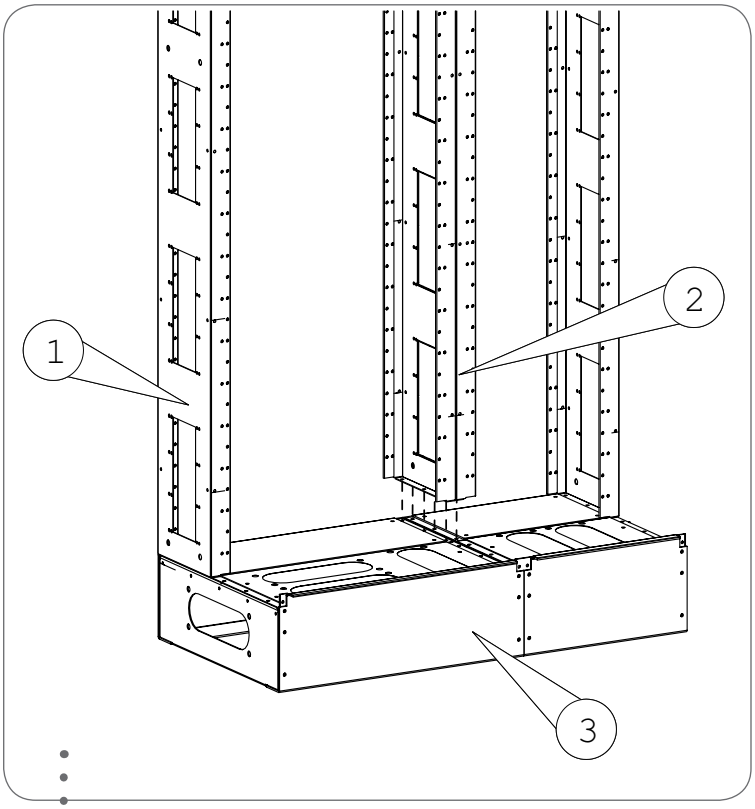


Fig. 2.8. a) *Fastening frame plates to the base of a 385 mm deep enclosure.*

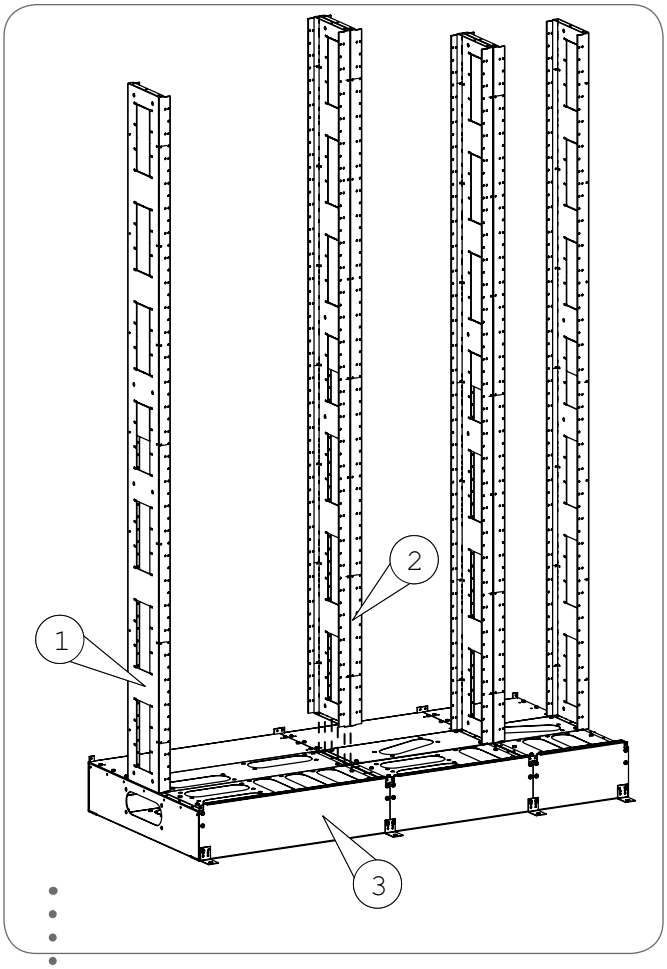


Fig. 2.8. b) *Fastening frame plates to the base of a 600 mm deep base structure.*

2.3 Roof

The roof of the E-serie enclosure is made up of end and intermediate profiles and plates for different parts of the roof.

If necessary, cooling of the cell centre is arranged through the ventilation grilles in the roof plates. The roof also has an important role in protecting personnel against damage in case of flash. Flash pressure escapes from the busbar space in the enclosure through a roof component opened by the pressure.

There are two ways to assemble the roof. We recommend that you arrange the end (1) and intermediate profiles (2) of the roof on an assembly table according to the field order, Fig. 2.9. Then you fasten either the back or middle plate depending on the structure of the cell centre.the cell centre.

385

With light cell centres the assembly of roof is started by fastening the back roof (1) and then the front roof (2) to the profiles mentioned earlier, Fig. 2.10.

600

With the larger cell centres the assembly of roofs is started by fastening the middle roofs (1) to the profiles. After the middle sections, the front roofs (2) are fastened. Do not fasten the back roofs yet because they would be in the way when back profiles are fastened to the cell centre frame.

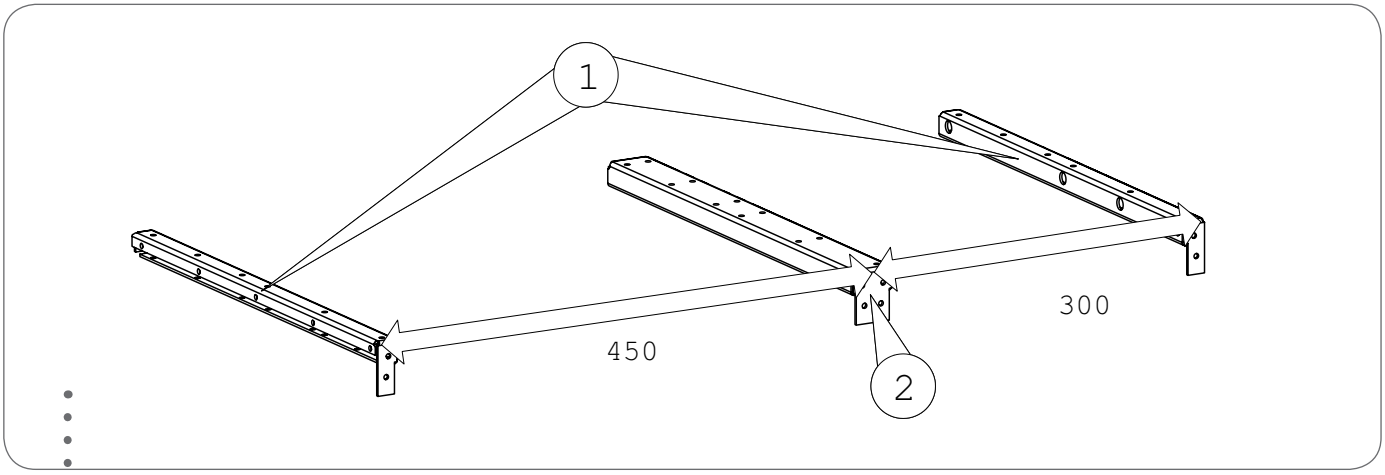


Fig. 2.9. *Arranging the end and intermediate profiles according to the field order.*

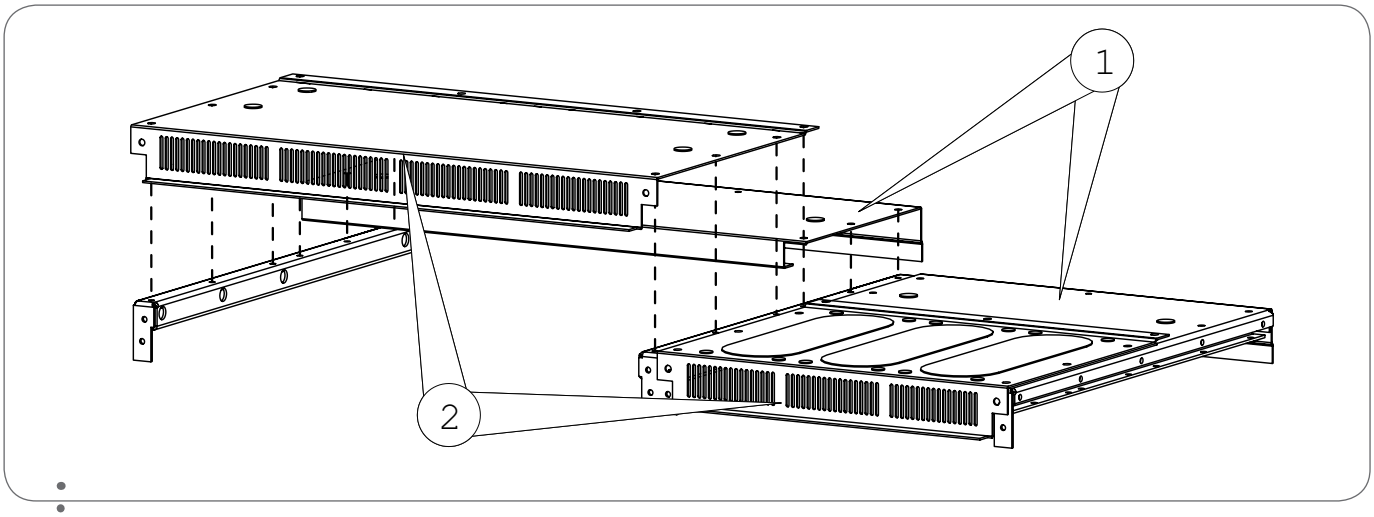


Fig. 2.10. *Back roofs are fastened to profiles first and then front roofs.*

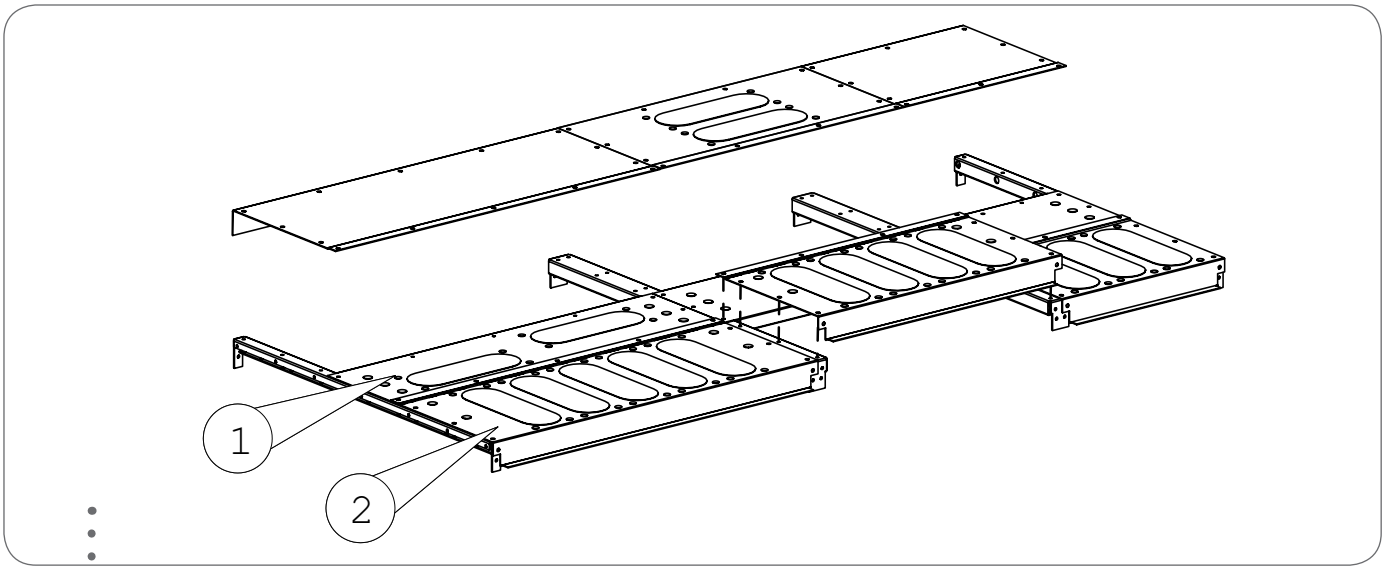


Fig. 2.11. *Assembly of roofs on a 600 deep E-serie cell centre is started with the middle sections, and then you fasten the front plates.*

2.3.1 Mounting of roofs

The roof assembly (2) is lifted onto the top of the frame plates (1) and fastened with screws. The end profiles are fastened with screws to single frame plates and the intermediate profiles to the frame plate assemblies. On 600 mm deep cell centres the back roofs should be fastened after mounting the roof assembly to avoid bending of parts when the rear profiles are installed.

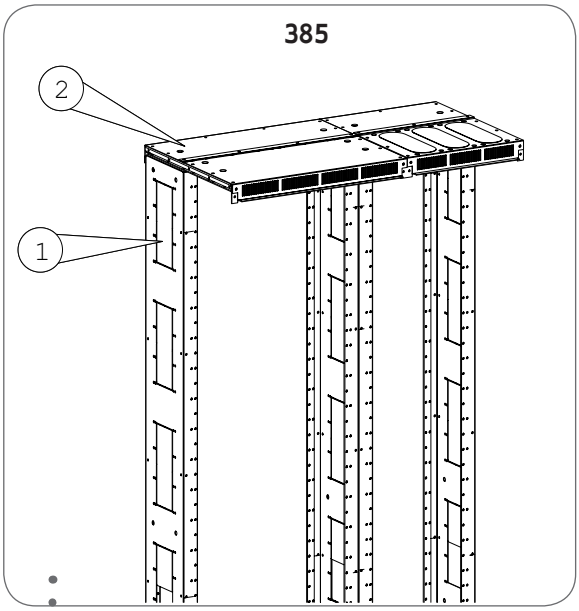


Fig. 2.12. *Installing roof assembly to a light cell centre.*

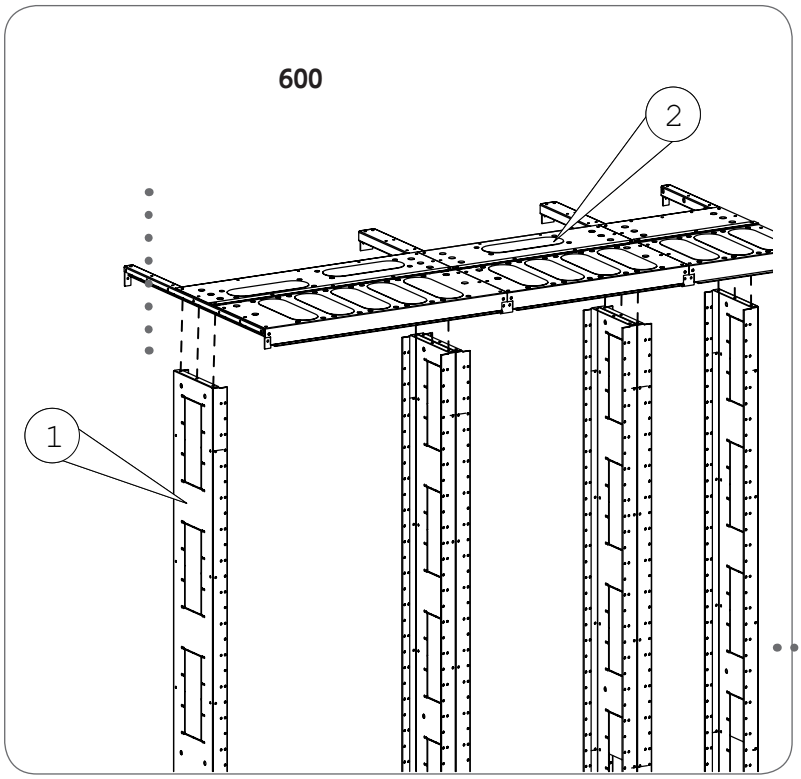


Fig. 2.13. *Installing top covers to a cell centre.*

2.4 Rigidifying the frame

It is advisable to make the cell centre frame more rigid and straighten it up by installing a large mounting plate or two mounting plates (1) to the frame plates. The mounting plates should be fastened at least at the corners to get the frame as straight as possible.

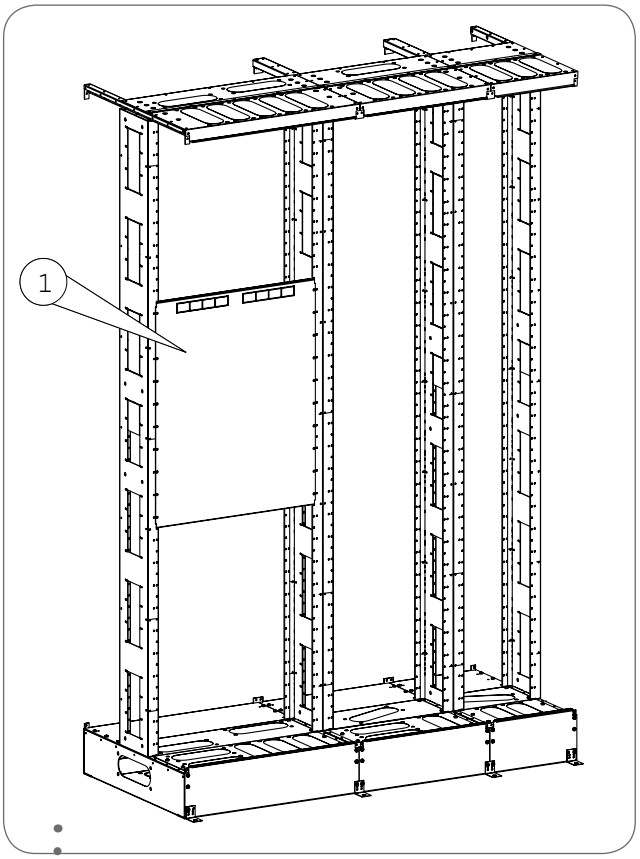


Fig 2.14. *The cell centre frame is straightened up by installing one or two mounting plates.*

2.5 Profiles

When the cell centre frame has been completed with the roofs and the frame has been straightened up, the front profiles (385 and 600) and the rear profiles (600) are fixed to the frame.

The front profile (1) is fastened on both cell centre frames with assembly screws to the base divider and intermediate bead.

600

Rear profiles are needed only in cell centre frames with 600 mm nominal depth. Joint back profiles (1) are fastened with screws to the cell centre ends and back profiles (2) to the base dividers and intermediate beads, Fig. 2.16.

After installing the rear profiles you can fasten the back roof plates (1) to the roof profiles, Fig. 2.17.

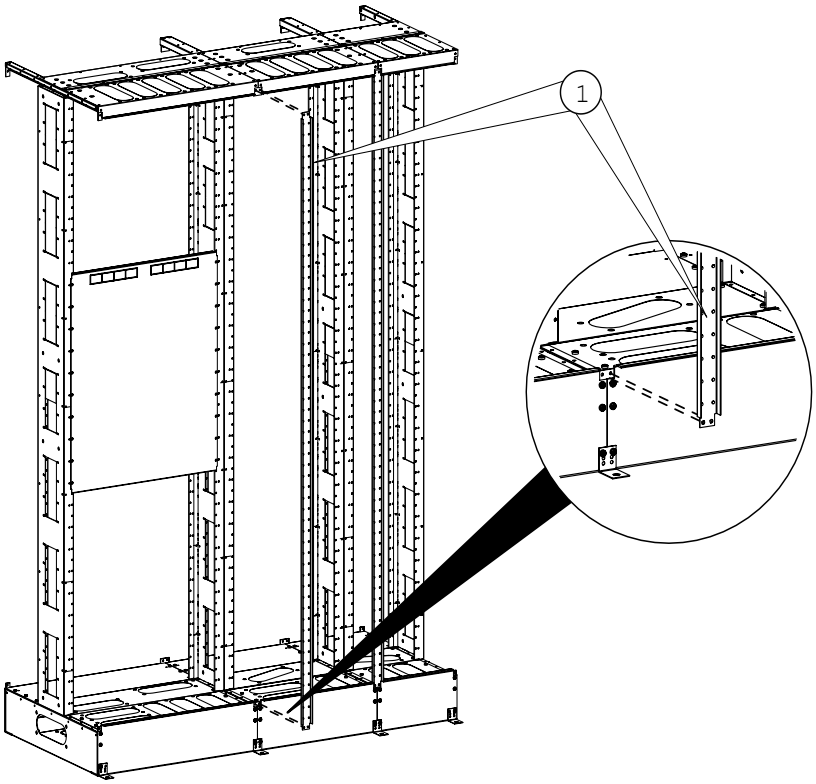


Fig. 2.15. *Front profiles are fastened with screws to the base divider and intermediate bead.*

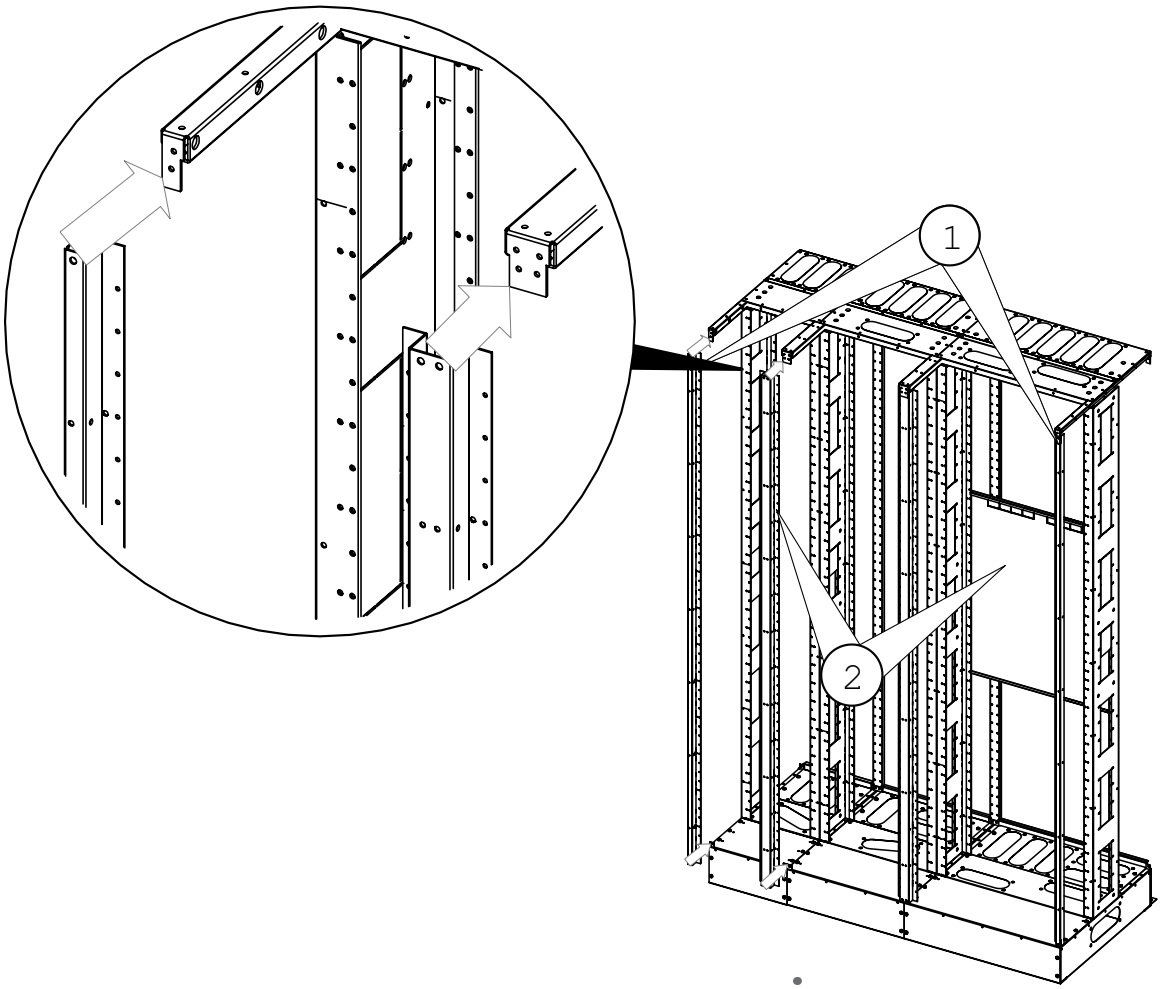


Fig 2.16. *Back profiles and joint back profiles are fastened with screws to dividers and intermediate beads.*

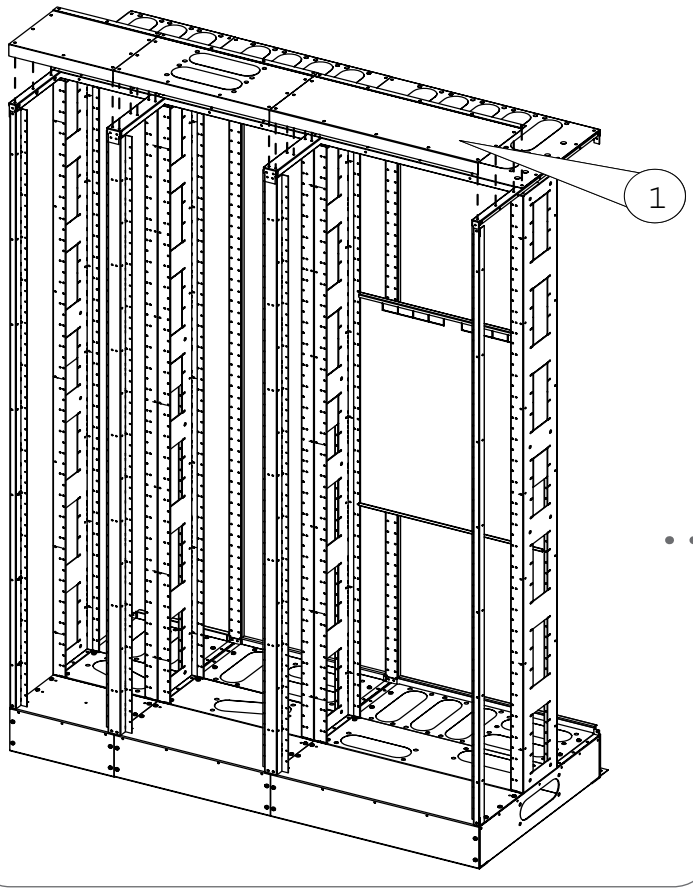


Fig. 2.17. *Back roof plates are fastened with screws to end and intermediate profiles after fixing the back profiles.*

2.6 Installation of busbar insulators into cell centre, flash barriers

Before installing busbar insulator adapters or Kutet1 support insulators it is advisable to insert flash barriers (2) into joint back profiles (1) in the corners of 600 mm cell centres. Flash barriers for corner profiles are installed according to Fig. 2.18.

F-serie busbar insulator adapter

The next step is to fasten F-serie busbar insulator adapters to the cell centre frame. You need one busbar insulator adapter for each end plate of base and two for each divider of base, Fig. 2.19. It is best to fix busbar insulator pairs (2) together and fit them with busbar insulators on an assembly table before installing the busbar insulator adapters into the cell centre frame. In the cell centre frame the busbar insulator adapters are fastened to the frame plates and back profiles (1).

At the ends of the busbar system in the cell centre busbar insulator adapters are used like frame plates, and the busbar insulator components are installed to them in the same way, Fig. 2.20.

E-serie Kutet1 support insulator

So-called E-serie support insulators, Kutet1 support insulators, are installed in 600 mm deep E-serie cell centres to the rear of the structure. The support insulator assemblies should be preassembled on an assembly table before fastening them into the structure. The support insulator holders (1) allow you to choose the correct bar size between 10x20 – 10x120mm. Support insulators (2) are fastened to the holders using 5.5x13mm plate screws (3). Fig. 2.21 shows how support insulator assemblies are installed.

Fastening support insulator assemblies

The support insulator holders of support insulator assemblies are fastened to frame plates and back profiles using assembly screws (at the end of cell centre to joint back profiles), Fig. 2.22.

Flash barriers

The structure of E-serie cell centres is protected against damage caused by short circuit through electric arc by inserting flash barriers into corner profiles (Fig. 2.23). The ends of the busbar system are insulated from the frame using end insulators (2) made of polycarbonate and fastened with screws to support insulator holders together with metallic end flash barriers (3). The back wall of the cell centre is protected using flash barriers for back panel (4). Intermediate supports (1) are fastened between back profile and frame plate at suitable distances (e.g. 420 mm). Installation of the above parts is shown in Fig. 2.23.

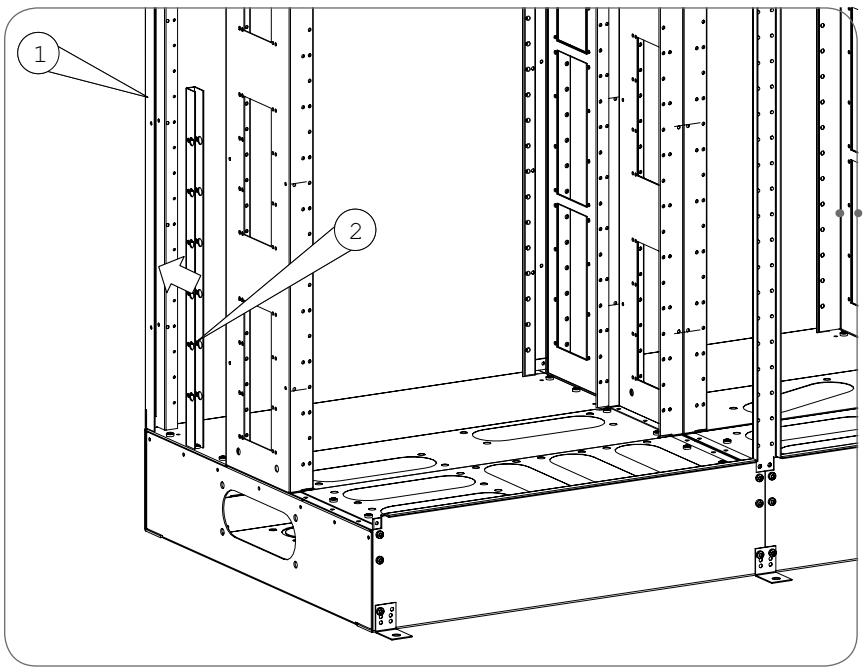


Fig. 2.18. *Before installing support insulator systems, insert required number of flash barriers for corner profiles.*

In E-serie light cell centres you need to install flash barriers (1) in addition to end flash barriers (Fig. 2.23, part 4). The flash barriers are fastened together with support insulators and end flash barriers to the frame plate using long plate screws (4,8x25mm). Fig. 2.24 shows installation of flash barrier.

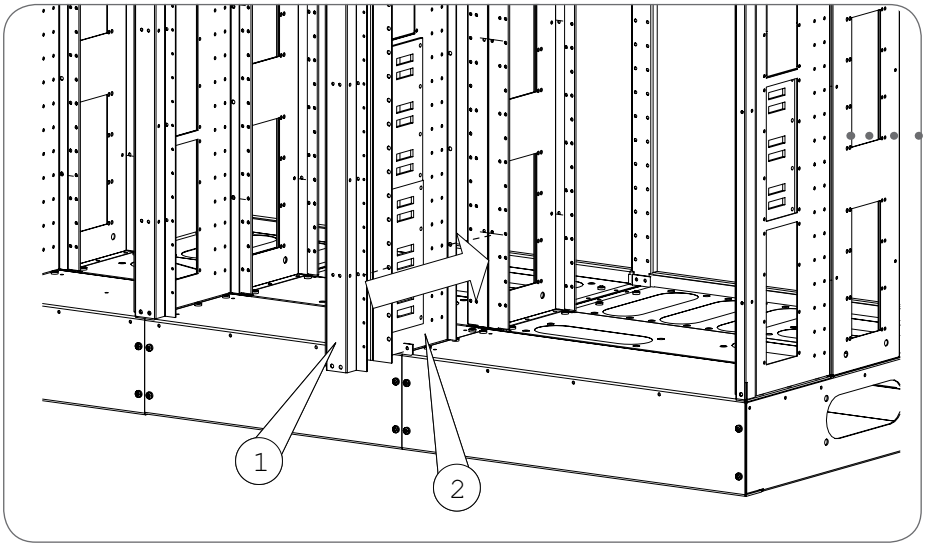


Fig. 2.19. *Installing busbar insulator adapters to E-serie cell centre frames. The busbar insulator adapters are fastened to the frame plates and back profiles.*

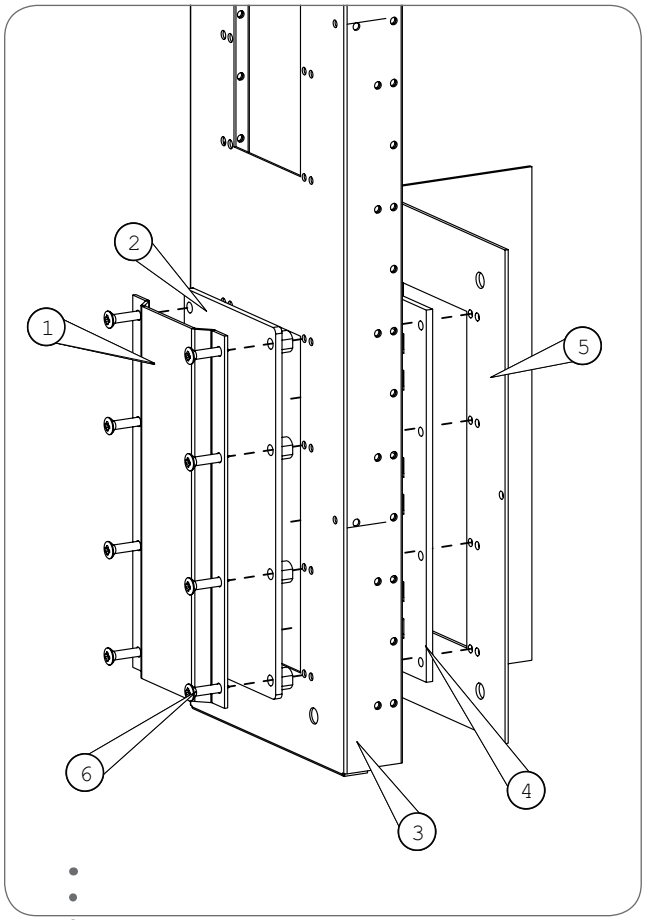


Fig. 2.20. *Installing busbar insulator components (1, 2, 4) to insulator adapter (3).*

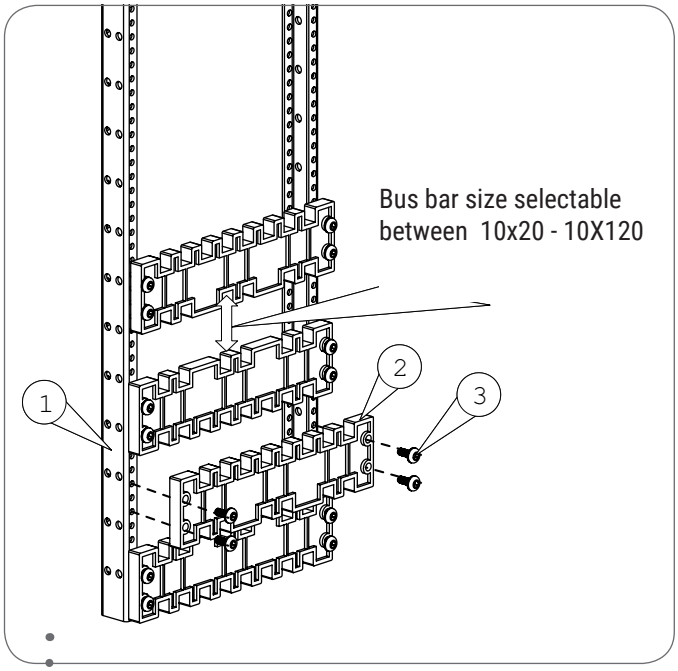


Fig. 2.21. *Assembling a support insulator package.*

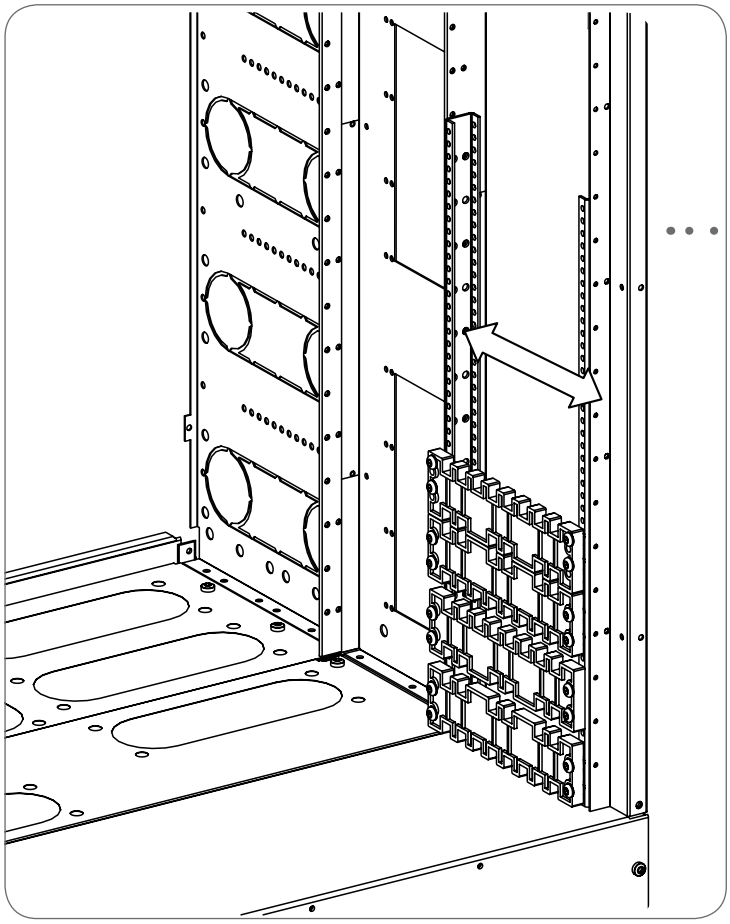


Fig. 2.22. *Fastening E-serie support insulator assemblies, using screws to fasten assembly to frame plate and back profile.*

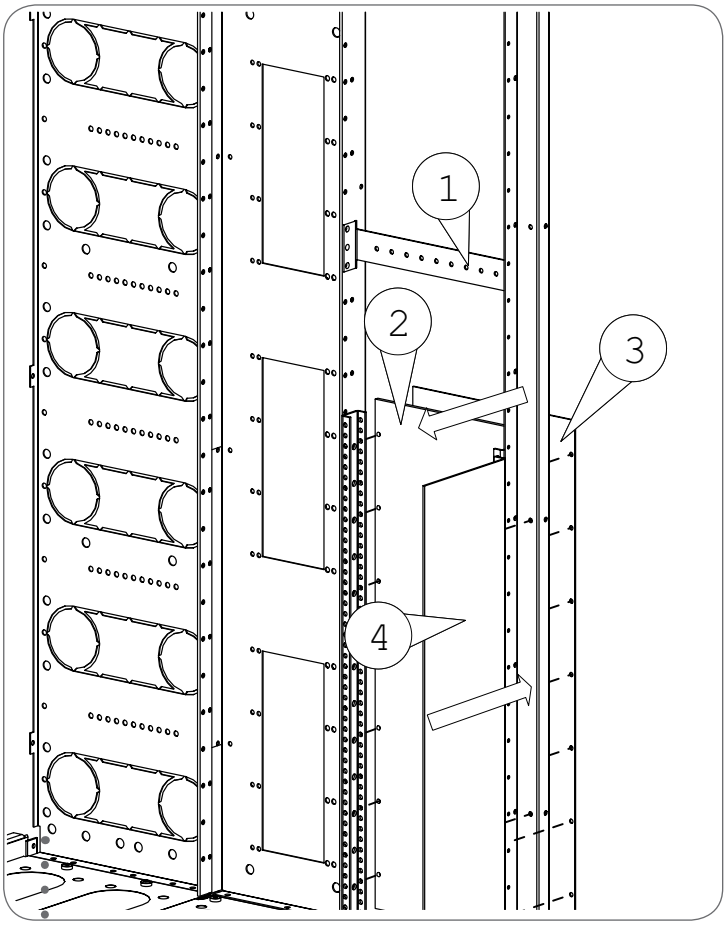


Fig. 2.23. *Installing flash barrier parts to E-serie cell centres.*

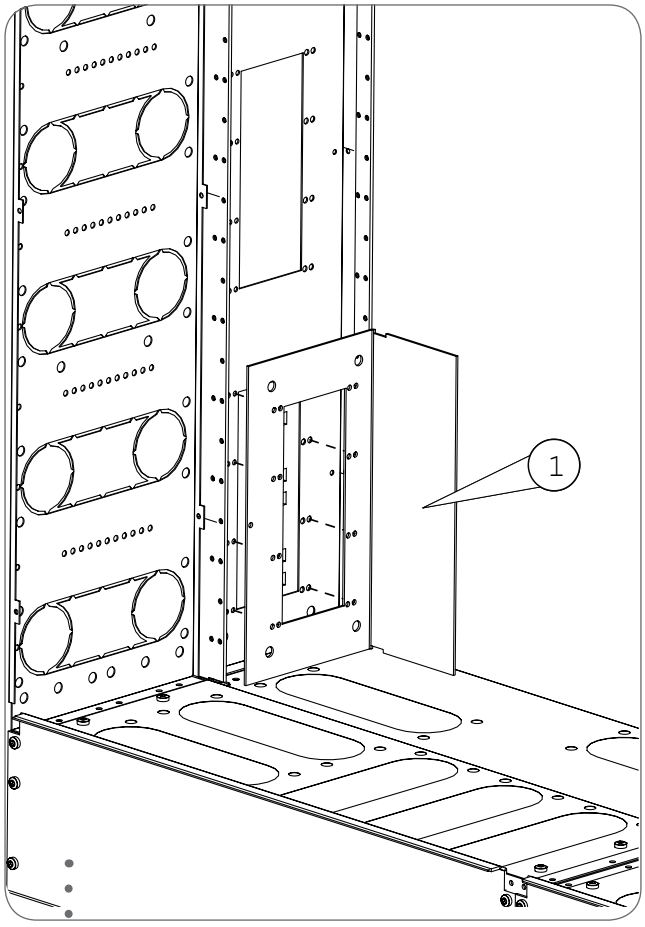


Fig. 2.24. *Installing flash barrier in E-serie light cell centre.*

2.7 Front partition walls and front intermediate supports

After completed installation of the support insulator elements, front partition walls (1) are installed between the fields. If no front partition walls are needed, you can install a few front intermediate supports instead.

The front partition wall (1) is first fastened with screws to the frame plate (2) (Fig. 2.25 a) and then to the base (4) and the intermediate profile at the top (3).

Front intermediate supports are installed every 420 mm to support the front profile. Front intermediate supports (1) can also be used for mounting components. Front intermediate supports are installed as shown in Fig. 2.26.

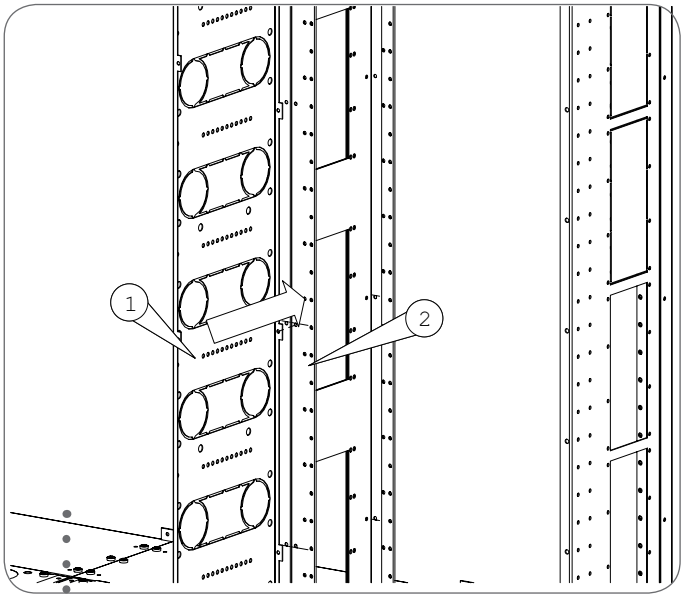


Fig. 2.25. a) *Fasten front partition walls first to frame plate.*

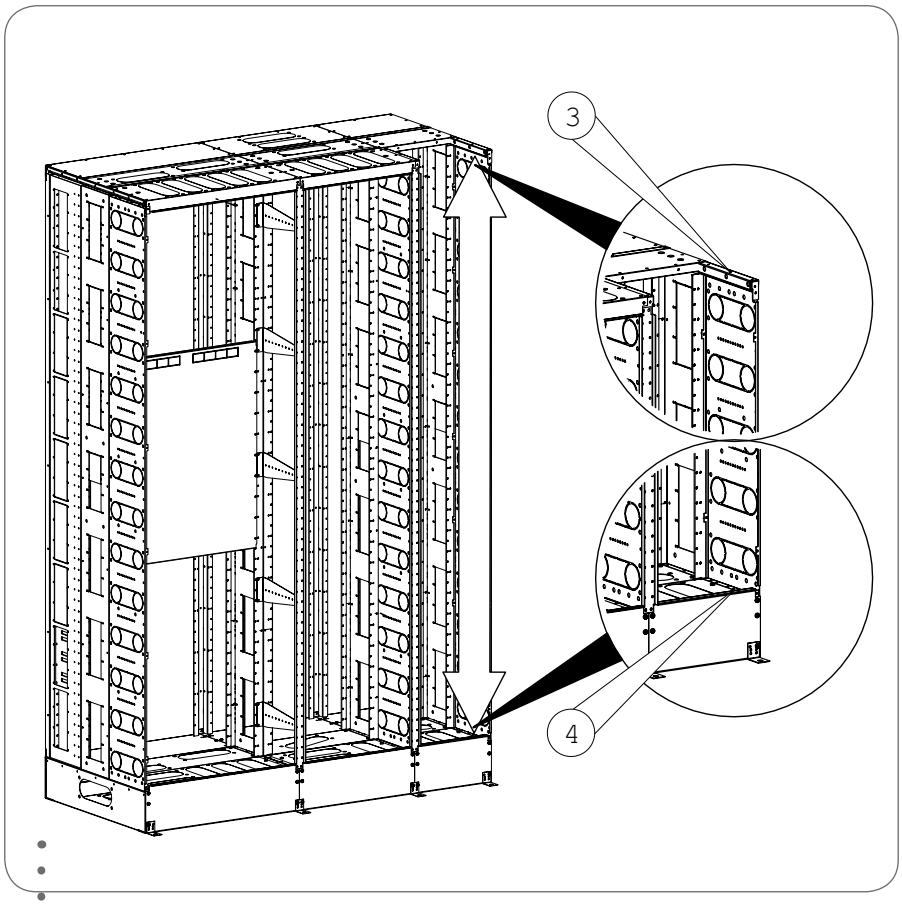


Fig. 2.25. b) *In step 2 fasten front partition wall to end or intermediate profile (3) at the top and to base (4) at the bottom.*

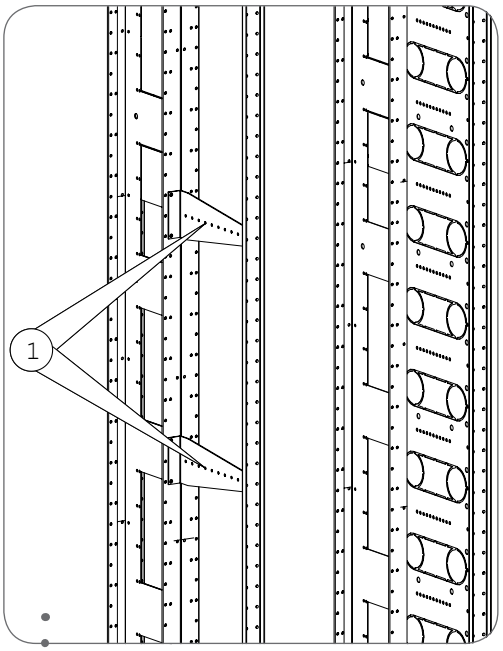


Fig. 2.26. *Front intermediate supports are installed between frame plate and front profile.*

2.8 Back plates

Back plates should not be installed until the busbar system is completed. The back plates (1) are inserted under the back roof elements and fastened with screws to frame plates in light cell centres and to back profiles in cell centres as shown in Fig. 2.27.

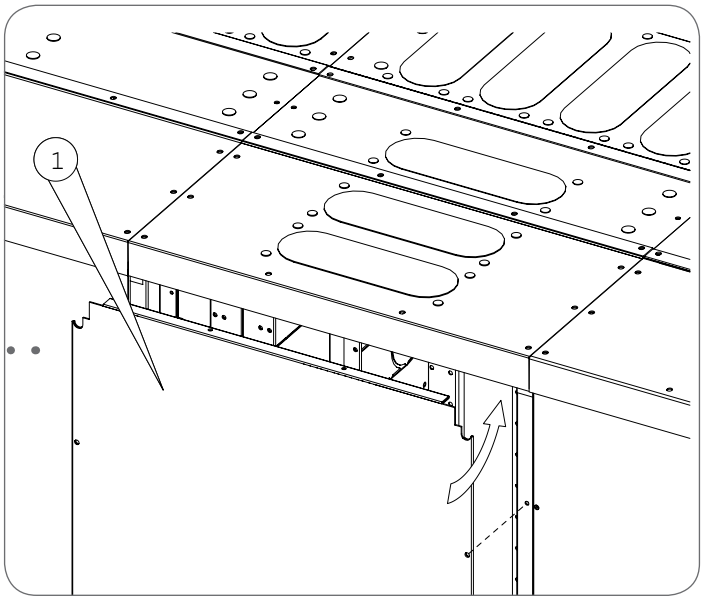


Fig. 2.27. *Back plates are inserted under the back roof elements and fastened to frame plates or back profiles.*

2.9 Mounting plates

In the E-serie system, installed components are mounted on mounting plates. At cable fields, full-height mounting plates can also be used as contact shields.

Mounting plates (1) are fastened with assembly screws to the front edge of the frame plate, Fig. 2.28.

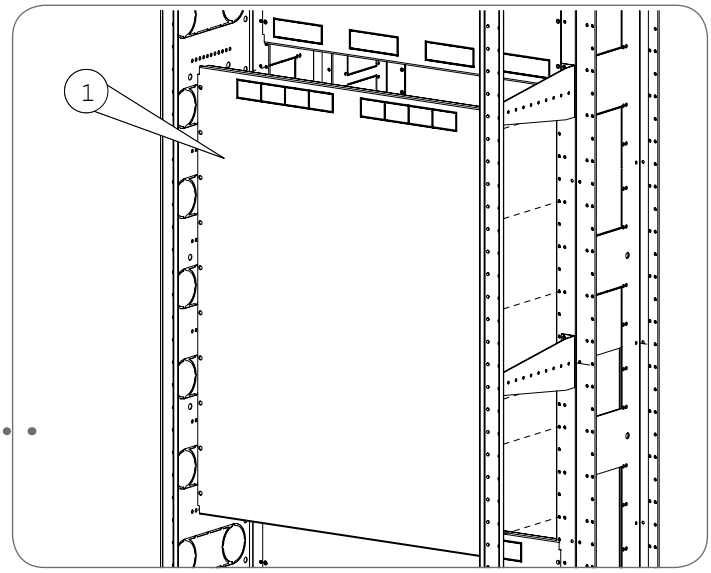


Fig. 2.28. *Installing mounting plates.*

2.10 Intermediate profiles and front intermediate level plates

Using horizontal intermediate profiles (1) and front intermediate level plates (2) you can divide a field in the vertical direction into cells where components are installed. Horizontal intermediate profiles are fastened with screws to side plates (3) or front profiles (4).

The front intermediate level plate is inserted between mounting plates in the field and fastened at the front with screws to the horizontal intermediate profile.

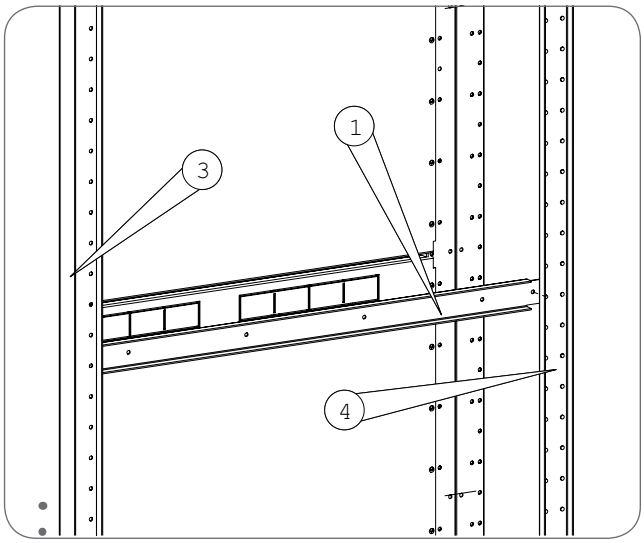


Fig. 2.29. a) *Installing horizontal intermediate profiles.*

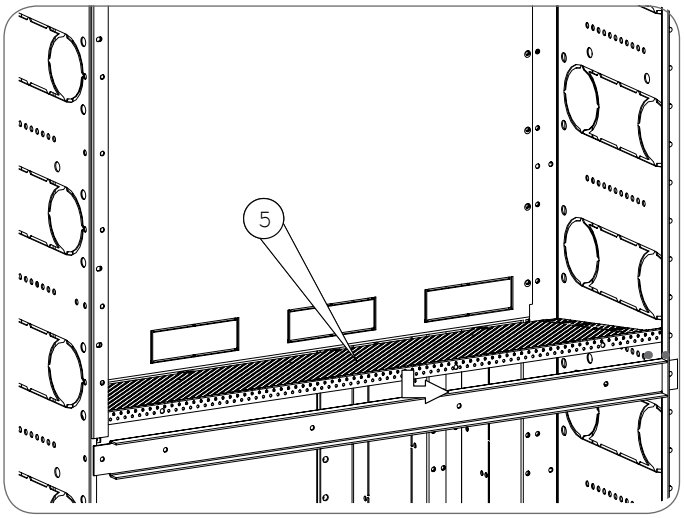


Fig. 2.29. b) *Installing front intermediate level plates.*

2.11 Side plates

Side plates are fastened with assembly screws to the ends of the cell centre frame. At the top, the side plates are fastened to the end profiles and at the bottom to the end plates of base. At the back, the side plates are fastened to the back profile or the frame plate and at the front to the front partition wall. Installing of side plates (1) is shown in Fig. 2.30.

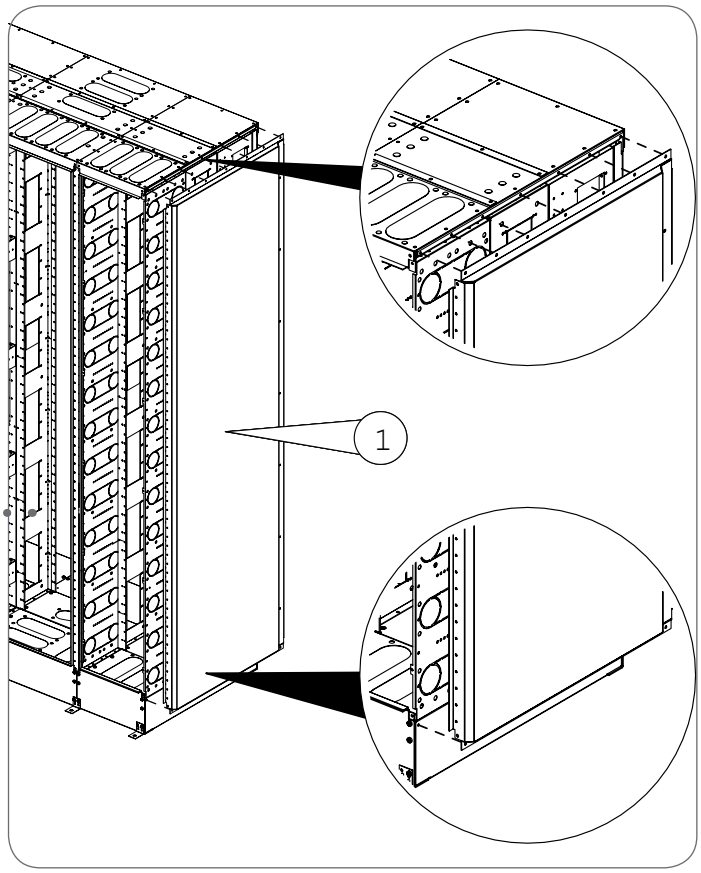


Fig. 2.30. *Fastening side plates to cell centre structure.*

2.12 Mounting heavy components

Particularly heavy components are mounted in E-serie cell centre frames using heavy-duty and heavy components hangers and C profiles. The components are fastened to C profiles using U-shaped nuts with M6 or M8 threads.

Heavy-duty hangers (1) are fastened with screws to front partition walls (2) and side plates / front profiles and also to frame plates.

Heavy components hangers (5) are fastened with M8 hex head screws to heavy-duty hangers (1), Fig. 2.31 b).

As necessary, U-shaped nuts (6, M6 or M8) are inserted into the C profile and the profile is mounted onto heavy components hangers (5).

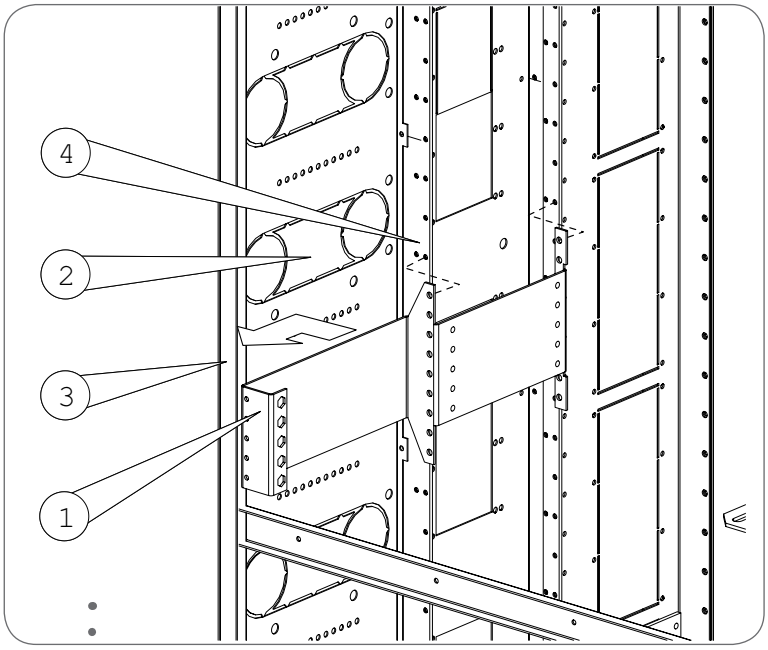


Fig. 2.31. a) *Fastening of heavy-duty hanger.*

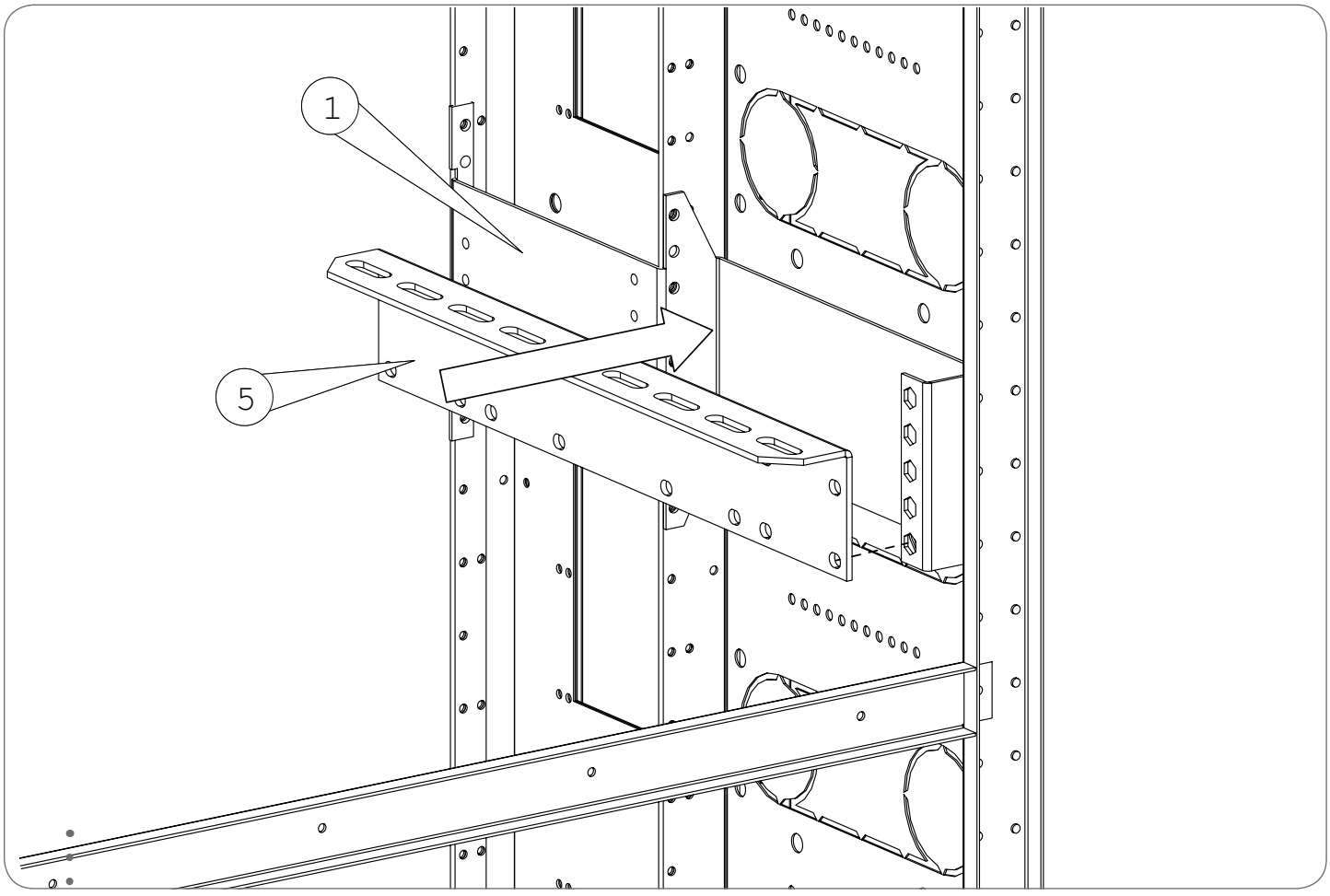


Fig. 2.31. b) *Heavy components hangers (5) are fastened with M8 hex head screws to heavy-duty hangers.*

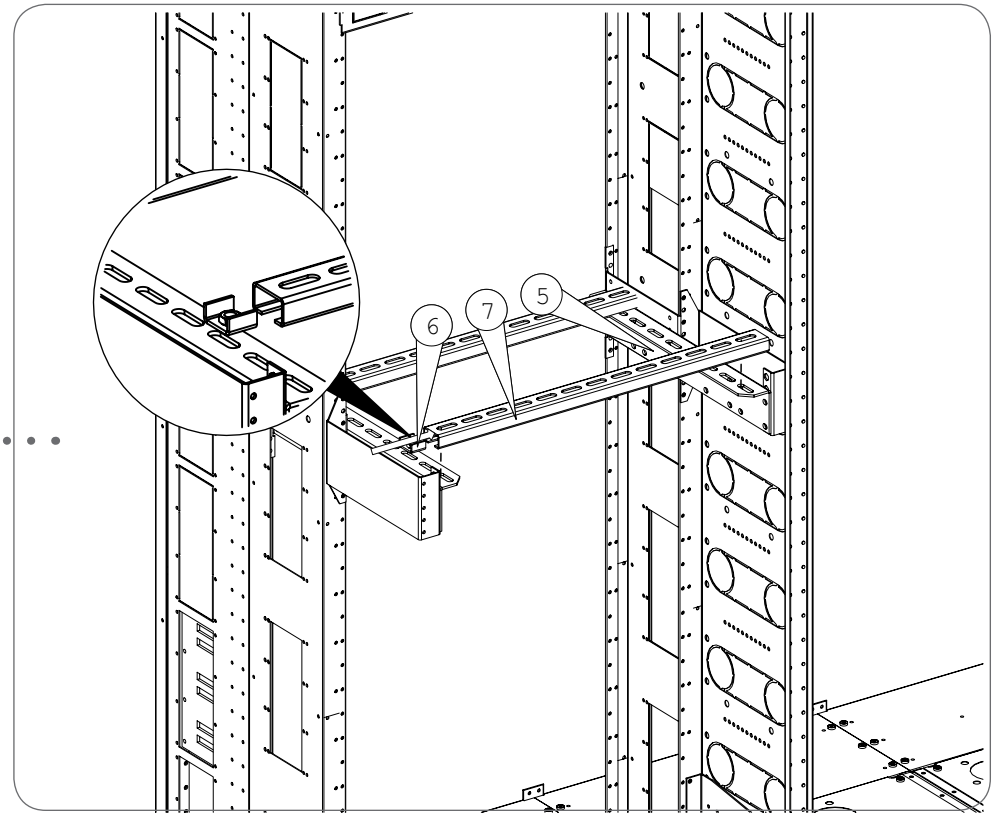


Fig. 2.31. c) *U-shaped nuts can be inserted inside C profiles.*

2.13 Doors and covers

Doors (1) are mounted to the cell centre frame by fastening them with M5x8 countersink screws to front profiles (2) or side plates. The sealing on the door is pressed against the sealing edge on the intermediate profile, base, or front roof.

A fixing rail has to be installed to the cell centre frame for mounting covers. The rail is fastened with assembly screws either to front profiles or to a side plate and a front profile, Fig. 2.33.The cover is fastened to the rail using M6 screws.

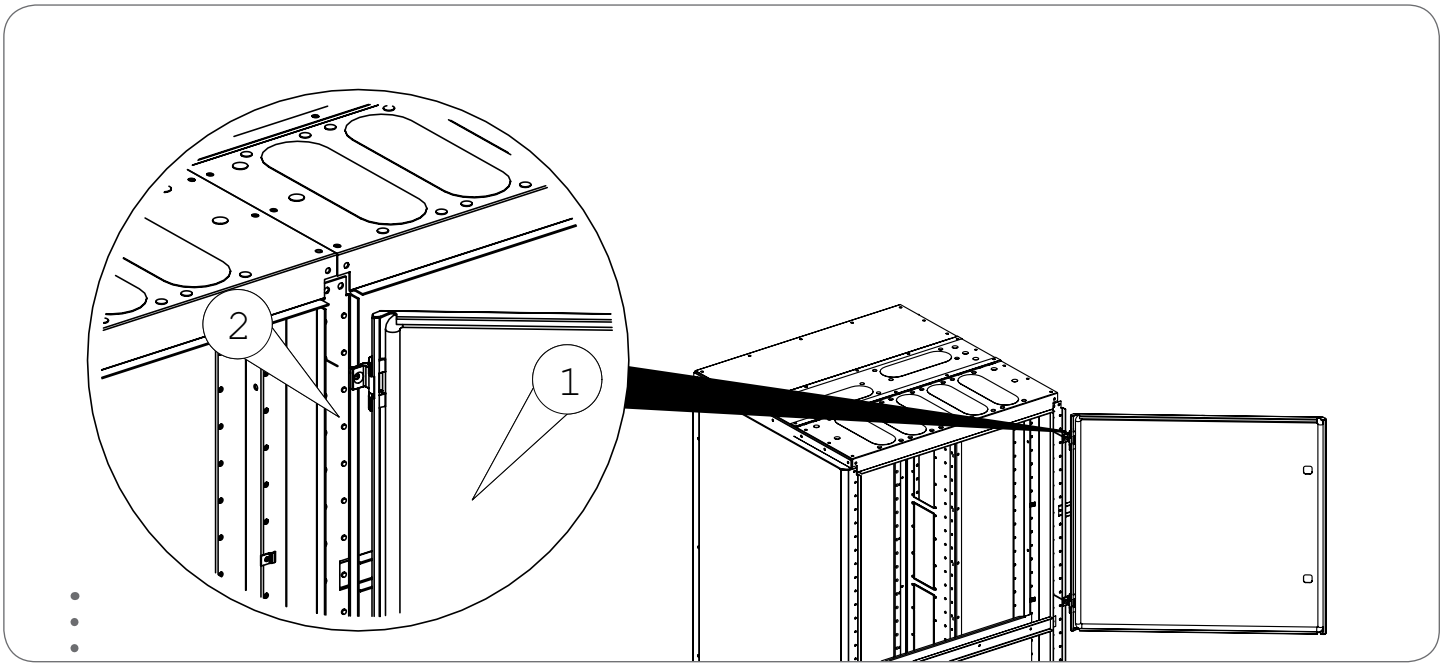


Fig. 2.32. *Doors are fastened to the front profile or side plate using hinge screws.*

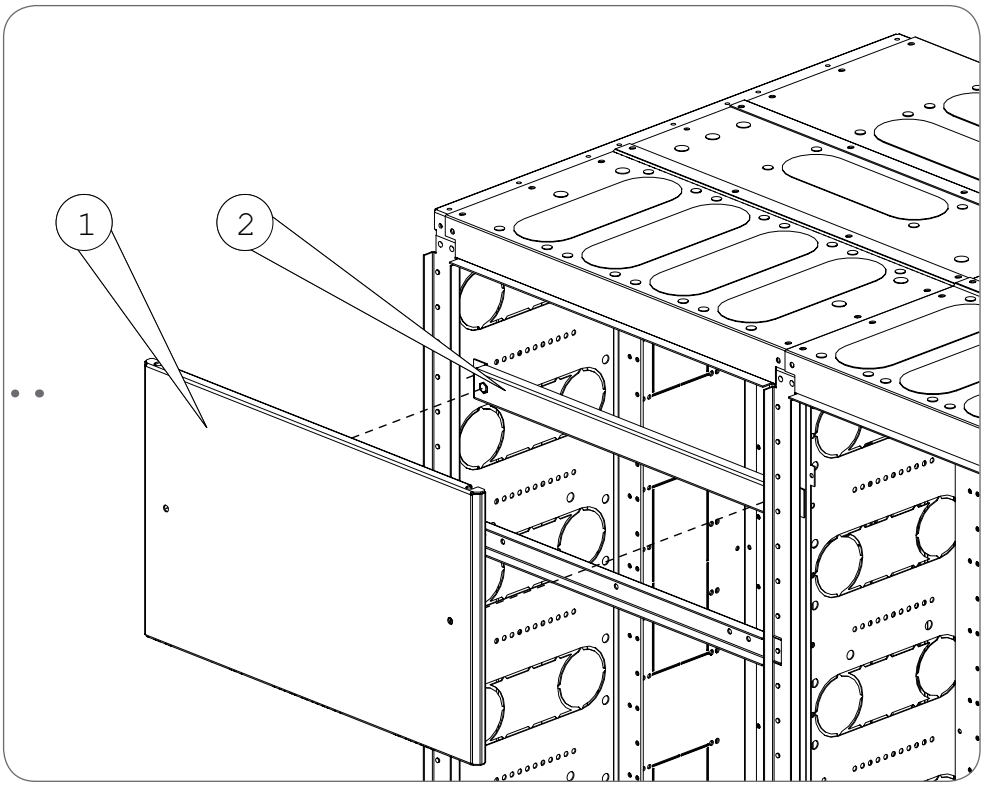


Fig. 2.33. *Installing covers and fixing rails for covers.*

2.14 Mounting plate fastening rails

Using a mounting plate fastening rail (1) you can adjust the installation depth suitable for the components. Without the rail you can install the mounting plate to following depths: 235, 400, or 595 mm. Fastening rails run over the whole length of the field and they are fastened with assembly screws to, for instance, front partition walls, Fig. 2.34.

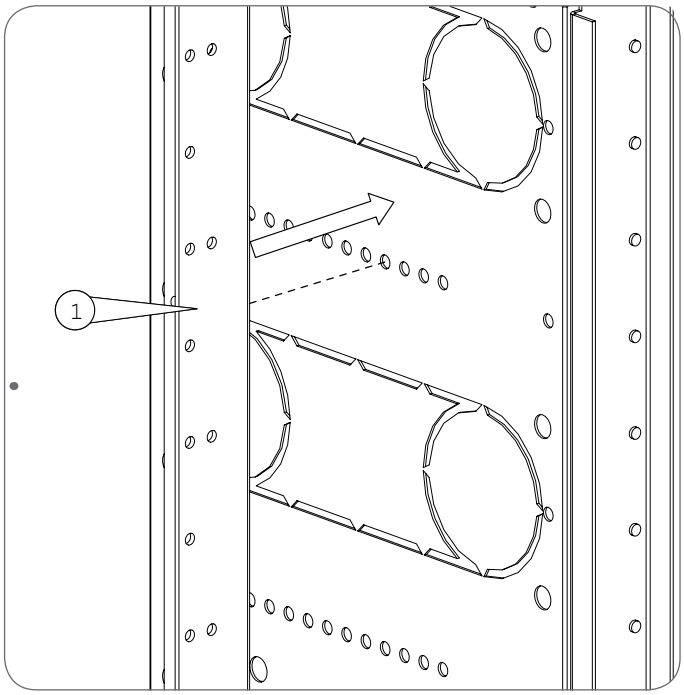


Fig. 2.34. *Mounting plate fastening rails are fastened with screws to front partition walls, for instance.*

2.15 Intermediate cover fastening rails and intermediate covers

Behind the doors of the E-serie system it is possible to make a system of intermediate covers to have modular components conveniently installed in a space protected by a cover.

There are two alternative ways to make up an intermediate cover system. One way is to make the cover system using separate DIN rail elevations and intermediate cover fasteners, the other way is to use an intermediate cover fastening rail to which DIN rails can be directly mounted.

An intermediate cover group can be constructed to cover the desired group/groups (1) or to cover the whole field (2).

The intermediate cover fastening rails are fastened to front profiles/side plates or to front partition walls according to the manner of installation, Fig. 2.35 a)-c).

Intermediate covers (3) are fastened with assembly screws or hinges to the front face of intermediate cover fastening rails. The DIN rails intended for mounting the modular components are fastened with screws to the rear face of the rails, behind the cover.

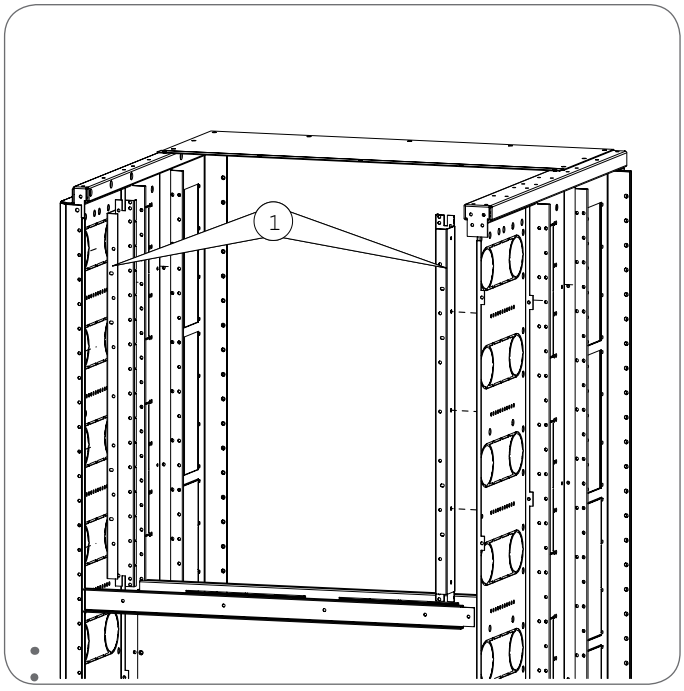


Fig. 2.35. a) *Installing intermediate cover fastening rails (5005)*

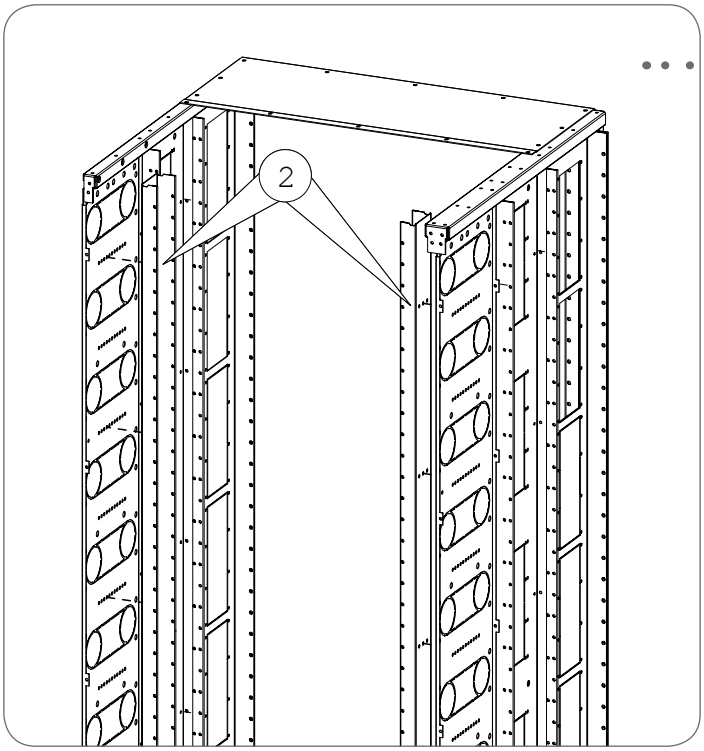


Fig. 2.35. b) *Intermediate cover fastening rails (5052) can be as high as the field.*

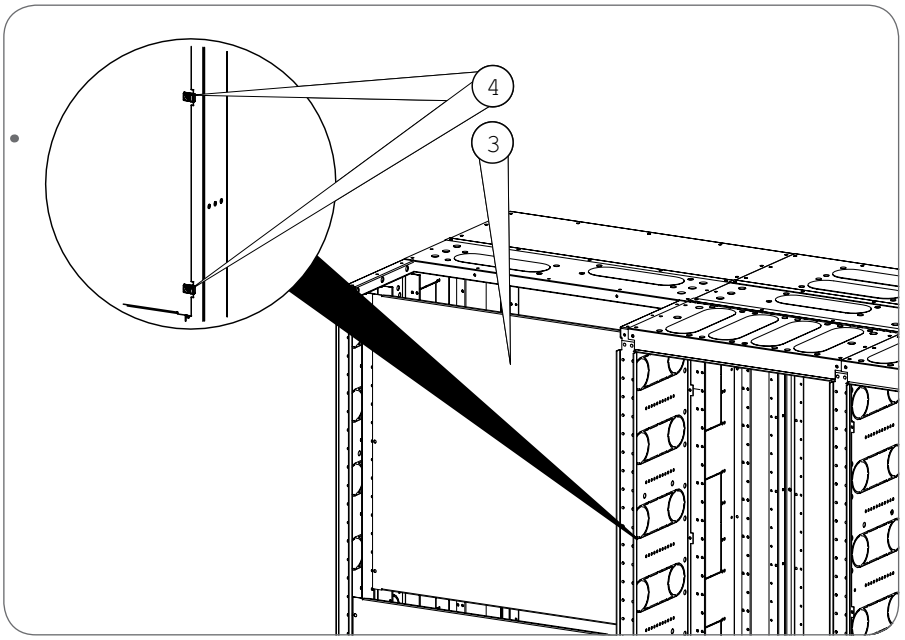


Fig. 2.35. c) *Intermediate covers are fastened to the fastening rails using screws or hinges.*

2.16 Compartment elevations

Compartments in the E-serie system can be separately elevated. End (1) and side (2) elevation profiles are assembled together using screws. The elevation frame is fastened with screws to the side plates or front profiles at the desired compartment as shown in Fig. 2.36. Using elevation frames you get an approx. 74 or 92 mm elevation to the normal structure.

An elevation frame can be as high as the whole field, Fig. 2.36 b).

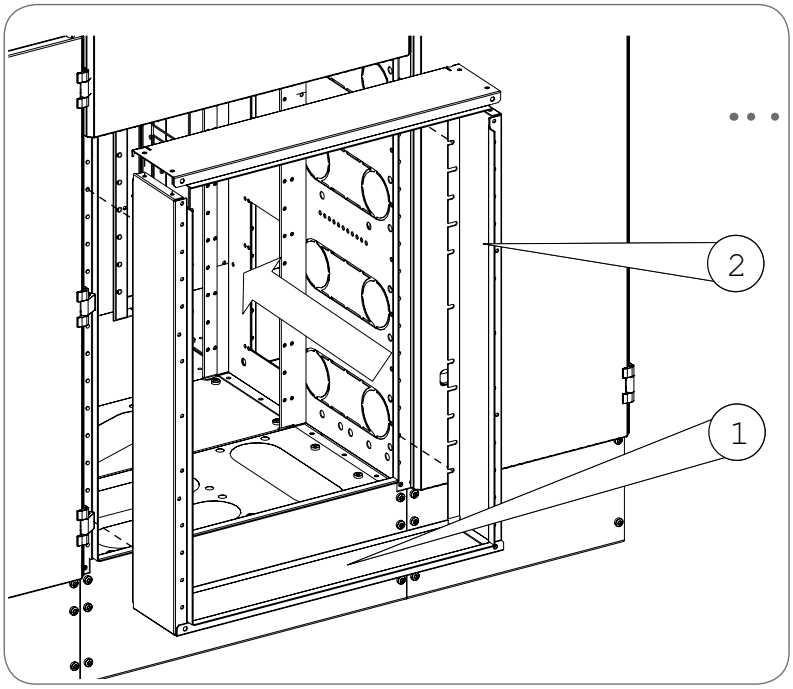


Fig. 2.36. a) *Elevation frames are fastened with screws to front profiles or side plates.*

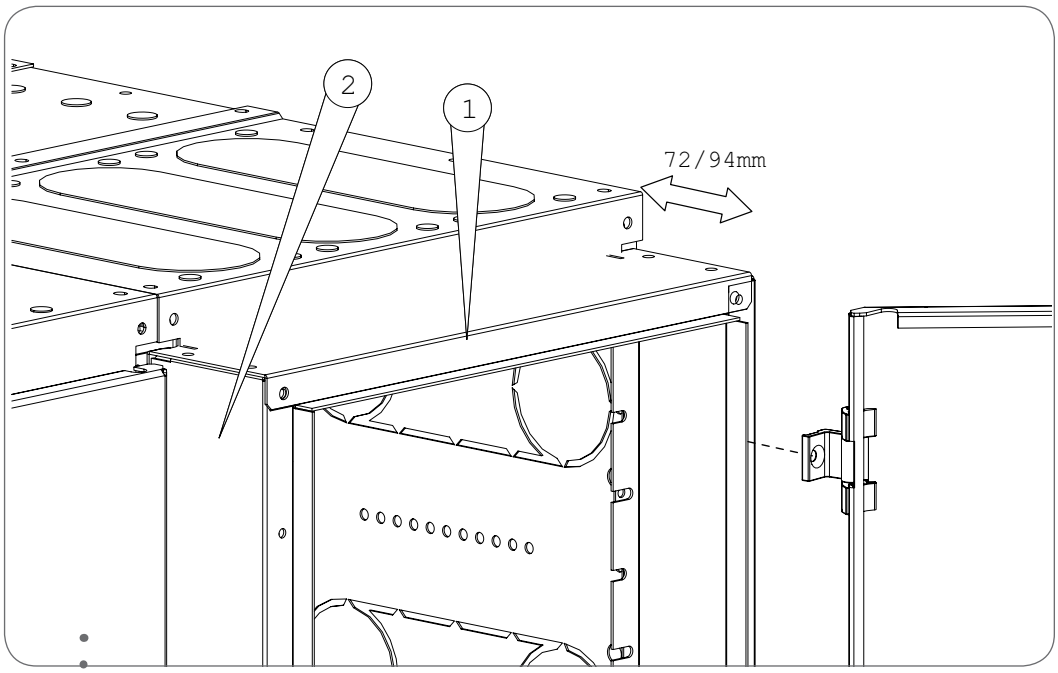


Fig. 2.36. b) *Installing field-specific elevation frame.*

2.17 Lifting components

There is a variety of different components intended for lifting E-serie cell centres. The lifting lug of the system is designed for easy installation of standard M12 lifting loop (DIN580). For heavier cell centres, special lifting loops are available with up to 500 kg capacity per loop and also allowing lifting in other than straight vertical direction.

For lifting elements, lugs for lifting loops are installed inside the frame plates, one lug for each 500 kg lifting loop, Fig. 2.37.The lugs for lifting loops (1) are fastened to frame plates using M8x20 hex head screws and nuts (2).

After fastening the lugs either 500 kg lifting loops or DIN lifting loops are fastened to the lugs. The knock-out blanks in the middle/back roof sections are removed and the 500 kg lifting loops are installed using hex head M12 screws, Fig 2.38.

DIN lifting loops are fastened to the lugs as shown in Fig. 2.39.

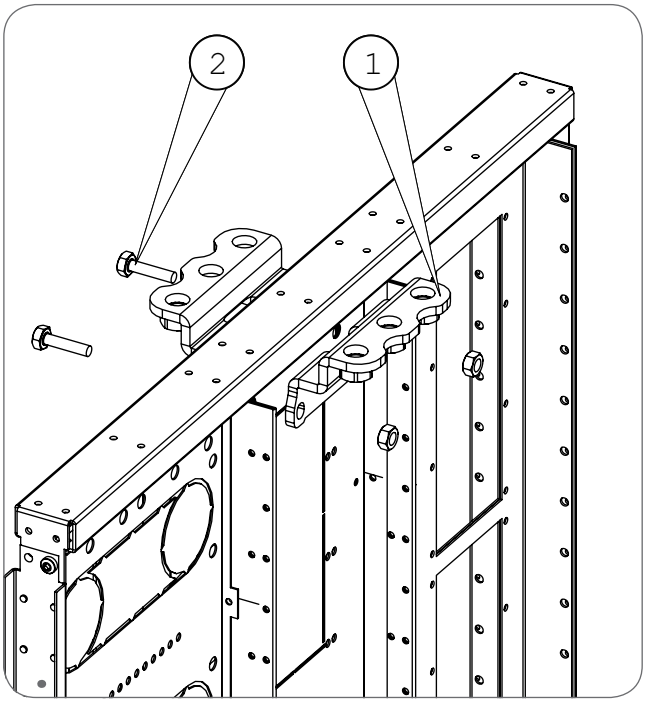


Fig. 2.37. *Installing lugs for lifting loops.*

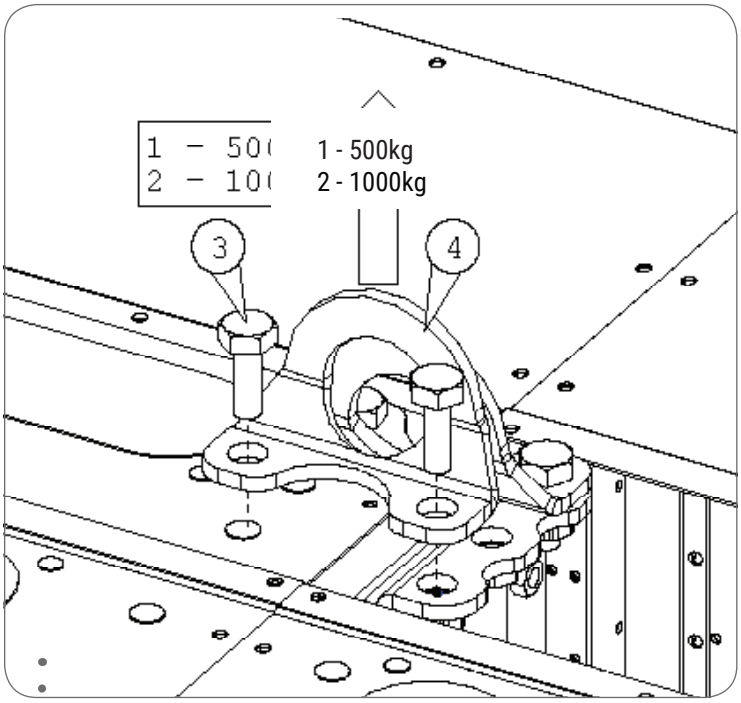


Fig. 2.38. *Fastening lifting loops with M12 screws.*

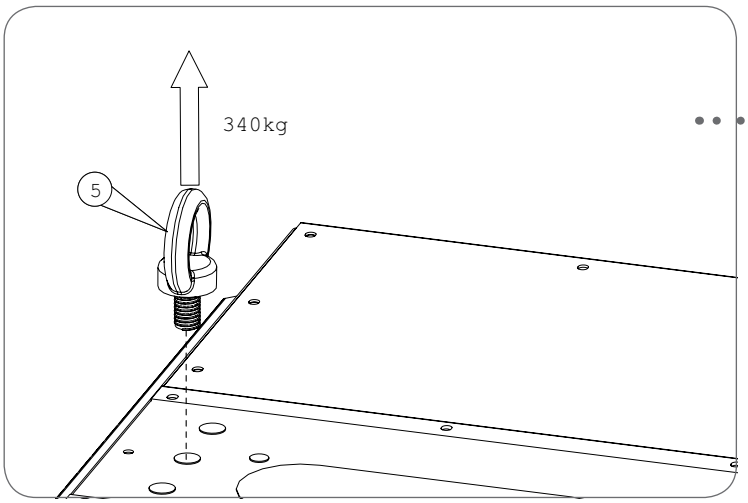


Fig. 2.39. *Installing DIN lifting loops.*

Lifting and transporting, transport break

Lifting E-serie cell centres is only allowed using the lifting elements specially designed for the structure.

The lifting chains/straps are fastened to the DIN loops or lifting loops. The cell centre should be lifted straight up with the aid of, for instance, a rigid lifting rail or bar as shown in Fig. 2.40.

Transport break

Transport breaks for E-serie cell centre frames are arranged between cable and instrument fields, Fig. 2.41. A transport break between two fields is made using the same components as at the cell centre ends, excepting side plates. In addition, the front partition walls at the cell centre ends are replaced by joint front partition walls.

For a transport break in both cell centre frame versions (385 and 610) you need end plates of base (1), joint front partition walls (2), frame plates (3), and joint end profiles (4). Only for cell centres with 610 mm nominal depth you also need a joint back profile (5) at the transport break. The parts needed for a transport break are shown in Table 2.1 and Fig. 2.43.

For a 610 mm deep cell centre frame you can also make the busbar insulator structure using F-serie support insulator adapters (6), Fig. 2.44.

At a transport break you will need two support insulator assemblies for the busbar system of the cell centre, Fig. 2.45.From the point of connecting busbars together (4.5), the best place to make a transport break is between instrument and cable fields.

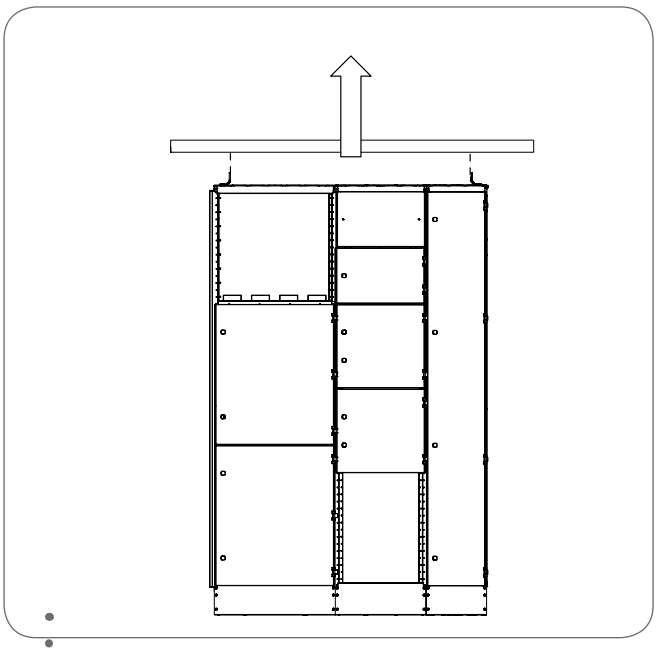


Fig. 2.40. *A rigid lifting beam used in lifting a cell centre.*

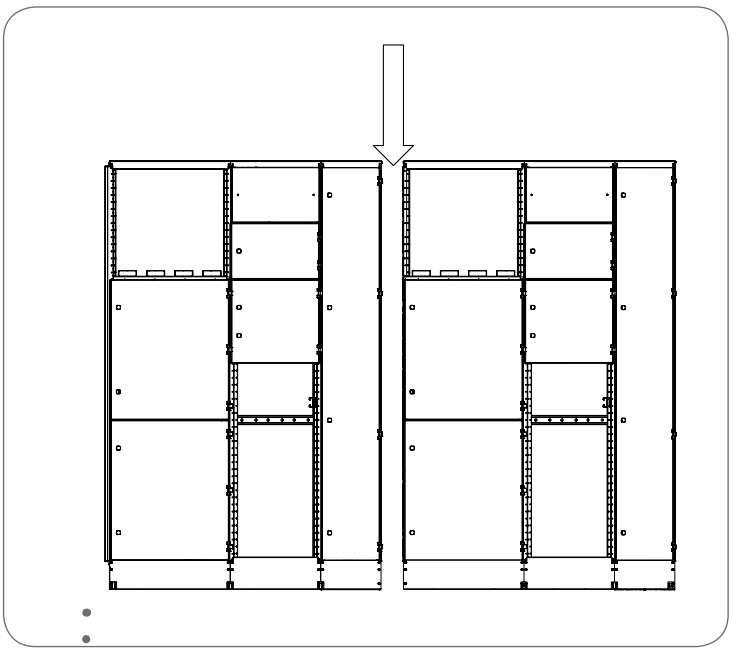


Fig. 2.41. *Transport break in an E-serie cell centre.*

No.	Part	385	610
1	End plate of base	50051105 and 50051106	50052041 2 pcs
2	Joint front partition wall	50056074 2 pcs	
3	Frame plate	50052011 2 pcs	
4	Joint end profile	50052051 and 50052052	50052041
5	Joint back profile		50052151 2 pcs

Table 2.1. *Needed parts for transport breaks.*

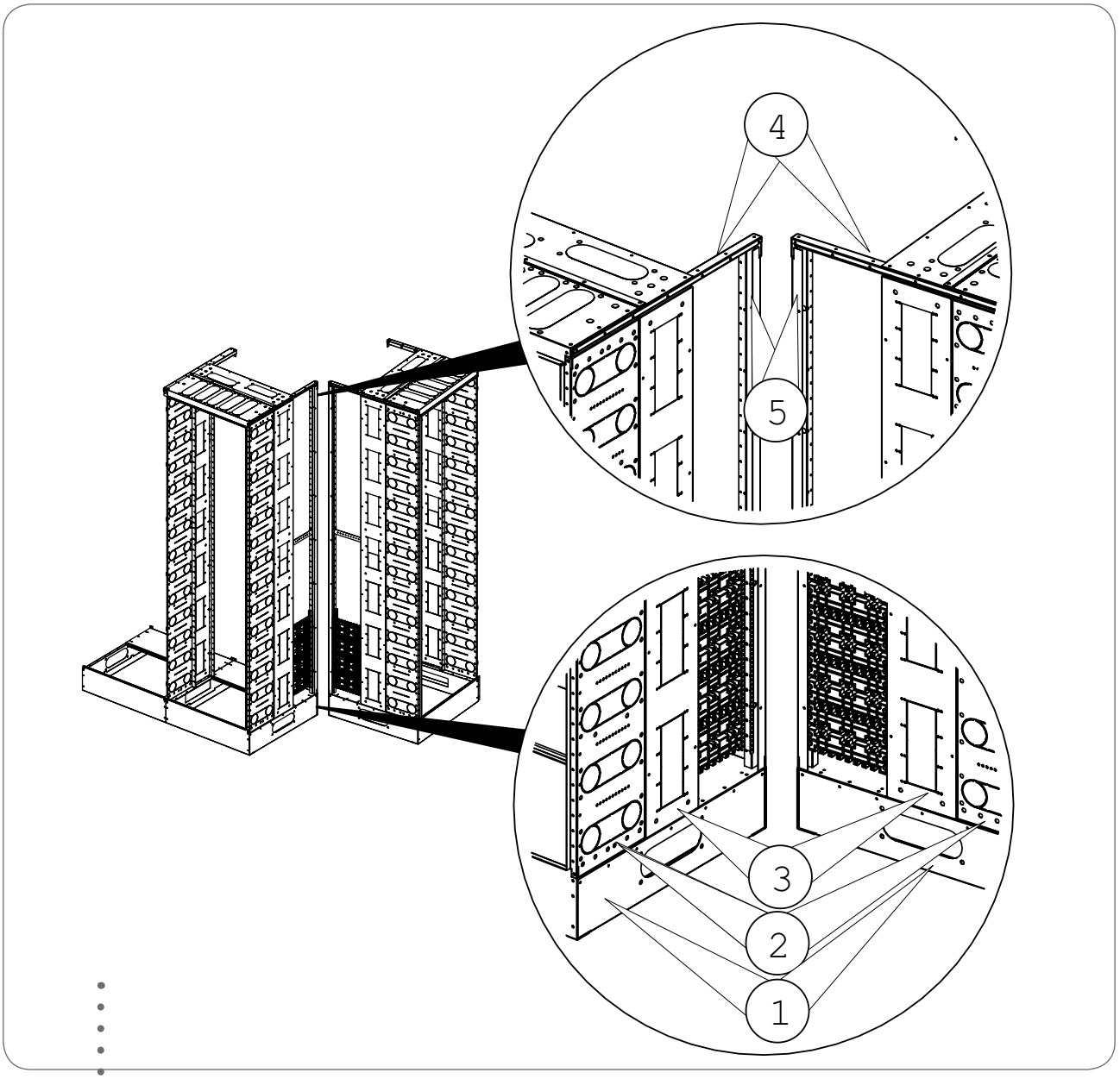


Fig. 2.43. *Parts needed for transport breaks in E-serie cell centre frames.*

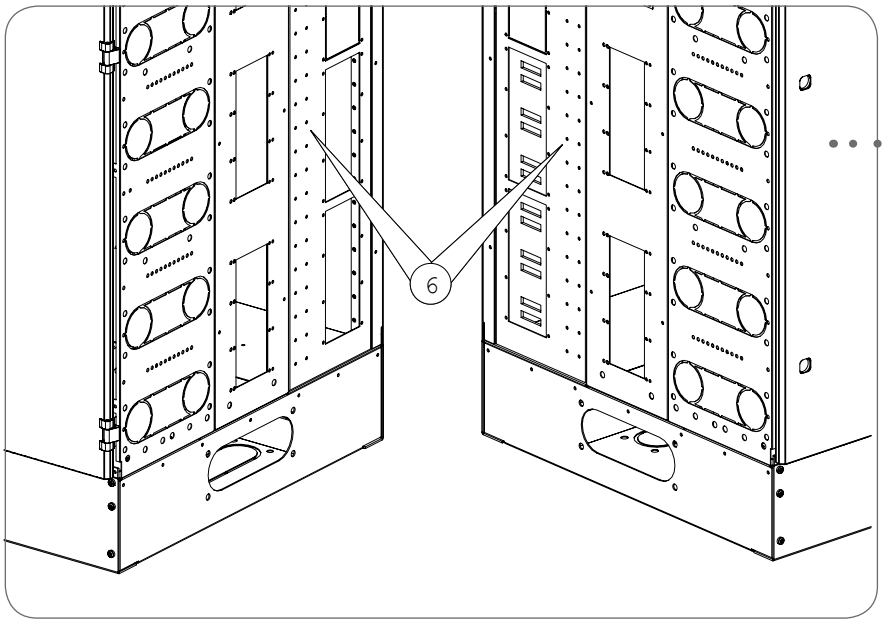


Fig. 2.44. *Using support insulator adapters at a transport break.*

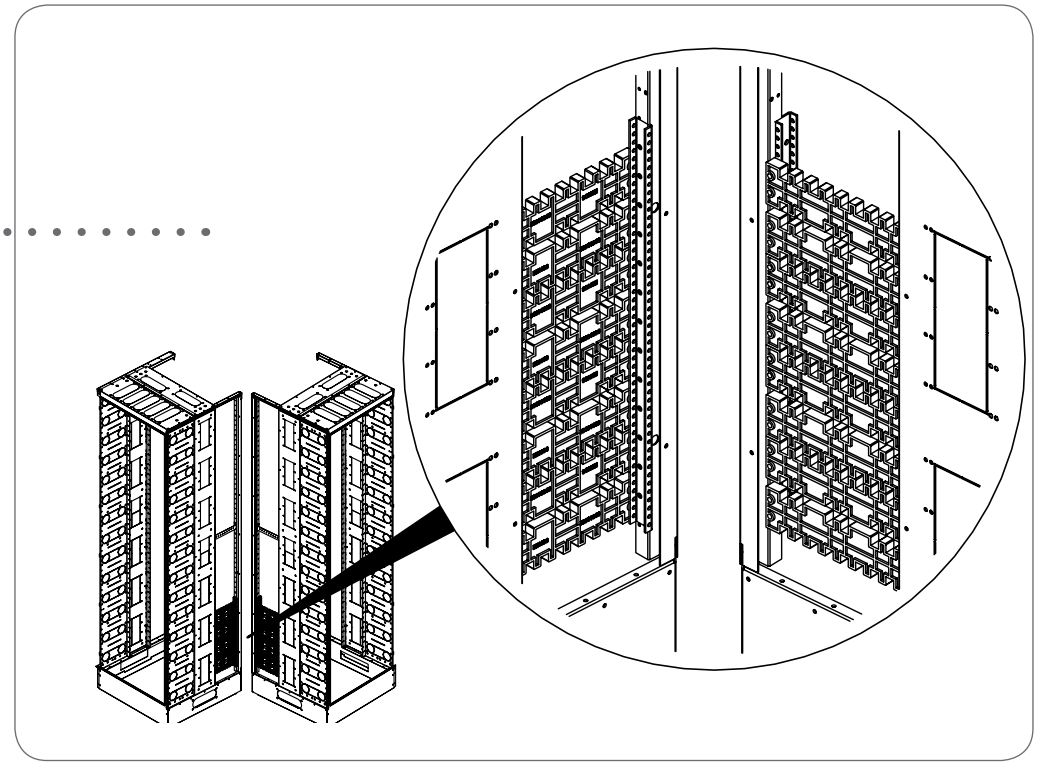


Fig. 2.45. *Installing support insulator assemblies at transport break.*

2.18 Special parts

19''instrument fastening rail

Installing 19'' components in the E-serie cell centre enclosure system is easy when you use instrument fastening rails (1). The rails are fastened with assembly screws to, for instance, front partition walls, Fig. 2.46.

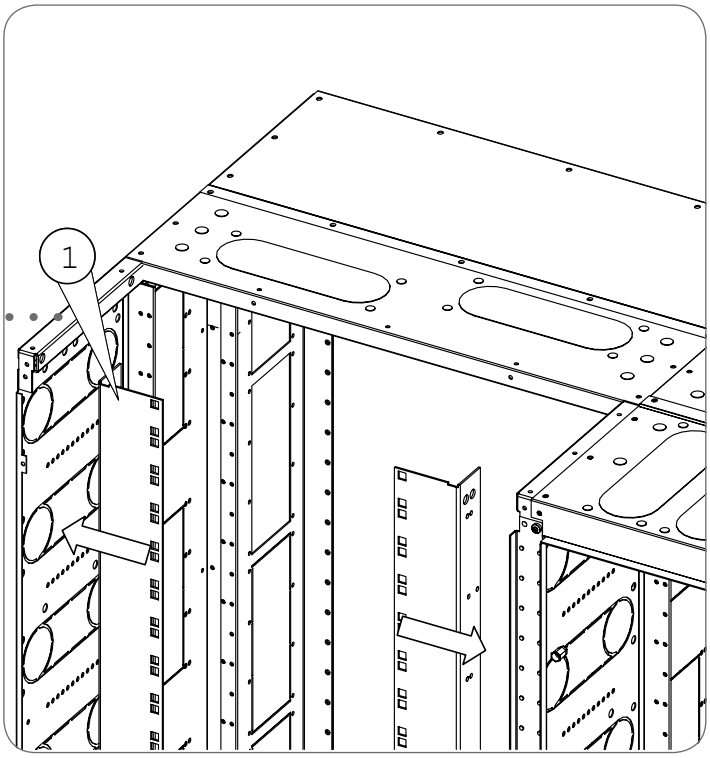


Fig. 2.46. *Instrument fastening rails for 19" instruments are installed into the cell centre.*

2.19 Special structures

Two-sided cell centre

E-serie cell centres (610) can be installed for two-sided arrangement, in which case the busbar system of the cell centre is set up in the frame plate compartment. The back panel of base in a normal cell centre frame base is replaced by a front plate of base (1) and dividers (2) are installed. Instrument compartment bottom panels are fitted to the base as necessary. Back roof is replaced by front roof (3).

Fig. 2.47 shows the parts for a two-sided cell centre.

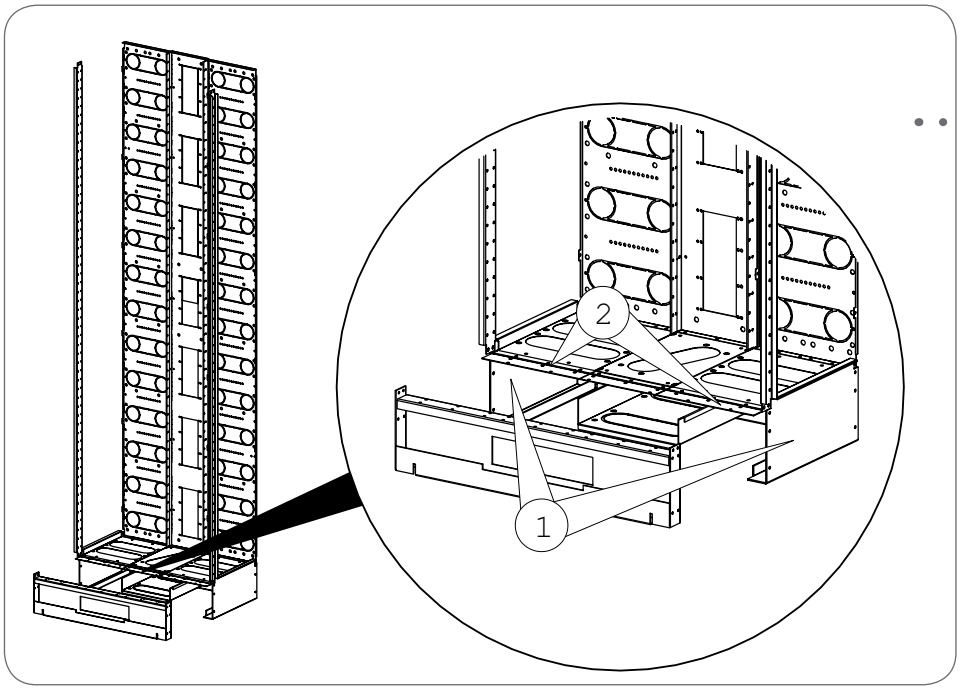


Fig. 2.47. a) *The base of a two-sided cell is fitted with two front plates (1), instrument compartment bottoms, and dividers (2).*

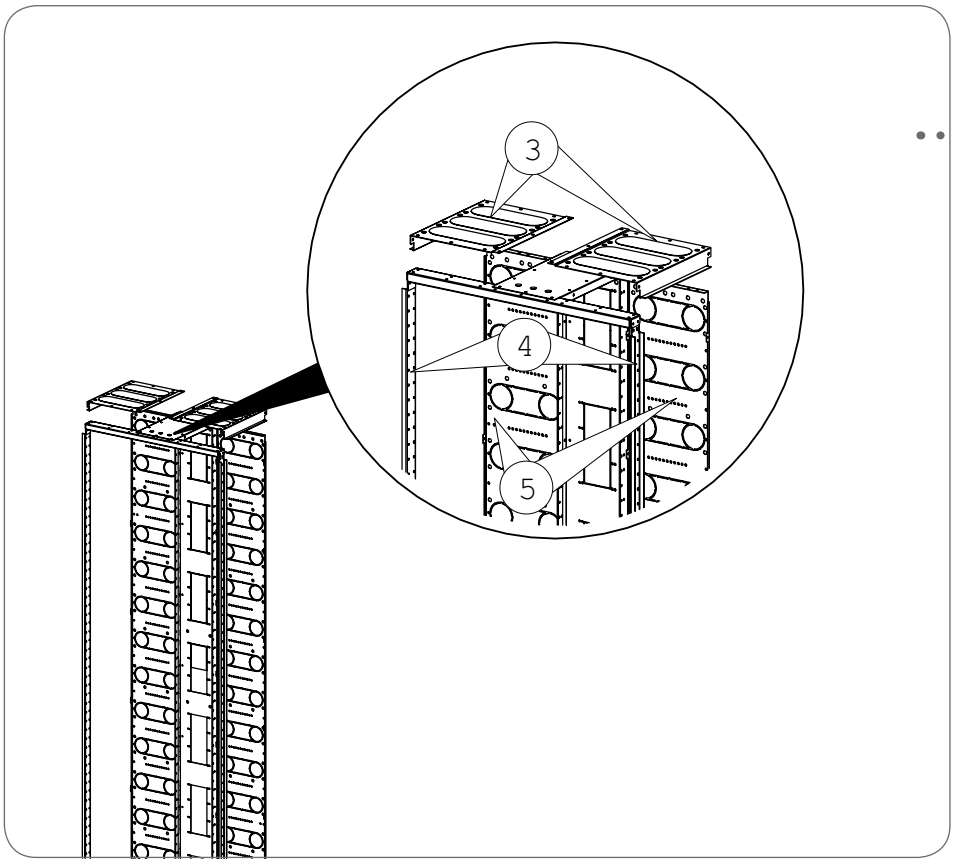


Fig. 2.47. b) *Roof of two-sided cell centre. The cell centre is fitted with two front roofs (3), front profiles (4), and front partition walls (5).*

2.20 Corner cabinets

With corner cabinets you can build cell centres in L or even U arrangement. Corner cabinets are available for both 385 and 610 versions.

The corner cabinet parts are shown in Table 2.2.

The standard parts for the structure are shown in Table 2.3.

CORNER CABINET 600/196 INCLUDES THESE PARTS:			
Code	Discription	Code	Discription
50059511	Rear plate of base 610 *	50056074	Joint front partition wall 196 C-hole
50059512	Extension plate , corner cabinet 610 *	50059515-2	Jointing angle 385/610 *
50059513	Extension profile, corner cabinet 610 *	50051001	Back panel base 30-60
50059514	Floor plate, corner cabinet 610 *	50056072	Front partition wall 196 C-hole
50059516	Rear plate, corner cabinet 610*	50056131	Back panel 30-196
50059517	Supporting profile for bus bar holders 610*	50052011	Frame plate 196
50059507	Front vertical profile, corner cabinet 196 *	50051111	Divider 60
50059509	Rear-/front joining flange *	50052171	Back profile196
50059510	Jointing angle 385/610 *	50052021	Intermediate profile 60
50059518	Jointing angle 385/610	50052081	Intermediate bead (60/38)

** 2 pieces*

Table 2.2 *Corner cabinet parts for 610 mm deep cell centres.*

Code	Discription	Code	Discription
50059920-2	Corner cabinet 385/196	50059921-2	Corner cabinet 600/196

CORNER CABINET 385/196 INCLUDES THESE PARTS:			
Code	Discription	Code	Discription
50059501	Rear plate of base, corner cabinet 385*	50059510	Jointing angle 385/610*
50059506	Rear plate 385	50059518	Jointing angle 385/610
50059504	Floor plate, corner cabinet 385*	50059507	Front vertical profile, corner cabinet 196*
50059502	Extension plate, corner cabinet 385*	50056074	Joint front partition wall 196 C-hole
50056503	Extension profile, corner cabinet 385*	50056130	Back panel 20-196
50059509	Rear-/front joining flange*	50059505-2	Roof plate 385, corner cabinet 385 DH8080

** 2 pieces*

Table 2.3 *Standard parts for cell centre corner structure (depth 610 mm).*

The assembly of a corner cabinet is started with the base. The example is for a corner cabinet with 610 mm depth.

Dividers of base (4) are fastened with screws to the rear plate (2) and fastened together with a rear/front jointing flange (3). Stage 1 is completed by fastening two back panels (1) to the structure, Fig. 2.48.

After installing parts of the corner cabinet you can assembly the rest of the cabinet at the same way at basic cell center.

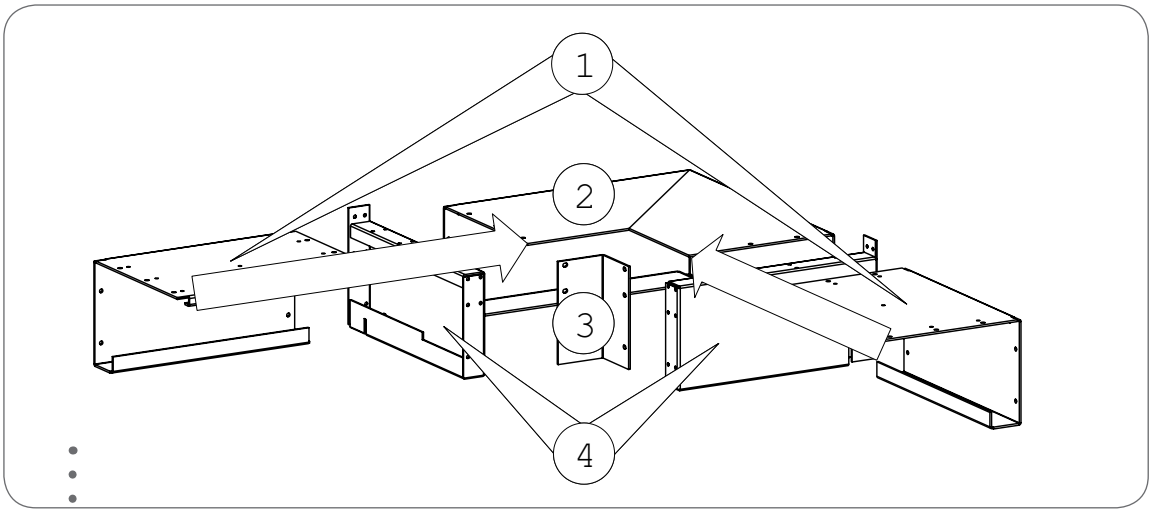


Fig. 2.48. *Stage 1 of assembling corner cabinet base.*

In Stage 2 you fasten two intermediate beads (6) and dividers (8) to the base. The dividers of base are joined using a rear/front jointing flange (7). On top of the assembled parts you install a bottom plate of corner cabinet instrument compartment (5). Installing of the parts is shown in Fig. 2.49.

After assembling the base the cell structure is completed with intermediate profiles (9), back profiles (10), jointing angles (11), and supporting profile for busbar holders (12), Fig. 2.50.

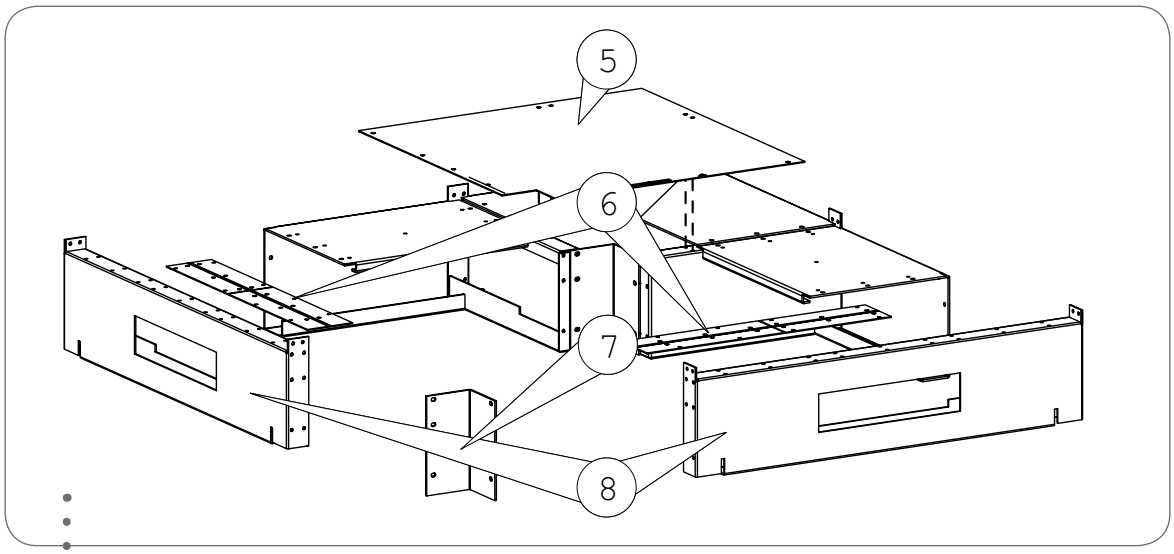


Fig. 2.49. *Stage 2 of assembling corner cabinet base.*

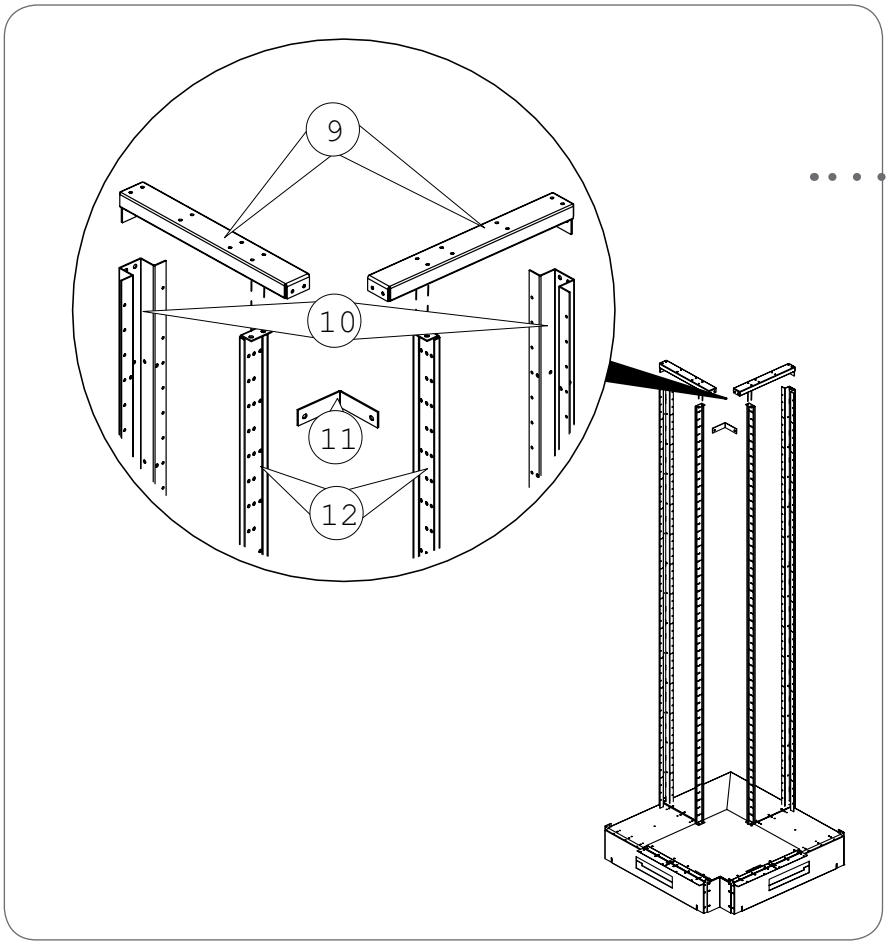


Fig 2.50. *After assembling the base the structure is completed intermediate profiles, vertical profiles, and a jointing angle.*

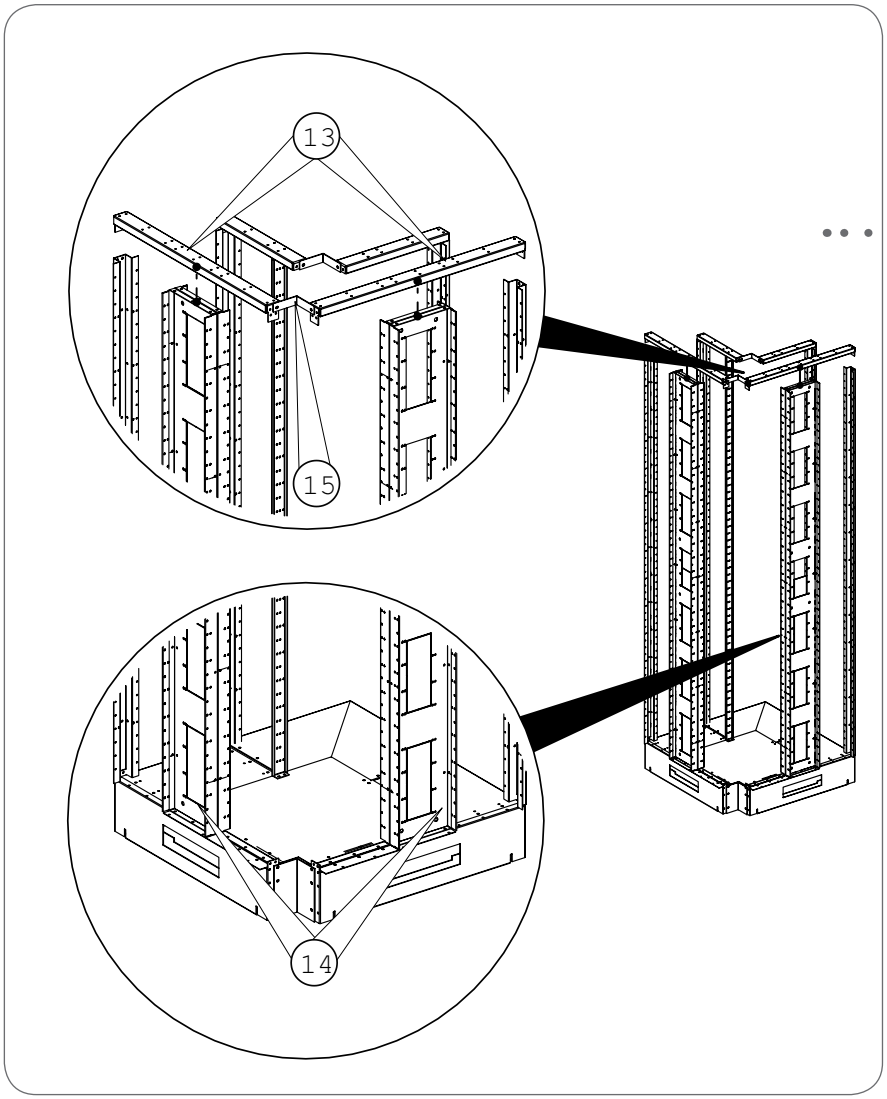


Fig. 2.51. *Fastening frame plate assemblies, intermediate profiles, and jointing angle.*

Then, frame plate assemblies (14) are installed to the corner structure, and intermediate profiles are fastened at the top. The intermediate profiles are connected at the front using a jointing angle (15) as shown in Fig. 2.51.

Corner cabinet roof (16) is fastened to the top of the frame structure, and corner cabinet back plates and back plates (17), joint front partition wall (18), front partition wall (19), and front vertical profile (20) are installed, Fig. 2.52.

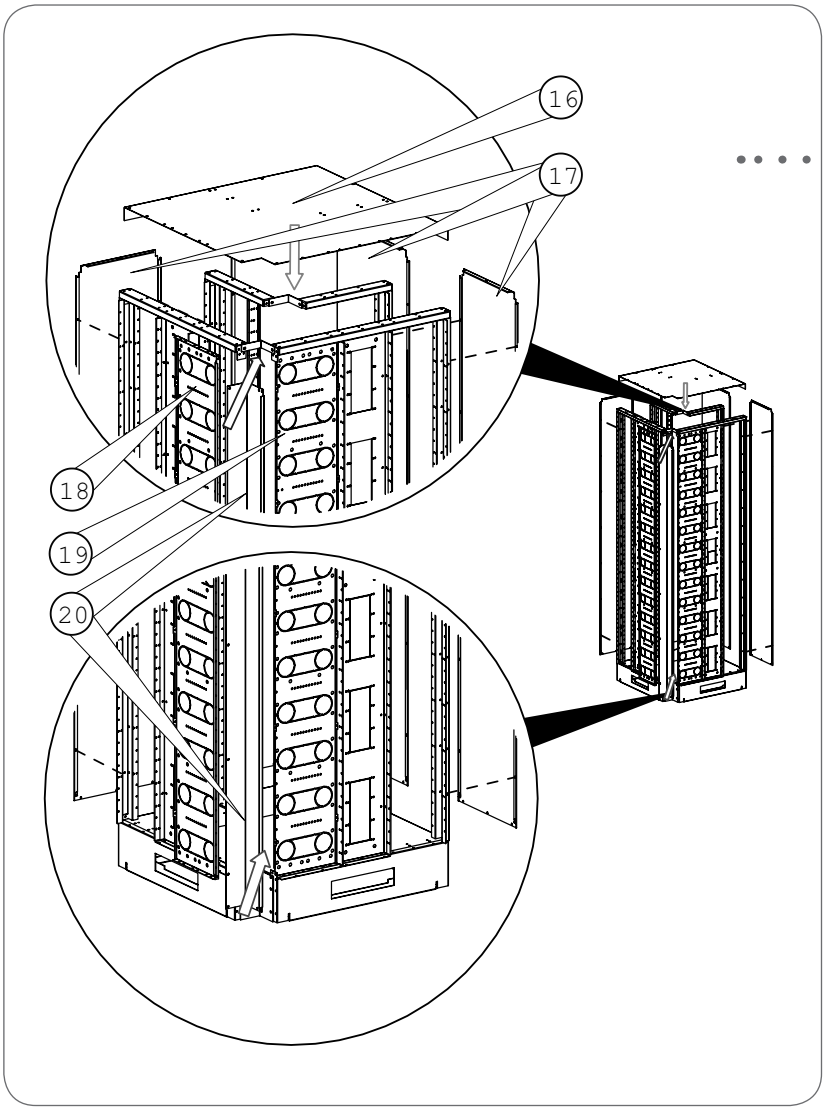


Fig. 2.52. *Installing corner cabinet roof (16), corner cabinet back plates and back plates (17), joint front partition wall (18), front partition wall (19), and front vertical profile (20) to the frame structure.*

Change-over back profile

Using change-over back profiles you can transpose the field arrangement in a cell centre frame so that the front and rear sides change places in the middle of the field division, Fig. 2.53.

The change-over back profile (1) is fastened at the bottom to the base and at the top to the intermediate profile in the same way as front and back profiles, Fig. 2.54 a).

After installing the change-over back profile (1) you can fasten the back plate (4) as well as front and back roofs (2, 3), Fig. 2.54 b).

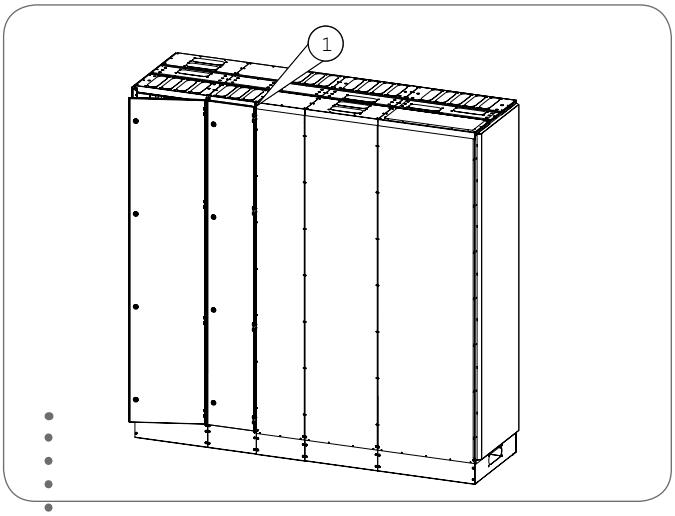


Fig. 2.53. *Using change-over back profiles you can transpose the front and rear sides of a cell centre.*

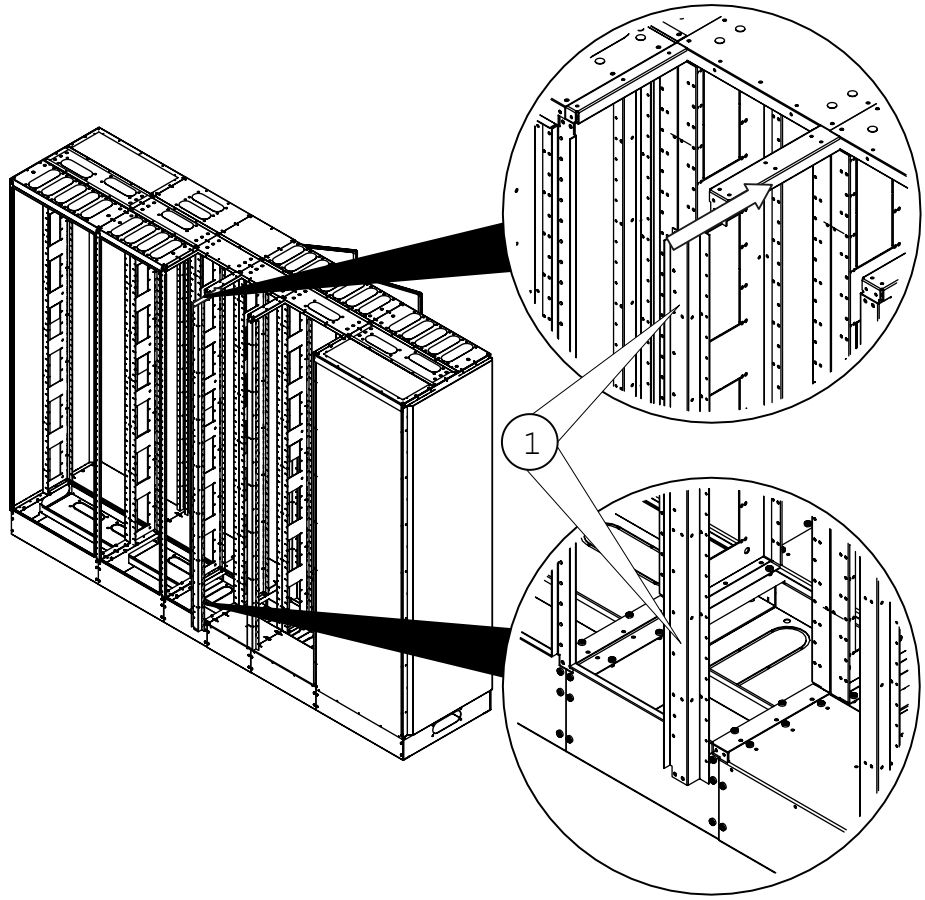


Fig. 2.54. a) *Change-over rear profiles are fastened to the base and the intermediate profile in a 610 mm deep cell centre frame.*

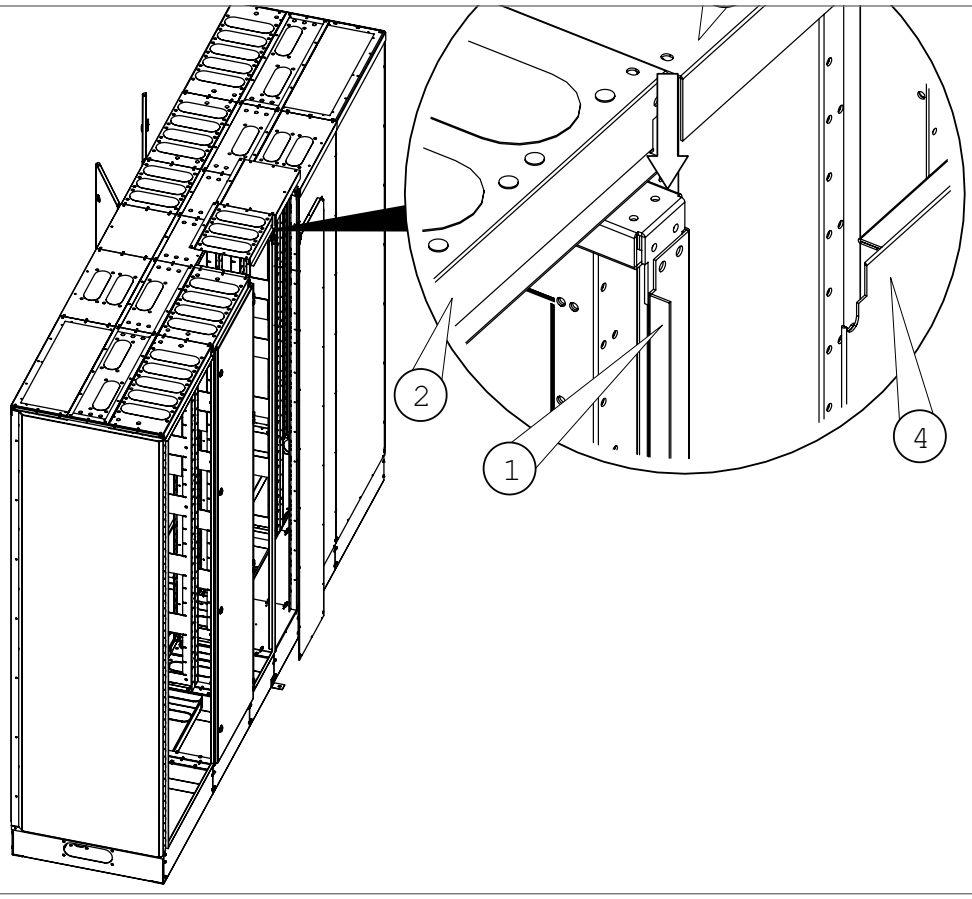


Figure 2.54. b) *Roof and back plates are added to the structure after installing the change-over back profile.*

3 SEALING

E-serie cell centres can be made to meet protection class IP55 requirements by using suitable strips and sealants at the joints.

3.1 Protection classes

Protection class IP20-IP31
Without the use of sealing strips or sealant the protection class is IP20-IP31 depending on the perforations in the front profiles and horizontal intermediate profiles.

Protection class IP34-IP44
In protection class IP34 you use front profiles and intermediate profiles provided with knock-out blanks. Roofs, front plates of base, and back panels of the cell centre must be imperforated. At the busbar compartment you can use roof sections for ventilation (Ch. 4.6) in protection class IP34.

Protection class IP34 is achieved by using either 0.8x20 or 0.8x30 mm sealing strip in the seams of parts surrounding the central frame (roofs, side plates, back panels). Of the central frame you must seal the end and intermediate profiles, the seams between back profiles and back panels, and the seams between back panel and the base, as shown in Fig. 3.1. The sealing strips must be installed to the frame so that, for instance, the roof mounting holes are covered.

After erecting and sealing the frame, sealing strips are installed to the roof of the cell centre. The roof can be sealed already in the assembly stage (2.3) or when the frame has been erected. The sealing strip is first installed to the intermediate and end profiles (1) and then to both sides of the middle roof (2). In cells with 385 mm nominal depth, the middle roof is replaced by the back roof, on which sealing strip is attached to the front side, Fig. 3.2.

On the back panel, the surface against the roof is sealed (3), Fig. 3.3.

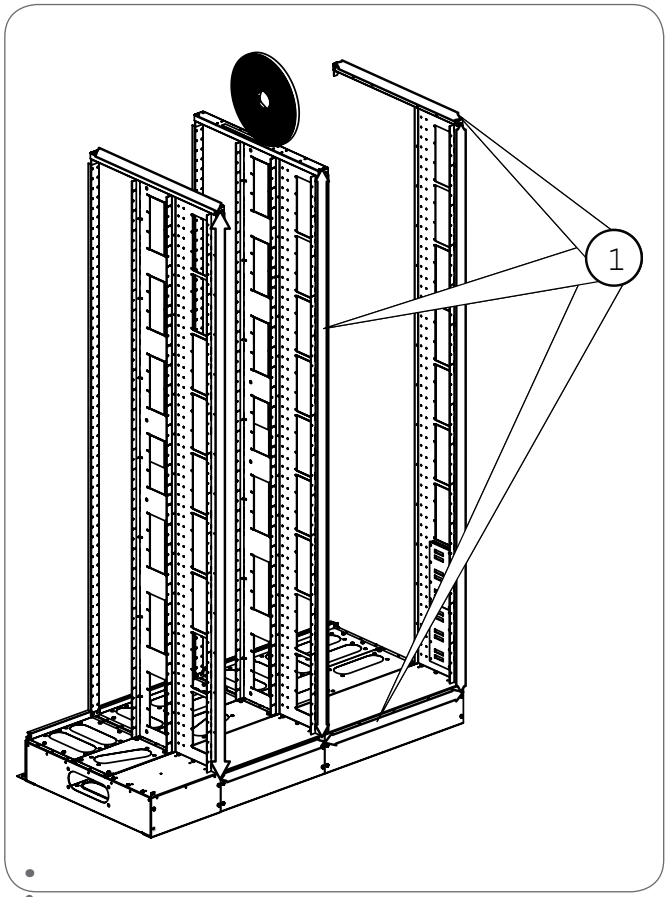


Fig. 3.1. *Sealing E-serie central frames using sealing strips. The strips must be installed to cover screw holes.*

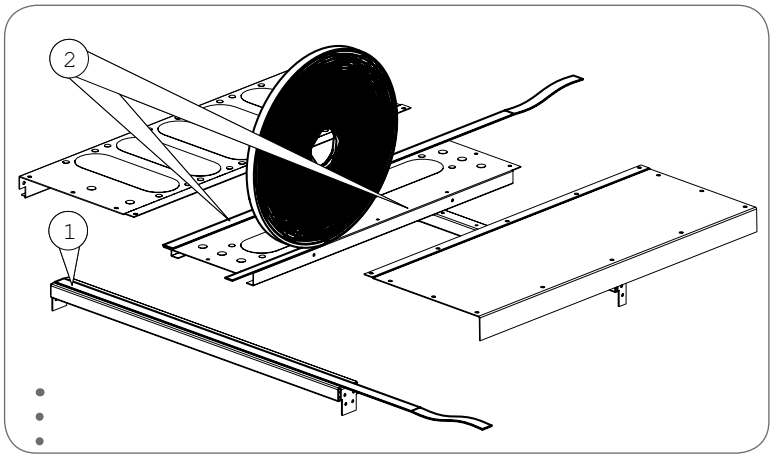


Fig. 3.2. *Sealing the roof.*

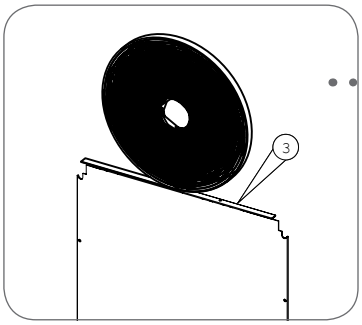


Figure 3.3. *Sealing the back panel.*

On the frame you must seal the seam between the end profile and the side plates, the seam between the frame plate or the joint back profile and the side panel as well as the seam between the end plate of base and the side panel, Fig. 3.4.

Sealing compound is used for sealing all door openings, i.e. between intermediate profiles and roof front profiles and side plates, Fig. 3.5.

Protection class IP55

To achieve protection class IP55 the seams between parts must be ensured using suitable sealing compound. The sealing of a cell centre frame is ensured by applying sealing compound to all the points shown in Figures 3.1-3.4. An at least 1.5 mm thick and wide strip of sealant shall be applied to the joint surface so that sealant is squeezed between the plates when the fastening screws are tightened.

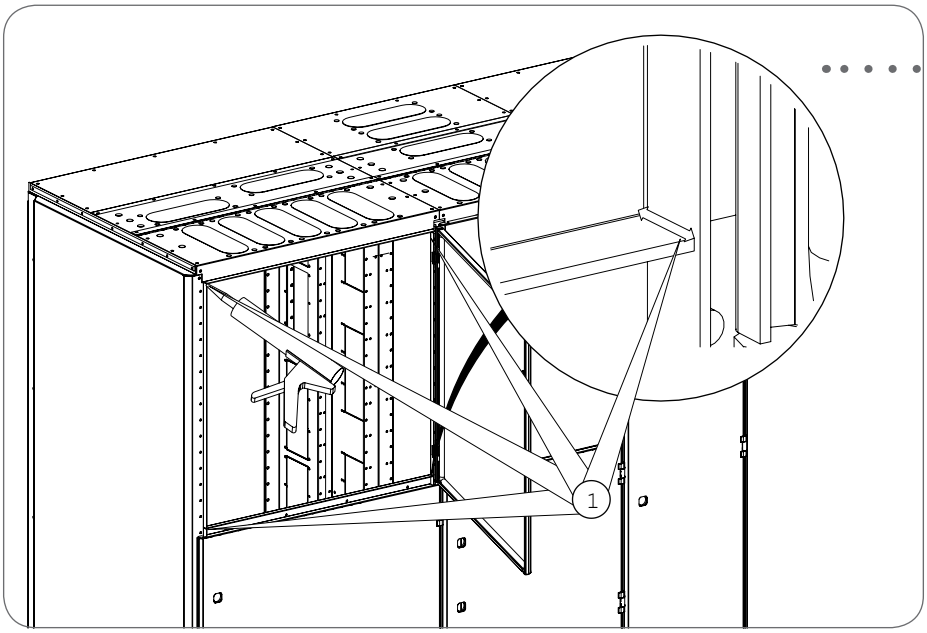


Fig. 3.4.*Sealing the frame.*

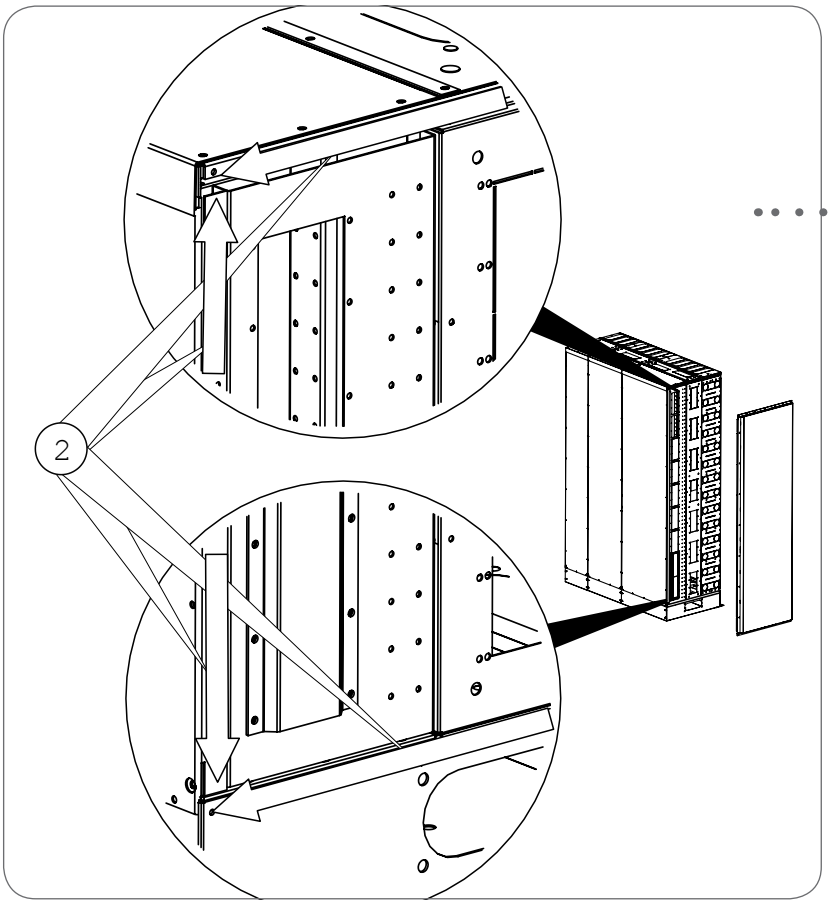


Fig. 3.5. *Sealing compound is applied to corners of door openings.*

4 BUSBARS

Aluminium busbars were used in the temperature rise and short-circuit tests on the E-serie cell centres, see Table 4.1. The system does not, however, exclude the use of copper busbars that can be dimensioned applying the SFS5556 Standard. The values in Table 4.2 are valid for flat busbars resting on the side in a free space.

Two different types of busbar system structures are used in the E-serie cell centre system. In the heavier, 630 mm deep E-serie cell centres so-called E-serie busbar insulators are primarily used (part 2, Fig. 2.21). Another alternative is to use F-serie support insulator adapters and F-serie support insulators (parts 1 and 3, Fig. 2.20).

The lighter, 400 mm deep, E-serie cell centres use only F-serie support insulators that are fastened to the frame plates (parts 3 and 2, Fig. 2.7).

With fields more than 450 mm in width intermediate insulators shall be used so that the distance between busbar insulators never exceeds 450 mm, Fig. 4.1.The distance between insulators on vertical busbar systems may not exceed 450 mm, either. It is advisable to use, for instance, an intermediate rod (1) in an intermediate support insulator structure.

Short-circuit resistance (I_{pk}) can be, as necessary, increased by using shorter insulator distance than 450 mm (=by adding the number of insulators). Added number of insulators has no effect on the thermal short-circuit resistance (I_{cw}).

No separate short-circuit tests were carried out for copper busbars. The short-circuit resistance values of aluminium busbars and busbar insulators of corresponding dimensions can be used for copper busbars.

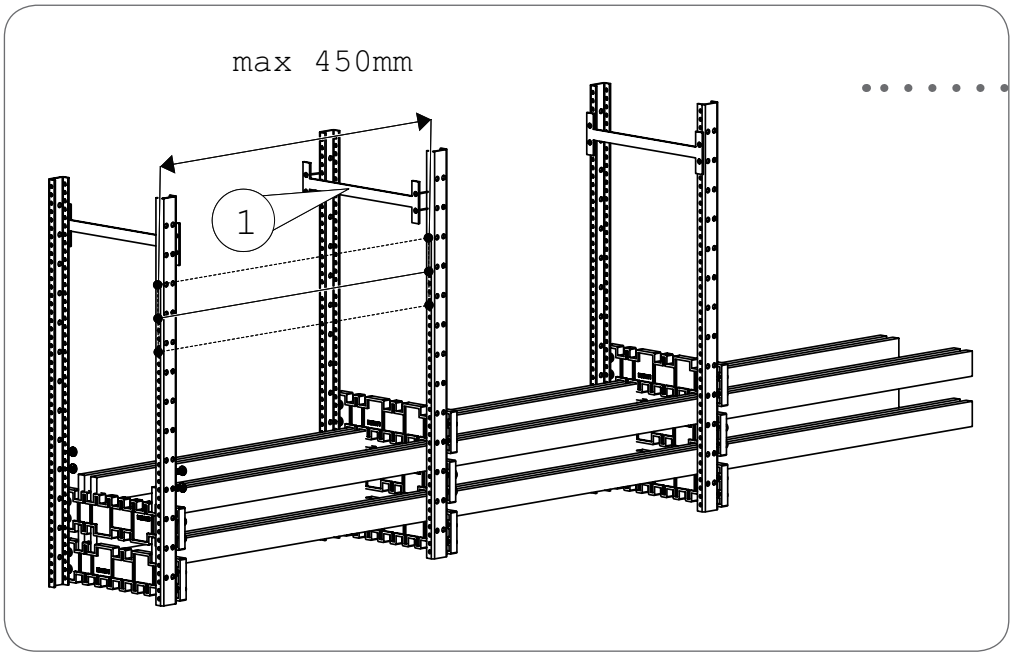


Fig. 4.1. a) *Assembling an intermediate support insulator structure using Kutet1 support insulators. The distance between support insulators may not exceed 450 mm.*

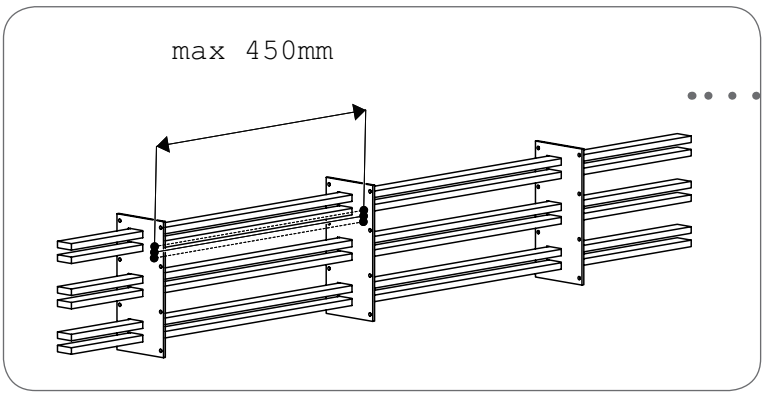


Fig. 4.1. b) *Assembling an intermediate support insulator structure using Kute busbar insulators.*

4.1 Constructing of busbar system and grouping of phases

In E-serie cell centres, the power busbar system is usually assembled at the rear of the structure. Phases are grouped depending on the busbar system structure according to either Fig. 4.2 a) or Fig. 4.2 b) to minimize noise and heat generation caused by eddy currents.

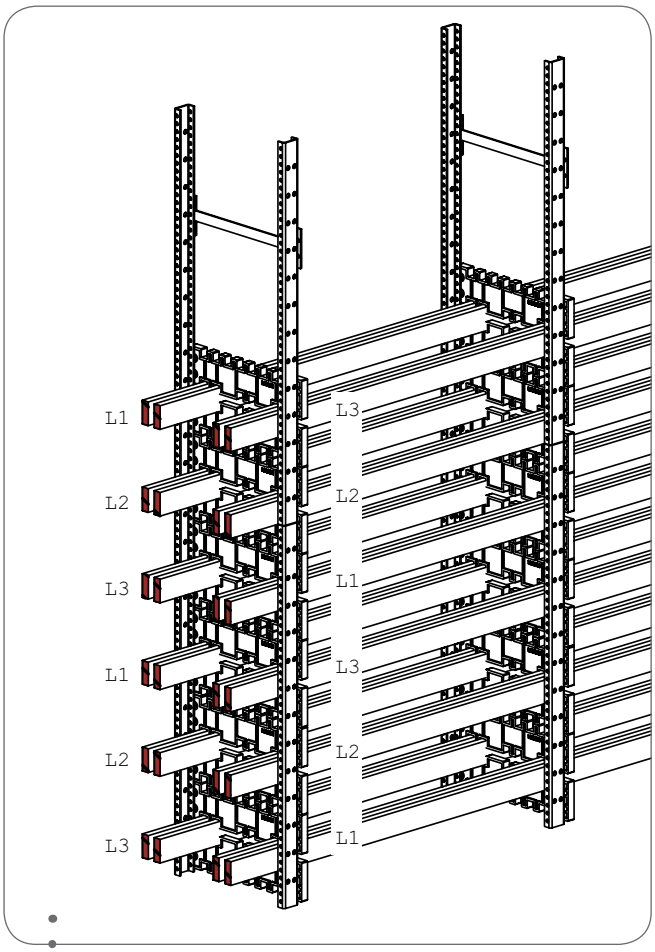


Fig. 4.2. a) *Example of phase grouping in E-serie cell centres.*

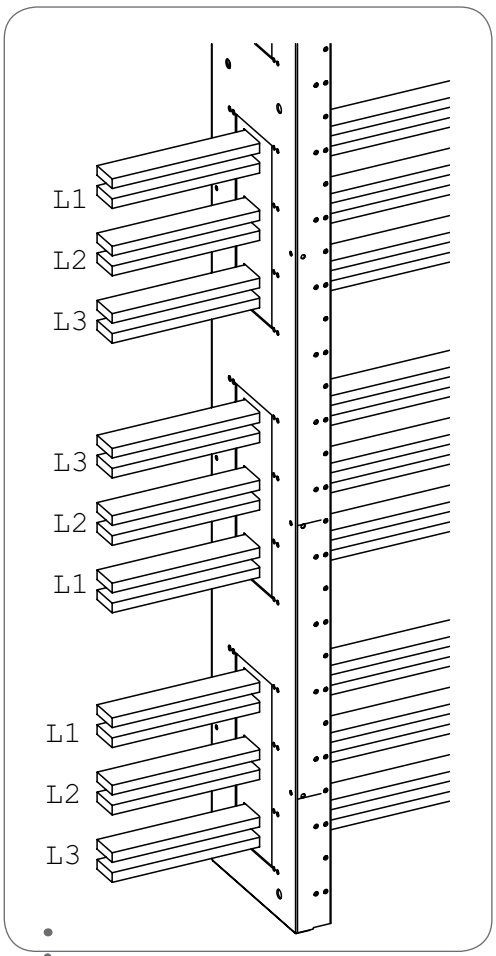


Fig. 4.2. b) *Example of phase grouping in E-serie cell centres using Kutet1 support insulators.*

4.2 Horizontal busbars

The horizontal busbar system is installed into the busbar compartment of the cell centre using frame plates or F-serie support insulator adapters and Kutet1 support insulators with their holders. The E-serie system uses polycarbonate busbar insulators available with perforations for 10x10 - 10x50 flat busbars (F-serie support insulators). With Kutet1 support insulators the available busbar size range is 10x20-10x120 (Fig. 2.21).

For enclosures with higher protection class than the one given in Tables 4.1 and 4.2 (e.g. IP30 -> IP44) the ratings for busbars would be about 20-25% lower than the values given in the Tables.

Rated current I_n [A]	Number of busbars / phase	Al busbar size	Short-circuit resistance I_{cw} / I_{pk} [A] * 10^{33}
1000	2	10*40 (1)	50/105
1250	2	10*50	50/105
1600	4	10*40 (1)	65/143
2000	4	10*50	65/143
2500	4	10*60	65/143
3150	8	10*40 (1)	100/220
4000	8	10*50	100/220
5000	8	10*60	100/220

Table 4.1 *Load charts for aluminium busbars (EN AW-6101), conductivity 31.9m/Ωmm², and shortcircuit resistances (Kutet1 support insulators) in E-serie cell centres. Short-circuit tests have been done to (1) marked busbars.*

Rated current I_n [A]	Number of busbars / phase	Al busbar size	Short-circuit resistance I_{cw} / I_{pk} [A] * 10^{33}
400	2	10*20 (1)	17,2/34,1
630	2	10*30 (1)	21,6/42,6
800	2	10*40 (1)	21,6/42,6
1000	2	10*50	24,0/50,4
1250	4	10*30	21,6/42,6
1600	4	10*40	31,5/66,2
2500	6	10*40	40,0/84,0
3150	8	10*40 (1)	60,0/132,0

Table 4.2 *Load charts for aluminium (EN AW-6101) busbar systems (conductivity 31.9m/Ωmm²) in E-serie cell centres, protection class IP30. Temperature rise tests have been carried out for the marked (1) busbars.*

Rated current I_n [A]	Number of busbars / phase	Cu busbar size
400	2	10*10
630	2	10*20
800	2	10*20
1000	2	10*30
1250	2	10*40
1600	2	10*50
2500	4	10*40
3150	4	10*50

Table 4.3 *Calculated ratings for copper (E-Cu F30) (=allowed temperature rise of busbar system 30 K) busbars (conductivity 56m/Ωmm²) not enclosed and in a free space. Table according to SFS5556 for busbars lying flat.*

4.3 Vertical busbars

Table 4.4 shows the results of the short-circuit and temperature rise tests for branch busbars with F-serie support insulators.

According to IEC/EN 61439-1 (Chapter 7.5.5.1.2) the busbars (e.g. branch busbars) and conductors between power busbars and feed connections to actuator units as well as the devices within operating units can be dimensioned field-specifically on the basis of the loads caused by a short-circuit behind the short-circuit protector. In other words, the short-circuit resistance of vertical/branch busbars need not be equal to that of the horizontal power busbars.

Rated current I_n [A]	Number of busbars / phase	Al busbar size	Short-circuit resistance I_{cw} / I_{pk} [A] * 10^{33}
250	2	10*10	7,5/12,8
400	2	10*20	7,5/12,8
630	2	10*20	7,5/12,8
800	2	10*30	23/48,3
1000	2	10*40	24/50,4

Table 4.4 *Ratings for vertical Al busbars. Temperature rise tests have been carried out for the marked (1) busbars.*

4.3.1 Vertical busbar

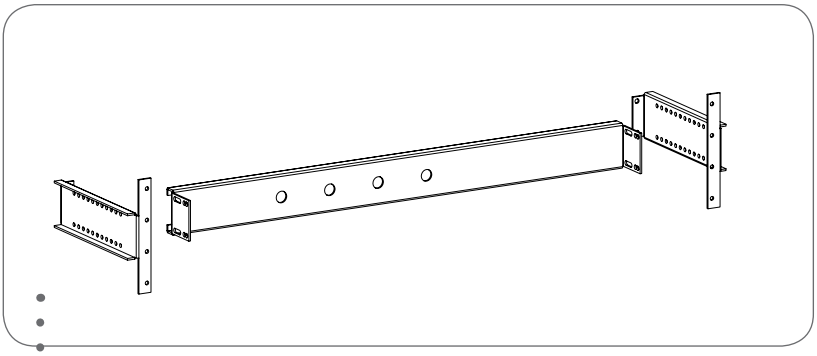


Fig 4.3.1 *Sample picture how Holder for vertical busbars 600 (50058282) is fixed into Hilder for support insulator holder.*

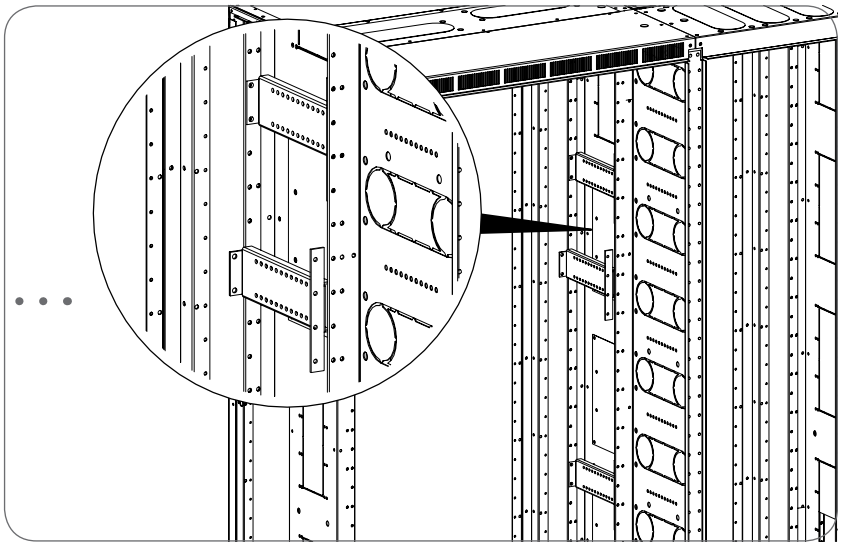


Fig 4.3.2 *Fix holder for support insulator holder into Frame plate.*

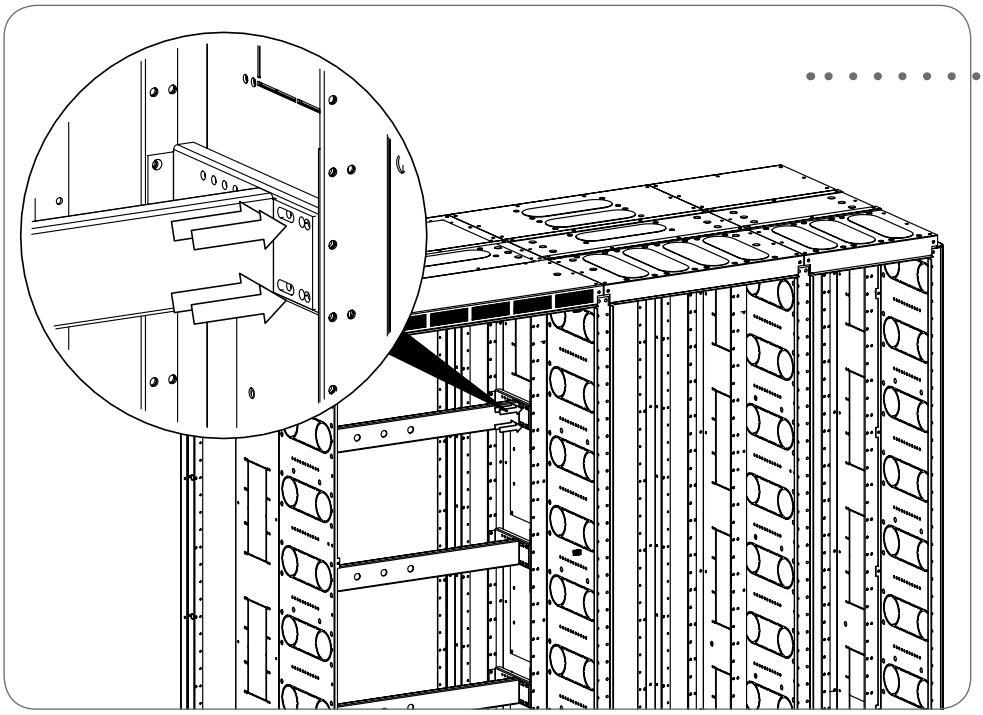


Fig 4.3.3 *Fix Holder for vertical busbars into Holder for support insulator holder.*

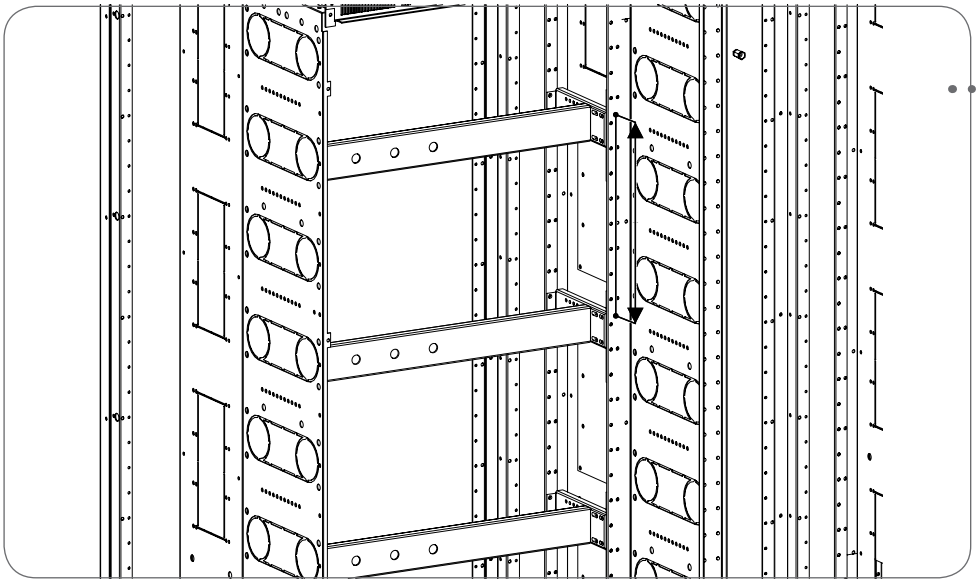


Fig 4.3.4 *The installation distance between busbar holders are 280mm*

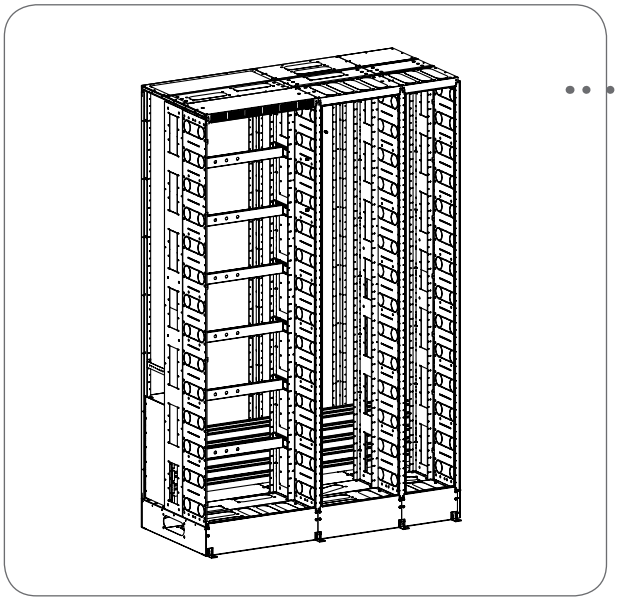


Fig 4.3.5 *Finished assembly*

4.4 Equipment earthing

The purpose of equipment earthing is to protect the user against the effects of possible faults in the cell centre or in the external circuit feeding the cell centre. The equipment earthing circuit of the cell centre consists of separate protective conductors or conductive structures or both.

4.4.1 Protective earthing of frame

The frame plates and front partition walls of the E-serie cell centre system are provided with perforations that can be used for connecting protective earthing for the frame. Using M8 screws you can connect max. one 70mm2 protective conductor of copper. At this point you must make sure that the connector used provides a sufficient contact area to the frame.

Cross section of phase conductor S [mm^2]	Min. cross-section of corresponding protective conductor (PE, PEN) S_p [mm^2]
S 16	S
16<S 35	16
35<S 400	S/2
400<S 800	200
800<S	S/4

Table 4.5 *Cross-sectional areas (IEC/EN 61439-1) of protective earth conductors (PE, PEN).*

According to IEC/EN 61439-1 the cross section of a protective conductor can be calculated from the equation.The equation is used for calculating the cross section for a protective conductor capable of sustaining the thermal load caused by a current of short duration. Table 4.6 contains some protective conductor cross sections calculated using equation 4.1.

$$S_p = \frac{\sqrt{I^2 t}}{k}, \qquad (4.1)$$

Rated thermal current resistance of cell centre I_{cw} [A] * 10^3	PVC insulated copper conductor Cu [mm^2]	Aluminium busbar 10x30 mm
5	35	1
6	50	1
10	70	1
12,5	2x50	1
16	2x70	1
20	2x70	1
25	3x70	2
32	4x70	2
40	4x70	2
50	5x70	3
63	7x70	3

Table 4.6 *Protective earthing of frame according to rated thermal current resistance (I_{cw}).*

Installing PE busbar

The PE busbar is installed, for instance, to the front part of the equipment compartment in the E-serie cell centre system using PE busbar holders. The PE busbar is connected using connectors that are suitable for PEN, PE, N, main potential equalizing and frame protective earthing connections according to SFS 154 (e.g. YKPEN and YKOL connectors).

4.4.2 Protective earthing of covers and doors

Protective earthing of covers and doors to the frame structure is provided through the direct contact of their unpainted hinges and fastening screw contact surfaces. Components with max. 16 A rated current can be mounted to doors without separate protective earthing conductors.

When covers are used and with currents exceeding 16A, doors must be provided with separate protective earthing using a conductor that is connected to the door through either a separate screw and nut connection or a protective earthing screw welded to the door.

4.5 Connecting of busbars

The power busbar system is installed in the frame plate compartment on E-serie cell centres using frame plates and busbar insulators. The E-serie cell centre has been tested using horizontal and vertical busbars of aluminium with their rated values given in Chapters 4.2 and 4.3.

To connect conductors to the busbars and busbars to each other you can use various types of busbar connectors (see El-parts Oy's product catalogue, for example).

SFS 154 provides comprehensive information on connectors for aluminium conductors and connections of aluminium busbars. The Table below gives tightening torques for aluminium connections.

Screw size	M6	M8	M10	M12	M16
Tightening torque [nm]	6...9	15...22	30...44	50...75	120...190

Table 4.7 *Tightening torques for Al connection screws.*

Connecting feed and power busbars

The busbars feeding the cell centre can be connected to the horizontal power busbars, for instance, as shown in Figure 4.2. Pieces of suitable Al busbar are placed between the feed busbars. Busbars are connected together using screws and nuts as well as various types of connecting pieces and washers.

Connecting vertical and horizontal busbars together

Vertical and horizontal busbars are connected together, as necessary, using YKG busbar connectors, see Fig. 4.3.

When making the connections you must make sure that the requirements on making connections presented in the SFS handbook 154, Chapter 7.1.3 "Ulkoisten johtojen liittimet – Alumiinijohtimien liittimet ja alumiinikiskojen liitokset" are complied with. For example, the mating surfaces of the connection must be deoxidized and the cleaned surfaces protected with connection grease.

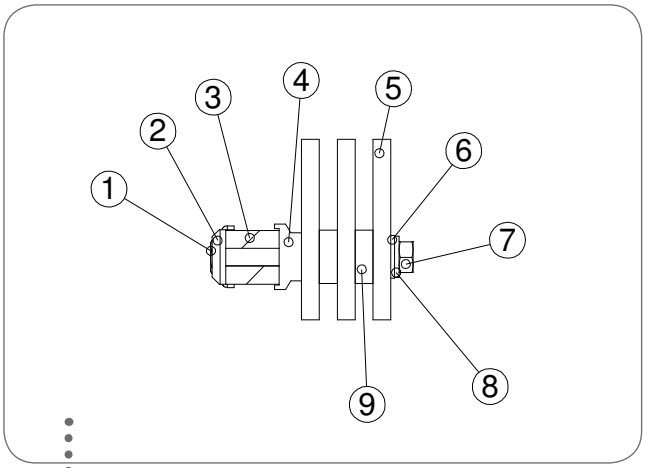


Fig. 4.2. *Connecting feed and horizontal power busbars together.*

1. Zinced M10 hex head screw (class 8.8)
2. Special washer YKG 28.3 M10
3. Horizontal power busbars
4. Connecting piece YKG 51/80(/100)
5. Feeder busbars
6. SFSW 3738 pressure washer
7. Zinced M10 nut (class 8)
8. SFS3737 conical pressure washer
9. Spacer, e.g. piece of 10x30 AL busbar

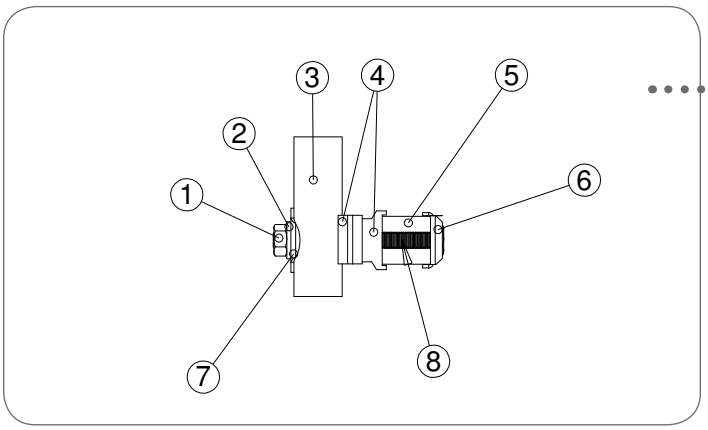


Fig. 4.3. *Connecting vertical and horizontal busbars using YKG busbar connectors.*

1. Zinced M10 nut (8)
2. SFS3737 pressure washer
3. Vertical busbar
4. Connecting piece YKG 51/30
5. Horizontal busbars
6. Special washer YKG 28.3 M10
7. Zinced washer YKG 44
8. Zinced hex head screw M10 (8.8)

Transport break

Any break points made into the cell centre and power busbar system should be located at a cable field to make reconnecting of busbars easier. For example, YKG 51/120 aluminium profiles and M10 screws and nuts are used for the connection as shown in Fig. 4.4.

When reconnecting, the busbar parts are matched together. The connecting pieces are placed symmetrically over the joint, and the screws are tightened to the correct torque (Table 4.7).

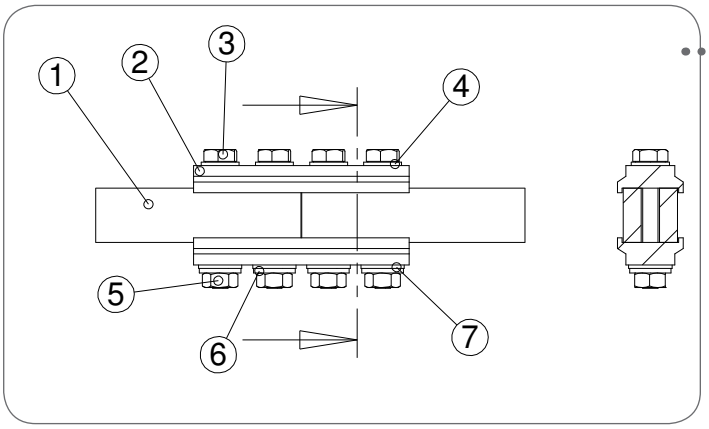


Fig. 4.4. *Connecting of busbars at a transport break. The busbars are connected using connecting pieces of aluminium (e.g. YKG 51/120), M10 screws and nuts, and various washers.*

1. Power busbar
2. YKG 51/120
3. Zinced M10 hex head screw (8.8)
4. SFS 3738 pressure washer
5. Zinced hex nut (8)
6. SFS3737 conical pressure washer
7. SFS 3738 pressure washer

4.6 Flash barriers

Flash barriers are arranged on E-serie cell centres by replacing the normal rear or front roof panel with a so-called ventilation roof element. The rectangular opening in the ventilation element (1) is provided with a ventilation box (2) and a roof for ventilation box (3) is fastened to it with screws. This arrangement allows the pressure caused by a flash to escape through the hinged roof hatch.

Flash spreading inside the cell centre can also be limited by installing cover flanges or F-serie system cover plates on the unused openings for busbar insulators.

The E-serie cell centre has been tested for arc short–circuit according to IEC 61641 and it complies with the criteria presented in the Standard when the short-circuit current is 50kA and the duration of short-circuit is 0,3s (725 V voltage).

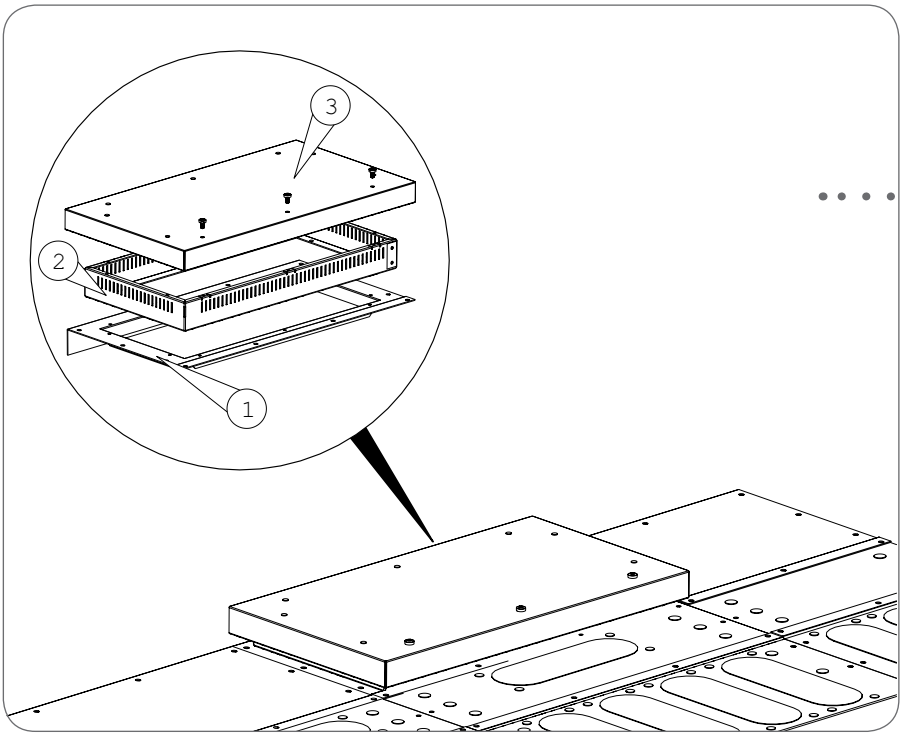


Fig. 4.5. *Ventilation roof allows flash pressure to escape safely.*

5 FURTHER INFORMATION

Warnings

The manufacturer does not assume liability for accidents or damage caused by incorrectly installed parts. The manufacturer is also not liable for accidents caused by the use of metal parts made by other manufacturers.

You must use feedthrough blanks and connecting methods intended and tested for the system.

Manufacturer reserves the right to technical changes.

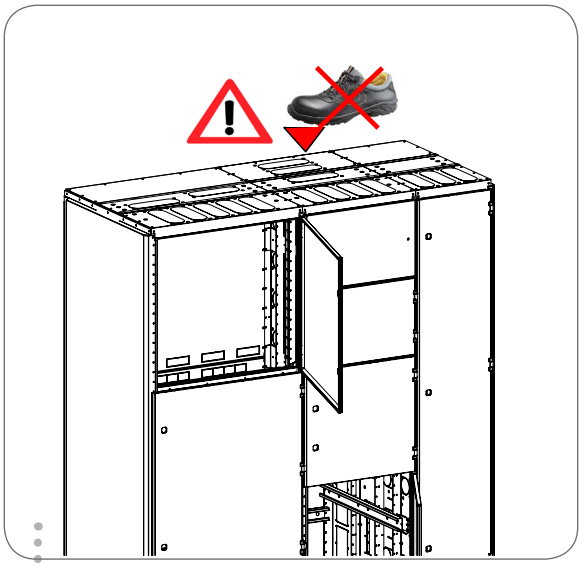


Fig 5.1. *Walking on the roof is prohibited.*

Cross-sectional views

Component installation depth

Mounting plates can be installed in many different positions giving installation depths according to Fig. 5.3. Using mounting plate fastening rails (1), installation depth can be set almost as desired, Fig. 5.4.

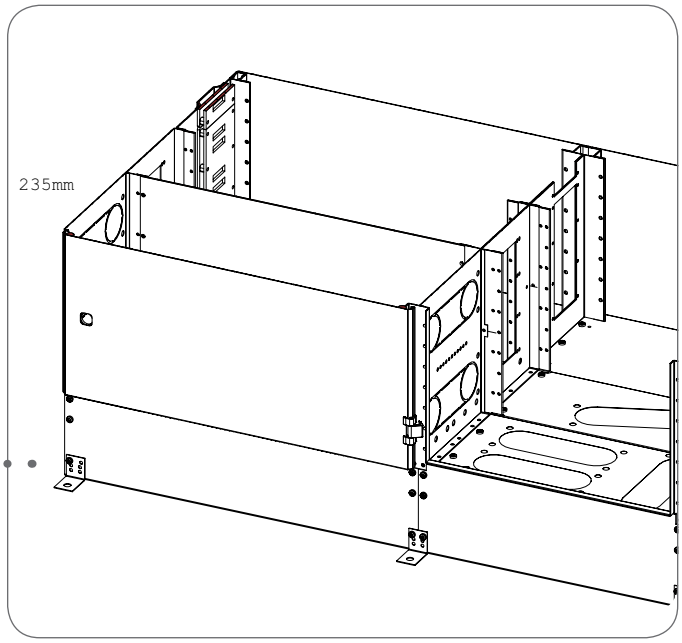


Fig. 5.2. *Component installation depth. The distance between the mounting plate surface and the back face of the door is approx. 235 mm.*

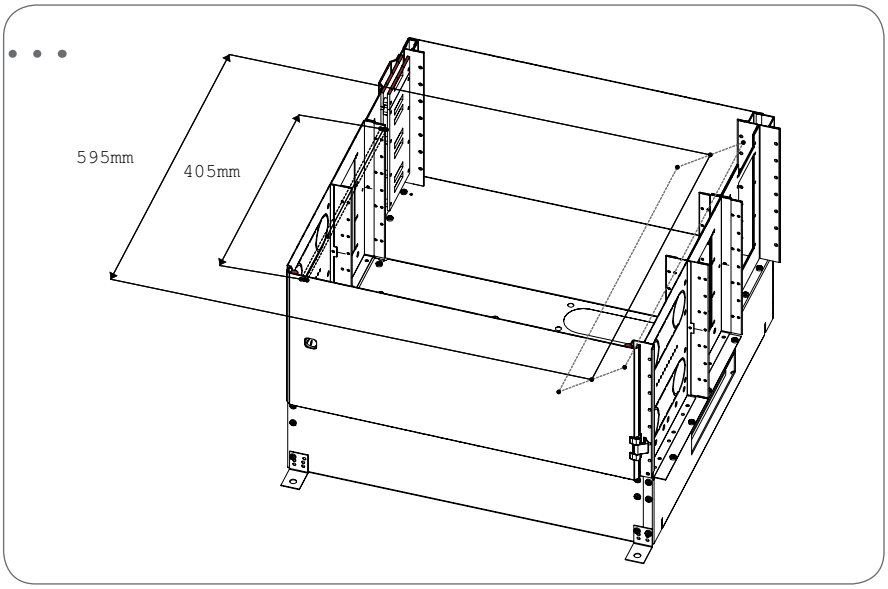


Fig. 5.3. *Installation depths in E-serie cell centres. In a 610 mm deep structure mounting plates can be installed in three different positions without using special accessories.*

6 OTHER INFORMATION

The E-serie cell centre system is intended for use as a protective enclosure for distribution, control and automation centres as well as electronic devices.

Compliance
When assembling centres using the E-serie system you should ensure with, for instance, piece tests (standard series IEC/EN 61439, Chapters 8.1.2 and 8.3) that the structural solutions of the delivered centres comply with the type tested centre and meet the requirements of the standards that form the basis for certification. In addition to the examples and instructions in this manual the requirements and regulations in the IEC/EN 61439 Standard shall be observed when assembling the power busbar system as well as the whole distribution centre. When using the structure you should also consider the various product standards according to which the final enclosed product shall be made.

When assembling the structure you shall utilize the specified screws, lifting eyes, washers, hinges, the components used in tests or corresponding components, and follow the assembly and operating instructions provided by the centre mechanics supplier.

The dimensioning of the instrument mountings on the mounting plates complies with the SFS 2529 Standard. Instrument spaces comply with the SFS 5601 Standard.

Compatibility
The parts of the electric centre enclosure systems manufactured by Suomen CNC-Metal Oy are primarily compatible with one another, for instance, the doors and mounting plates are compatible with all systems.

Independency of components
The frame structure and fastening mechanics are designed so that the commonest and standardized electric and mechanical components (e.g. components mounted to DIN rails, feedthrough flanges) are easy to install to the structure. The structures of the E-serie cell centre are not component-dependent, in other words, you can use the components of any components manufacturer.

Safety distances
In the design of the E-serie cell centre attention has been paid on the safety distances between live parts and the conductive parts of the frame. Both surface and air gap distances in the E-serie cell centre are at least 7 mm.

Static loads
The mounting plates for E-serie cell centres are made of 2.0 mm hot-galvanized steel plate. With components fastened to the mounting plate, the structure and the mounting plates can be statically loaded by 2 kg/dm^2 of mounting plate. In this case, the number of mounting plate screws shall be at least equal to the mass of the component divided by two (2), however, not less than four (4) mounting screws.

Components can be mounted to doors and covers as necessary. The maximum mass mounted to a door is 0.5 kg/dm^2, but not more than 6 kg per hinge including the door's own weight. The allowed masses fastened to screw-mounted covers are 0.25 kg/dm^2, but not more than 1 kg per cover mounting screw.

7 TECHNICAL DATA

General

The E-serie cell centre is an according to Standards IEC/EN 61439-1 and IEC/EN 62208 tested cell centre with fixed or withdrawable output units.

Insulation voltage U_i	1000V (AC)
Rated voltage U_n	690V (AC)
Rated current I_n	
horizontal power busbars	5000A
vertical busbars	1000A
Thermal short-circuit resistance I_{cw}	17,2-60kA/1s
Dynamic short-circuit resistance I_{pk}	25,6-132kA
Nominal frequency f_n	50-60Hz
Protection class	IP20-IP55
Impact strength	IK09
Nominal dimensions	
depth	385/610 mm
field widths	200, 300, 450, 600, 750, 900 and 1050 mm
height	1720-2100 mm

Material

- frame and enclosure of hot-galvanized steel
- busbar insulators of polycarbonate, PC

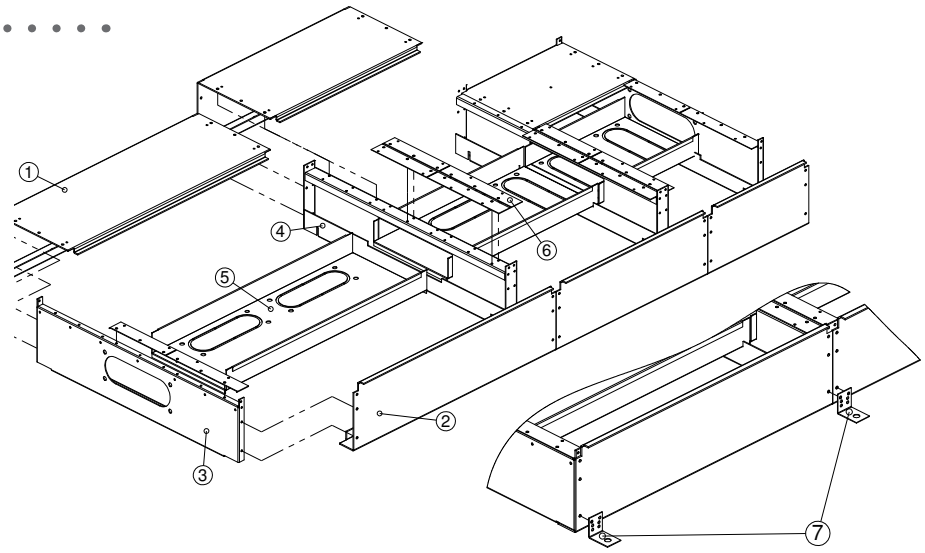
Surface treatment

- powder paint, external components (doors, covers, roofs, side plates)

PART LIST

BASE ELEMENTS

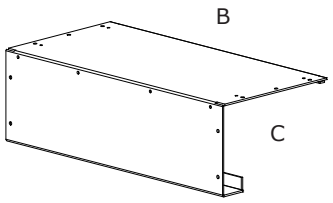
1. Back panel of base
2. Front plate of base
3. End plate of base
4. Divider of base
5. Cable conduit
6. Intermediate bead
7. Lug for base



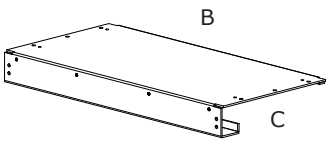
1. Back panel of base 600

Code	Description	Width mm (B)	Height mm (C)	Material
50051000	Back panel of base 20-60	200	140	zn
50051001	Back panel of base 30-60	300	140	zn
50051005	Back panel of base 45-60	450	140	zn
50051011	Back panel of base 60-60	600	140	zn
50051015	Back panel of base 75-60	750	140	zn
50051120	Back panel of base 90-60	900	140	zn
50051121	Back panel of base 105-60	1050	140	zn
50051016	Back panel of base 30-60 M	300	40	zn
50051017	Back panel of base 45-60 M	450	40	zn
50051018	Back panel of base 60-60 M	600	40	zn
50051019	Back panel of base 75-60 M	750	40	zn
50051020	Back panel of base 90-60 M	900	40	zn

50051005
Back panel of base 45-60



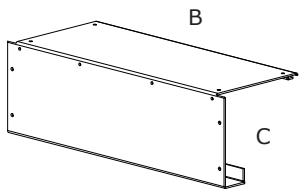
50051017
Back panel of base 45-60 M



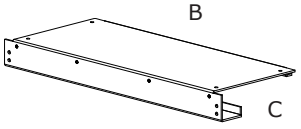
Back panel of base 385

Code	Description	Width mm (B)	Height mm (C)	Material
50051050	Back panel of base 20-38	200	140	zn
50051051	Back panel of base 30-38	300	140	zn
50051055	Back panel of base 45-38	450	140	zn
50051061	Back panel of base 60-38	600	140	zn
50051062	Back panel of base 75-38	750	140	zn
50051119S	Back panel of base 90-38	900	140	zn
50051063	Back panel of base 105-38	1050	140	zn
50051021	Back panel of base 20-38 M	200	40	zn
50051023	Back panel of base 30-38 M	300	40	zn
50051025	Back panel of base 45-38 M	450	40	zn
50051027	Back panel of base 60-38 M	600	40	zn
50051029	Back panel of base 75-38 M	750	40	zn
50051030	Back panel of base 90-38 M	900	40	zn
50051031	Back panel of base 105-38 M	1050	40	zn

50051055
Back panel of base 45-38



50051025
Back panel of base 45-38 M



2. Front plate of base

Code	Description	Width mm (B)	Height mm (C)	Material
50051070	Front plate of base20	200	140	zn
50051071	Front plate of base30	300	140	zn
50051075	Front plate of base45	450	140	zn
50051081	Front plate of base60	600	140	zn
50051085	Front plate of base75	750	140	zn
50051089	Front plate of base90	900	140	zn
50051088	Front plate of base105	1050	140	zn
50051064	Front plate of base20	200	40	zn
50051065	Front plate of base30	300	40	zn
50051066	Front plate of base45	450	40	zn
50051067	Front plate of base60	600	40	zn
50051068	Front plate of base75	750	40	zn
50051069	Front plate of base90	900	40	zn
50051096	Front plate of base105	1050	40	zn
50051091	Front plate of base20 IP30	200	140	zn
50051092	Front plate of base30 IP30	300	140	zn
50051093	Front plate of base45 IP30	450	140	zn
50051094	Front plate of base60 IP30	600	140	zn
50051095	Front plate of base75 IP30	750	140	zn
50051090	Front plate of base90 IP30	900	140	zn

3. End plate of base 600

Code	Description	Depth mm (A)	Height mm (C)	Material
50051101	End plate of base 60	600	140	zn
50051108	End plate of base 60 M	600	40	zn

End plate of base 385

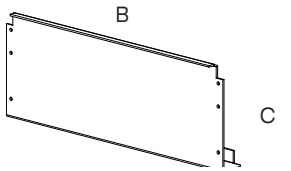
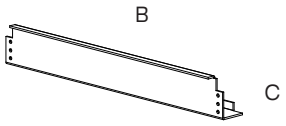
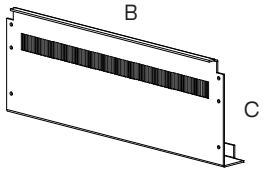
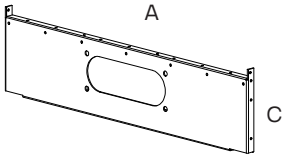
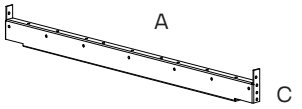
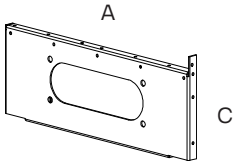
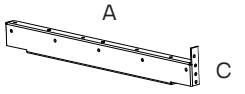
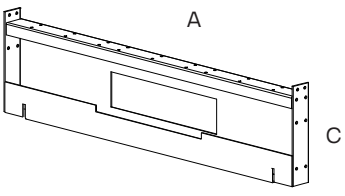
Code	Description	Depth mm (A)	Height mm (C)	Material
50051105	End plate of base 38 right	385	140	zn
50051106	End plate of base 38 left	385	140	zn
50051103	End plate of base 38 M right	385	40	zn

End plate of base 800

Code	Description	Depth mm (A)	Height mm (C)	Material
50059601	End plate of base 80	800	140	zn

4. Divider of base 600

Code	Description	Depth mm (A)	Height mm (C)	Material
50051111	Divider of base 60	600	140	zn
50051109	Divider of base 60 M	600	40	zn

50051075 Front plate of base45	
50051066 Front plate of base45 M	
50051093 Front plate of base45 IP30	
50051101 End plate of base 60	
50051108 End plate of base 60 M	
50051106 End plate of base 38 left	
50051104 End plate of base 38 M left	
50051111 Divider of base 60	

Divider of base 385

Code	Description	Depth mm (A)	Height mm (C)	**Material**
50051115	Divider of base 38	385	140	zn
50051114	Divider of base 38 M	385	40	zn

Divider of base 800

Code	Description	Depth mm (A)	Height mm (C)	**Material**
50059602	Divider of base 80	800	140	zn

5. Cable conduit 38/60

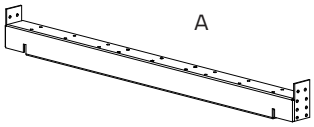
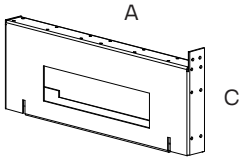
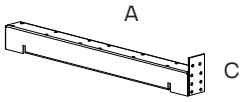
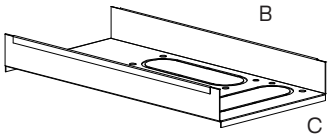
Code	Description	Width mm (B)	Material
50051150	Cable conduit 20 (38/60)	200	zn
50051151	Cable conduit 30 (38/60)	300	zn
50051155	Cable conduit 45 (38/60)	450	zn
50051161	Cable conduit 60 (38/60)	600	zn

6. Intermediate bead 60/38

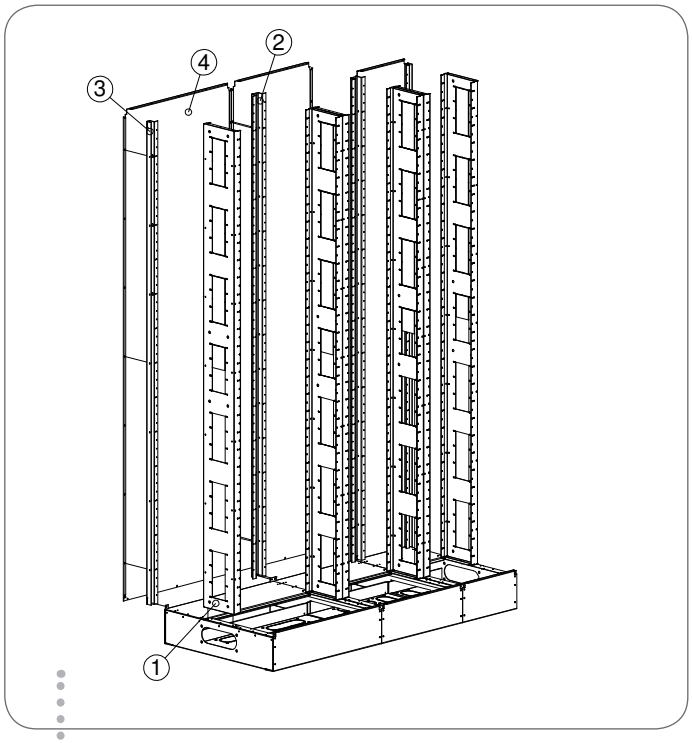
Code	**Description**	**Material**
50052081	Intermediate bead (60/38)	zn

7. Lug for base

Code	**Description**	**Material**
50059001	Lug for base	zn

50051109 *Divider of base 60 M*	
50051115 *Divider of base 38*	
50051114 *Divider of base 38 M*	
50051155 *Cable conduit 45*	
50052081 *Intermediate bead (60/38)*	
50059001 *Lug for base*	

FRAME ELEMENTS



1. Frame plate
2. Back profile
3. Joint back profile
4. Back panel

1. Frame plates

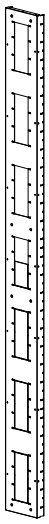
Code	Description	Height mm (C)	Material
50052001	Frame plate 168	1680	zn
50052011	Frame plate 196	1960	zn

2. Back profiles

Code	Description	Height mm (C)	Material
50052161	Back profile168	1680	zn
50052171	Back profile196	1960	zn

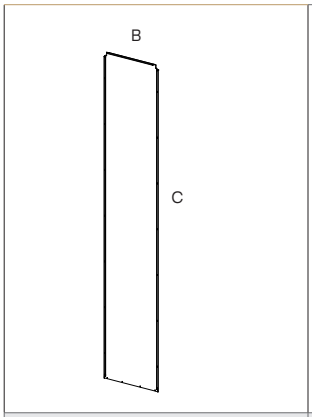
3. Joint back profiles

Code	Description	Height mm (C)	Material
50052141	Joint back profile168	1680	zn
50052151	Joint back profile196	1960	zn

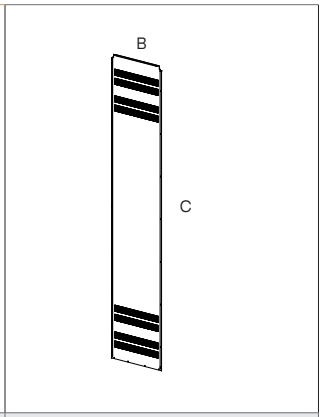
50052011 *Frame plate 196*	 C
50052171 *Back profile196*	 C
50052151 *Joint back profile196*	 C

4. Back panel

Code	Description	Width mm (B)	Height mm (C)	Material
50056075	Back panel 20-168	200	1680	zn
50056081	Back panel 30-168	300	1680	zn
50056082	Back panel 30-168 IP30	300	1680	zn
50056091	Back panel 45-168	450	1680	zn
50056092	Back panel 45-168 IP30	450	1680	zn
50056101	Back panel 60-168	600	1680	zn
50056102	Back panel 60-168 IP30	600	1680	zn
50056121	Back panel 75-168	750	1680	zn
50056122	Back panel 75-168 IP30	750	1680	zn
50056129	Back panel 20-196 IP30	200	1960	zn
50056130	Back panel 20-196	200	1960	zn
50056131	Back panel 30-196	300	1960	zn
50056132	Back panel 30-196 IP30	300	1960	zn
50056141	Back panel 45-196	450	1960	zn
50056142	Back panel 45-196 IP 30	450	1960	zn
50056151	Back panel 60-196	600	1960	zn
50056152	Back panel 60-196 IP30	600	1960	zn
50056161	Back panel 75-196	750	1960	zn
50056162	Back panel 75-196 IP30	750	1960	zn
50056171	Back panel 90-196	900	1960	zn
50056172	Back panel 90-196 IP30	900	1960	zn
50056181	Back panel 105-196	1050	1960	zn
50056182	Back panel 105-196 IP30	1050	1960	zn

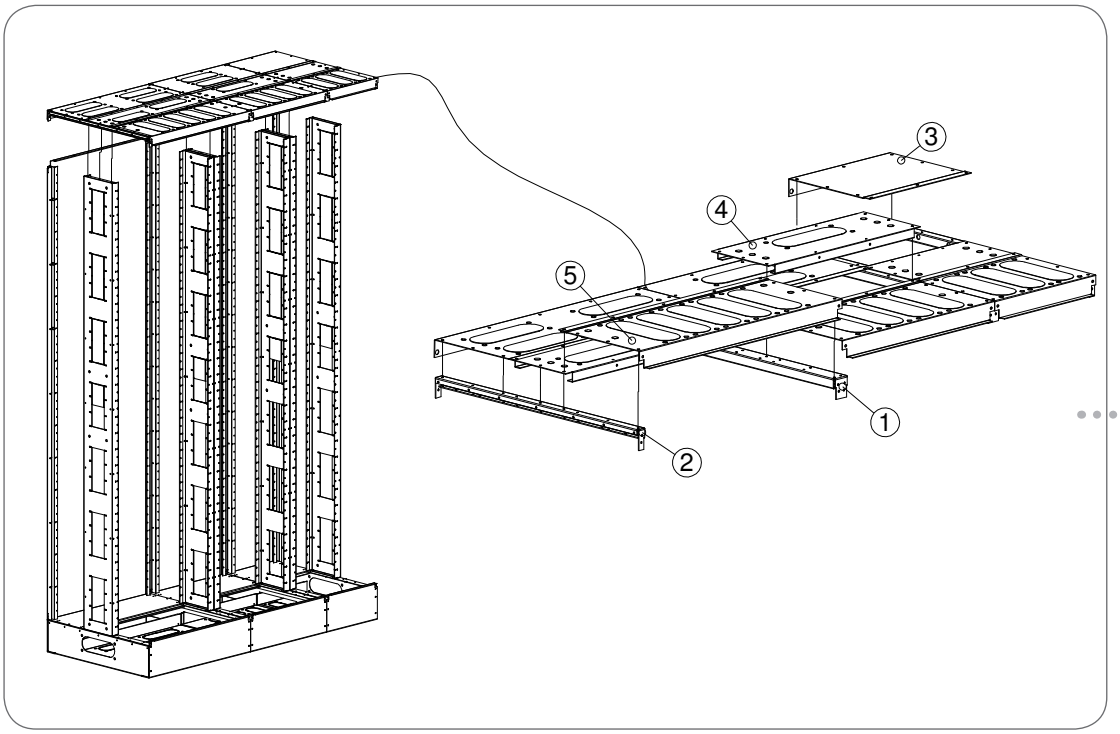


50056141
Back panel 45-196



50056142
Back panel 45-196 IP30

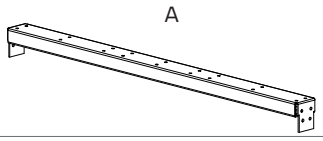
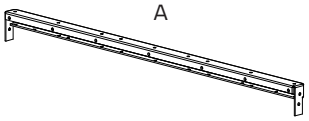
INTERMEDIATE PROFILES AND ROOF ELEMENTS



1. Intermediate profile
2. Joint end profile
3. Back roof
4. Middle roof
5. Front roof

1. Intermediate profile

Code	Discription	Depth mm (A)	**Material**
50052021	Intermediate profile 60	600	zn
50052031	Intermediate profile 38	385	zn
50059604	Intermediate profile 80	800	zn

50052021 *Intermediate profile 60*	
50052041 *Joint end profile 60*	

2. Joint end profiles

Code	Discription	Depth mm (A)	**Material**
50052041	Joint end profile 60	600	zn
50052051	Joint end profile 38 right	385	zn
50052052	Joint end profile 38 left	385	zn
50059603	Joint end profile 38 left	800	zn

3. Back roofs (see layout pictures in page 57)

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057079-2	Back roof 20-60	600	200	RAL7035
50057080-2	Back roof 30-60	600	300	RAL7035
50057081-2	Back roof 30-60 2C	600	300	RAL7035
50057090-2	Back roof 45-60	600	450	RAL7035
50057091-2	Back roof 45-60 2C	600	450	RAL7035
50057100-2	Back roof 60-60	600	600	RAL7035
50057101-2	Back roof 60-60 4C	600	600	RAL7035
50057110-2	Back roof 75-60	600	750	RAL7035
50057111-2	Back roof 75-60 6C	600	750	RAL7035
50057112-2	Back roof 90-60	600	900	RAL7035
50057114-2	Back roof 105-60	600	1050	RAL7035

Code	Discription	Depth mm (A)	Width mm (B)	**Material**
50057350-2	Back roof 20-38	385	200	RAL7035
50057351-2	Back roof 20-38 T	385	200	RAL7035
50057360-2	Back roof 30-38	385	300	RAL7035
50057361-2	Back roof 30-38 T	385	300	RAL7035
50057370-2	Back roof 45-38	385	450	RAL7035
50057371-2	Back roof 45-38 CT	385	450	RAL7035
50057380-2	Back roof 60-38	385	600	RAL7035
50057381-2	Back roof 60-38 C2T	385	600	RAL7035
50057390-2	Back roof 75-38	385	750	RAL7035
50057391-2	Back roof 75-38 2CT	385	750	RAL7035
50057394-2	Back roof 90-38	385	900	RAL7035
50057395-2	Back roof 105-38	385	1050	RAL7035

4. Middle roofs (see layout figures in page 57)

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057163-2	Middle roof 20-60	600	200	RAL7035
50057160-2	Middle roof 30-60	600	300	RAL7035
50057161-2	Middle roof 30-60 C	600	300	RAL7035
50059610-2	Middle roof 30-80	600	300	RAL7035
50057170-2	Middle roof 45-60	600	450	RAL7035
50057171-2	Middle roof 45-60 C	600	450	RAL7035
50059606-2	Middle roof 45-80	600	450	RAL7035
50057180-2	Middle roof 60-60	600	600	RAL7035
50057181-2	Middle roof 60-60 2C	600	600	RAL7035
50059607-2	Middle roof 60-80	600	600	RAL7035
50057190-2	Middle roof 75-60	600	750	RAL7035
50057191-2	Middle roof 75-60 2CT	600	750	RAL7035
50059608-2	Middle roof 75-80	800	750	RAL7035
50057193-2	Middle roof 90-60	600	900	RAL7035
50057192-2	Middle roof 90-60 2CT	600	900	RAL7035
50059609-2	Middle roof 90-80	800	900	RAL7035
50057195-2	Middle roof 105-60 2CT	600	1050	RAL7035
50057194-2	Middle roof 105-60	600	1050	RAL7035

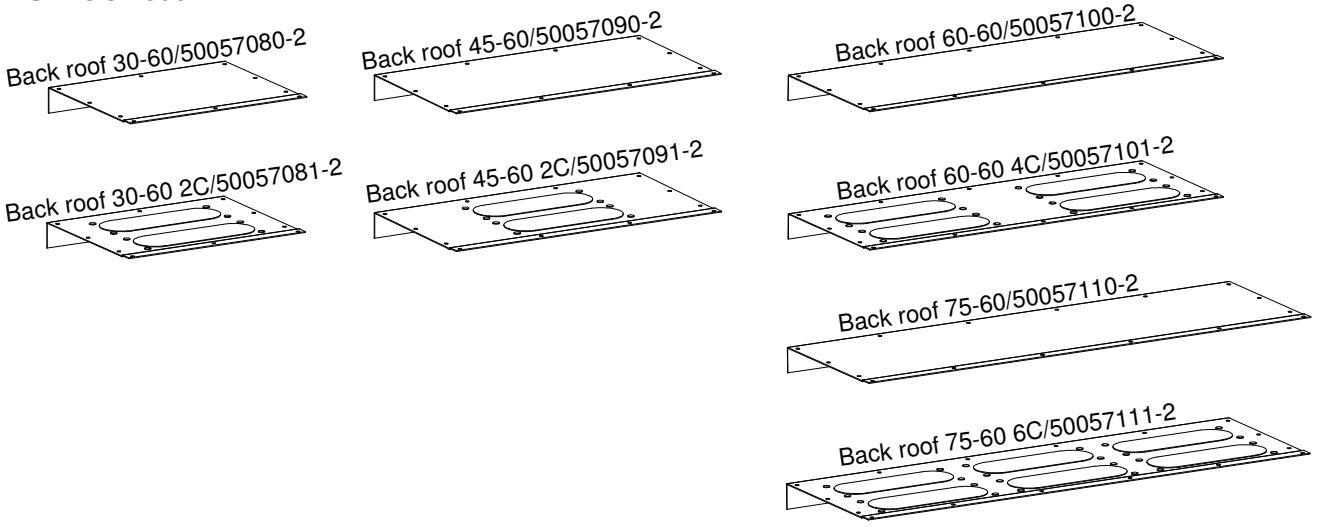
5. Front roofs (see layout figures in page 59)

Code	Description	Width mm (B)	Colour
50057116-2	Front roof 20 2C IP55	200	RAL7035
50057120-2	Front roof 30 3C IP55	300	RAL7035
50057121-2	Front roof 30 2C IP55	300	RAL7035
50057130-2	Front roof 45	450	RAL7035
50057131-2	Front roof 45 4C IP55	450	RAL7035
50057140-2	Front roof 60 IP 55	600	RAL7035
50057141-2	Front roof 60 5C IP55	600	RAL7035
50057150-2	Front roof 75	750	RAL7035
50057151-2	Front roof 75 7C IP55	750	RAL7035
50057159-2	Front roof 90	900	RAL7035
50057117-2	Front roof 90 IP55	900	RAL7035
50057115-2	Front roof 105 IP55	1050	RAL7035

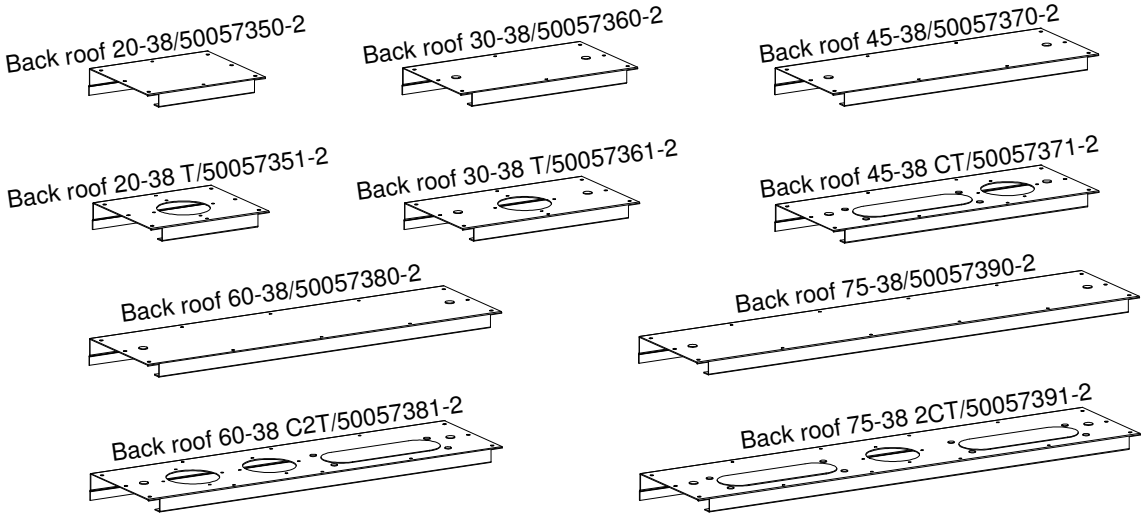
Front roof for ventilation (see layout figures in page 59)

Code	Description	Width mm (B)	Colour
50057124-2	Front roof for ventilation 20 IP30	200	RAL7035
50057123-2	Front roof for ventilation 30 2C IP30	300	RAL7035
50057125-2	Front roof for ventilation 30 3C IP30	300	RAL7035
50057133-2	Front roof for ventilation 45 4C IP30	450	RAL7035
50057134-2	Front roof for ventilation 45 IP30	450	RAL7035
50057142-2	Front roof for ventilation 60 5C IP30	600	RAL7035
50057144-2	Front roof for ventilation 60 IP 30	600	RAL7035
50057152-2	Front roof for ventilation 75 7C IP30	750	RAL7035
50057158-2	Front roof for ventilation 75 IP30	750	RAL7035
50057162-2	Front roof for ventilation 90 IP30	900	RAL7035
50057156-2	Front roof for ventilation 90 8C IP30	900	RAL7035

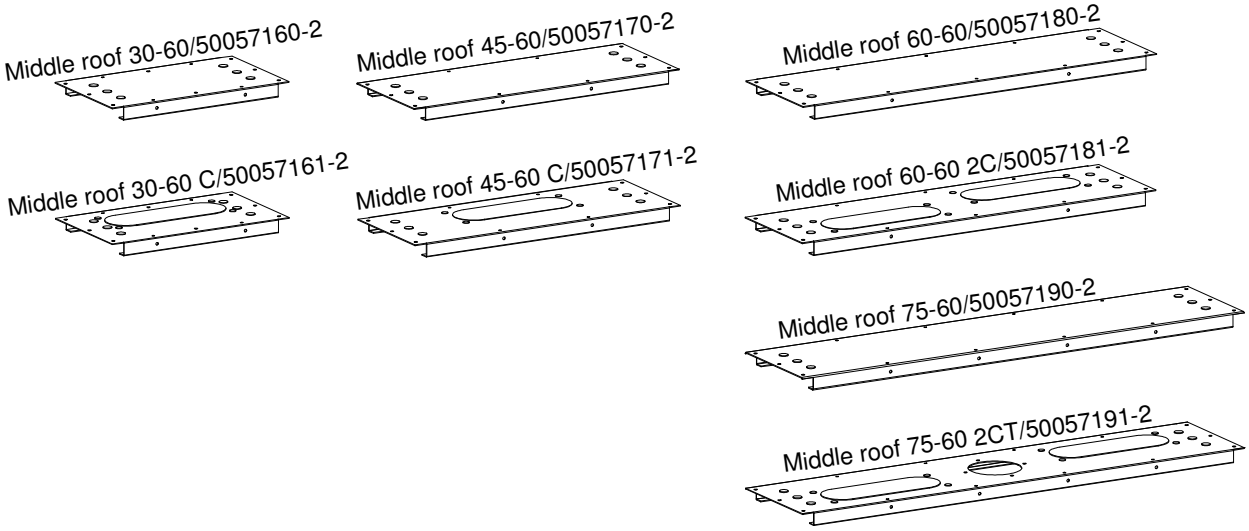
BACK ROOF 600



BACK ROOF 385

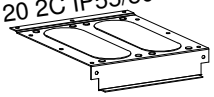


MIDDLE ROOF

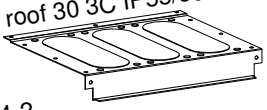


FRONT ROOF

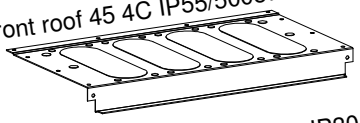
Front roof 20 2C IP55/50057116-2



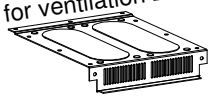
Front roof 30 3C IP55/50057120-2



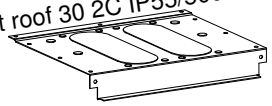
Front roof 45 4C IP55/50057131-2



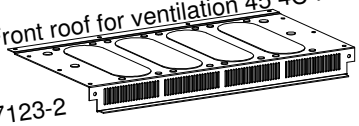
Front roof for ventilation 20 IP30 /50057124-2



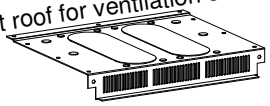
Front roof 30 2C IP55/50057121-2



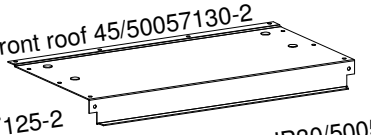
Front roof for ventilation 45 4C IP30/50057133-2



Front roof for ventilation 30 2C IP30/50057123-2

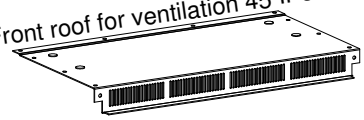


Front roof 45/50057130-2

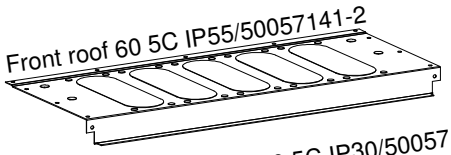


Front roof for ventilation 30 3C IP30/50057125-2

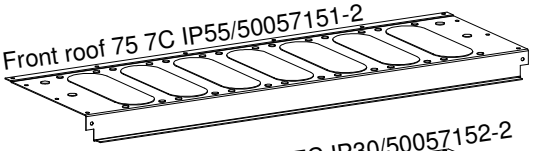
Front roof for ventilation 45 IP30/50057134-2



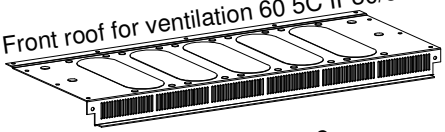
Front roof 60 5C IP55/50057141-2



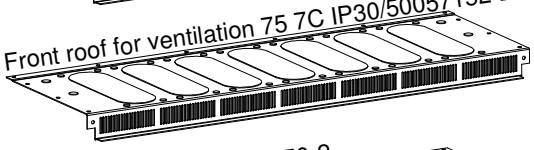
Front roof 75 7C IP55/50057151-2



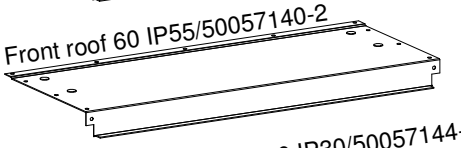
Front roof for ventilation 60 5C IP30/50057142-2



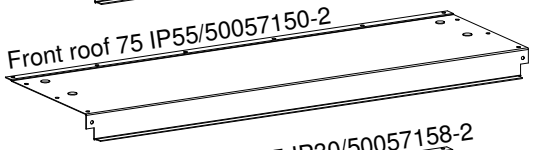
Front roof for ventilation 75 7C IP30/50057152-2



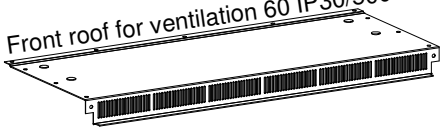
Front roof 60 IP55/50057140-2



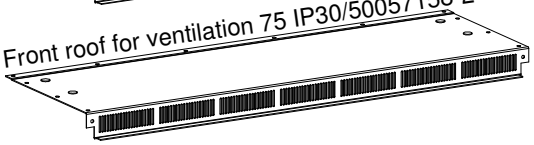
Front roof 75 IP55/50057150-2



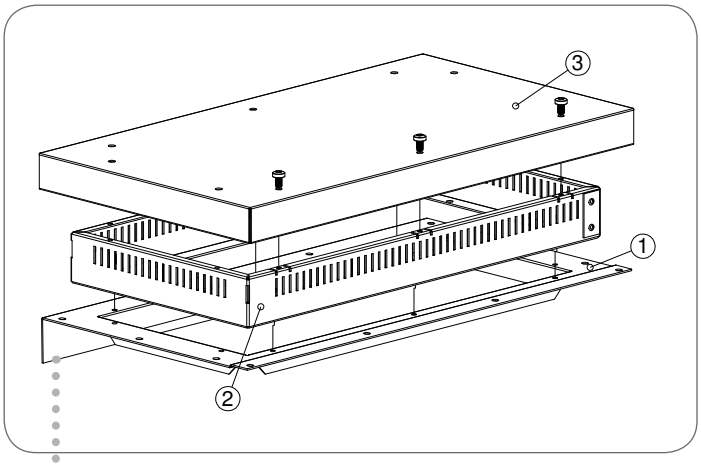
Front roof for ventilation 60 IP30/50057144-2



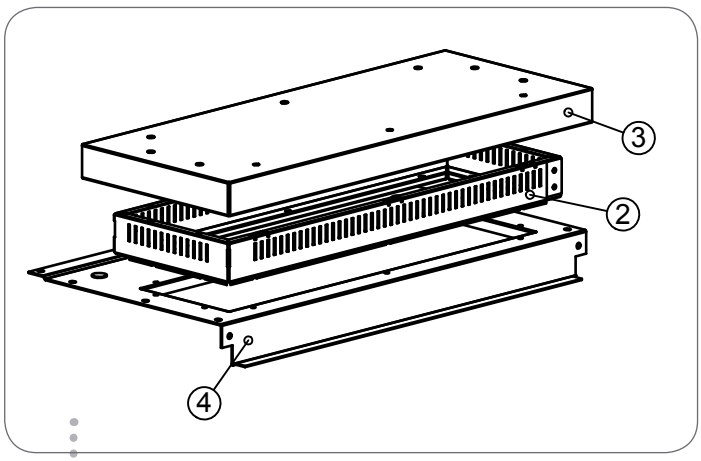
Front roof for ventilation 75 IP30/50057158-2



ROOFS FOR VENTILATION



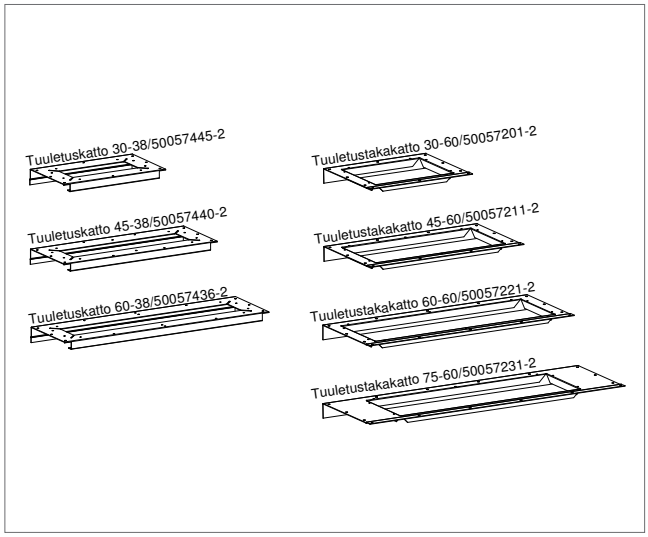
1. Back roof for ventilation
2. Ventilation box
3. Roof for ventilation box



2. Ventilation box
3. Roof for ventilation box
4. Front roof for ventilation
5. Tekamat blind flange

1. Back roof for ventilation 600

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057201-2	Back roof for ventilation 30-60	600	300	RAL7035
50057211-2	Back roof for ventilation 45-60	600	450	RAL7035
50057221-2	Back roof for ventilation 60-60	600	600	RAL7035
50057231-2	Back roof for ventilation 75-60	600	750	RAL7035
50057235-2	Back roof for ventilation 90-60	600	900	RAL7035

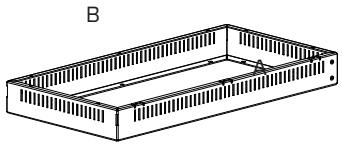
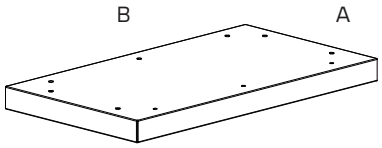


Back roof for ventilation 385

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057445-2	Roof for ventilation 30-38	385	300	RAL7035
50057440-2	Roof for ventilation 45-38	385	450	RAL7035
50057436-2	Roof for ventilation 60-38	385	600	RAL7035

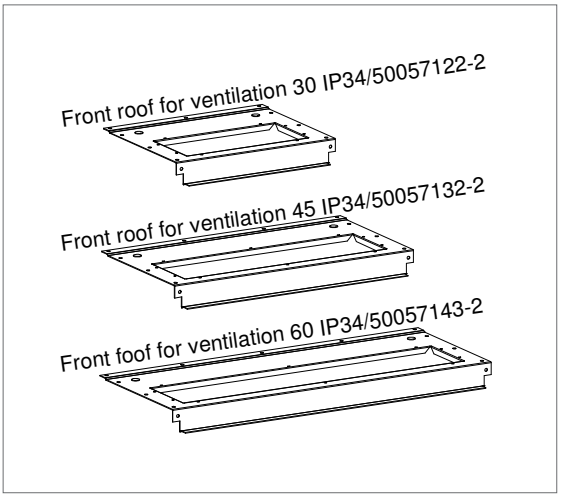
2. Ventilation box

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057241-2	Ventilation box 30-60	600	300	RAL7035
50057251-2	Ventilation box 45-60	600	450	RAL7035
50057261-2	Ventilation box 60/75/90-60	600	600	RAL7035
50057475-2	Ventilation box 30-38	385	300	RAL7035
50057470-2	Ventilation box 45-38	385	450	RAL7035
50057465-2	Ventilation box 60-38	385	600	RAL7035

50057251-2 Ventilation box 45-60	
50057291-2 Ventilation box 45-60	

3. Roof for ventilation box

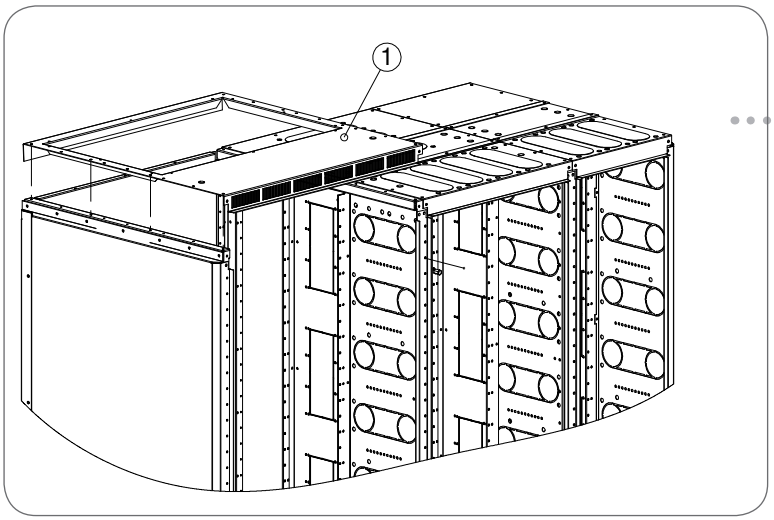
Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057281-2	Roof for ventilation box 30-60	600	300	RAL7035
50057291-2	Roof for ventilation box 45-60	600	450	RAL7035
50057301-2	Roof for ventilation box 60-60	600	600	RAL7035
50057311-2	Roof for ventilation box 75-60	600	750	RAL7035
50057460-2	Roof for ventilation box 30-38	385	300	RAL7035
50057455-2	Roof for ventilation box 45-38	385	450	RAL7035
50057450-2	Roof for ventilation box 60-38	385	600	RAL7035



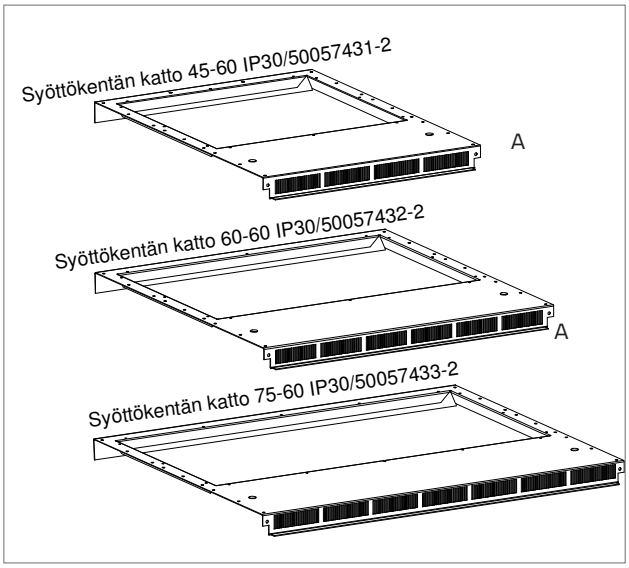
4. Front roof for ventilation

Code	Discription	Width mm (B)	**Colour**
50057122-2	Front roof for ventilation 30 IP34	300	RAL7035
50057132-2	Front roof for ventilation 45 IP34	450	RAL7035
50057143-2	Front roof for ventilation 60 IP34	600	RAL7035
50057154-2	Front roof for ventilation 75 IP34	750	RAL7035
50057157-2	Front roof for ventilation 90 IP34	900	RAL7035

FEEDER BAY'S ROOF



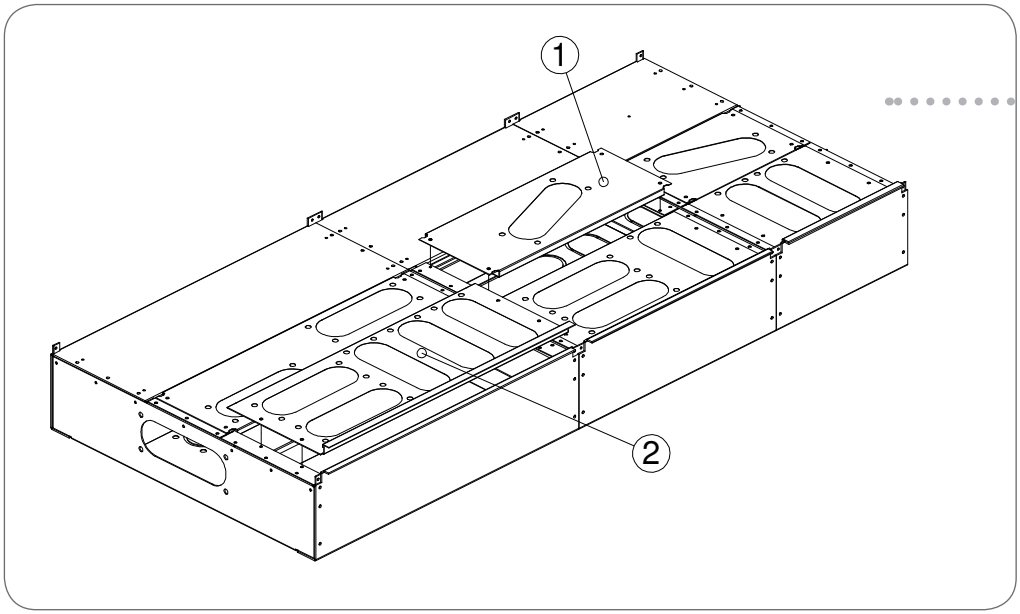
1. Feeders bay´s roof



1. Feeders bay´s roof

Code	Discription	Depth mm (A)	Width mm (B)	**Colour**
50057431-2	Feeders bay´s roof 45- 60 IP30	600	450	RAL7035
50057432-2	Feeders bay´s roof 60- 60 IP30	600	600	RAL7035
50057433-2	Feeders bay´s roof 75- 60 IP30	600	750	RAL7035
50057435	Feeders bay´s roof 105- 60 IP30			RAL7035

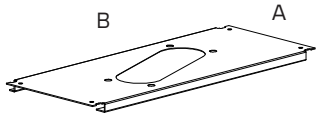
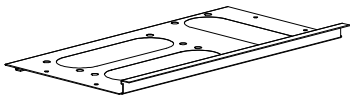
INTERMEDIATE BOTTOMS AND BOTTOMS OF INSTRUMENT COMPARTMENT



1. Intermediate bottom
2. Bottom of instrument compartment

1. *Intermediate bottom*

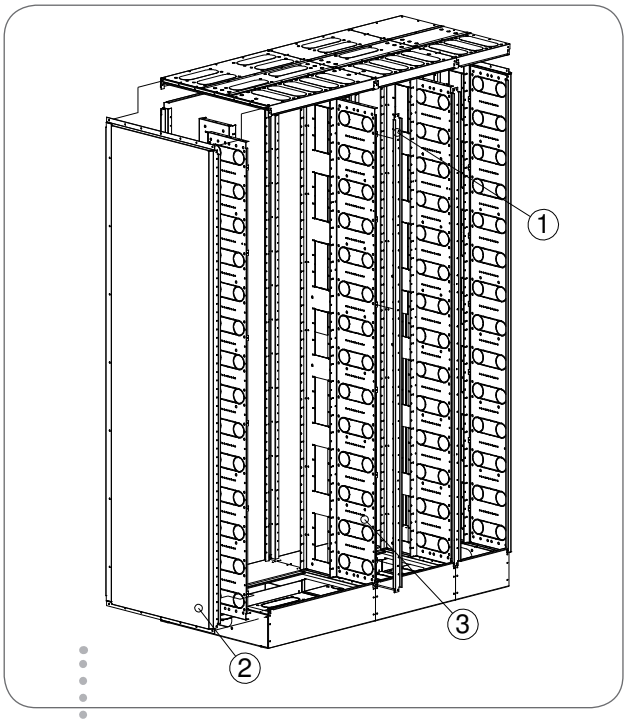
Code	Discription	Depth mm (A)	Width mm (B)	Colour
50057000	Intermediate bottom20-60	600	200	zn
50057001	Intermediate bottom30-60	600	300	zn
50057011	Intermediate bottom45-60	600	450	zn
50057021	Intermediate bottom60-60	600	600	zn
50057031	Intermediate bottom75-60	600	750	zn
50057036	Intermediate bottom90-60	600	900	zn
50057038	Intermediate bottom105-60	600	1050	zn

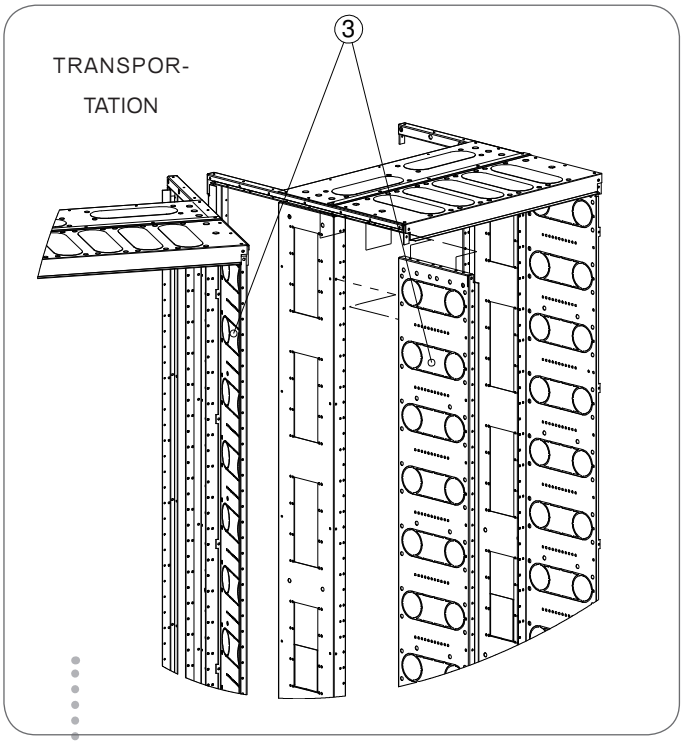
50057011 Intermediate bottom 45 -60	
50057051 Bottom of instrument compartment 45	

2. *Bottom of instrument compartment*

Code	Discription	Width mm (B)	Colour
50057040	Bottom of instrument compartment 20	200	zn
50057041	Bottom of instrument compartment 30	300	zn
50057051	Bottom of instrument compartment 45	450	zn
50057061	Bottom of instrument compartment 60	600	zn
50057071	Bottom of instrument compartment 75	750	zn
50057073	Bottom of instrument compartment 90	900	zn
50057075	Bottom of instrument compartment 105	1050	zn

FRONT PROFILES, SIDE PANELS, FRONT PARTITION WALLS AND DIVIDING INTERMEDIATE PROFILES





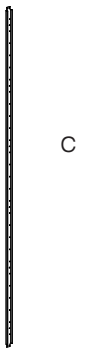
1. Front profile
2. Side plate
3. Front partition wall

3. Joint front partition wall

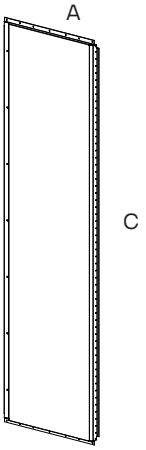
1. *Front profile*

Code	Description	Height mm (C)	Material
50526013	Front profile28	280	zn
50526014	Front profile42	420	zn
50526015	Front profile56	560	zn
50526012	Front profile70	700	zn
50526016	Front profile84	840	zn
50526017	Front profile112	1120	zn
50526018	Front profile140	1400	zn
50052189	Front profile168	1680	zn
50052190	Front profile196	1960	zn
50052189R	Front profile168 with holes	1680	zn
50052190R	Front profile196 with holes	1960	zn

50052190
Front profile196



50056011-2
Side plate 60-196



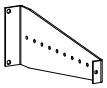
2. *Side plate*

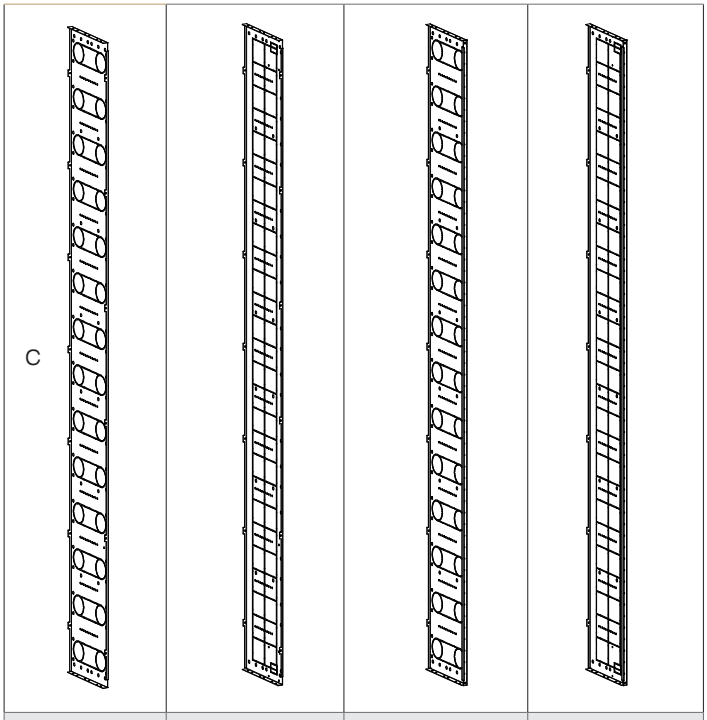
Code	Description	Width mm (B)	Height mm (C)	Material
50056001-2	Side plate 60-168	600	1680	RAL7035
50056011-2	Side plate 60-196	600	1960	RAL7035
50056041-2	Side plate 38-168	385	1680	RAL7035
50056051-2	Side plate 38-196	385	1960	RAL7035
50059605-2	Side plate 80-196	800	1960	RAL7035

3. *Front partition wall*

Code	Description	Height mm (C)	Material
50056061	Front partition wall168, blank	1680	zn
50056062	Front partition wall168, C-hole	1680	zn
50056063	Front partition wall168, with square holes	1680	zn
50056069	Front partition wall196, blank	1960	zn
50056072	Front partition wall196, C-hole	1960	zn
50056073	Front partition wall196, with square holes	1960	zn

50056060
Front support





50056072
Front partition wall
196 C-hole

50056073
Front partition wall196
with square holes

50056074
Front partition wall
196 ,
C-hole

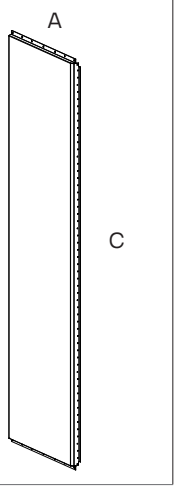
50056068
Front partition wall196
with square holes

TWO-SIDED SIDE PANEL

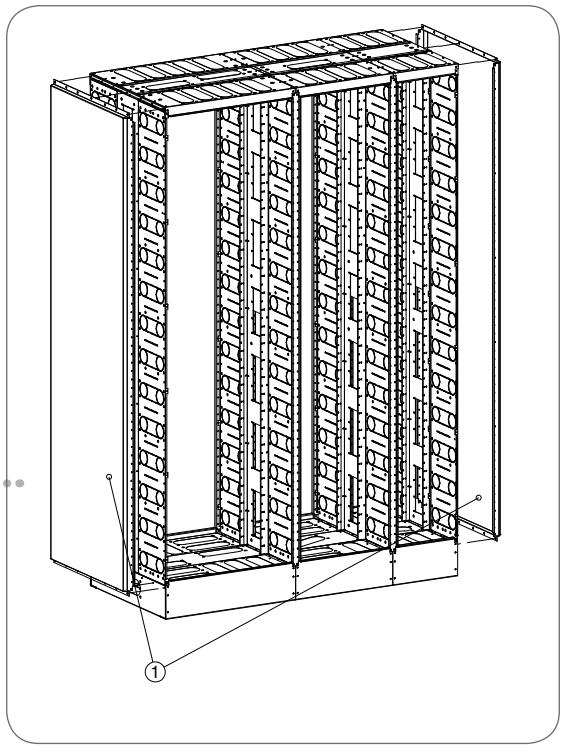
1. *Two-sided side panel*

Code	Description	Depth mm (A)	Height mm (C)	Colour
50056021-2	Two-sided side panel 60-168	600	1680	RAL7035
50056031-2	Two-sided side panel 60-196	600	1960	RAL7035

50056031-2
Side panel/two-sided
60-196



1. Side panel/two sided



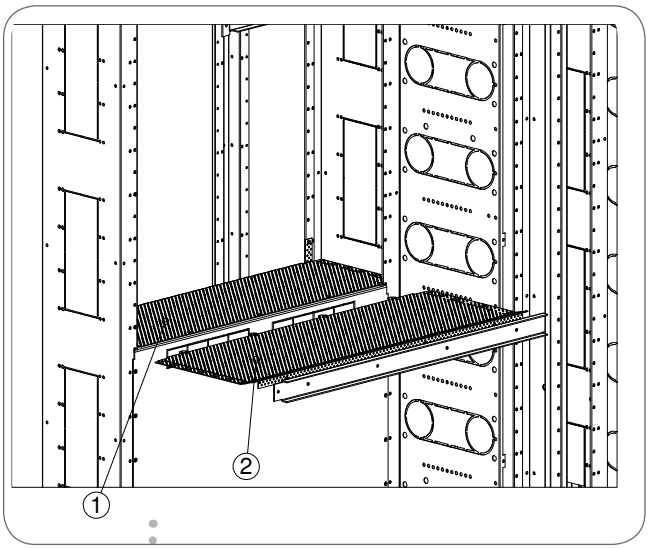
INTERMEDIATE LEVEL PLATES

1. Back intermediate level plate

Code	Description	Width mm (B)	Material
50053900	Back intermediate level plate20 (38/60)	200	zn
50053901	Back intermediate level plate30 (38/60)	300	zn
50053906	Back intermediate level plate45 (38/60)	450	zn
50053911	Back intermediate level plate60 (38/60)	600	zn
50053916	Back intermediate level plate75 (38/60)	750	zn

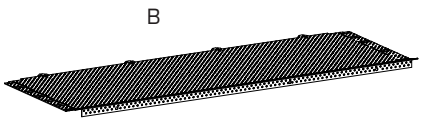
2. Front intermediate level platet

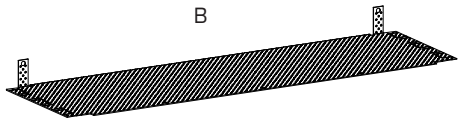
Code	Description	Width mm (B)	Mate-rial
50053918	Front intermediate level plate 15 (38/60)	150	zn
50053921	Front intermediate level plate 30 (38/60)	300	zn
50053926	Front intermediate level plate 45 (38/60)	450	zn
50053931	Front intermediate level plate 60 (38/60)	600	zn
50053936	Front intermediate level plate 75 (38/60)	750	zn
50053938	Front intermediate level plate 90 (38/60)	900	zn
50053938	Front intermediate level plate 1050 (38/60)	1050	zn



1. Back intermediate level plate
2. Front intermediate level plate

50053931
Front intermediate level platelevy 60





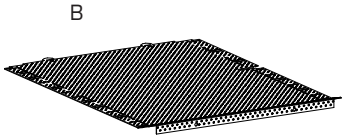
50053911
Back inter-mediate level plate 60

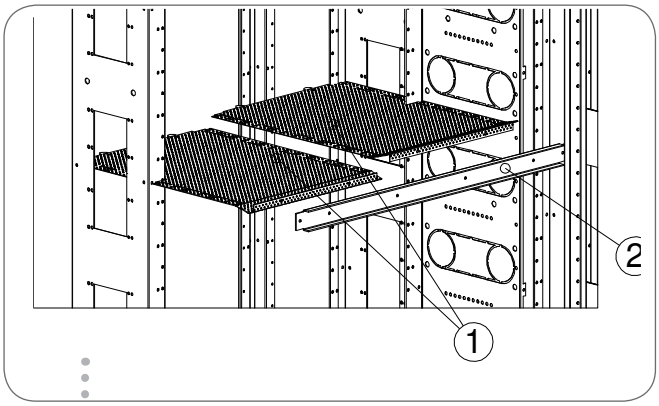
INTERMEDIATE LEVEL PLATES AND HORIZONTAL INTERMEDIATE PROFILES

1. Front intermediate level plate

Code	Description	Width mm (B)	Material
50053919	Front intermediate level platelevy 15	150	zn
50053923	Front intermediate level platelevy 30	300	zn

50053923
Front intermediate level plate 30



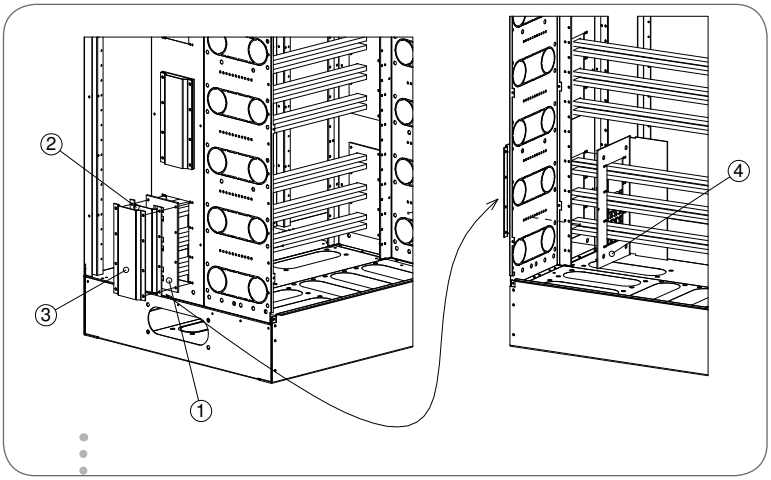


1. Front intermediate level plate Full size
2. Horizontal intermediate profile (Mat-ching parts)

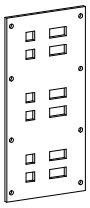
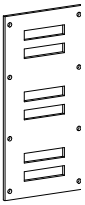
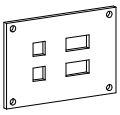
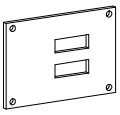
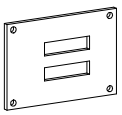
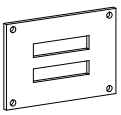
BUSBARS

1. Busbars insulators

Code	Discription	Material
50081006	Busbar insulator MFBH h50 (2)	PC
50081010	Busbar insulator MFBH J10-2 (6+6)	PC
50081012	Busbar insulator MFBH H30 (6)	PC
50081014	Busbar insulator MFBH H40 (6)	PC
50081016	Busbar insulator MFBH H50 (6)	PC
50081000	Busbar insulator MFBH h10-2 (2+2)	PC
50081002	Busbar insulator MFBH h30 (2)	PC
50081004	Busbar insulator MFBH h40 (2)	PC



1. Busbar insulator
2. Busbar insulator end
3. End flash barrier 38
4. Flash barrier 38

							
50081010 Busbar insulator MFBH H10-20 (6+6)	*50081014 Busbar insulator MFBH H40 (6)*	*50081012 Busbar insulator MFBH H30 (6)*	*50081016 Busbar insulator MFBH H50 (6)*	*50081000 Busbar insulator MFBH h10-20 (2+2)*	*50081002 Busbar insulator MFBH h30 (2)*	*50081004 Busbar insulator MFBH h40 (2)*	*50081006 Busbar insulator MFBH h50 (2)*

2. Busbar insulator end

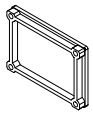
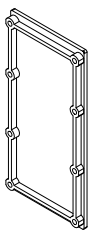
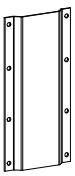
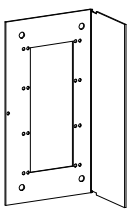
Code	Discription	Material
50081052	Busbar insulator end MFEBH 210	PC
50081050	Busbar insulator end MFEBH 70	PC

3. End flash barrier

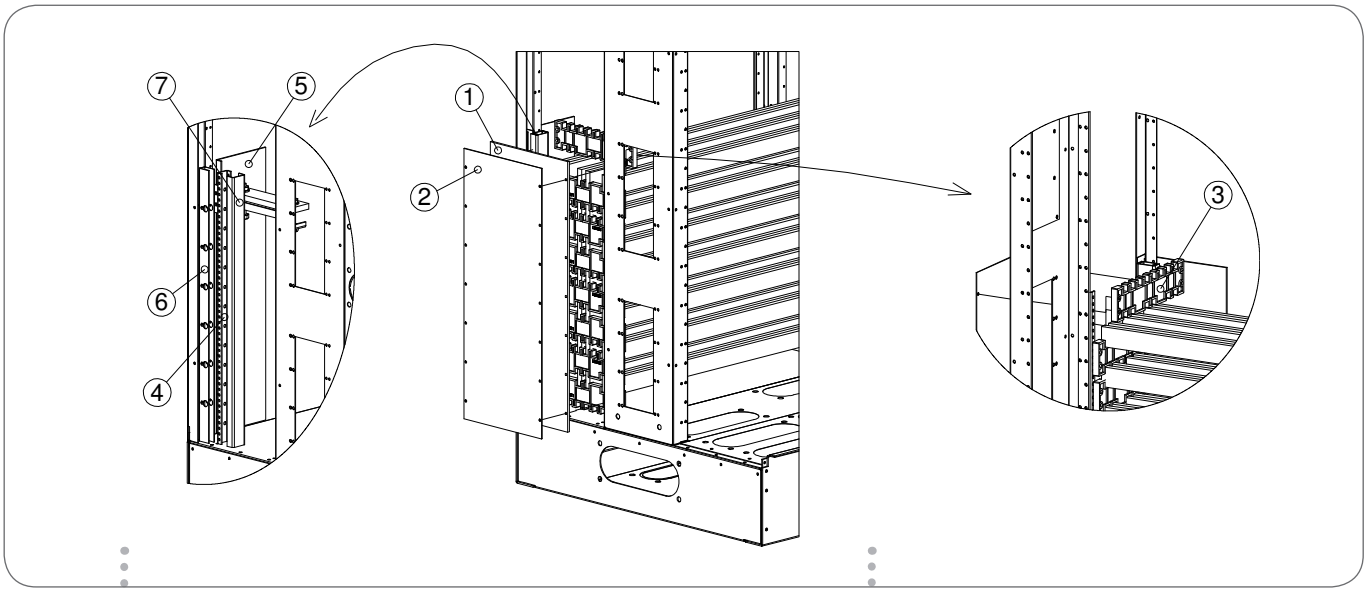
Code	Discription	Colour
50058294	End flash barrier 38	zn

4. Flash barrier

Code	Discription	Colour
50058293	Flash barrier 38	zn

			
50081050 Busbar insulator end MFEBH 70	*50081052 Busbar insulator end MFEBH 210*	*50058294 End flash barrier 38*	*50058293 Flash barrier 38*

BUSBARS (KUTE1-INSULATOR)



1. End insulator
2. End flash barrier
3. Support insulator EBHC8
4. Support insulator holder
5. Flash barrier for back panel
6. Flash barrier for corner profile
7. Flash barrier for Kutet1 485

1. End insulator

Code	Discription	Colour
50058202	End insulator	zn

2. End flash barrier

Code	Discription	Colour
50058295	End flash barrier / 60	zn

3. Support insulator

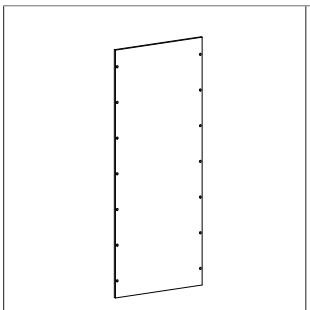
Code	Discription	Material
50081030	Support insulator EBHC8	PC

4. Support insulator holder

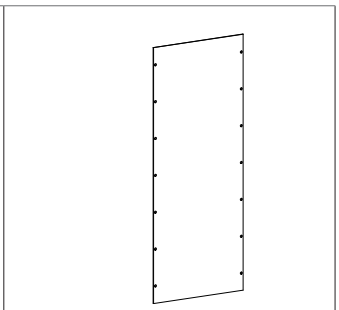
Code	Discription	Colour
50058251	Support insulator holder	zn

5. Flash barrier 60 for back panel

Code	Discription	Colour
50058292	Flash barrier 60 for back panel	zn

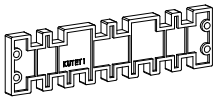


50058202
End insulator



50058295
End flash barrier /60

50081030
Support insulator EBHC8

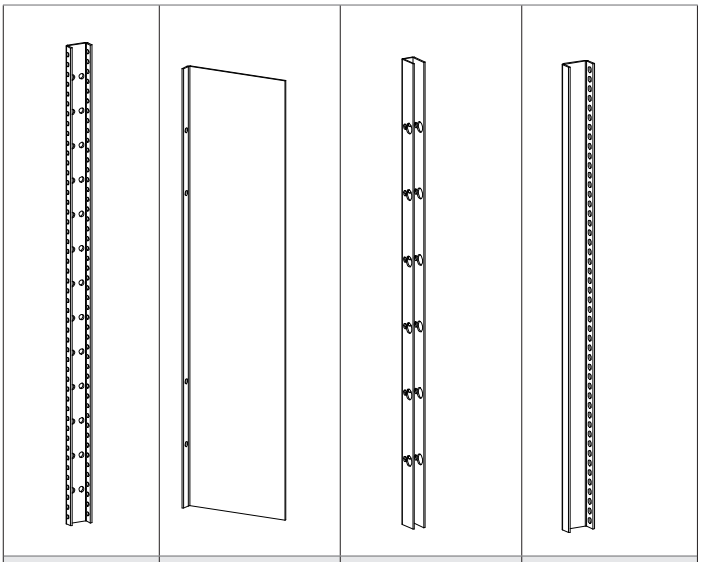


6. Flash barrier for corner profile

Code	Discription	Colour
50058296	Flash barrier for corner profile 60	zn

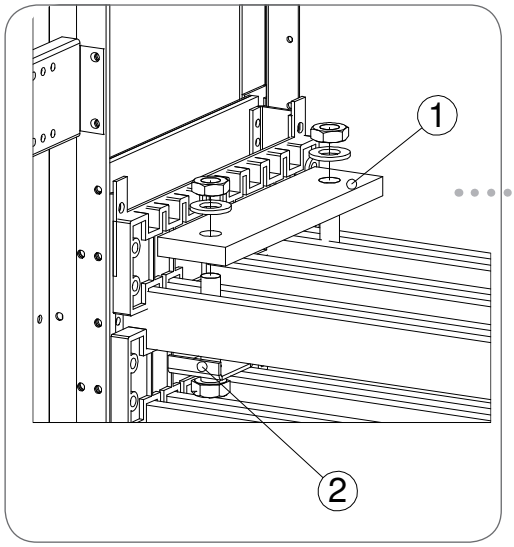
7. Flash barrier for Kutet 1 485

Code	Discription	Colour
50058253	Flash barrier for Kutet1 485	zn



50058251 Support insulator holder	50058292 Flash barrier for back panel 60	50058296 Flash barrier for corner 60	50058253 Flash barrier for Kutet1 485

BUSBARS



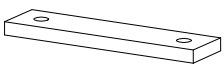
1. PE vertical bus bar holder
2. Busbar support

1. PE vertical busbar holder

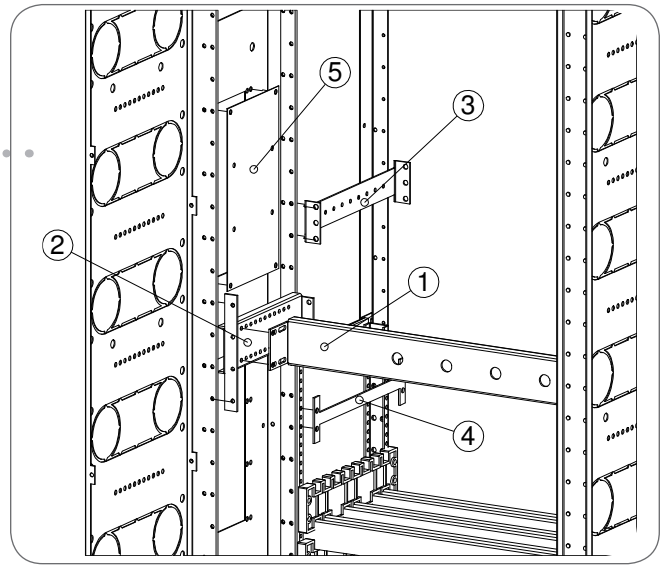
Code	Discription	Colour
50059003	Fastening piece	zn

2. Busbar support

Code	Discription	Colour
50081034	Busbar support	zn

50059003 Fastening piece	
50081034 Busbar support	

FIXING ELEMENTS



1. Holder for vertical bus bars
2. Holder for support insulator holder
3. FInge for frame plate

1. Holder for vertical busbars

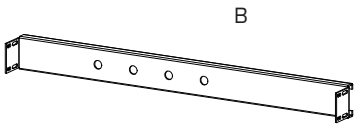
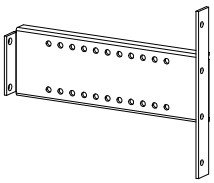
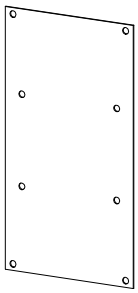
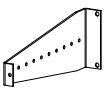
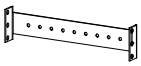
Code	Discription	Leveys mm (B)	Colour
50058281	Holder for vertical busbars 450	450	zn
50058282	Holder for vertical busbars 600	600	zn
50058283	Holder for vertical busbars 750	750	zn

2. Holder for support insulator holder

Code	Discription	Colour
50058290	Holder for support insulator holder for busbar sec	zn

3. Flange for frame plate

Code	Discription	Colour
50052195	Flange for frame plate	zn

50058282 Holder for vertical busbars 600	
50058291 Holder for support insulator holder for busbar sec	
50052195 Flange for frame plate	
50056060 Front support	
50058275 Intermediate support	
50058271 Intermediate rod	

SUPPORT PARTS

1. Front support

Code	Discription	Colour
50056060	Front support	zn

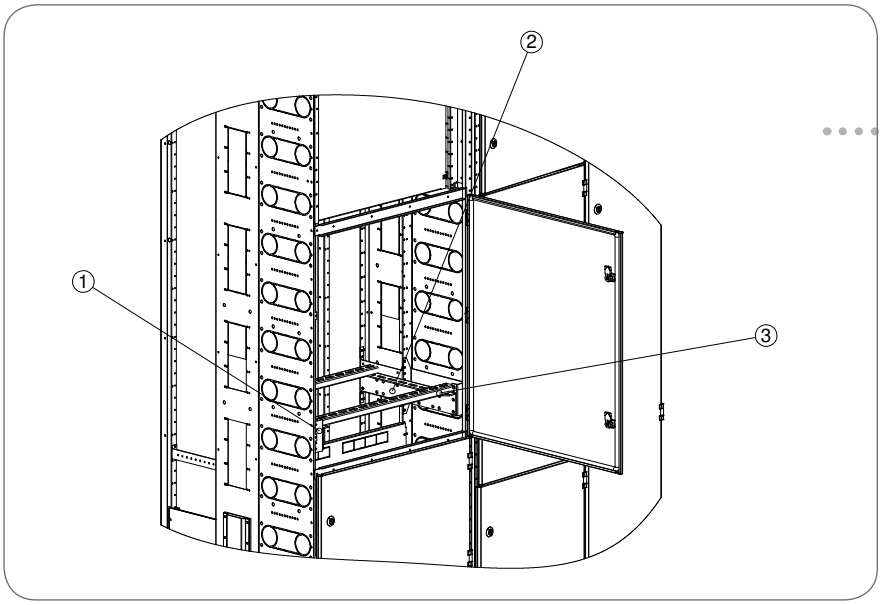
2. Intermediate support

Code	Discription	Colour
50058275	Intermediate support	zn

3. Intermediate rod

Code	Discription	Colour
50058271	Intermediate rod	zn

FIXING ELEMENTS



1. Heavy-duty hanger
2. Heavy component's hanger
3. C-Profile

1. Heavy-duty hanger

Code	Discription	Colour
50059002	Heavy-duty hanger	zn

2. Heavy component's hanger

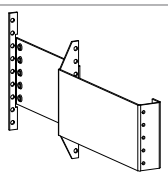
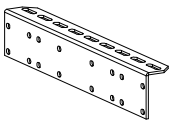
Code	Discription	Colour
50059007	Heavy component's hanger	zn

3. C-Profile

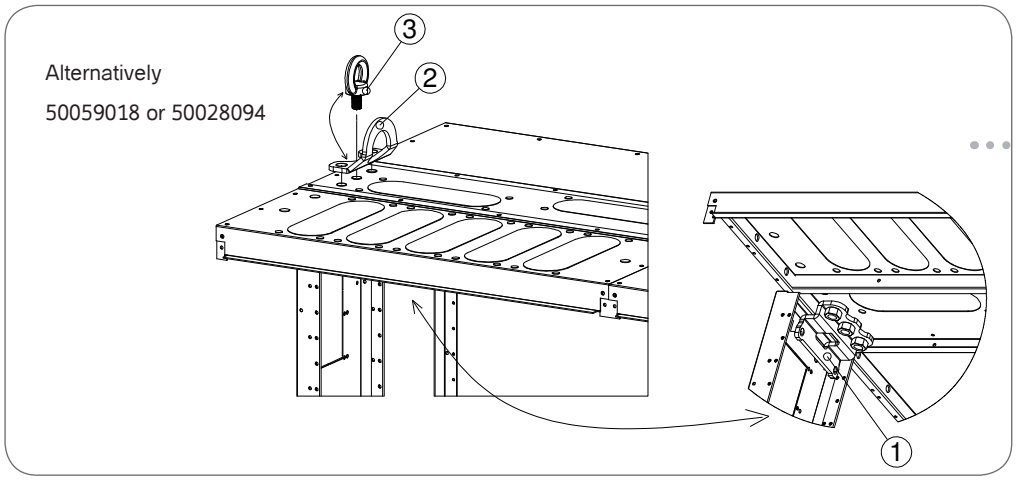
Code	Discription		Colour
50059079	C-Profile 450	450	zn
50059080	C-Profile 600	600	zn
50059081	C-Profile 750	750	zn
50059082	C-Profile 900	900	zn
50059083	C-Profile 1050	1050	zn

U-nut for C-profile

Code	Discription	Colour
50059095	U-nut for C-profile M8	zn
50059096	U-nut for C-profile M6	zn

50059002 Heavy-duty hanger	
50059007 Heavy component's hanger	
50059080 C-Profile 600	
50059095 U-nut for C-profile M8	

LIFTING COMPONENTS



1. Lug for lifting loop
2. Lifting loop 500 kg (50059018)
3. Lifting loop M12 (50028094)

1. Lug for lifting loop

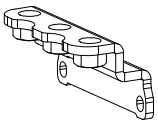
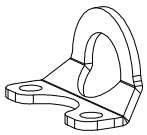
Code	Discription	Colour
50059011	Lug for lifting loop	zn

2. Lifting loop

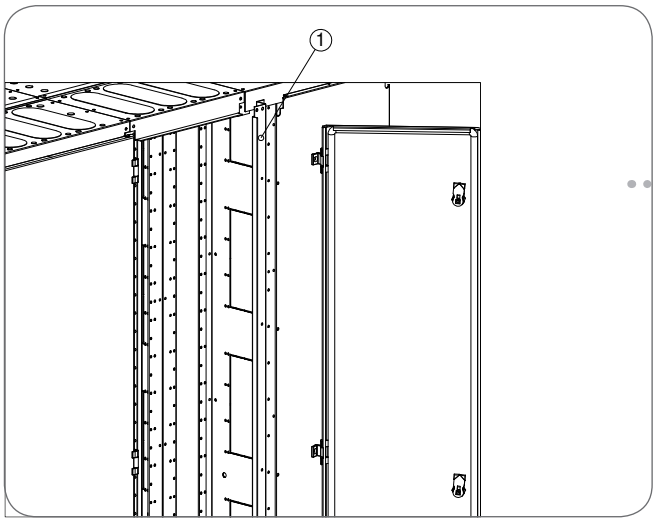
Code	Discription	Colour
50059018	Lifting loop 500 kg	zn

3. Lifting loop

Code	Discription	Colour
50028094	Lifting loop M12	zn

50059011 *Lug for lifting loop*	
50059018 *Lifting loop 500 kg*	
50028094 *Lifting loop M12*	

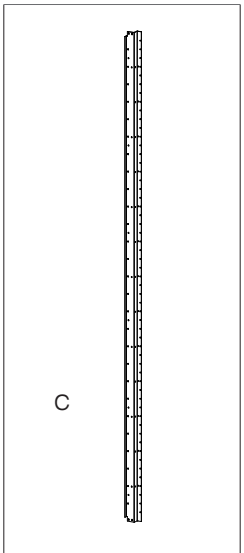
CHANGE-OVER BACK PROFILE



1. Change-over back profile

1. Change-over back profile

Code	Discription	Height mm (C)	Colour
50052174	Change-over back profile 168	1680	zn

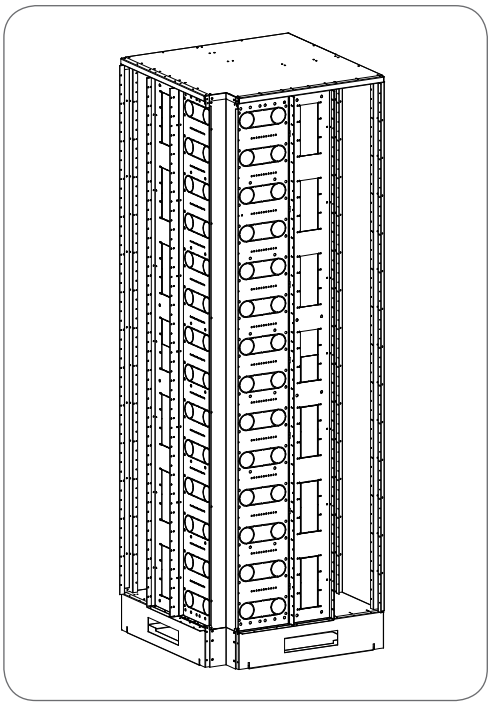


50052176
Change-over back profile 196

CORNER CABINETS

Corner cabinet 385/196

Code	Discription	Depth mm (A)	Height mm (C)	Colour
50059927-2	Corner cabinet 385/196 matching parts	385	1960	RAL7035
50059928-2	Corner cabinet 385/196 separate	385	1960	RAL7035
50059929-2	Corner cabinet 385/196 fixed	385	1960	RAL7035
50059930-2	Corner cabinet 385/196 transportation break	385	1960	RAL7035



Parts included:

Code	Corner cabinet 385/196 matching parts	Amount
50059501	Rear plate of base, corner cabinet 385 (special part)	1 pcs
50059502	Extension plate, corner cabinet 385 (special part)	2 pcs
50059503	Extension profile, corner cabinet 385 (special part)	2 pcs
50059504	Floor plate, corner cabinet 385 (special part)	1 pcs
50059506	Rear plate 385	1 pcs
50059509	Rear-/front joining flange (special part)	2 pcs
50059505-2	Roof plate 385, corner cabinet 385 (special part)	1 pcs
50051050	Back panel of base20-38	2 pcs
50056130	Back plate 20-196	2 pcs
50052081	Intermediate bead (60/38)	2 pcs

Parts included:

Code	Corner cabinet 385/196 separate	Amount
50059510	Jointing angle 385/610 (special part)	2 pcs
50059518	Jointing angle 385/610 (special part)	2 pcs
50059522	Front vertical plate, corner cabinet (special part)	1 pcs
50056072	Front partition wall 196 c-hole	2 pcs
50052011	Frame plate 196	6 pcs
50052051	Intermediate profile right	1 pcs
50052052	Intermediate profile left	1 pcs
50051105	End plate of base 38 right	1 pcs
50051106	End plate of base 38 left	1 pcs

Parts included:

Code	Corner cabinet 385/196 fixed	Amount
50059510	Jointing angle 385/610 (special part)	1 pcs
50059518	Jointing angle 385/610 (special part)	1 pcs
50059507	Front vertical profile, corner cabinet 196 (special part)	1 pcs
50056072	Front partition wall 196 c-hole	1 pcs
50052011	Frame plate 196	8 pcs
50052031	Intermediate profile 38	2 pcs
50051115	Divider 38	2 pcs
50056074	Joint front partition wall 196 C-hole	1 pcs

Parts included:

Code	Corner cabinet 385/196 with transportation break	Amount
50059510	Jointing angle 385/610 (special part)	2 pcs
50059518	Jointing angle 385/610 (special part)	2 pcs
50059507	Front vertical profile, corner cabinet 196 (special part)	1 pcs
50056072	Front partition wall 196 c-hole	1 pcs
50052011	Frame plate 196	7 pcs
50052031	Intermediate profile 38	1 pcs
50051115	Divider 38	1 pcs
50052051	Intermediate profile right	1 pcs
50052052	Intermediate profile left	1 pcs
50051105	End plate of base 38 right	1 pcs
50051106	End plate of base 38 left	1 pcs

Corner cabinet 600/196

Code	Discription	Depth mm (A)	Height mm (C)	Colour
50059923-2	Corner cabinet 600/196 matching parts	600	1960	RAL7035
50059924-2	Separated corner cabinet 610/196	600	1960	RAL7035
50059925-2	Fixed corner cabinet 610/196	600	1960	RAL7035
50059926-2	Corner cabinet 610/196 with transportation break.	600	1960	RAL7035

Parts included:

Code	Corner cabinet 600/196 matching parts	Amount
50059511	Rear plate of base 610 *	1 pcs
50059512	Extension plate , corner cabinet 610 *	2 pcs
50059513	Extension profile, corner cabinet 610 *	2 pcs
50059514	Floor plate, corner cabinet 610 *	1 pcs
50059516	Rear plate, corner cabinet 610*	1 pcs
50059517	Supporting profile for bus bar holders 610*	2 pcs
50059509	Rear-/front joining flange *	2 pcs
50059510	Jointing angle 385/610 *	2 pcs
50059518	Jointing angle 385/610	2 pcs
50059515-2	Jointing angle 385/610 *	1 pcs
50051001	End plate of base 30-60	2 pcs
50056131	Back panel 20-196	2 pcs
50052081	Intermediate bead (60/38)	2 pcs

Parts included:

Code	Corner cabinet 600/196 separate	Amount
50059522	Front vertical plate, corner cabinet 196	1 pcs
50052011	Frame plate 196	2 pcs
50052171	Back profile196	2 pcs
50052151	Joint back profile 196	2 pcs
50052041	Joint end profile 60	2 pcs
50051101	End plate 60	2 pcs
50056072	Front partition wall 196 C-hole	2 pcs

Parts included:

Code	Corner cabinet 600/196 fixed	Amount
50059507	Front vertical profile, corner cabinet 196 *	1 pcs
50056074	Joint front partition wall 196 C-hole	1 pcs
50056072	Front partition wall 196 C-hole	1 pcs
50052011	Frame plate 196	4 pcs
50051111	Divider 60	2 pcs
50052171	Back profile196	4 pcs
50052021	Intermediate profile 60	2 pcs

Parts included:

Code	Corner cabinet 600/196 with transportation break	Amount
50059507	Front vertical profile, corner cabinet 196 *	1 pcs
50056072	Front partition wall 196 C-hole	1 pcs
50052011	Frame plate 196	1 pcs
50051111	Divider 60	4 pcs
50052171	Back profile196	2 pcs
50052151	Joint back profile 196	4 pcs
50052021	Intermediate profile 60	2 pcs
50052041	Joint end profile 60	1 pcs
50051101	End plate 60	1 pcs
50056074	Joint front partition wall 196 C-hole	1 pcs

MATCHING PARTS - PART LIST