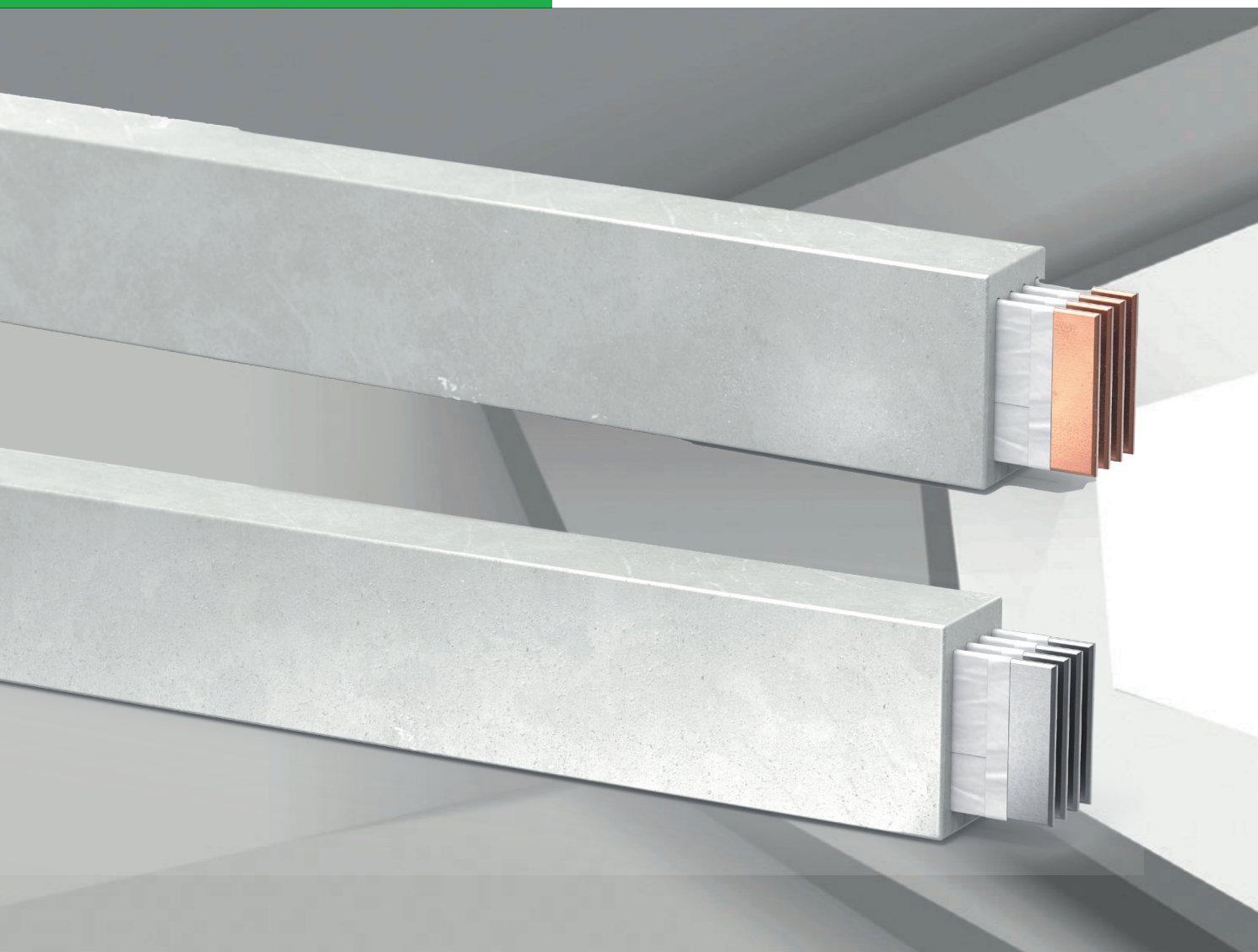


INSTALLATION GUIDE

RCP IP68 BUSBAR SYSTEMS



LEGRAND SUPPORTS YOU ON ALL YOUR PROJECTS

The present manual contains all the information necessary for the installation of Legrand RCP busbar trunking system.

It contains the guidelines and procedures to be followed during the different phases involved in the whole process related to the realisation of the plant and its final power up.

All preliminary requirements, specific installation procedures and overall recommendations are explained along the present manual.

Topics exposed can be divided into different sections:

- check of the equipment and of all the tools necessary for plant assembly.
- check of all the material availability and its correct identification (both as an individual component and inside the whole system).
- pre-installation checks on connections among different components.
- detailed operative installation procedures.

Also checks to be carried out after installation and before power up (putting into service) are detailed in this manual.

A section relating to the periodic inspection of the plant during its life with the definition of the types and frequency of the checks to be performed are included as a recommendation from Legrand.

This manual is addressed to suitably qualified and trained technical personnel.

LEGAL INFORMATION

Presentation pictures do not always include Personal Protective Equipment (PPE), but this is a legal and regulatory obligation that must be scrupulously respected.

In accordance with its continuous improvement policy, Legrand reserves the right to change the specifications and illustrations without notice. All illustrations, descriptions and technical information included in this document are provided as indications and cannot be held against Legrand.



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INSTALLATION GUIDE RCP IP68 BUSBAR SYSTEMS

SAFETY INSTRUCTIONS



Any failure to strictly apply the procedures and to respect these recommendations could lead to serious risk of accident, endangering people and property (in particular, without limitation, risk of burns, electric shocks, etc.).



General information

- Use only the products and accessories recommended by the Legrand Group in the catalogue, instructions, technical data sheets and all other documents provided by Legrand (hereinafter referred to as "the Documentation") in compliance with the installation rules.



Improper installation or use may result in the risk of arcing in the enclosure, overheating or fire. The enclosures must be used under normal conditions, they must not be subjected to Voltage / Current / Temperature values other than those specified in the Documentation.

- Legrand declines all responsibility for any modification or repair of the equipment making up the enclosure that is not authorized by the Legrand Group, as well as any failure to comply with the rules and recommendations specified by Legrand in the Documentation. In addition, in the cases mentioned above, the warranty granted by Legrand will not be applicable.
- It is necessary to check that the characteristics of the products are appropriate for their environment and use during maintenance operations, and to refer to the Documentation.
- If you have any questions or require clarification, please contact Legrand Group.

Protection/security



- The installation, use and maintenance of the enclosures and their components must be carried out by qualified, trained and authorized personnel, in accordance with the regulations in force in each country.
- People working on the installation must have the appropriate electrical authorizations for the work to be carried out.
- Wear the PPE (Personal Protective Equipment) necessary to work on live products.



- During the preparation of the junction, it is advisable to use a protective mask.
- Respect the safety rules related to electrical work.
- Improper electrical and mechanical use of equipment can be dangerous and may result in personal injury or damage to property.

Maintenance

- Depending on the maintenance operations to be carried out, total power cuts of the enclosure concerned should be planned before any work.
- When performing operations that involve access to the inside of the enclosure, be aware of the risk of burns before touching any.
- Before turning the power back on, make sure that there are no foreign bodies and that all physical protections have been put back in place (e.g.: screens, covers, faceplates).



Risk of electric shock, burns and explosion.

The rules and recommendations in this document are based on our knowledge of the typical conditions of use of our products in the fields of application usually encountered. However, it is always the customer's responsibility to verify and validate that Legrand products are suitable for its installation and use.

The customer must ensure proper installation, maintenance and operation of the equipment to avoid any risk of injury to personnel or damage to property in the event of product failure, especially for applications that require a very high level of safety (e.g., those in which the failure of a component may endanger human life or health).

The rules for storage, handling, installation and maintenance and the appropriate precautions and warnings must be strictly observed and applied.



RCP IP68 BUSBAR SYSTEMS

LOGISTIC PART

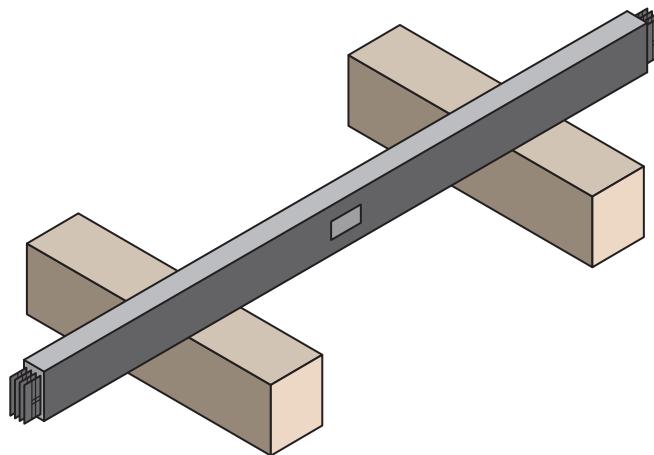
▪ Handling

When handling the material, comply with the regulations for safety in the workplace, taking in to account any relevant national legislation, and accepted local good practice.

Follow the indications supplied to prevent damage to materials, or risks to personnel.

Below are the instructions to follow for a correct material handling.

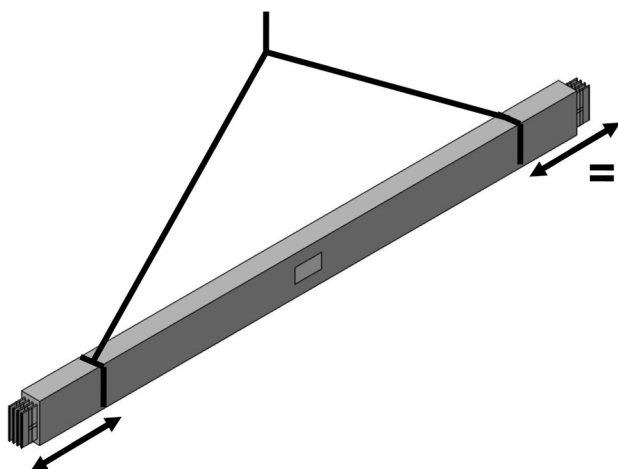
- When opening the packaging, always pay the utmost attention and wear the correct PPE.
- To open wooden cases, in which the materials are dispatched, use a claw hammer or pry bar, and correct personal protective equipment.
- Handle the busbars with due care and attention. Do not subject busbars to torsions, dents, violent impact, or sharp movements, or expose to any materials or liquids that may impair performance or may damage their internal components.
- Do not lift the busbars from their bars. This could not just damage the busbar, but also cause injury to the personnel carrying out the operation.
- When using a crane to install the busbar, use nylon slings to balance the weight.
- When not installing the busbar immediately upon receipt, ensure appropriate storage for the time required before installation. Follow the storage instructions.
- Do not drag the busbar along the floor. This could cause irreversible damage.
- To correctly move busbars, cranes shall be used. Timber bearers should be used when busbar is placed on the floor, these should be of multiple numbers to ensure no damage to the busbar.
- Do not move already assembled busbars, as this would cause stress at the point of the electric joint, even if the joint has not yet been cast.
- The information regarding the disposal of the components necessary to make the junctions are indicated in the paragraph "Disposal kit".



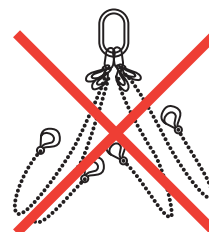
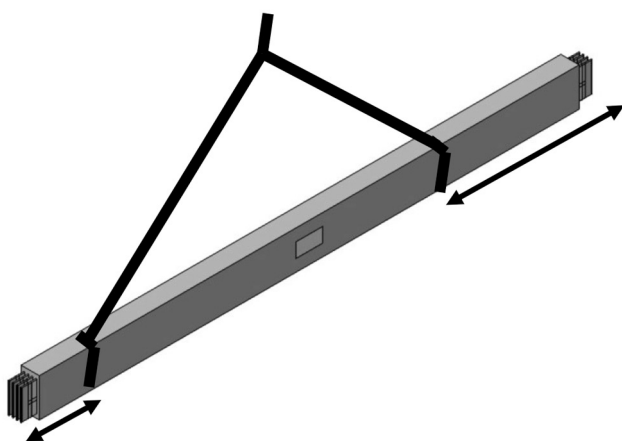
The busbar must not rest on the ground.



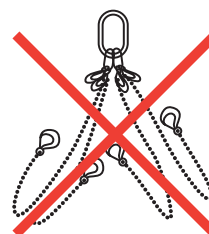
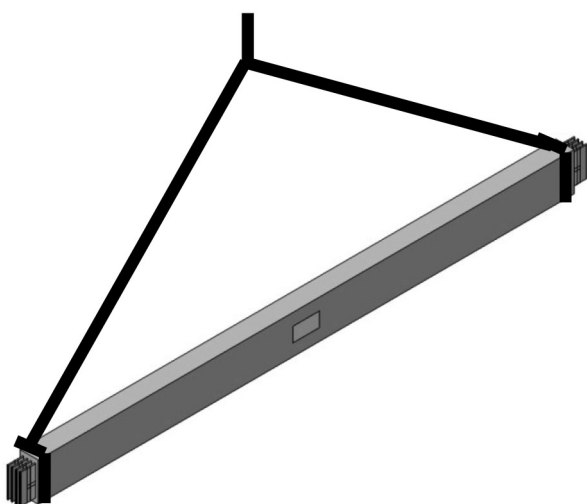
OK : Correct way to lift the busbar, equal distance on each side.



NOT OK : Do not use belts or other system to lift the busbar in unbalanced position.



NOT OK : Do not lift the busbar from their bars.



LOGISTIC PART (continued)

▪ Products reception

Upon receipt of the goods check the following:

- Integrity of the packaging, and the goods, if delivered in a see-through package.
- Consistency of the material with the Delivery Note and the packing list, if supplied.
- Consistency of the material with the order acknowledgement details.

In case of any inconsistency, please inform the supplier in writing following the instructions found in the notifications section.

In addition, please note the Terms and Conditions from your local Legrand subsidiary. These may require us to be advised in addition, within a certain time frame.



RCP busbar, at the time of delivery, that is, before installation and the resin coating of the joints, has a protection rating of IP 00.

▪ Notifications

In case of any disclaim, please forward your official complaint to the supplier that the purchase was made from.

Whenever possible, with each notification, attach photos of the items affected.

When notifying that a wrong item has been received, please indicate the item code no. found on the packaging, and the item code no. found on the part (if possible, include a photo of the labels).

In case of damaged material, attach photos of the affected part and the packaging (if present).

In case of hidden damage (outer packing undamaged, material inside damaged), or if the transport was the responsibility of manufacturer, please contact your supplier immediately so that we may initiate a complaint procedure against the freight forwarder.



We remind you that the maximum limit for a hidden damage complaint is 7 days from the receipt of goods, this may vary depending on your local Legrand subsidiary.

We recommend that upon receiving the goods, the integrity of the packaging is checked with the freight forwarder present.



If you find that the packaging has suffered damage and/or collisions of varying degree, please write "MATERIAL RECEIVED DAMAGED" on the delivery note, to enable us to initiate a complaint procedure against the freight forwarder.

If the freight forwarder stops you from indicating on the delivery note that the goods have been received in damaged condition, or from performing the visual inspection, we suggest that you do not accept the delivery.

This procedure will enable us to immediately initiate the complaint procedure against the freight forwarder, and to quickly replace any damaged material received. If the transport is at your charge, we recommend that you immediately issue a complaint against the freight forwarder.



▪ Storage

Below are the instructions to follow for a correct storage of the materials.



Failure to comply with the indications supplied may cause damage to the materials, and make the product warranties void.

Store the material in a dry place, protected from weather conditions such as rain and humidity, to prevent the formation of condensation inside the busbars.

Also ensure that the busbars are protected from smoke, water, soil, mud, dust, or dirt in general. Position the material in a way that prevents a physical damage to it. We recommend to not store the busbars outside.

It is recommended that the material is stored indoors, in a dry location. In case of storing the busbars outside for short-medium periods i.e. for a minimal time prior to casting joint, ensure that it is appropriately protected, to avoid accidental infiltration of water, which will result in them being damaged.

- The busbars can be transported and stored at a temperature between -25 °C and +55 °C.
- Do not store the cast resin mix in direct sunlight, below 5 °C or above 40 °C.
- Prior to casting, store all the junction kit components at a temperature between 18 °C and 25 °C for at least 24 h.



INSTALLATION INSTRUCTIONS

▪ Preliminary installation instructions

Before the installation, all material should be inspected for damage.

When installing the busbars comply with the following:

- For the installation only use bracketing systems supplied by BTicino or Legrand, and follow the instructions found in the catalogue or enclosed with the item.
- Only use accessories supplied by BTicino or Legrand.
- Check that the element's position coincides with what indicated on the project drawing.
- Check every element with a 1000V Insulation resistance test with a reading $\geq 100 \text{ M}\Omega$ (To ensure an additional level of safety, we use a higher resistance value than the minimum required by the standard, which specifies $1 \text{ M}\Omega$ for a test voltage of 1000 V).
- Check that the system operating current does not exceed the product rated current, downgrading it if required.
- Check if the busbar capacity must be downgraded (for example due to high ambient temperature, presence of harmonics, etc.)
- Check data log for storage room of the junction kit to ensure temperature has been maintained for the required timescales.
- Before using the junction kit checks that the resin is clear and liquid. Do not use the resin if it is milky or crystallized. Check that the filler material/sand is dry.
- The lowest temperature to pour the junction is 5°C , ensure the correct resin kit is being used for the ambient temperature.
- Before starting to pour the junction be sure that all the elements of the line are in the correct position.



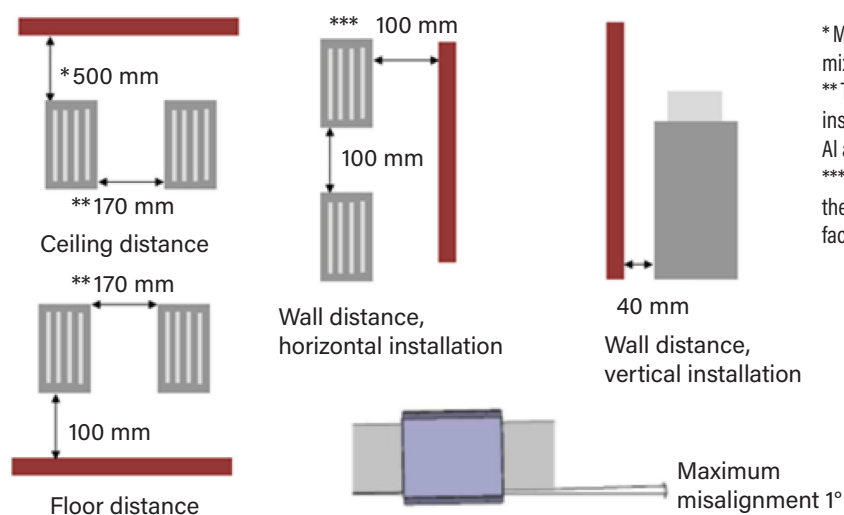
▪ Distances and dimensions



When positioning the elements, pay attention to the distances from the ceiling, wall and floor.
The minimum distances indicated are essential to avoid problems when pouring the resin into the joint.

The above distances apply to all current values of the RCP busbars (from 630 A to 6300 A). Below are the minimum distances.

Minimum distance for path elements

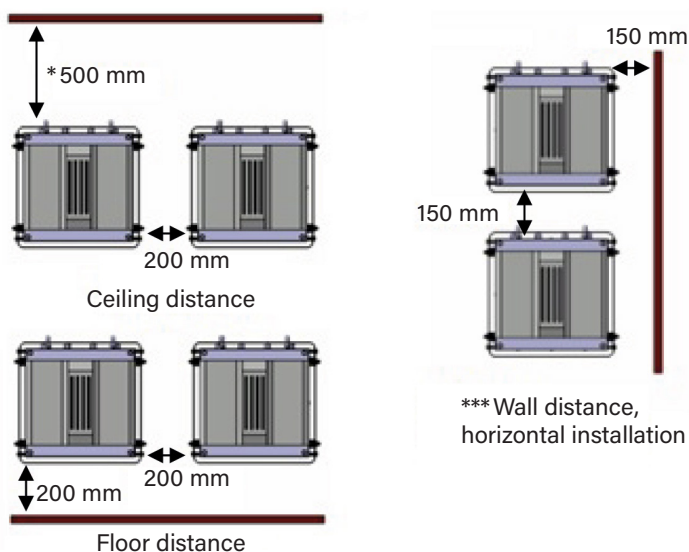


* Minimum recommended distance to be able to pour the resin mixture in the junction.

** This distance can be reduced to 100 mm if the supports are not installed one beside the other and NEVER with the solutions 5000 A Al and 6300 A Cu.

*** It is recommended, in case of installing two elements one above the other, to first mount the lower line and then the upper one to facilitate pouring.

Minimum distance for expansion



* Minimum recommended distance to be able to pour the resin mixture in the junction.

*** It is recommended, in case of installing two elements one above the other, to first mount the lower line and then the upper one to facilitate pouring.



INSTALLATION INSTRUCTIONS (continued)

▪ Underground installation

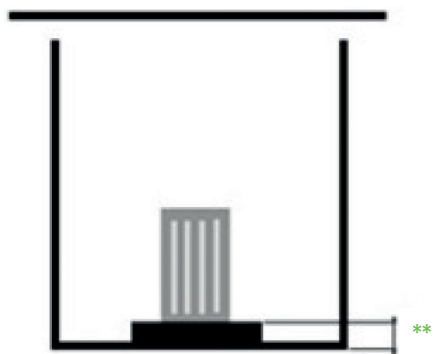
If the busbars are installed underground, it is mandatory to install them inside a duct.

The use of solid supports is recommended to support the busbars along its entire length.

It is necessary to install a top cover if the busbar is to be covered with ground, whereas if the busbar is installed in the underground burrow, the top cover may not be required.

Regarding the distances, it is mandatory to maintain the distances from the side walls and ceiling previously seen.

For ground distances, follow the quotas below:



** : minimum distances for path elements : 100 mm
If there is an expansion element on the path : 200 mm



* Each piece, regardless of its size, must be supported by at least two supports, positioned 100 mm from both ends of the enclosure.



Pay attention to the positioning of the solid supports to prevent them from being positioned near the junctions where the joining castings must then be made.

If the prescribed distances are not respected, the mould of the junction kit can no longer be removed after casting.



▪ Types of supports

The RCP busbar is equipped with brackets for horizontal and vertical installation, made of either stainless steel (INOX) or galvanized steel.

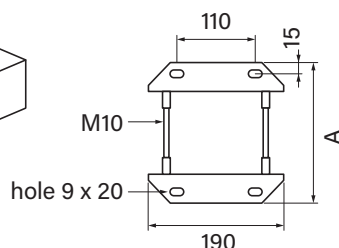
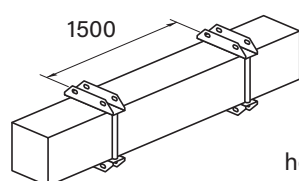
Stainless steel is used for outdoor installations or in aggressive environments where the installation of these busbars is permitted. Galvanized steel is used for indoor installations and in non-aggressive environments.

Horizontal suspension bracket

The brackets enable sturdy installation of the busbar to the system support structures. The recommended installation distance between brackets is 1.5 meters.

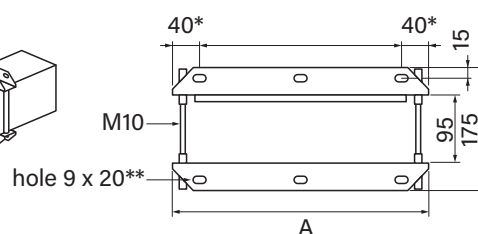
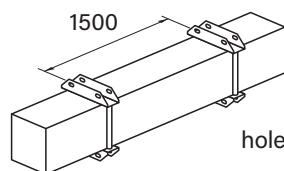
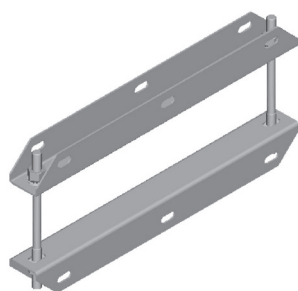
In case there are multiple holes in the bracket for flat installation, always use the slots closest to the busbar.

Edgewise installation



In (A)	A (mm)	
	Al	Cu
630	195	-
800	230	195
1000	230	230
1250	240	230
1600	280	270
2000	325	280
2500	380	320
3200	460	440
4000	550	460
5000	-	540

Flat installation



*100 mm for 1600 A and 2000 A

** hole 9 x 30 mm for 1600 A and 2000 A

In (A)	A (mm)	
	Al	Cu
630	190	-
800	315	190
1000	315	315
1250	315	315
1600	315	315
2000	315	315
2500	370	315
3200	430	430
4000	530	430
5000	-	530

In case there are multiple holes in the bracket for flat installation, always use the slots closest to the busbar.

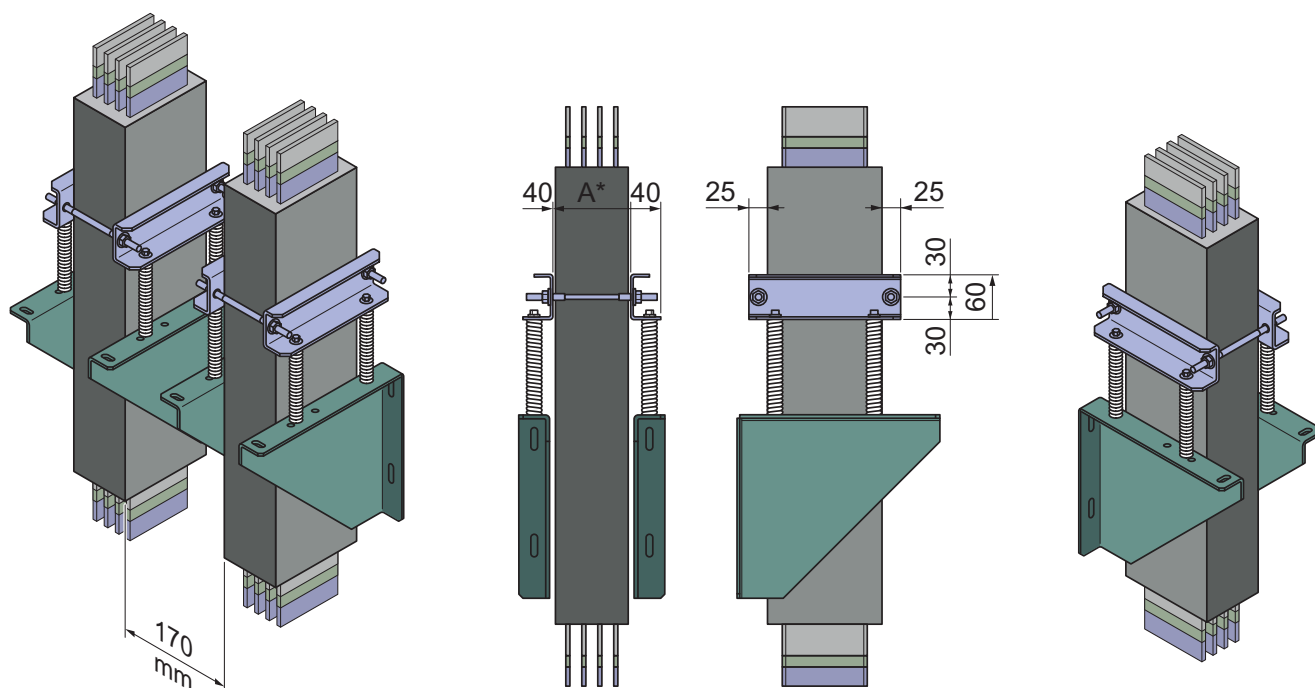
INSTALLATION INSTRUCTIONS (continued)

▪ Types of supports *(continued)*

Vertical suspension bracket

In case of rising mains, thanks to pre-load springs, these brackets absorb the forces pressing on the busbar and direct any expansion in a precise direction.

They therefore operate as a limitation and support the traction and compression forces of the busbar trunking system.

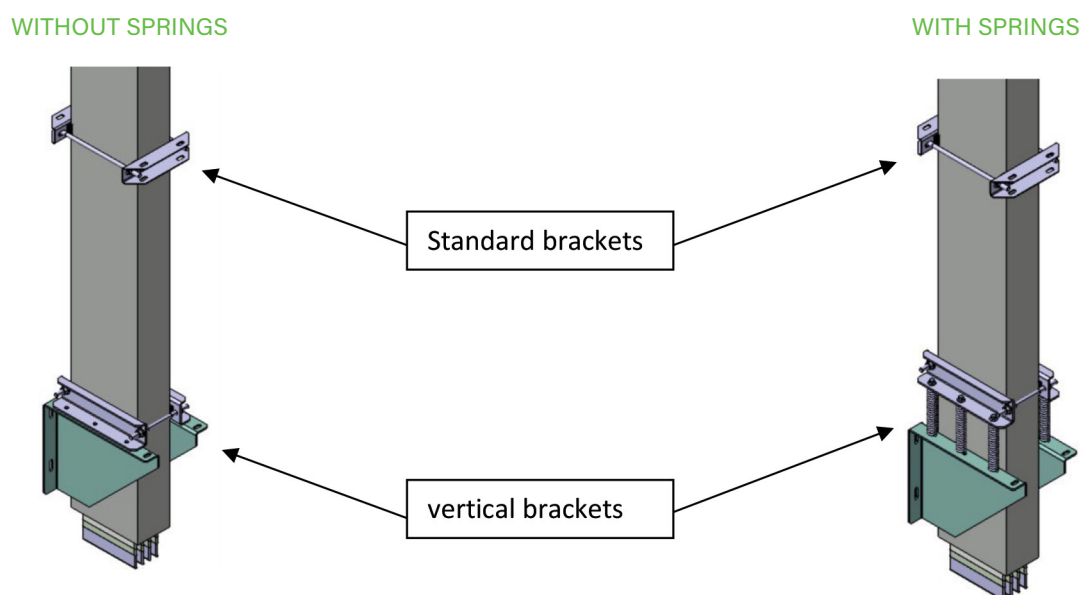


A* : Depending on the quantity of conductors.

B** : Depending on the rating of busbar.



There are two different vertical configurations:



CONFIGURATION 1:

- Use this configuration if the section line is between 2 and 4 meters.
- The vertical bracket must be secured to the wall; the standard bracket must be secured to shelves which can guarantee the load.
- The normal distance between brackets should be 1.5 meters.

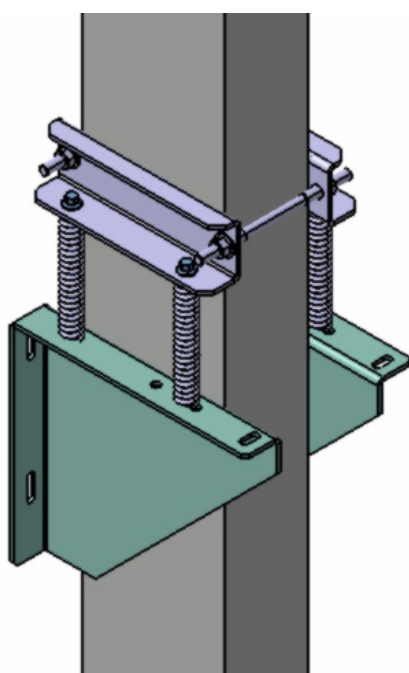
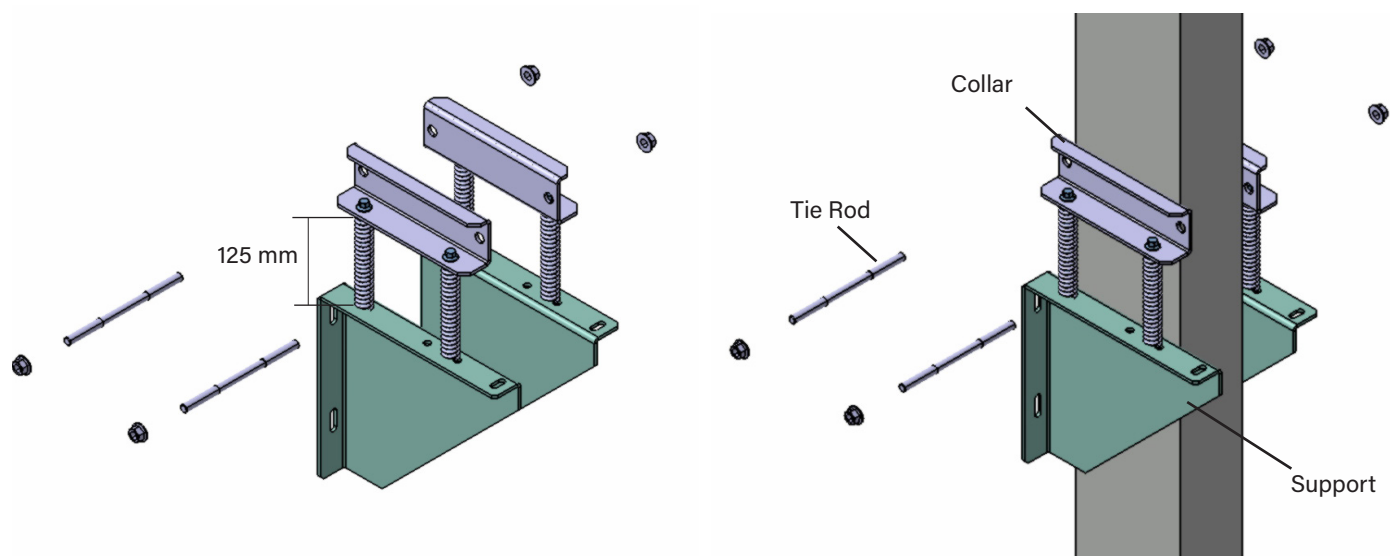
CONFIGURATION 2:

- Use this configuration if the section line is over 4 meters.
- The vertical bracket must be secured to the wall; the standard bracket must be secured to shelves which can guarantee the load.
- The normal distance between brackets should be 1.5 meters.

INSTALLATION INSTRUCTIONS (continued)

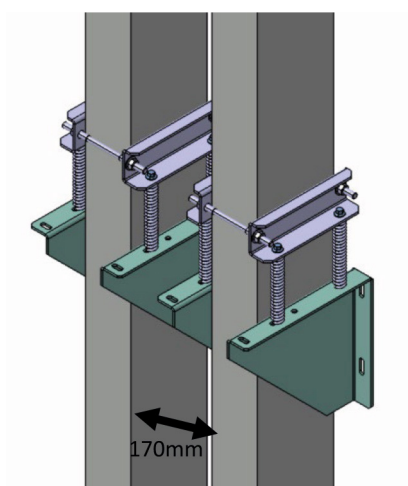
▪ Types of supports *(continued)*

Vertical suspension bracket



The brackets with springs for the vertical solution must be installed as shown in the previous figure and following the indications reported in their instruction sheet. In case vertical brackets without springs are used, it is first necessary to fix the tie rods and the collar to the busbar and then fix the collar to the support. Tighten the nuts to 15 Nm.





For the 5000 A (Al) and 6300 A (Cu) solutions, please take the following indications into account.

The minimum distance between two busbars is 170 mm.

- Vertical solution:

The figure shows how to carry out a vertical installation for the two solutions 5000 A (Al) and 6300 A (Cu).

- Necessary brackets:

RCP 5000 A (Al) = consider 2 brackets of 2500 A (Al).

RCP 6300 A (Cu) = consider 2 brackets of 3200 A (Cu).

RCP IP68 BUSBAR SYSTEMS

INSTALLATION INSTRUCTIONS (continued)

▪ Rules for supports installation

- A support shall never coincide with a junction.
- For easier leveling, always use two supports for each element.
- Always maintain a distance of at least 500 mm between the center of junction and the support on one side of the junction to be able to assemble the junction kit.
- The minimum distances between the installed elements, walls, and ceilings must be taken into account when installing the supports, as shown before (distance and dimension Paragraph).
- Mount all supports on the wall in the corresponding locations before installing the RCP busbar trunking system.
- Mark the anchorage holes on the wall, using the support as a template.
- Use the appropriate fixing bolts for the weight to be supported (see the table below).
- Ensure the support has the correct number of springs (see the table below).
- For the installation of RCP busbars in a horizontal position, there are two different installation instructions depending on the type of element to be bracketed.

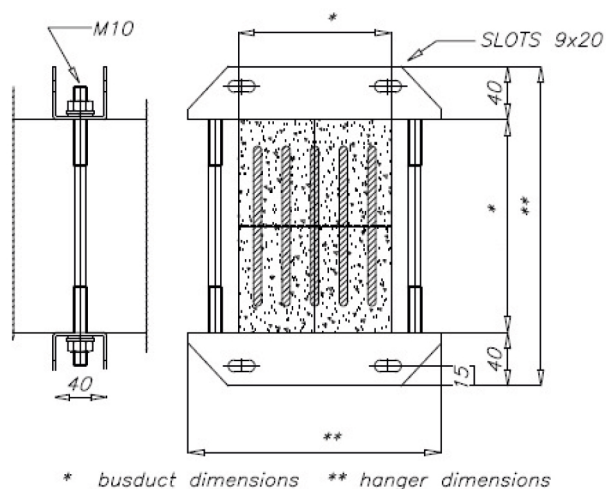
MATERIAL	RATING (A)	QUANTITY OF SPRINGS	MAX LOAD PER BRACKET (kg)
Al	630	4	300
	800	4	300
	1000	4	300
	1250	4	300
	1600	6	300
	2000	8	600
	2500	8	600
	3200	12	600
	4000	12	600
	5000	2 x 8	2 x 600
Cu	800	4	300
	1000	4	300
	1250	4	300
	1600	6	300
	2000	6	300
	2500	8	600
	3200	8	600
	4000	12	600
	5000	12	600
	6300	2 x 8	2 x 600



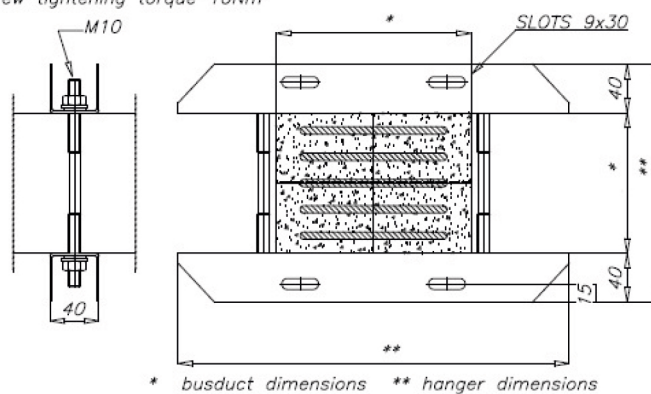
INSTALLATION TYPE A:

It is done on the elements used for direction changes (elbow).

Screw tightening torque 10Nm



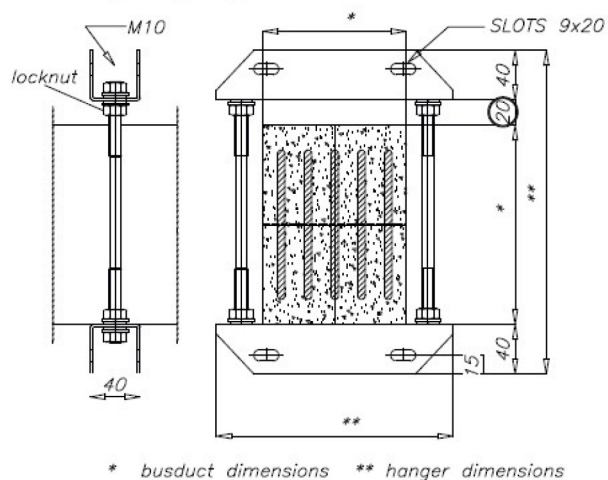
Screw tightening torque 10Nm



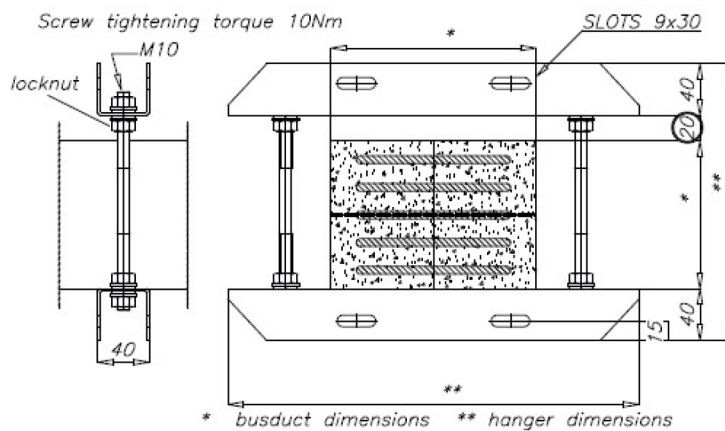
INSTALLATION TYPE B:

It is done on all straight elements.

Screw tightening torque 10Nm



Screw tightening torque 10Nm



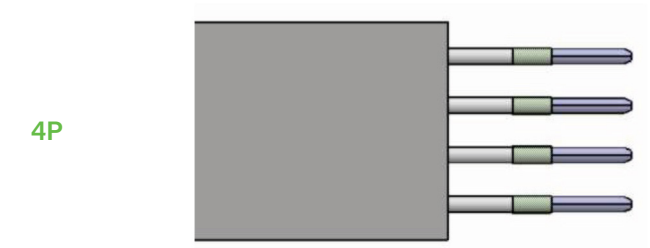
RCP IP68 BUSBAR SYSTEMS

INSTALLATION INSTRUCTIONS (continued)

▪ Rules for supports installation (continued)

Accessories

If you do not use the supports supplied by Bticino to fix the busbar, you must verify the load capacity of your supports. You can use the following technical data:



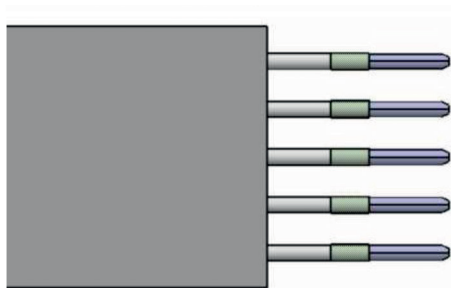
RCP-4 CONDUCTORS-ALUMINIUM*											
SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 2500 A
Rating	(A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Weight	(kg/m)	29.2	35.4	35.4	37.5	46.9	57.6	72.7	91.2	110.3	72.7 x 2

* For more information contact us or check the RCP catalog.

RCP - 4 CONDUCTORS - COPPER*											
SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 3200
Rating	(A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Weight	(kg/m)	41.1	50.4	50.4	65.1	71.4	89	127	141	173.6	127 x 2

* For more information contact us or check the RCP catalog.

5P



RCP - 5 CONDUCTORS - ALUMINIUM*

SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 2500
Rating	(A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Weight	(kg/m)	34.2	41.8	41.8	44.4	55.9	68.6	91.3	115.8	141	91.3 x 2

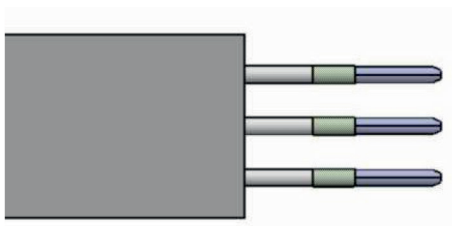
*For more information contact us or check the RCP catalog

RCP - 5 CONDUCTORS - COPPER*

SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 3200
Rating	(A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Weight	(kg/m)	49	60.4	60.4	78.1	86.2	107.6	158.2	177.1	219.4	158.2 x 2

*For more information contact us or check the RCP catalog

3P



RCP - 3 CONDUCTORS - ALUMINIUM*

SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 2500
Rating	(A)	630	800	1000	1250	1600	2000	2500	3200	4000	5000
Weight	(kg/m)	23.1	27.7	27.7	29.1	36.2	44.3	61.7	77.7	94	61.7x2

*For more information contact us or check the RCP catalog

RCP - 3 CONDUCTORS - COPPER*

SINGLE BARS								DOUBLE BARS			DOUBLE BARS 2 x 3200
Rating	(A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Weight	(kg/m)	32.1	39.1	39.1	50.3	54.8	68.1	103.9	115.3	141.8	103.9x2

*For more information contact us or check the RCP catalog



INSTALLATION INSTRUCTIONS (continued)

▪ Junction installation



- Read all the instruction sheet (included with the mould kit) before starting the installation.
- Ensure that all contact surfaces are clean and free of impurities.
- Ensure that the monobloc is exactly central of the two elements to be joined.
- Do not knock or hit the junction block hard when you insert it. Instead, insert it carefully to avoid damaging the elements. A rubber hammer can be used as an aid.
- Before casting, check the insulation resistance using an insulation tester with 1000 V rating. The insulation resistance for each element should be $\geq 100 \text{ M}\Omega$ (to ensure an additional level of safety, we use a higher resistance value than the minimum required by the standard, which specifies $1 \text{ M}\Omega$ for a test voltage of 1000 V).
- Prior to casting, store all the junction kit components at a temperature between 18 °C and 25 °C for at least 24 hours.
- Before casting make sure that the element corresponds to the ones shown in the drawing (check item and reference present on the label).
- Use correct PPE i.e. protective overalls, gloves, glasses, and masks.
- In the event of unintentional spillage, clean with inert absorbent material (sand) and store the contaminated material in an appropriate container before disposal. Please scrap any mixture where there is excessive spillage as the mix ratio may not be sufficient to ensure a good joint.
- Ensure good ventilation of working areas and avoid inhalation of vapor.
- Before mixing resin and hardener be sure resin is clear and without crystallization.
- It is recommended to apply resin at an ambient temperature between 5 °C and 40 °C. The surface temperature of the mould and the busduct does not affect the quality of the resin application.
- It is recommended delay casting if the required ambient temperatures cannot be maintained for a minimum of 6 hours.
- Before starting to pour the junction be sure that all the elements of the line are in the correct position.

Procedure

Before starting, ensure you have all the materials:

- Personal protective (PPE).
- Resin and hardener (ZU-65200002R/ZU-65200003R*).
- Filler mix and bucket (ZU-65200001R).
- Mould kit with release agent.
- Rubber hammer and wrench.
- **Brush.**
- Industrial mixer (rated 750 W or above).
- Screwdriver.
- Clamping tools (only for vertical junction).
- Metallic rasp or grinding stone.



Remember that before resin-coating all the joints of the line, you must perform checks to ensure the correct electrical insulation of the line. Then proceed by leaving one joint uncoated for every four resin-coated joints and complete the process only after verification (as explained in the section on checks during the installation of the line).

- For the preparation of the mixture in an environment with temperatures between 5 °C and 23 °C, you must use the code ZU-65200003R.
- For preparation of the mixture in environment temperature between 18 °C to 40 °C, you must use the code ZU-65200002R.

One junction kit (resin + hardener + filler) could be used for more than one junction, please check the tables below:

RCP 4 CONDUCTORS JUNCTION

Material	Rating (A)	Number of junctions per kit	Material	Rating (A)	Number of junctions per kit
ALUMINIUM	630	2,50	COPPER	800	2,50
	800	2,65		1000	2,65
	1000	2,65		1250	2,65
	1250	2,70		1600	2,20
	1600	2,30		2000	2,30
	2000	1,90		2500	1,90
	2500	1,40		3200	1,15
	3200	1,15		4000	1,15
	4000	1,00		5000	1,00
	5000	0,70		6300	0,55

RCP 3 CONDUCTORS JUNCTION

Material	Rating (A)	Number of junctions per kit	Material	Rating (A)	Number of junctions per kit
ALUMINIUM	630	3,00	COPPER	800	3,00
	800	3,00		1000	3,00
	1000	3,00		1250	3,00
	1250	3,00		1600	2,60
	1600	2,60		2000	2,60
	2000	2,15		2500	2,15
	2500	1,60		3200	1,30
	3200	1,30		4000	1,30
	4000	1,25		5000	1,25
	5000	0,80		6300	0,65

RCP 5 CONDUCTORS JUNCTION

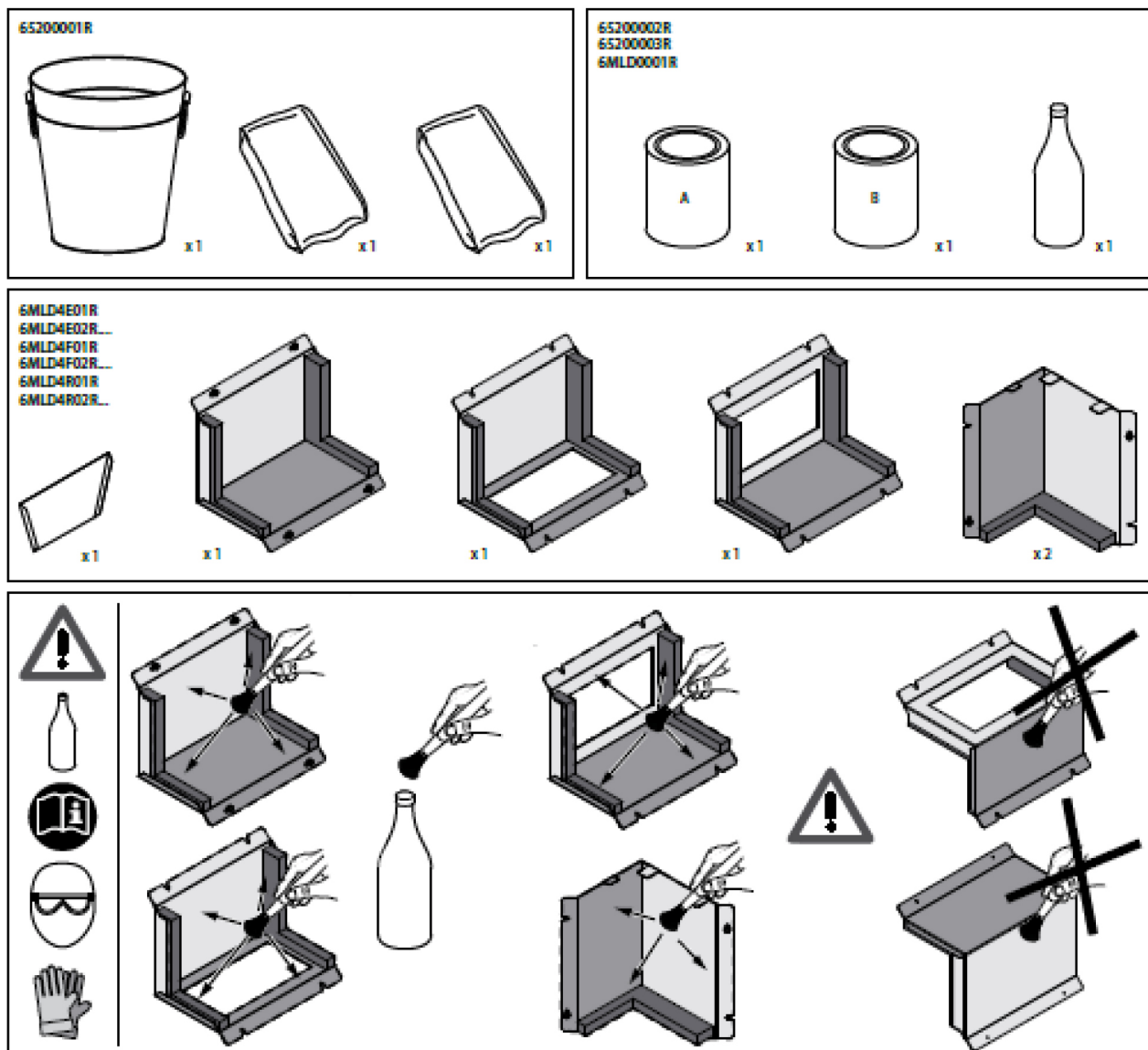
Material	Rating (A)	Number of junctions per kit	Material	Rating (A)	Number of junctions per kit
ALUMINIUM	630	2,40	COPPER	800	2,40
	800	2,50		1000	2,50
	1000	2,50		1250	2,50
	1250	2,60		1600	2,10
	1600	2,30		2000	2,20
	2000	1,85		2500	1,90
	2500	1,40		3200	1,10
	3200	1,10		4000	1,10
	4000	1,10		5000	1,00
	5000	0,70		6300	0,55



INSTALLATION INSTRUCTIONS (continued)

▪ Junction installation (continued)

Make sure that the junction kit and the mould have not been damaged and have been stored correctly. Apply the release agent abundantly with a brush, covering all the internal surfaces of the mould and the rubbers.

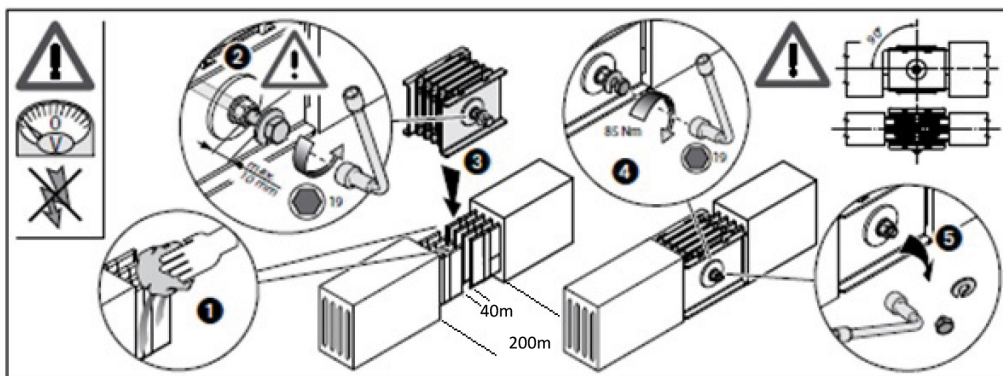


Ensure the correct position of the RCP elements, the distance between bars must be ≈ 40 mm and the distance between the resin of the busducts should be ≈ 200 mm.

Clean the bar's surface ensuring that any moisture has been removed and completely dried out, do not remove the surface treatment (if applied). Take the monobloc and loosen the block screw/s. Fit the monobloc between conductors from above or below. Align it so that it extends equally on all sides. If necessary, gently knock the monobloc into place using a rubber hammer. When the junction block is aligned, tighten the connecting bolts until braking the shearhead nut.

Use a calibrated torque wrench set to 85 Nm to check remaining bolt is at the correct tension.





Dry possible wet parts with hot air at a temperature not higher than 80 °C and remove residues with mild reagents (e.g. trichlorethene) not corroding or creating abrasion on surface treatment (zinc, tin, silver coating) or on contact surface (copper). Check that the conductive elements are perfectly in contact with the internal plates of the monobloc.

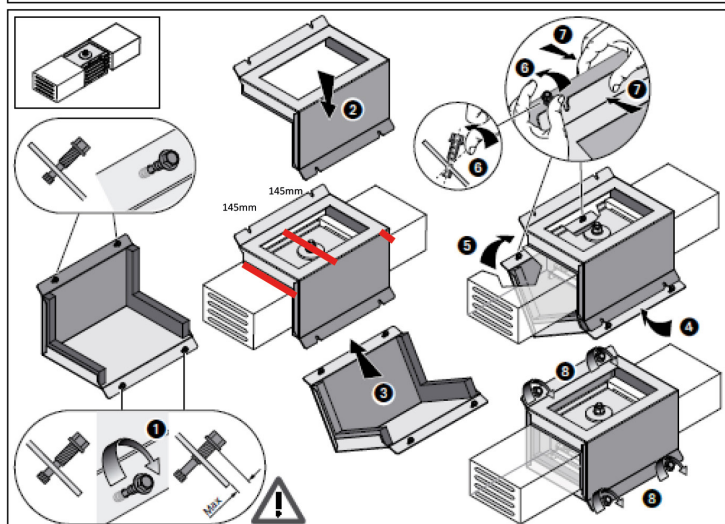
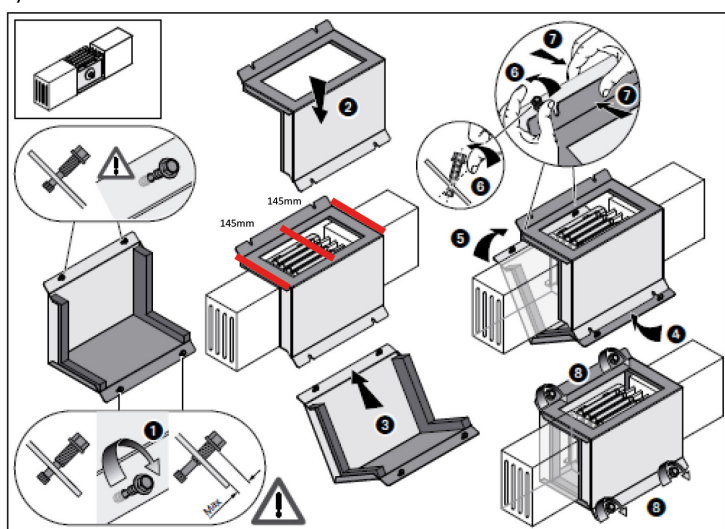
Do not remove screws from mould

There are two parts to the mould kit, place the mould section without the retained screws on top of the busbar near the mechanical junction and place the other section of the mould under the first part.

Hook the lower screws of the formwork and then move the upper screws with the fingers, completely hooking the two parts of the formwork. Finally tighten the four screws to 6 Nm.

Make sure the mould is central of the joint, do not push the mould along the bar without fully loosening the screws as this could mean an off-centre casting.

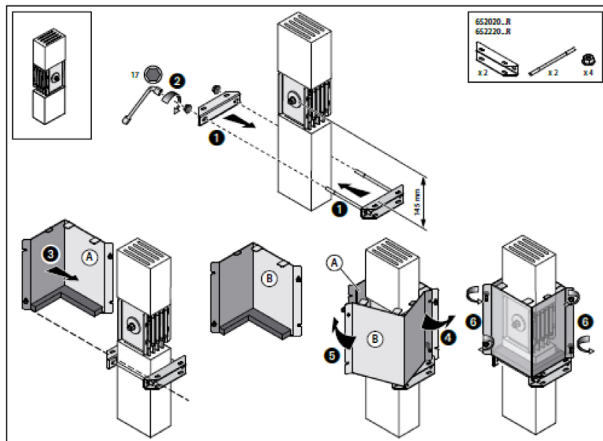
Best practice is to draw a line on the top surface 145 mm from the centre of the joint each way



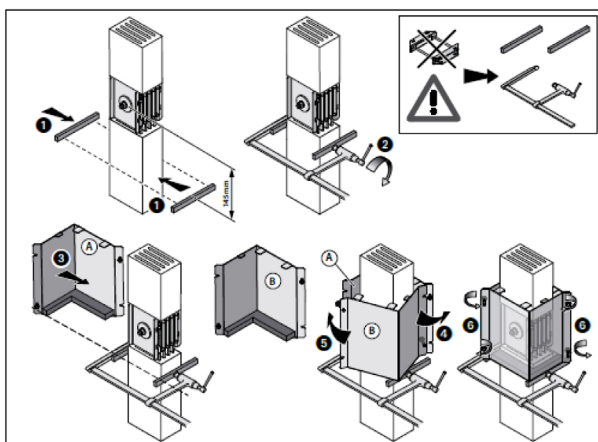
INSTALLATION INSTRUCTIONS (continued)

▪ Junction installation (continued)

In vertical junction use a bracket to keep the mould in the correct position (horizontal suspension bracket - edgewise installation)



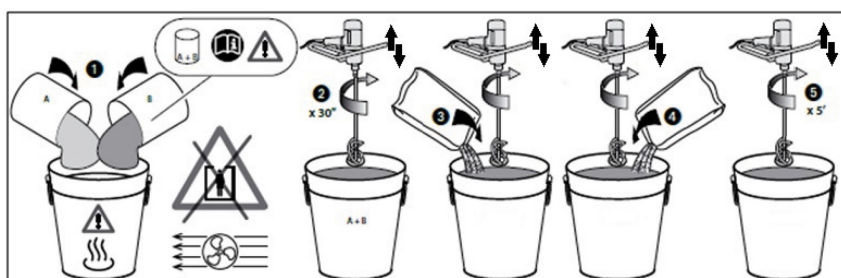
If you do not have a bracket, you can use two blocks of wood and a clamping tool to keep the mould in the correct position (in this case make sure that the blocks do not damage the busbar's surface).



Mix all the components, checking the correct sequences in the following figures.

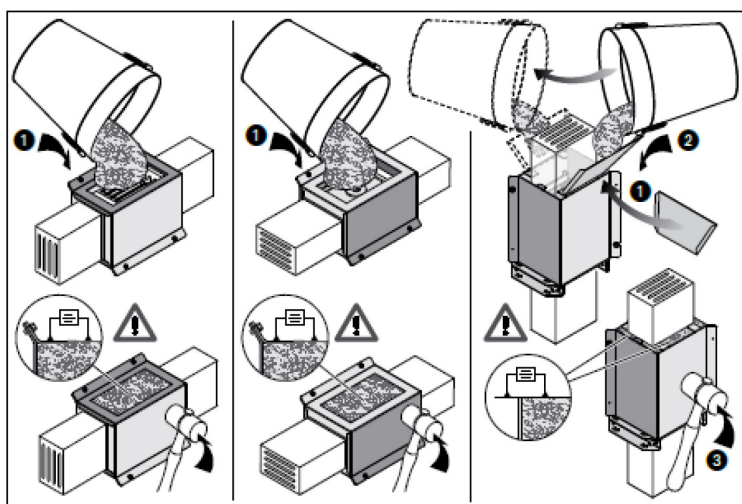
During this operation, use PPE with a degree of protection as indicated on the safety data sheets of the components used. Perform the mixing operation in a ventilated and not confined space.

💡 When the mould has been completely assembled, check that there are no cracks along the sides in contact with the busbars and that the rubber adhere perfectly to them. If there were any spaces present, reposition the mould correctly.

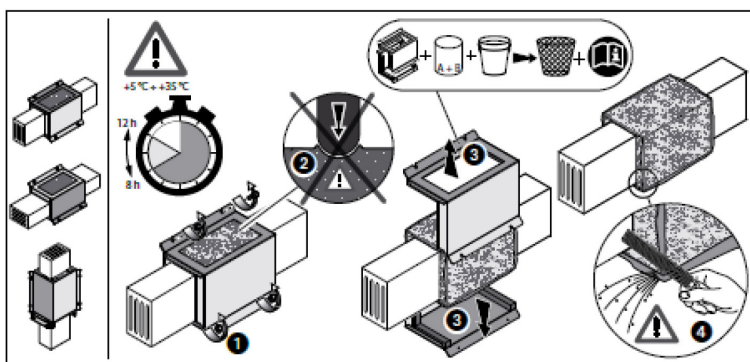


- Heat may be generated during mixing.
During operation 3 and 4 gradually introduce the quartz and mix with the industrial mixer at a suitable speed for at least 5 minutes from when all the components are added, making circular movements and from top to bottom.

Pour the mixture slowly and carefully. Use a rubber hammer to help eliminate air bubbles. Periodically check if the resin has settled but has not reached the correct level (it is visibly below the edge of the mould), in this case pour more resin until it completely fills the mould kit and the resin mixture has settled and is level with the top of the opening.



Wait for the resin to harden (approx. 8 to 12 hours) and check that the visible surface is solidified and that there is no deformation when touched. Gently remove the mould and use a metal rasp to clean the edges.



Kit Disposal

For the disposal of waste produced during the construction of the building and equipment, please refer to the provisions of national / local regulations in force.

For any residues of chemical products and their respective containers, see the relevant safety data sheets.

RCP IP68 BUSBAR SYSTEMS

INSTALLATION INSTRUCTIONS (continued)

▪ Junction IP 68-IP 55

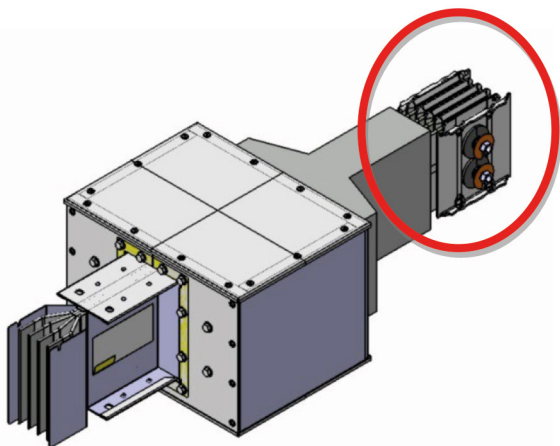
The RCP busbar system is compatible with XCP busbar system.

When you connect RCP with XCP the Ingress protection rating becomes IP 55 at this point.

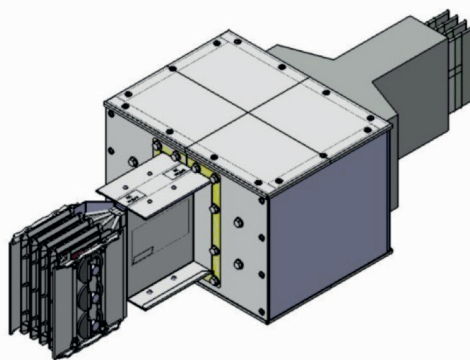
The connection is made with the appropriate RCP-XCP junction (as in the picture): just insert the RCP-XCP junction within the line in the desired section as if it is any element.

There are 4 types of RCP-XCP junction:

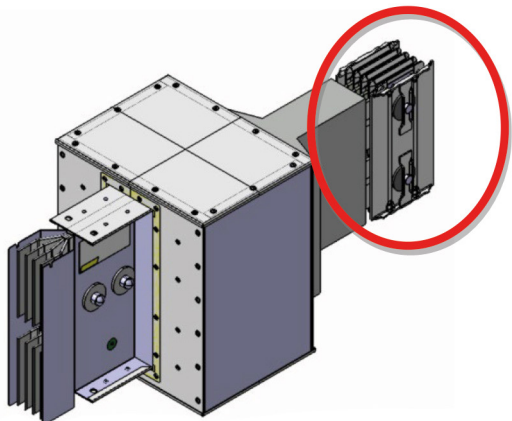
RIGHT JUNCTION WITH SINGLE BAR



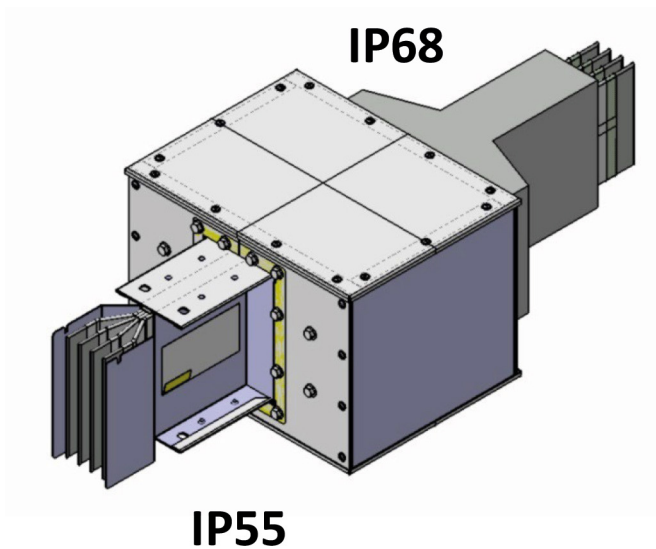
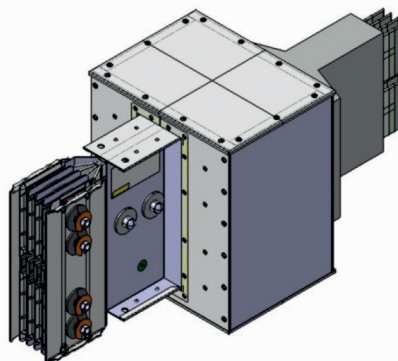
LEFT JUNCTION WITH SINGLE BAR



RIGHT JUNCTION WITH DOUBLE BAR



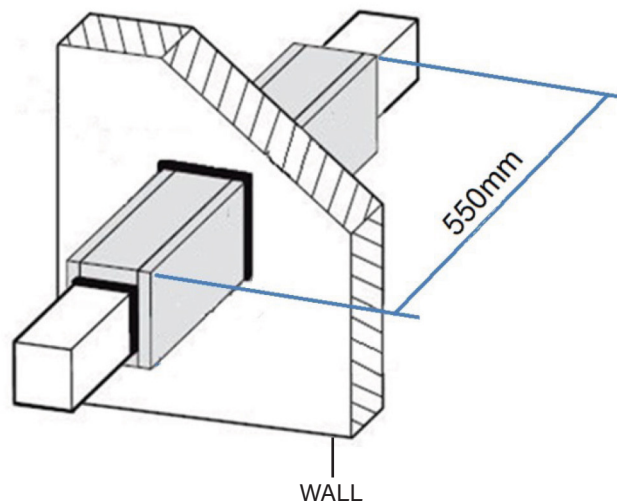
LEFT JUNCTION WITH DOUBLE BAR



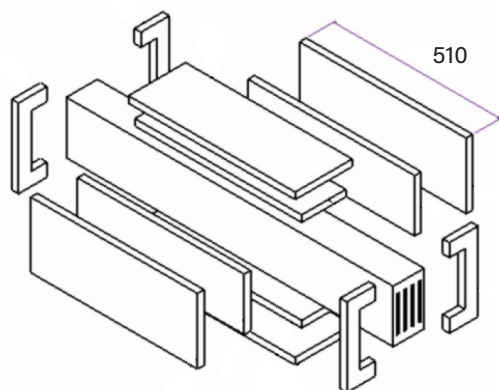
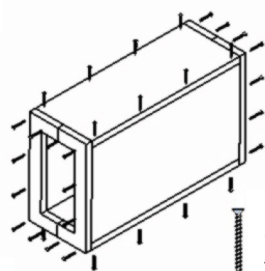
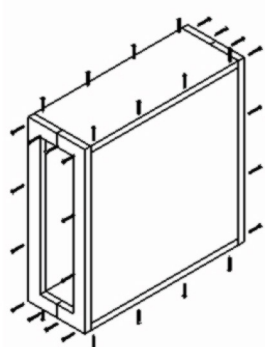
▪ Fire barrier

To ensure the correct fire resistance rating for the wall/floor penetration, use only the products included in the kit.

If any materials are missing or if you have any doubts, please contact Bticino customer service.



Once the barriers are assembled with screws, fill all the joints between panels with the Promaseal paste and then work it with a putty knife to obtain a smooth and homogeneous aspect.



Screw 4.2 x 65 self threading
double principle
for dry walls
x 40

INSTALLATION INSTRUCTIONS (continued)

▪ Expansion elements

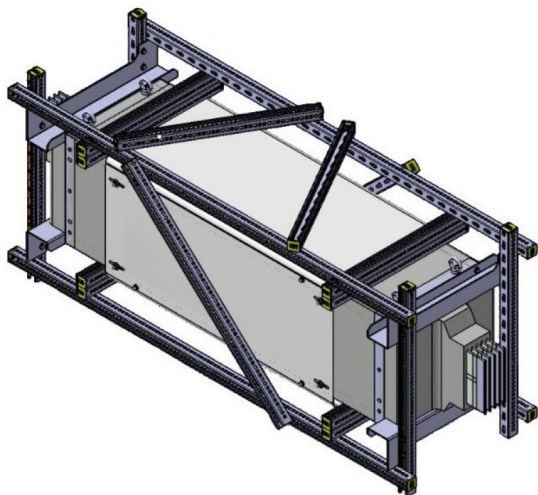
The RCP line features expansion elements for all rates busbar rating and configurations.

The expansion elements can be used to facilitate the thermal expansion of conductors due to the passage of current, the expansion of busbars and as a building movement element decoupling joint for the lines.

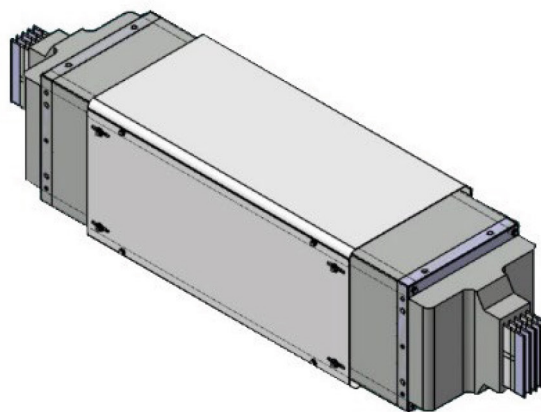
These elements must be installed if the line exceeds a certain length (see catalogue) or if there is a transition between different buildings or structures that have or may have different expansion rates.

The expansion element is shipped with a support structure, Once installed and secured along the line, the structure must be removed to allow the element to function correctly.

EXPANSION ELEMENT WITH SINGLE BAR CONSTRUCTION

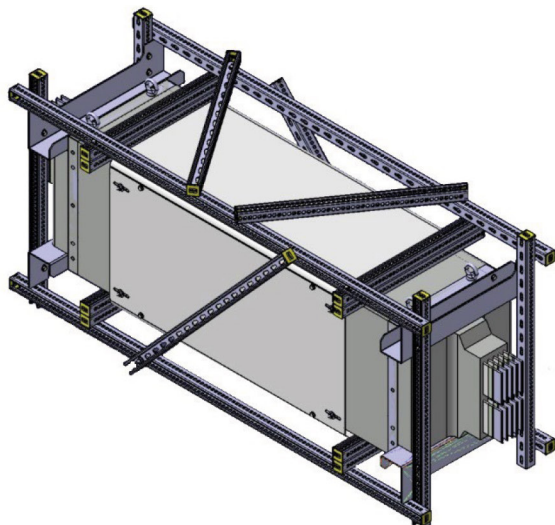


With structure

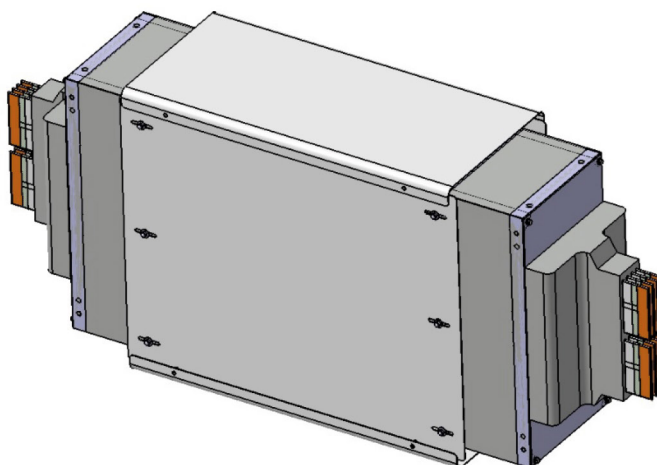


Without structure

EXPANSION ELEMENT WITH DOUBLE BAR CONSTRUCTION



With structure



Without structure



3rd Party connection elements i.e. Transformer/Switchboard connection- IP55

On switchboard connections verify that:

- The air distances between bars with different potentials are over 40 mm wide. If it is not the case, contact Eng. Dept. Zucchini Brand to evaluate the employment of correct insulating material.
- The recommended tightening torques for electrical and mechanical connections are as follows:
 - 25 Nm for M8;
 - 50 Nm for M10;
 - 85 Nm for M12;
 - 100 Nm for M14;
 - 120 Nm for M16.

These inspections must be carried out by personnel with a proper technical background and with controlling function/responsibility in the installation activities.

If the product is installed externally then further weather proof accessories will be required from the 3rd Party equipment supplier to ensure that any external weather conditions are taken into account at the final connection point.



COMMISSIONING TEST AND PERIODIC INSPECTIONS

Checks during the installation of the line

We recommend that a batch of no more than 6 elements are cast at any one point and that at a minimum an insulation test is required every 6 installed elements. This can be done after 5 joints have been cast or once the line is completed but remember to keep one joint disassembled every 6 elements for inspection.

Insulation test performed at 1000V, with minimum value of 100 M Ω (to ensure an additional level of safety, we use a higher resistance value than the minimum required by the standard, which specifies 1 M Ω for a test voltage of 1000V). The insulation test must be carried out between phases, between phases and neutral, and between every single phase for each section of bar.

Thermal test

After operating the line at least at its working current and keeping it running for at least 6 hours, carry out a thermal test. Stick labels on the hottest parts and mark them with progressive numbers to identify the element. Carry out the thermal test again on the labels. Fill the attached form with the measured values, together with ambient temperature and working current.

Thermal tests can be carried out with contact temperature sensors, with optical pyrometers or thermal cameras.

Annual periodic inspections

Verifying the temperature on the casing of the busbar:

The thermal verification must be carried out after running the plant at its working current and keeping it active for at least 6 hours (to achieve a stable thermal regime). Perform the thermal test by taking temperature readings on the labels (to have a fixed verification position).

Below you will find the form to be filled in with the values found during the verification, the working current of the line, the ambient temperature, and the part that was verified. If the temperature measured during the inspection is greater than 15 K ($(T_{\text{measured}} - T_{\text{ambient}}) - (T_{\text{measured commissioning}} - T_{\text{ambient commissioning}}) > 15$) compared to that measured during commissioning (measurements taken in the same position and with the same load), please contact Zucchini customer care. This thermal test can be carried out with contact temperature sensors, optical pyrometers or thermal cameras.

Visual inspection:

Perform a visual inspection of the entire line and verify the absence of cracks and crevices.

Temperature form:

ELEMENT:

PERSON IN CHARGE OF INSPECTION:

COMPANY (if different from installing company):

INSPECTION DATE:

SIGNATURE:



CHECK POINT

[illegible]

I_b = Working current

CHECK POINT

Δt = Measured T - Ambient T
 I_b = Working current

The information in this installation manual offers general descriptions and considers the general technical features of the products discussed, with the object of guiding the user through the installation of the RCP busbar.

Therefore, product reliability for specific user applications cannot rely on this manual alone to ensure suitability or reliability of the busbar.

Please refer to your local Legrand subsidiaries current version of terms & conditions of sale.

Legrand cannot be held responsible for incorrect installation or damage of goods.

Disclaimer – This is to assist in the installation of RCP Busbar. Installers should fully satisfy themselves of their competence to install before commencement of the installation.

Any doubts should be clarified with Legrand prior to installation.

Each user must assess the specific risks and test the product based on their own specific application.

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The publication of any types of hyperlinks to this manual or part thereof is also strictly prohibited.

The user of this manual agrees to use it exactly as it is written, and always at their own risk.

Only the manufacturer has the authority of intervening on individual components for replacement and repair purposes, to ensure the compliance of those described in this document.

The instructions of this manual must always be followed, to ensure correct installation of the components within the system.

Failure to comply with such instructions can cause injury or damage to system components and equipment.



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