Kalzip® FC façade system
Installation manual

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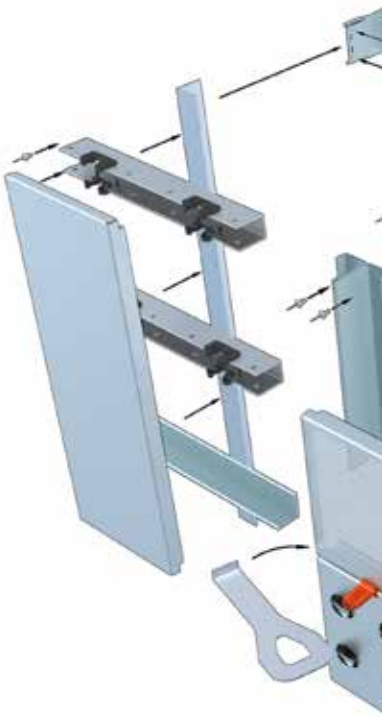
1.0 Introduction

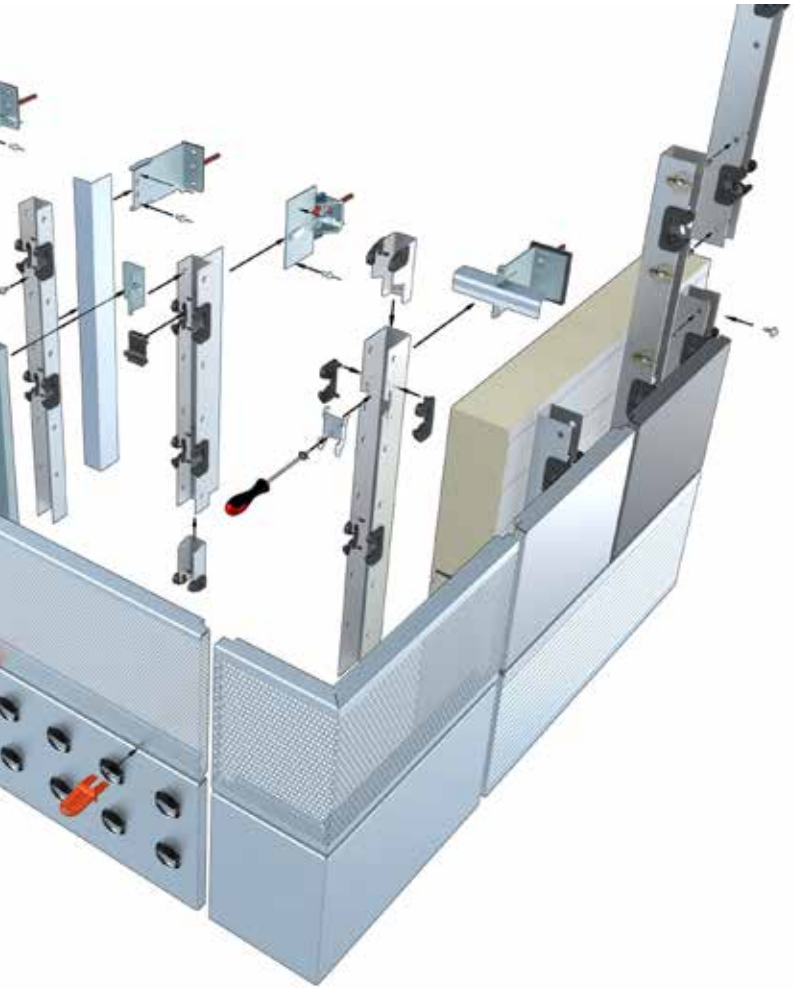


This installation manual specifies the correct methods for installing the Kalzip FC façade system, including support elements, panels and accessories. It should be read together with the technical approval document Zulassung Z-14.1-581 (August 2015). It should also be used in conjunction with all other applicable technical approvals, standards and safe working procedures on the construction site.

Installation of the Kalzip FC façade is carried out using proprietary system support rails fixed to an adjustable subconstruction suitable for rainscreens.The chosen subconstruction should be adjustable to accommodate building tolerances to achieve a plane surface in accordance to ensure the FC Facade system can be installed within the recommended tolerances and specifications as stated in this manual.

The manual contains general information about the FC façade system and its components together with detailed drawings and explanatory text for installation. The renderings and drawings are not to scale and therefore should not be dimensioned. Where appropriate, drawings are labelled with metric dimensions.

Care has been taken to ensure that the information contained within this manual is correct. At the time of publication, the diagrams and descriptions represent our current knowledge of best practice. They are intended as guidelines for standard applications and do not necessarily apply in all situations. Other relevant standards and local building regulations must also be taken into account.



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Due to the dynamic nature of product development and continuous technical improvement, Kalzip reserves the right to make amendments to the installation manual and technical specifications given at any time without prior notice. End-user should therefore check that they have the latest available edition of this manual.

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2.0 System overview

The FC façade from Kalzip is a quick to install, open-jointed, lightweight, flat metal rain-screen system. It provides a cost-effective solution for horizontally and vertically spanning cladding applications for both new build and refurbishment projects.

Fixing-free supports

The FC façade system is supplied with proprietary fixing-free panel supports. The FC panels are inserted and clicked into proprietary modular click rails. In summary the system consists of:

- FC panels with edge returns
- Modular click rails type SE and SEL with adapters for non-standard cover width transition panels
- Additional system components, accessories and installation tools such as the fixed point clamp, guidance snapper, flashing support clip and modular click rail setting out tool

To ensure trouble-free panel installation, it is essential that the modular click rails are accurately installed according to the guidelines in this manual to give a lined and levelled sub-construction for the FC panels. A range of typical adjustable subconstruction options are illustrated which provide solutions for various types of backing wall.

Profile dimensions

The FC panels are available from 250 mm to 800 mm cover width. The nominal profile depth is 30 mm. Panels can be roll-formed from min. 350 mm to max. 8,0 m standard lengths in the gauges given in Table 1.

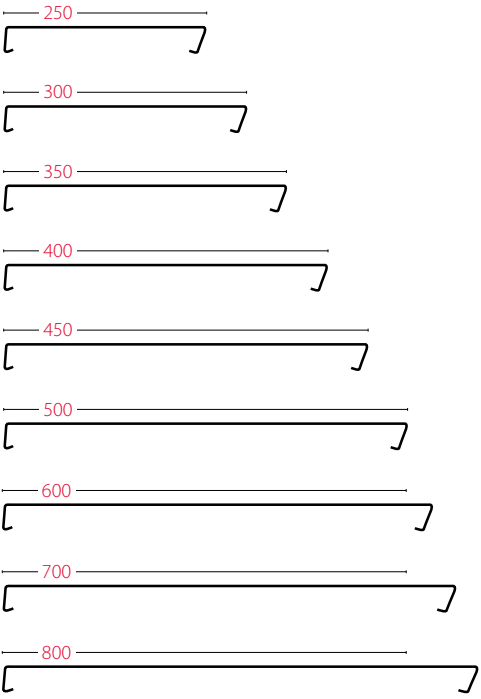
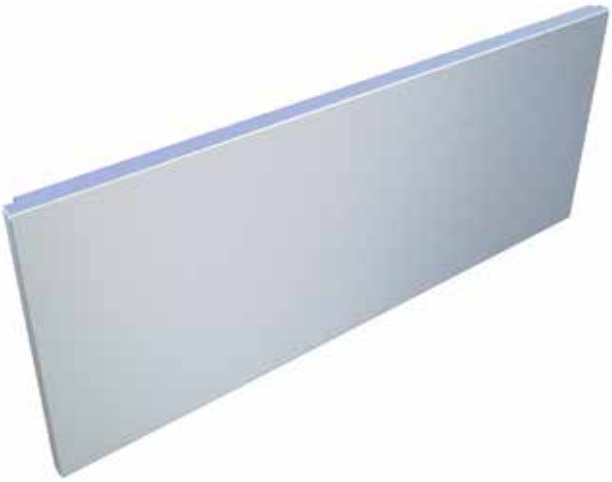


Table 1: FC panel thickness and cover width availability

Thickness (mm)	30/250	30/300	30/350	30/400	30/450	30/500	30/600	30/700	30/800
1.0	●	●	●	●	—	—	—	—	—
1.2	●	●	●	●	●	●	—	—	—
1.47	—	—	—	—	—	—	●	●	●

● Available as standard — Not available



Panel edge returns

Kalzip FC façade panels are supplied as standard with 17 mm edge returns. Panels can be supplied without edge returns on request. Some of the diagrams illustrating panel installation in this manual are shown without edge returns for clarity.

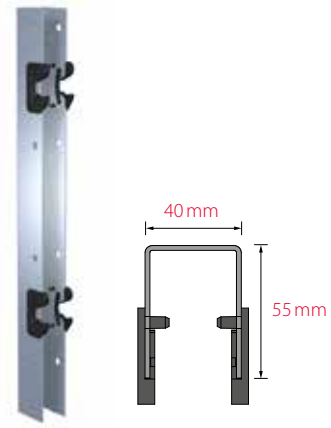
Modular click rails

There are two types of modular click rail available for mounting FC panels (SE and SEL). Extruded from 2 mm thick aluminium and pre-fitted with plastic inlays, they are supplied in standard lengths of 2985 mm and 5935 mm. Both rails are Structurally Effective (SE) with the same mechanical characteristic values and can be used independently as a spanning element.

The spanning capacity must be calculated by the project structural engineer.

Modular click rail SE

The modular click rail SE is a Structurally Effective support rail i.e. it can be used independently as a spanning element. The spanning capacity must be calculated by the project structural engineer. It does not have pre-punched holes for fixing as the fixing position is not necessarily at the panel support positions



Modular click rail SE

Modular click rails (SE, SEL), standard lengths

Type	250	300	350	400	450	500	600	800
Standard length short in mm	2.985	2.985	2.985	2.985	2.985	2.985	2.985	2.985
No of click points	12	10	9	8	7	6	5	4
Standard length long in mm	5.935	5.935	5.935	5.935	5.750	5.935	5.935	5.935
No. of click points	24	20	17	15	13	12	10	8

Note

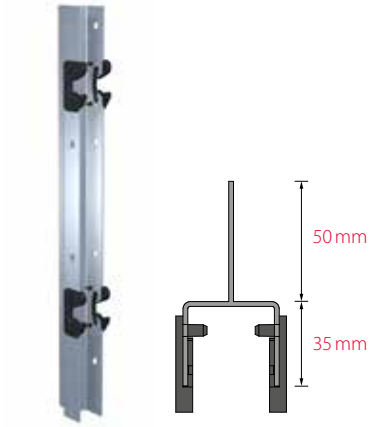
The position of the first inlay on each modular rail is located 95 mm from the bottom of the rail

Modular click rail SEL

This rail has an integrated rear web for ease of installation to standard L-profile helping hand brackets

Plastic inlays

The plastic inlays are supplied pre-fitted to modular click rails. Due to the panel profile geometry the inserts are provided for left and right sides of the rail or bracket. When installed in a horizontal direction the embossed arrow indicates the upward direction. The side of the plastic inlay has a setting out / laser level line to help with alignment of the rails when using a laser level. The setting out / laser level line also corresponds to the centre of the panel gap.

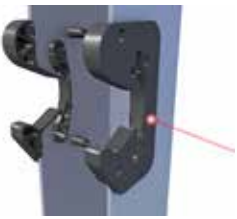


Modular click rail SEL

System depth

System depth modular click rail SEL

System depth with modular click rail SE



Plastic inlays

Click rail adapter SE and SEL

The FC click rail adapter allows non-standard panel cover widths to be accommodated at interfaces such as window heads and cills. See Section 5.7 for detailed installation instructions.

Click rail setting out pins

The setting out pins are used to accurately space adjacent modular click rails. The adjustable pins are inserted into the modular click rail and can accommodate the full range of standard or non-standard panel cover widths. See Section 5.6. for detailed installation instructions.

Fixed-point clamp

Every FC panel must have a fixed point clamp installed at a single position along its length. See Section 6.4 and 6.5 for detailed installation instructions

Guidance snapper

The guidance snapper is designed to ensure a constant joint line between adjacent panels. See section 6.5 for information on use of the guidance snapper with straight panels. The guidance snapper is also used at internal and external corner panels to ensure correct panel alignment. See Section .6.6 for detailed installation instructions on corner panels.

Flashing support clip

The flashing support clips into the modular click rails without the need for additional mechanical fasteners. It ensures that a consistent, level surface is provided to which flashings can either be screwed or riveted. See Section 7 for detailed installation instructions.

Panel removal tools

The two panel removal tools allow easy removal of individual FC panels without the need to demount a complete bay. The panel can either be replaced with a new one or the original panel refitted. This is a key benefit when access is required to the rainscreen cavity for maintenance, cleaning or fixing scaffolding to the backing wall.

See Section 8.0 for further instructions on individual panel removal.

3.0 Transport, storage and handling

Transportation of panels to site

As standard, FC panels are transported by road up to a maximum length of 8 m. The panels are packed in pairs up to a maximum of 25 pairs per row. The table below gives maximum pack sizes for different FC panel cover widths.

Cover width (mm)	No. rows	Max. no sheets
250	4	200
300 – 350	3	150
400 – 500	2	100
600 – 800	1	50

System components and accessories are packed as follows:

Modular click rails

Modular click rails are supplied in standard lengths of approximately 3 m or 6 m on wooden pallets. The maximum pallet size is 1.2 m width x 1.2 m height.

Adapter SE and SEL

Both modular click rail adapters are delivered as standard in boxes of 25.

Fixed point clamp

The fixed point clamp is supplied as standard in boxes of 50 pieces with a 3 mm Allen tool included for locking and un-locking the clamp.

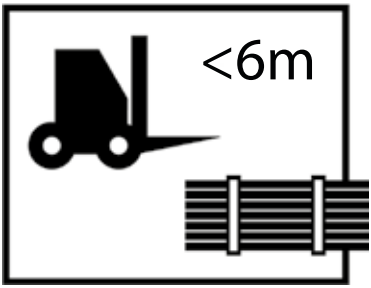
Guidance snapper

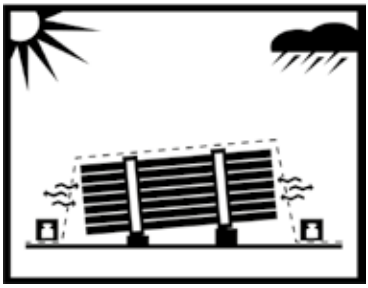
The guidance snapper is supplied as standard in boxes of 50.

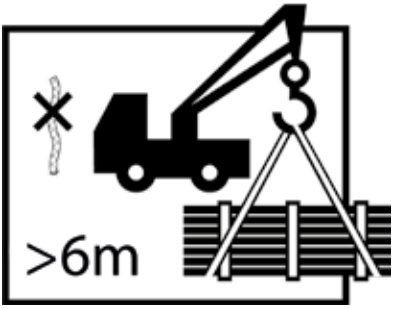
Unloading of panels on site

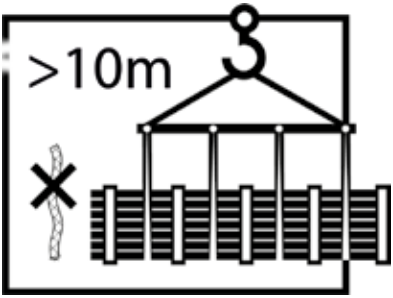
The maximum pack weight for 8 m length sheets is 2.0 t. Make prior arrangements for lifting gear such as cranes, fork lift trucks, spreader beams, sling belts, etc. Protect the edges of pallets if sling belts are used.

Access to the delivery address point must be guaranteed, this applies for all deliveries. Before delivery, the person who has placed the order must check the site and it may also be necessary for the transport agent to check the route. Delivery dates must be agreed with the supplier.









Panel storage

Panels should be stored under cover to prevent accumulation of dirt and condensation. Store at an angle on cross bearers and cover to allow air circulation.

Unpacking panels

Caution

Exercise care when opening packages stored at an angle. There is a risk of panels sliding sideways and/or in the direction of slope. When removing packaging from the panels with a blade, take care not to scratch the painted surface of the panels.

To reduce the risk of damaging FC panels, ropes should not be used. Slings with a minimum 150 mm width are recommended.

Panel protective film

FC panels are supplied with a protective polyethylene film. The film can be temporarily kept on the panels during installation to protect them from contamination from other works, provided that before installation, the film is peeled back from the edge fold area. This is to ensure that the rest of the film can be removed from the remainder of the panel. In any case the film should be removed from panels in opened packages within fourteen days.

Checking incoming materials

Obtain confirmation of any material and packaging deficiencies from the forwarder and notify the supplier immediately.

Check that the number of packages and their contents agree with the delivery documents. Inform the supplier immediately of any discrepancies in dimensions or quantities etc. Any damage occurring during transport must be reported before installation. Claims for damaged goods will not be accepted after installation. All claims must be made within one week of arrival on the building site.

Panel handling

Suitable protective gloves should always be worn when handling FC panels. When carrying individual panels on-site, make sure to keep them in an upright position.

Before commencing with installation of the FC façade system, this chapter should be read in its entirety. It contains two sections giving key information on sub-construction tolerances and panel support requirements which apply to all sub-construction variations and panel cover widths.

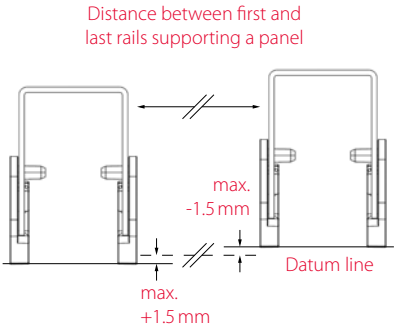
4.1 Sub-construction alignment

Installation of the Kalzip FC façade is achieved in combination with a suitable sub-construction system (see section 5.0). The sub-construction system must be capable of accommodating building tolerances to ensure that the supporting elements are lined and levelled to suit the tolerances given in this section. These requirements are divided into a number of specific criteria, all of which must be met.

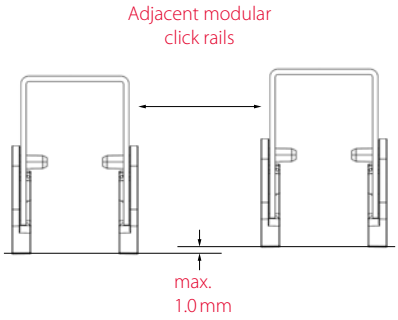
Face alignment

Three conditions for the face alignment of modular click rails must be satisfied.

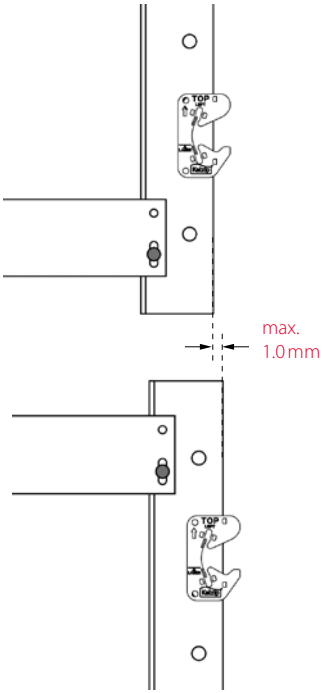
1. Over the complete length of an FC panel, no modular click rail must be positioned more than 1.5 mm from the datum line.



2. Horizontally adjacent modular click rails must be aligned within 1.0 mm of each other (independent of the distance between them).

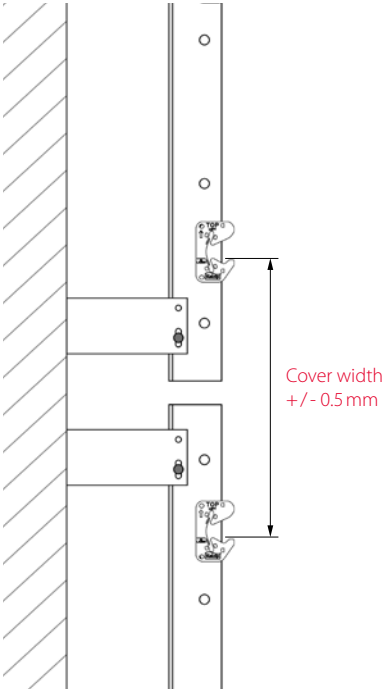


3. Vertically adjacent modular click rails must be aligned within 1.0 mm of each other.



Panel cover width

The distance between panel locking points in vertically adjacent modular click rails must be within + / - 0.5 mm of the nominal panel cover width. See section 5.6 for information on using the modular click rail setting out tool.



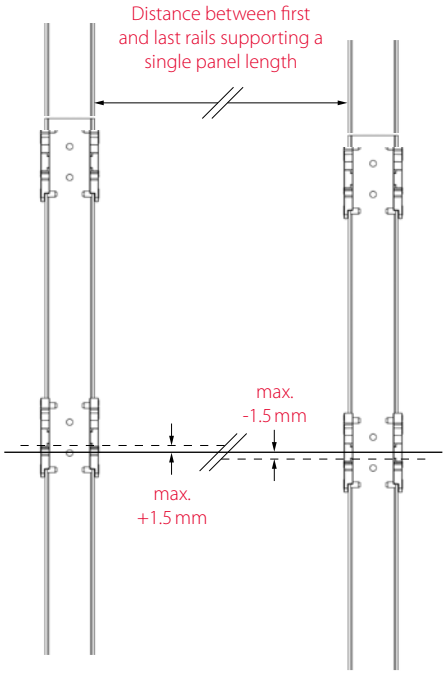
Height alignment

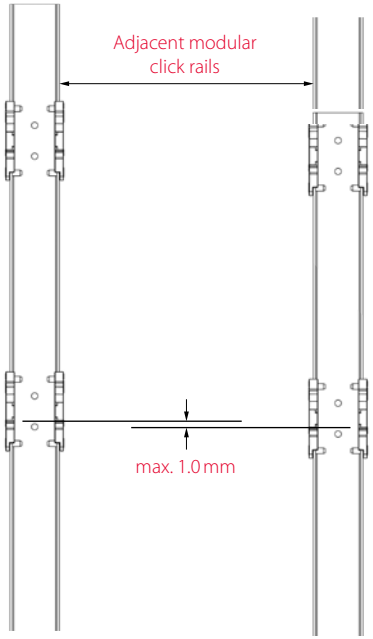
Note

Do not use the top or bottom of the modular click rails as a reference point to make measurements – always use the setting out / laser level lin on the plastic inserts to check the height alignment.

Over a complete FC panel length, the maximum deviation from the datum line must not exceed 1.5 mm.

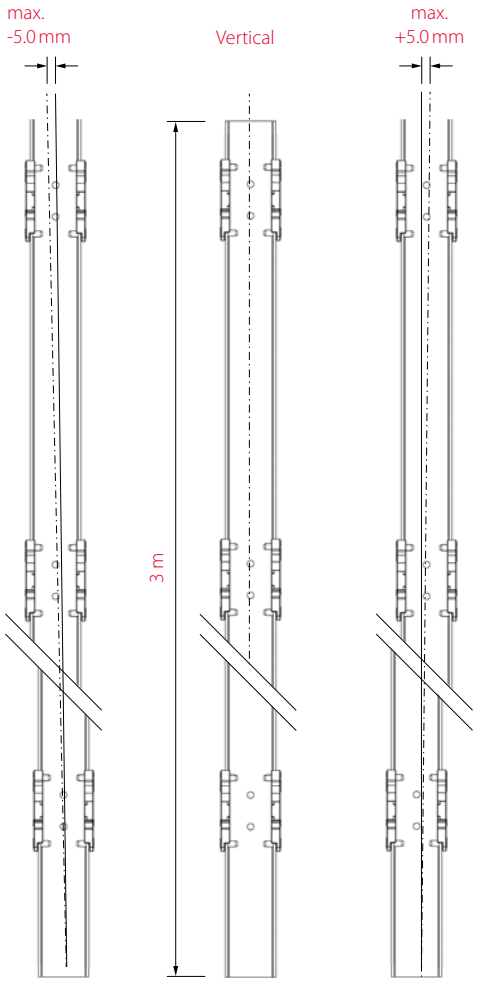
Between adjacent modular click rails, the difference in height position must not exceed 1 mm (independent of rail spacing).





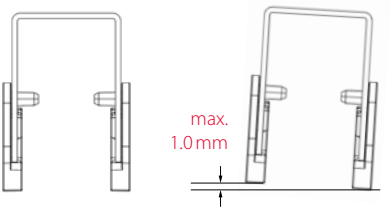
Vertical alignment

Over a 3 m length, the alignment of modular click rails must be within + / - 5 mm of the vertical.



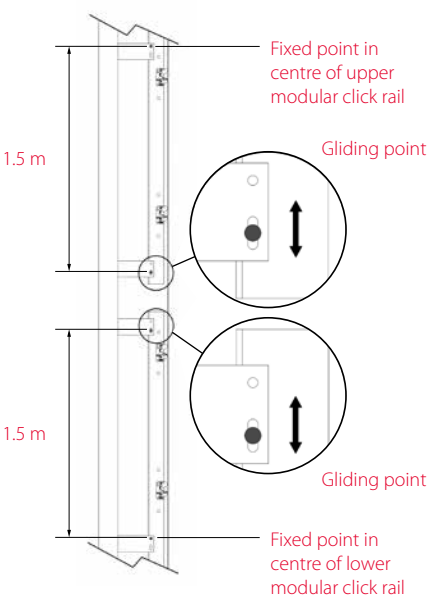
Rotational alignment

The modular click rails must be aligned to within the tolerance shown below.



Modular click rail expansion joint

To allow for thermal movement, the modular click rails should be ideally a maximum of 3 m in length, preferably with the fixed point at the top of each modular click rail. It is also possible to position the fixed point in the centre of the modular click rail as shown in the example below.



To make the sliding point effective, a spacer pad must be used with the rivet gun to ensure the rail is free to expand and contract.

An alternative way of ensuring movement is to use bulbtite rivets with a grip range greater than the thickness of the two clamped materials for the sliding point and use a suitable screw fastener for the fixed point.

4.2 Panel support requirements for horizontally spanning applications

This section gives an overview of general panel support requirements for horizontal applications. Section 6.3 gives further information on vertical panel joints.

Panel overhangs

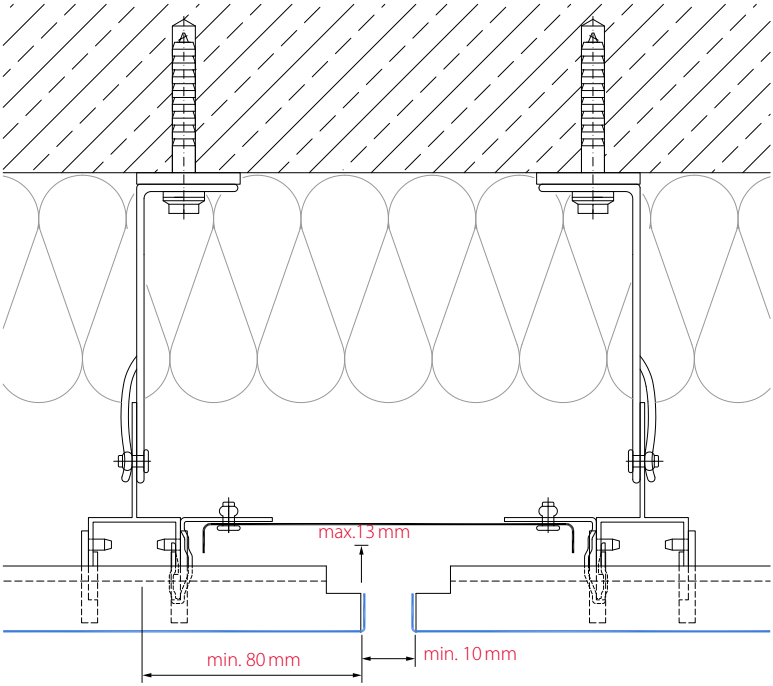
To ensure sufficient room for the installation of flashings (either directly on the sub-construction or using the proprietary flashing support) the minimum distance between the centre of the panel support point and the edge of the panel is 80 mm. The maximum allowable panel overhang is 20 % of the panel span unless detailed calculation is used to determine otherwise.

Minimum joint width

All vertical panel joints must be a minimum of 10 mm width. This is to ensure there is sufficient space for the panels to expand and contract. For panels longer than 10 m, 1 mm per linear metre gap should be allowed.

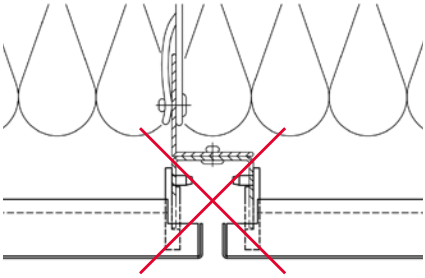
Flashing holder

To allow for installation of panels, the maximum overall depth of joint closer flashings is 13 mm. (See image below)



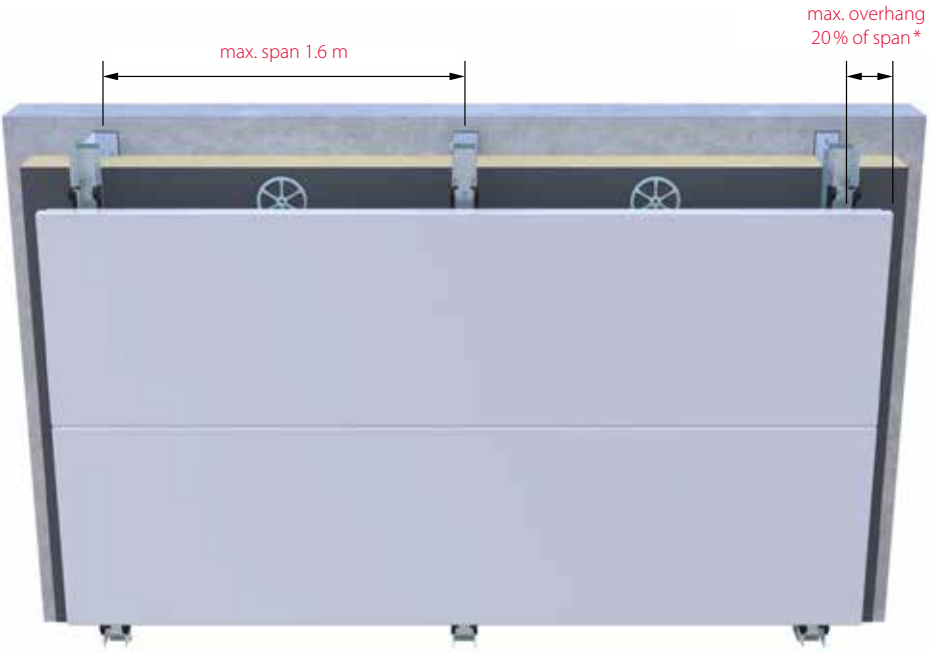
Stop

A single modular click rail must never be used to support two FC panels.



Maximum panel span

The maximum panel span (distance between adjacent panel supports) is limited to 1.60 m independent of structural performance.



* unless detailed calculation is used to determine otherwise.

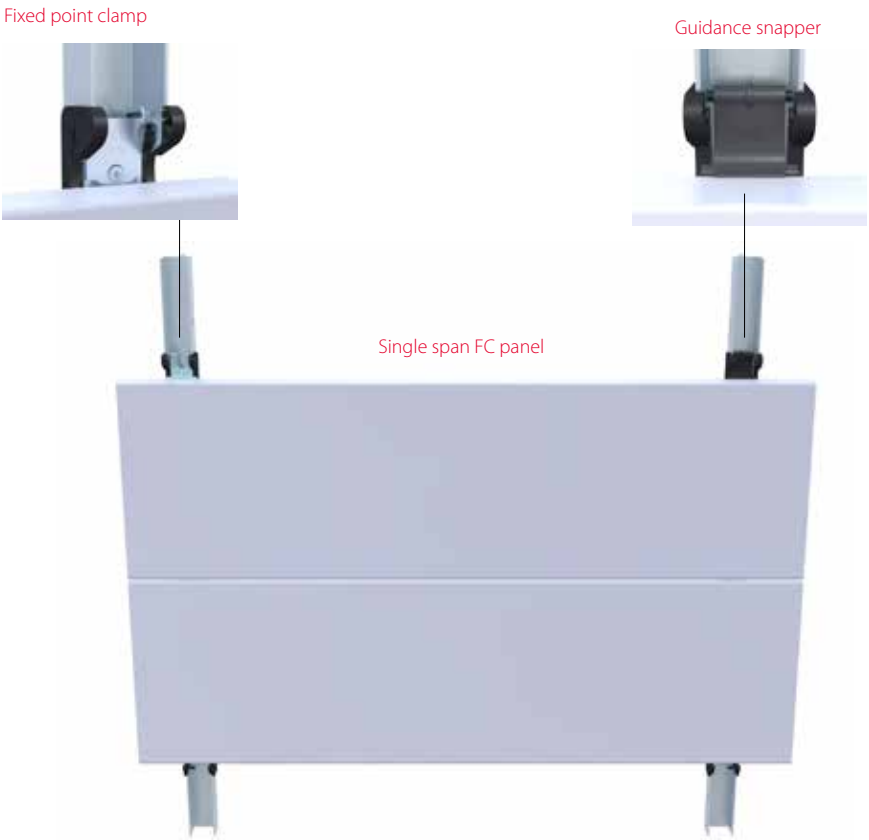
Straight panels

Every standard FC panel requires a single fixed point clamp. For single-span panels, a guidance snapper is required at the opposite end of the panel.

The fixed point allows for the control of thermal movement of the panel. The guidance snapper provides a positive panel engagement and thereby ensures a consistant horizontal panel-to-panel joint line.

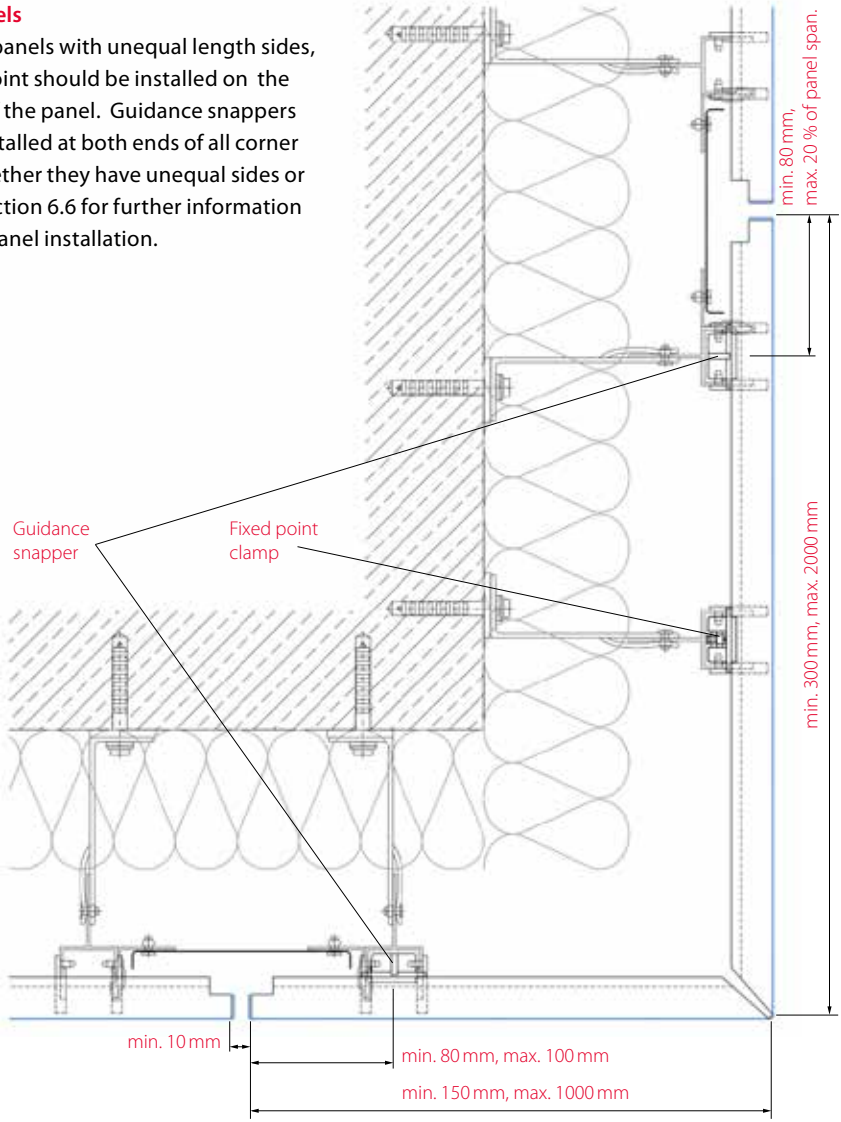
Multi-span panels

For multiple-span panels a guidance snapper is not required unless the application is for ceilings or soffits.



Corner panels

For corner panels with unequal length sides, the fixed point should be installed on the long side of the panel. Guidance snappers must be installed at both ends of all corner panels, whether they have unequal sides or not. See Section 6.6 for further information on corner panel installation.



5.0 Wall constructions

The Kalzip FC façade system must be installed on a line and levelled sub-construction for the installation of the FC Facade panels. This is required to ensure a lined and levelled surface for supporting elements. It also provides a cavity for wall insulation and an air gap for drainage and ventilation. This chapter gives an overview of different panel installations on a range of backing wall. The type numbering follows the same sequence as the 2D and 3D construction details.

5.1 Modular click rail SEL on L-brackets

5.1.1. FC horizontally spanning

5.1.2 FC vertically spanning

5.2 Modular click rail SE on cladding rails

5.2.1. FC horizontally spanning

5.2.2 FC vertically spanning

5.3 Modular click rail SE on U-brackets

5.3.1 FC horizontally spanning

5.4 Modular click rail SE / SEL on structural cassette

5.4.1 FC horizontally spanning

5.5 Modular click rail SE on sandwich carrier (Hybrid)

5.5.1. FC horizontally spanning

5.5.2 FC vertically spanning

5.1 Modular click rail SEL on L-brackets

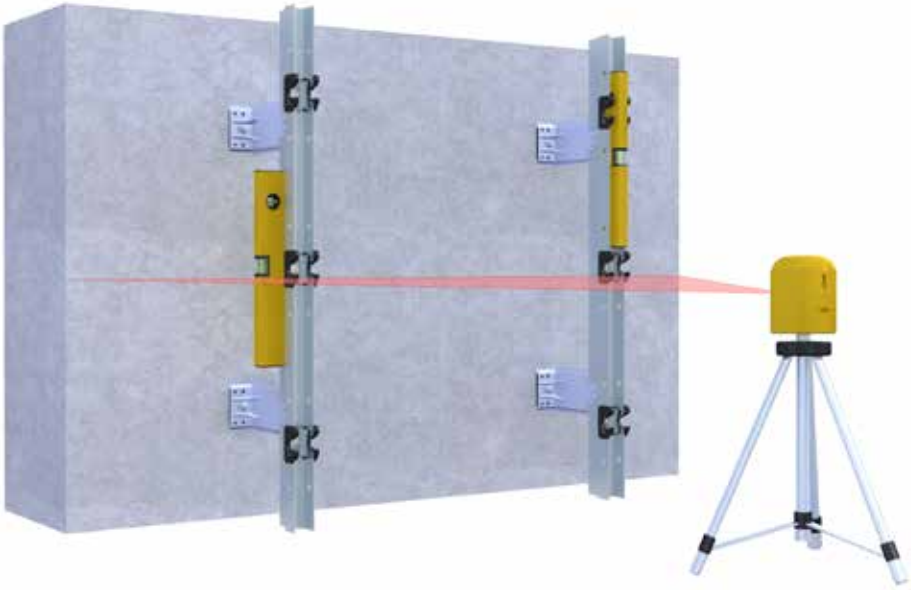
5.1.1 FC facade horizontally spanning

The modular click rail SEL is a structurally-effective vertical support rail compatible which can be fixed directly to standard helping hand brackets. Alignment of this type of sub-construction variation, using only two components is carried out it a single step.

Installation procedure

Install the SEL modular click rail onto standard helping hand brackets. Using this system, the complete alignment of the sub-construction must be carried out accurately in a single step.

Adjust the rails to suit the installation tolerances for the FC facade system as noted in Section 4.1. Check the distances A, B and C are correct according to the project drawings.



Fixed point
The number of rivets or screws required to make a fixed point mus be installed according to the project structural design calculations and drawings.

Sliding point
Rivets or screws (according to structural requirements) fixed in slotted holes.

Note

The arrangement of fixed points and sliding points must ensure adequate accommodation of thermal movement.

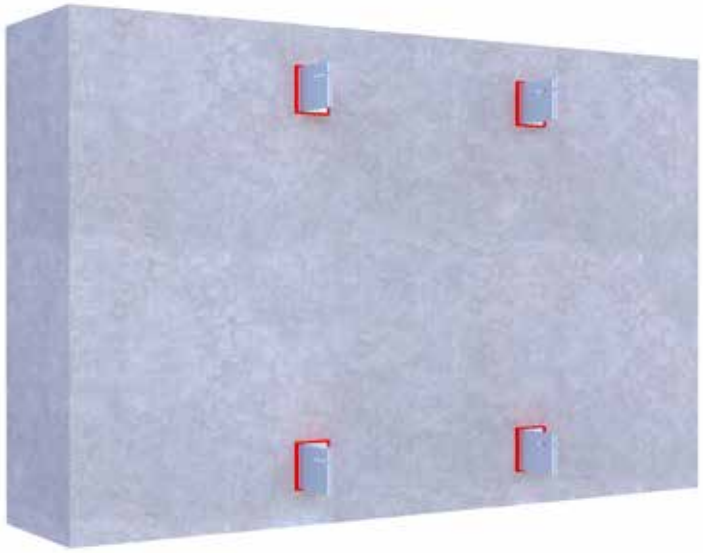
5.1.2 FC facade vertically spanning

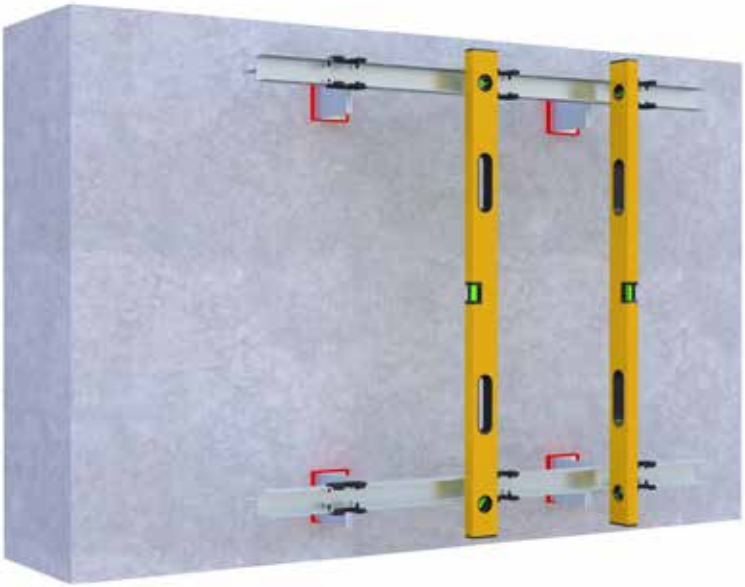
The modular click rail SEL is a structurally effective vertical support rail which can be fixed directly to standard helping hand bracket. Alignment of this sub-construction variation, using only two components is carried out it a single step.

Installation procedure

Install the SEL modular click rail onto standard helping hand brackets. Using this system, the complete alignment of the sub-construction must be carried out accurately in a single step.

Adjust the rails to suit the installation tolerances for the FC facade system as noted in Section 4.1.





Note

The arrangement of fixed points and sliding points must ensure adequate accommodation of thermal movement.

5.2 Modular click rail SE on cladding rails

5.2.1 FC horizontally spanning

Using horizontal rails fixed to adjustable wall brackets simplifies the installation procedure by splitting the alignment of the modular click rails into two steps – alignment in the plane of the backing wall followed by height and vertical alignment.

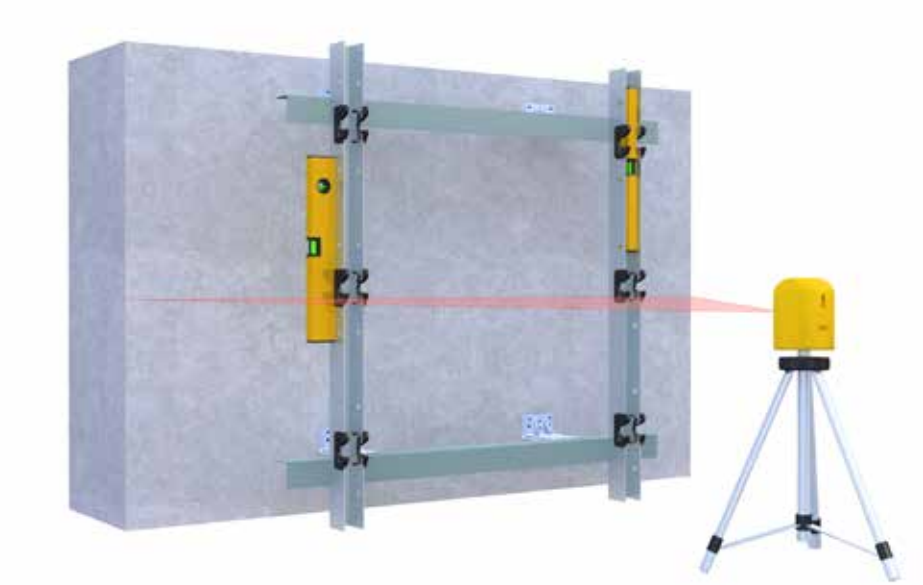
Installation procedure

Install the horizontal rails onto standard adjustable helping hand brackets. Adjust the inplane alignment of the horizontal rails to the tolerances specified in Section 4.1.

Check the distances of the helping hand brackets and the rails as well as the number of fixings to be used according to the project structural design calculations and drawings. Suitable accommodation of horizontal thermal movement of support rails should be ensured.

The modular click rail SE should be fixed to the horizontal cladding rails with the appropriate number of self drilling/tapping screws or rivets, taking account of thermal movement.

Always use the laser marking on the side of the plastic insert as the height reference. Adjust the vertical alignment of the modular click rail SE to the tolerances specified in section 4.1.



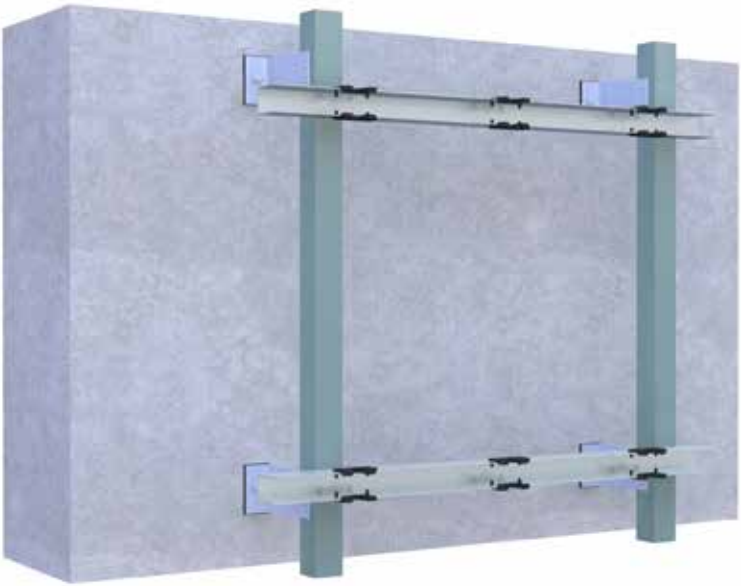
5.2.2 FC facade horizontally spanning

Using horizontal rails fixed to adjustable helping hand brackets simplifies the installation procedure by splitting the alignment of the modular click rails into two steps – alignment in the plane of the backing wall followed by height and vertical alignment.

Installation procedure

Install the vertical cladding rails onto standard adjustable helping hand brackets. Adjust the inplane alignment of the vertical cladding rails to the tolerances specified in Section 4.1.

Check the distances A, B and C are correct according to the project drawings. Accommodation of horizontal thermal movement of support rails should be carried out according to one of the methods described in Section 5.0.



The modular click rail SE can be fixed to the horizontal rails with self drilling/tapping screws or with rivets.

Always use the setting out / laser line on the side of the plastic insert as the height reference. Adjust the vertical alignment of the modular click rail SE to the tolerances specified in section 4.1.

Note

The arrangement of fixed points and sliding points must ensure adequate accommodation of thermal movement.

5.3 Modular click rail SE on U-bracket

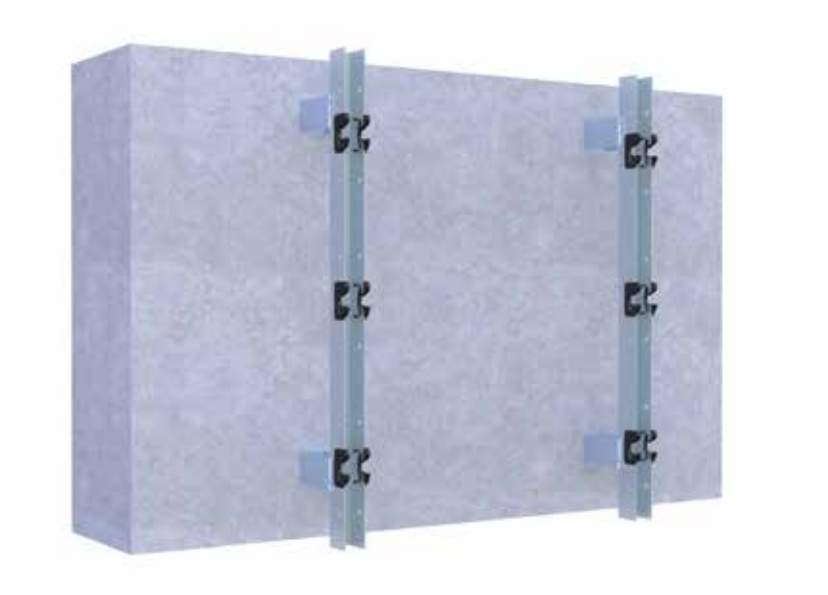
5.3.1 FC facade vertically spanning

Using horizontal rails fixed to adjustable helping hand brackets simplifies the installation procedure by splitting the alignment of the modular click rails into two steps – alignment in the plane of the backing wall followed by height and vertical alignment.

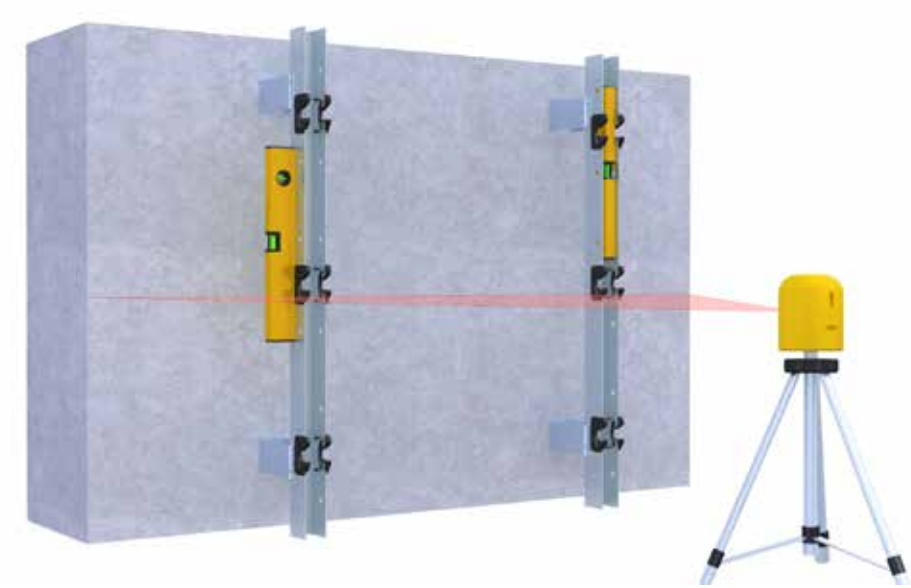
Installation procedure

Install the modular click rail SE onto U-profile helping hand brackets. Using this system, the complete alignment of the sub-construction must be carried out accurately in a single step.

Adjust the rails to suit the installations tolerances for the FC facade system as noted in Section 4.1 Check the distances A, B and C are correct according to the project drawings.



Fixed point
Rivets or screws fixed in circular holes (on **both** sides of the U-bracket).



Sliding point
Rivets or screws fixed in slotted holes (on **both** sides of the U-brackets).

Note

The arrangement of fixed points and sliding points must ensure adequate accommodation of thermal movement.

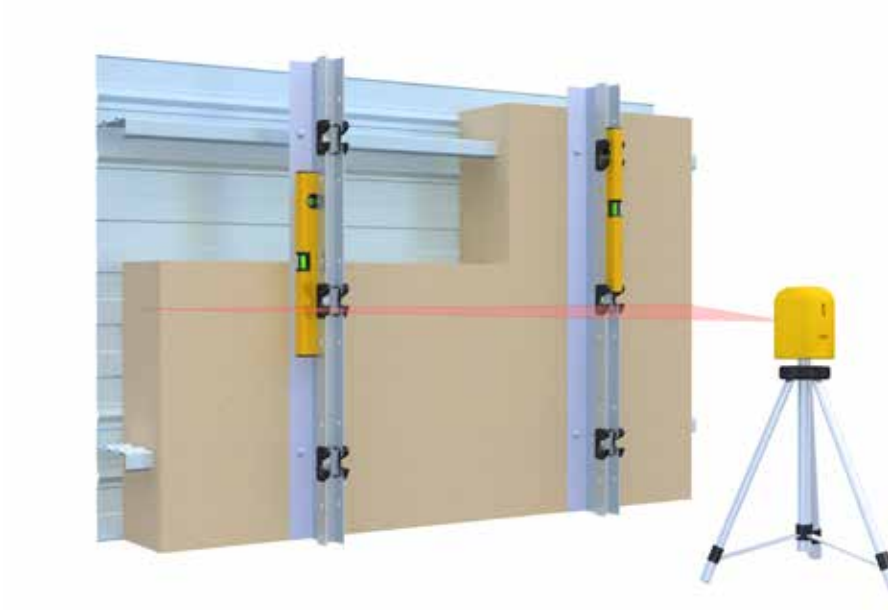
5.4 Modular click rail SEL on structural cassette

5.4.1 FC horizontally spanning

For installation on steel structural liner trays, the modular click rail is fixed to the top flanges of the tray by means of a thermally broken fixing system.

Installation procedure

Using this variation discrepancies in alignment must be accommodated by an additional sub-construction. Using structural cassettes as the backing wall, the maximum spacing between modular click rails must be verified by the project structural engineer. The dead weight of the sub-construction, modular click rails and FC panels must be either transferred back to the building structure at the head or the base of the façade according to project-specific calculations. Check the rails are aligned to the tolerances specified in section X.X. The modular click rail SEL can be fixed to the L-profile which is fixed on to structural cassette with self drilling/tapping screws or with rivets.



Note

The he number of fixings must be according to the project structural design calculations.

5.5 Modular click rail SE on sandwich carrier panel

5.5.1 FC horizontally spanning

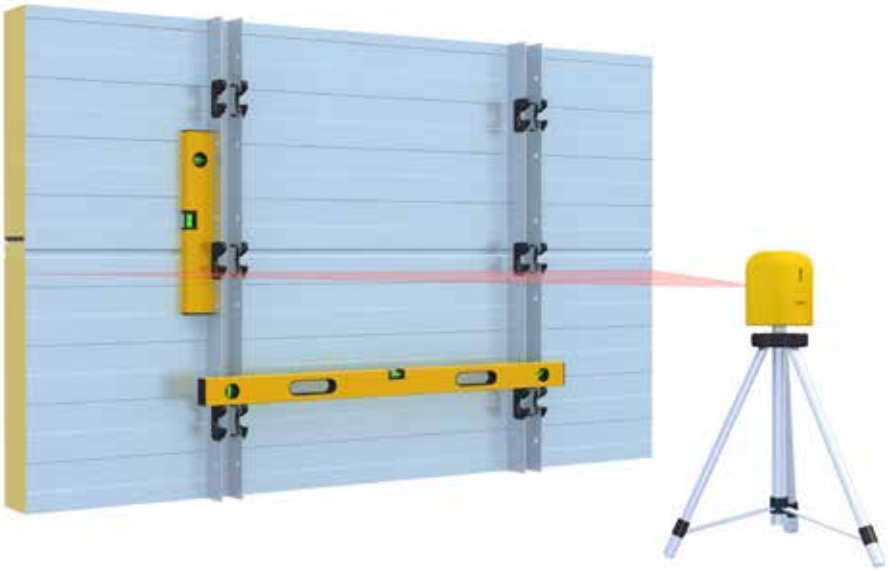
For installation on horizontally spanning sandwich panels, the modular click rail SE is fixed to the external steel face of the sandwich panel with approved self-drilling fasteners.

Installation procedure

Using this variation the alignment of the sandwich panels must be checked and confirmed to be within sufficient tolerance to meet the requirements outlined in section 4.1.

Using the approved SFS SLG-6,5 or EJOT JF3 self-drilling screws the modular click-rail is fixed into the outer steel face.

To accommodate thermal movement, the modular click rail SE is supplied pre-punched with alternative round and slotted holes. One fixed point is required per rail. The optimal configuration is to make the fixed point in the same position in each rail.



Note

The number of fixings must be installed according to the project structural design calculations.

5.5.2 FC vertically spanning

For installation on horizontally spanning sandwich panels, the modular click rail SE is fixed to the external steel face of the sandwich panel with approved self-drilling fasteners.

Installation procedure

Using this variation the alignment of the sandwich panels must be checked and confirmed to be within sufficient tolerance to meet the requirements outlined in section 4.1.

Using the approved SFS SLG-6,5 or EJOT JF3 self-drilling screws the modular click-rail is fixed into the outer steel face.

To accommodate thermal movement, the modular click rail SE is supplied pre-punched with alternative round and slotted holes. One fixed point is required per rail. The optimal configuration is to make the fixed point in the same position in each rail.

Note

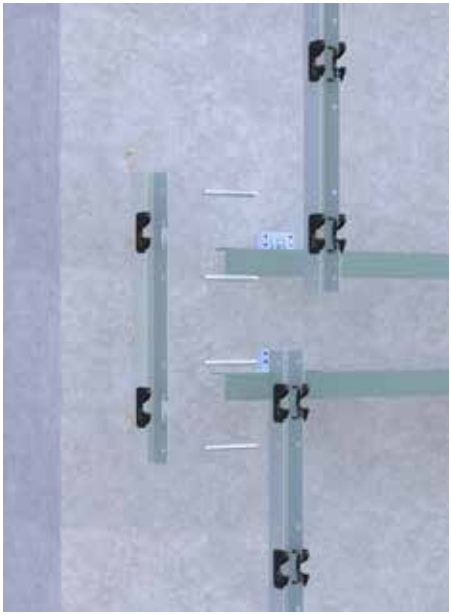
The number of fixings must be installed according to the project structural design calculations.

5.6 Modular click rail setting out tool

To allow for thermal expansion, all modular click rails are supplied in standard lengths of approx. 3 metre. The setting out tool allows accurate spacing at joins between vertical rails. The tool can be adjusted to accommodate every standard panel cover width.

Panel cover width adjustment

The setting out tool consists of a rail with two pairs of pins, one pair fixed and one pair adjustable. The tool shown bottom left is set to the 500 mm cover width position. The sequence on page 43 shows how to reset the cover width to 300 mm.



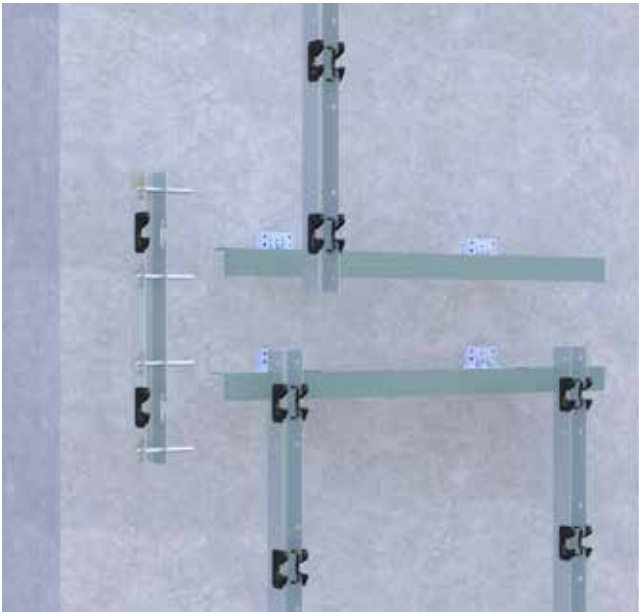
Setting out modular click rails

The modular click rails are provided with pre-punched holes in their sides to accept the setting out tool locating pins.

1. Align and fix the lower set of modular click rails according to the tolerances given in section 4.1 and the relevant type of sub-construction described in section 5.

To adjust the setting out tool (1) to the required cover width, remove the two clips holding the adjustable pins in place (2), pull the pins out of the rail (3) and relocate in the appropriate holes (4).

Replace the clips to secure the pins in their new position (5). The cover width set is shown in the window in the side of the adjustable pins (6). The sequence (1) to (6) below shows each step.



2. Insert the lower set of locating pins of the setting out tool into the top set of holes in the lower modular click rail.

3. Insert the bottom of the upper modular click rail into the top set of pins and check the alignment of the rail with a spirit level.

4. Double check that the correct panel cover width is showing in the window in the side of the tool and fix the top modular click rail in position.

5. Best practice is to start the next rail with the panel support position fixed directly over a wall bracket or horizontal rails. The allowable overhang of any rails must be approved by the project structural engineer.

5.7 Adapter SE & SEL

The click rail adapters SE and SEL are designed to accommodate bespoke cover width panels, which may be required for example at interfaces with windows and doors.

The adapter can be installed either on the top or the bottom part of the rail. Due to this, two plastic inlays (left and right) are supplied in the box, which are to be cut and installed on-site.

Adapter SE

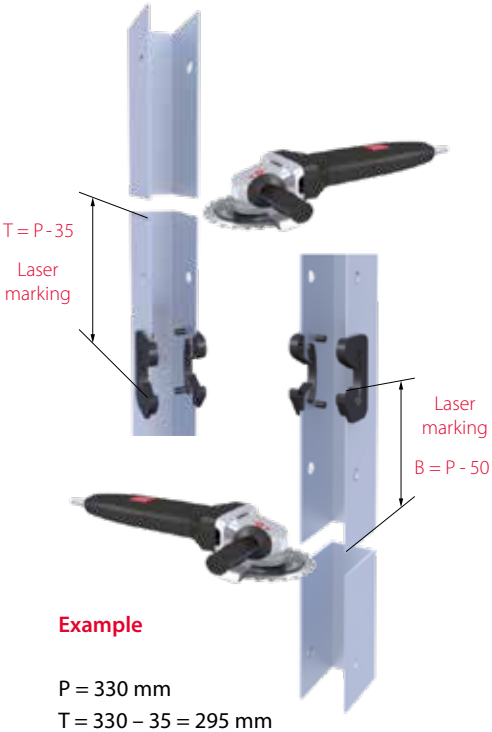
Adapter SEL

Note

Minimum bespoke panel cover width, P
SE = min. 100 mm
SEL = min. 130 mm

Cut the modular click rail to the required length according to the cover width of the transition panel (see example below). The laser marking should be used as the reference point when measuring to the end of the rail.

P = bespoke panel cover width (mm)
T = distance from laser marking to top of rail
B = distance from laser marking to bottom of rail



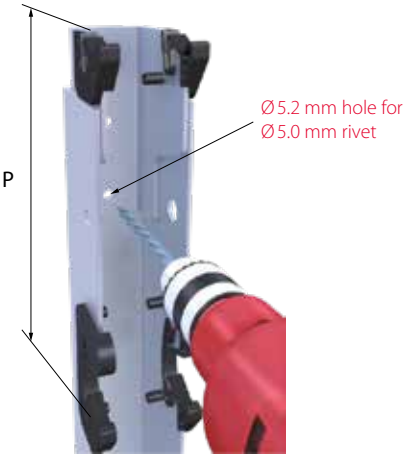
Example

P = 330 mm
T = 330 – 35 = 295 mm
B = 330 – 50 = 280 mm

Insert the adapter into the modular click rail. For the upper adapter check the distance between the lower edges of adjacent inlays is equal to the transition panel cover width, P.

The adapter must be secured to the modular click rail with at least two fixings (it is recommended to use rivets).

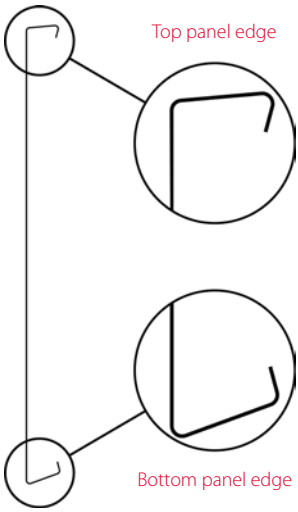
All adapters are supplied with three pre-drilled holes. These are aligned centrally for the modular click rail SE and staggered diagonally for the SEL rails.



For the lower adapter, check the distance between the upper edges of adjacent inlays.

6.0 Horizontal panel installation

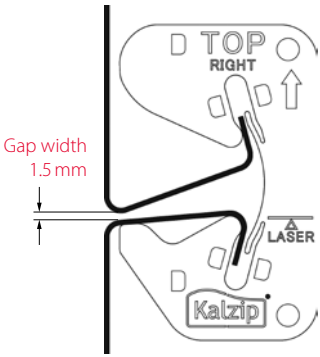
The following sections illustrate the installation of FC façade panels in horizontally spanning applications. The design of the FC panel profile geometry permits the installation of panels in both directions (from bottom to top or from top to bottom).



Panel edge geometry

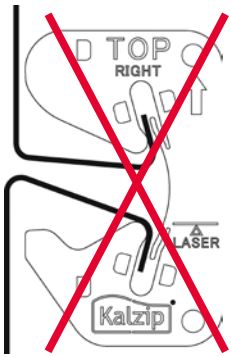
The top and bottom edges of the panel are not symmetrical so care must be taken to ensure the panel is installed the correct way up.

Correct panel installation



Stop

Never try to install the panels upside down.



6.1 Panel installation (bottom to top)

This sequence shows the installation of FC panels from bottom to top. Refer to section 6.4 for making the fixed point.

Note

The panel overhang has been reduced in these drawings for clarity only. Refer to the panel support requirements in section 4.2.

1. Insert the top edge of the first panel over **both** lower parts of the plastic inlay. Check that the panel can slide freely left to right.

2. Wearing gloves, use the palm of the hand to gently push the bottom edge of panel to click into the upper part of the inlay.

3. The bottom edge of the panel should click into place easily. Check again that the whole panel can slide freely left to right.

If the panel cannot slide freely left-to-right, check that the panel can be easily moved up and down before making a fixed-point.

Caution

Always gently push the panel directly over the clicking point – not between the supports.

Never force the panel into position – this will damage the edges and may require panel replacement. If the panel does not click in easily, double-check the alignment of the sub-construction.

4. Install a fixed point clamp and guidance snapper(s) in the lower panel (see section 6.4) before hooking the second panel in place above.

5. During bottom-to-top installation, each panel can be sequentially hooked and clicked into the modular click rail.

6.2 Panel installation (top to bottom)

In situations where back-lapping of panels on-site is advantagous, such as during the removal of mast climbers or other aerial platforms, the FC panels can be installed from top-to-bottom. Refer to section 6.4 for making the fixed point.

1. Insert the top edge of the upper panel over the lower parts of the plastic inlays. Check the panel can slide freely left to right. Do not click in the bottom edge of the panel at this stage.

2. Insert the lower panel in place as described in step 1.

3. Return to the upper panel and install and tighten the fixed point clamp and insert guidance snapper(s) (see section 6.4).

4. Repeat step 3 for the lower panel before clicking in the bottom edge of the upper panel.

Caution

Do not click in the bottom edge of the upper panel until the lower panel has been hung in place and a fixed point has been made in the lower panel.

6.3 Vertical panel joints

Vertical panel joints are important for the appearance of the façade. This section should be read together with section 7 on flashing installation which gives a range of possible joint flashings.

Minimum joint width

All vertical panel joints must be a minimum of 10 mm width. This is to ensure there is sufficient space for the panels to expand and contract. For panels longer than 10 m, 1 mm per linear metre gap is normally adequate.

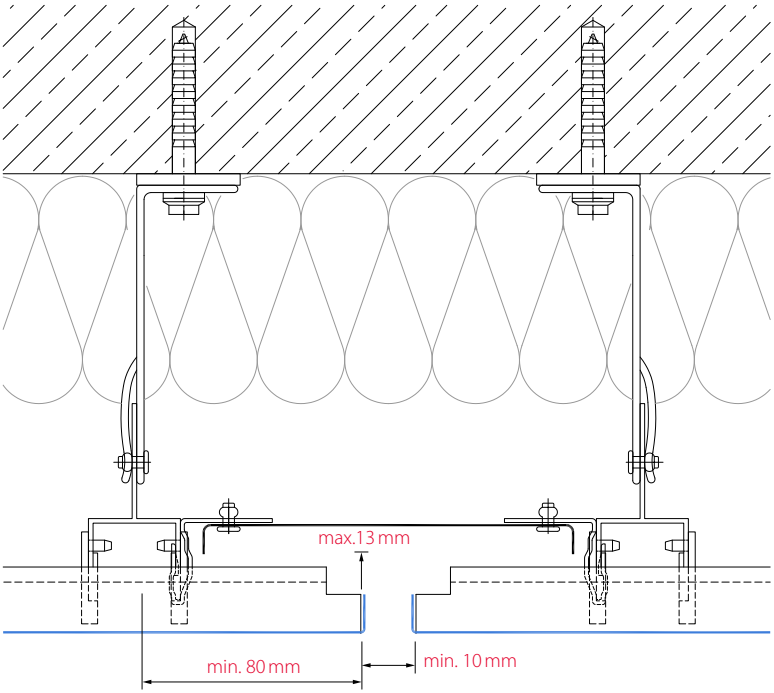
This requirement should be checked according to the local climatic conditions and panel colour/surface finish.

Panel overhangs

To allow sufficient space for flashings to be fixed (either directly to the sub-construction or via the proprietary flashing supports) there should be a minimum of 80 mm distance between the centre of the clicking points and the edge of the panel. The maximum allowable panel overhang is 20 % of the panel span unless detailed calculation is used to determine otherwise.

Panel joints with backing flashing

To allow for installation of panels, the maximum overall depth of joint backing flashings is 13 mm. (See image below)

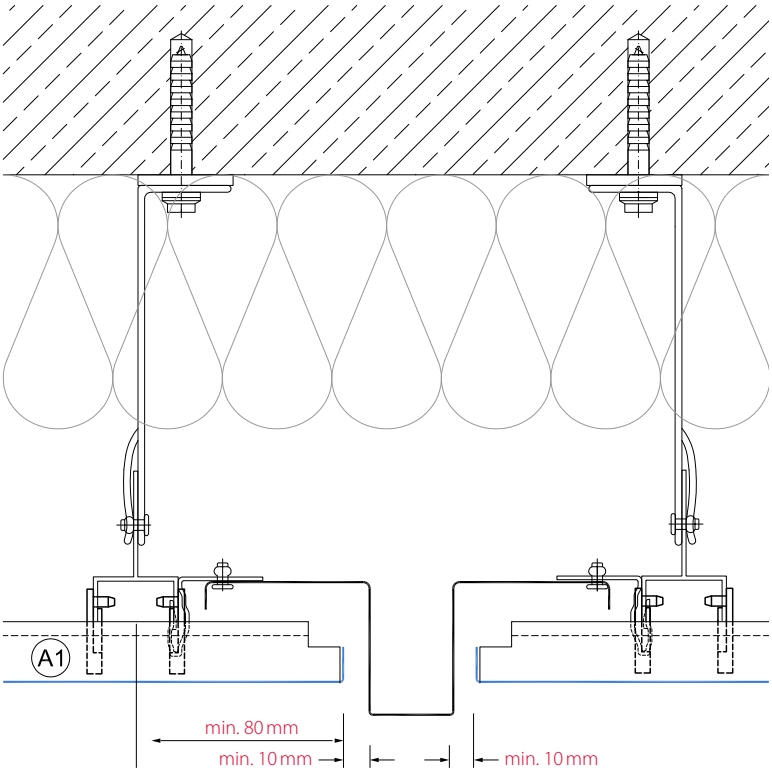


Panel joints with protruding flashings

For vertical joints which include flashings separating the edges of adjacent panels, the minimum joint width should be 10 mm either side of the flashing.

Note

For this type of flashing design option, to ensure even vertical panel joint appearance, consideration can be given to installing the fixed point clamp centrally along the panel length.

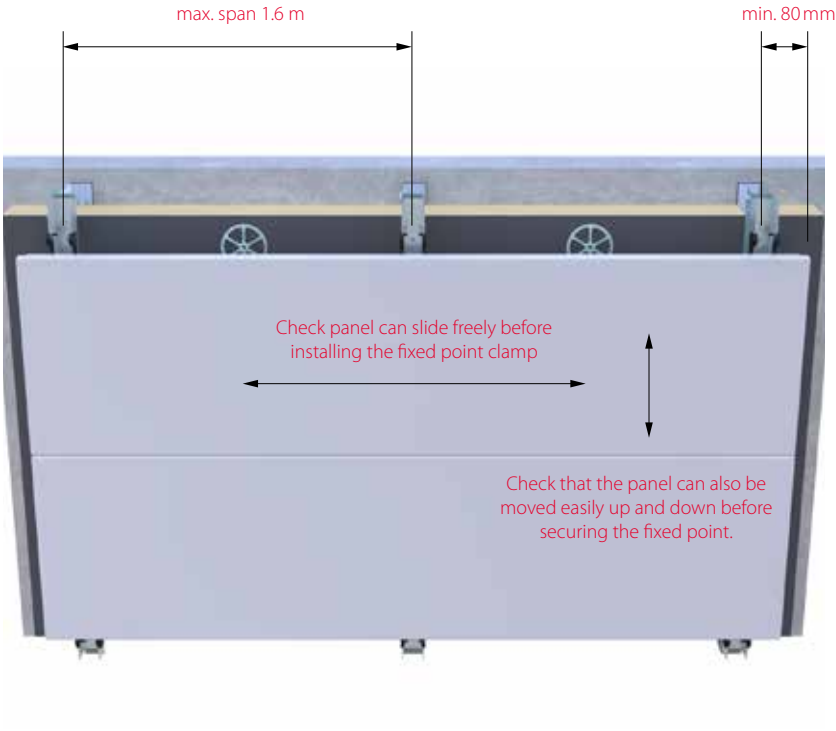


6.4 Fixed points

Every FC panel must have one fixed point to stop the panel sliding out of place during thermal movement. This is achieved using the proprietary fixed point clamp supplied with the system.

Fixed point location

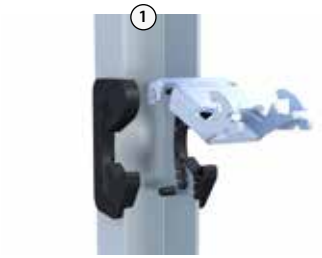
The fixed point clamp should normally be installed in the same position of straight panels to divide the thermal movement equally left and right.

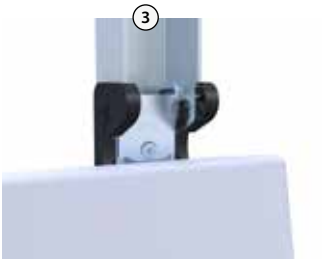


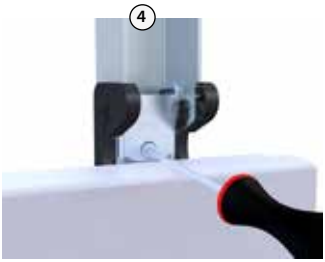
Installation sequence

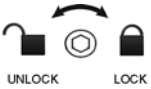
Before making the fixed point, check that the panel slides freely left-to-right and up and down in the plastic inlays. Make sure the panel is in the correct horizontal position in relation to flashings or adjacent panels.

After the lower panel is installed, the fixed point clamp is inserted between the plastic inlays and clips over the two internal pins in the top of the inlays. When the clamp is in position, screw until hand-tight using a Ø 3 mm Allen head screwdriver.









Caution

The fixed point clamp in any panel should be tightened before the bottom edge of the panel above can be clicked in.

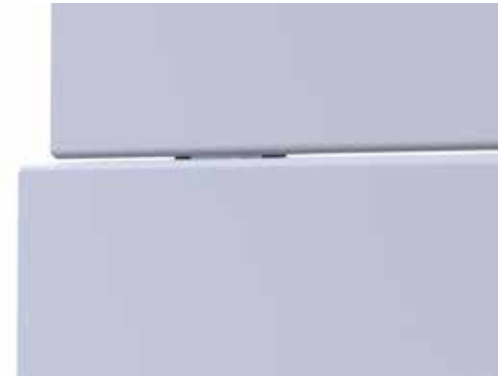
Take care not to overtighten the grub screw into the clamp.

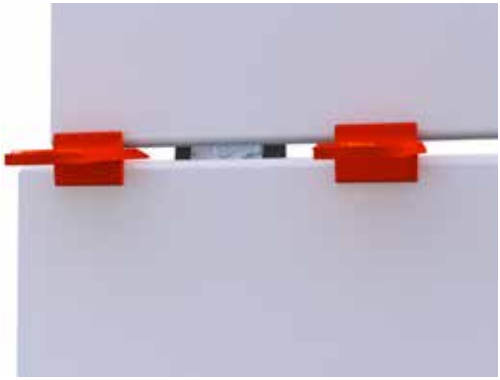
6.5 Adjustment of panel position

After the FC panels have been installed and fixed points have been made, it is possible to re-adjust the position of the panels as shown below.

1. Horizontal misalignment of lower panel.

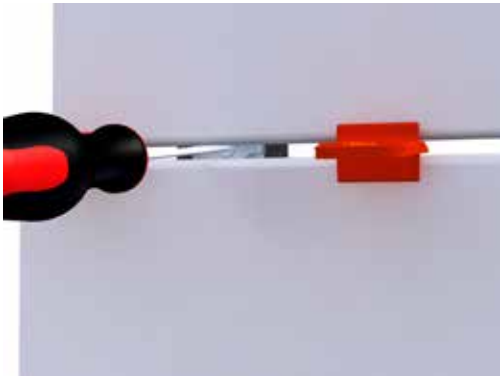
2. Wedge upper panel either side of fixed point with 4 mm shims.

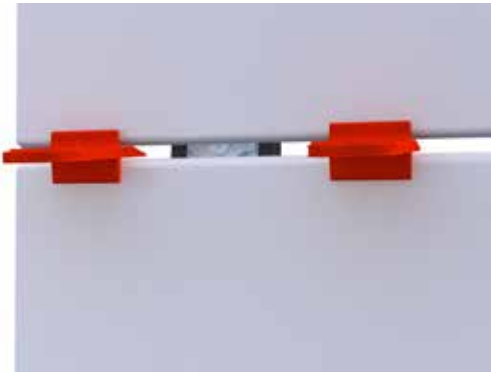




3. Unlock fixed point clamp with Ø 3 mm Allen head screwdriver.

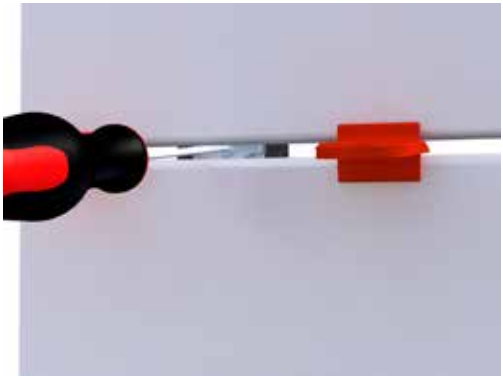
4. Align lower panel to correct position





5. Relock fixed point clamp hand-tight

6. Remove wedges to return upper panel to original vertical position



When no flashing is wanted at the corners, symmetric and non-symmetric internal and external corner FC panels can be supplied to order. This section gives details on the correct installation methods.

Panel supports

Special attention must be paid to the installation of corner panels. A panel support point must be positioned a minimum of 80 mm and a maximum of 20 % of the length of that side of panel taken from the corner (A). For corner panels with unequal length sides, the corner support point should be positioned on the long side of the panel.

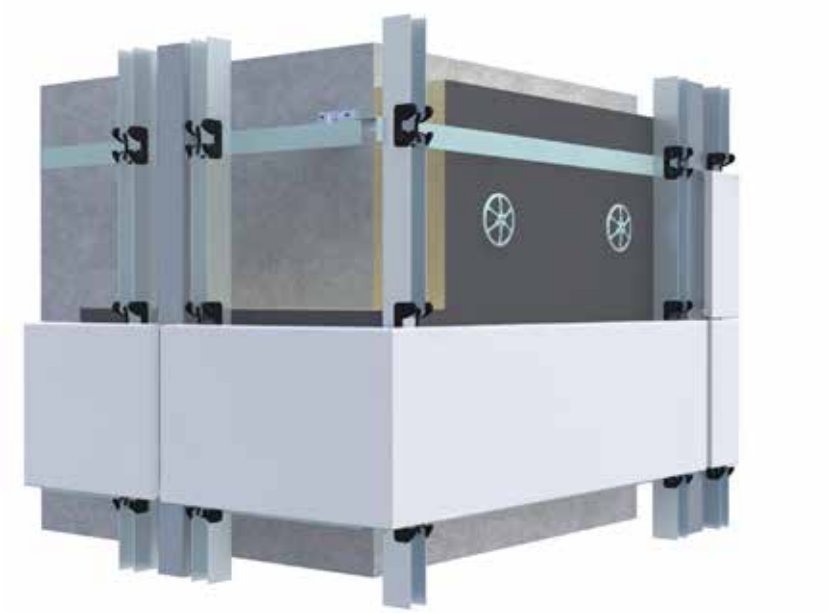
At both ends of the panel, a support point must also be positioned a minimum of 80 mm and maximum of 20 % of the length of that side of the panel from the panel edges (B). This requirement applies whether the sides of the panel are unequal or not. See drawing on page 62.

Corner panel fixed point

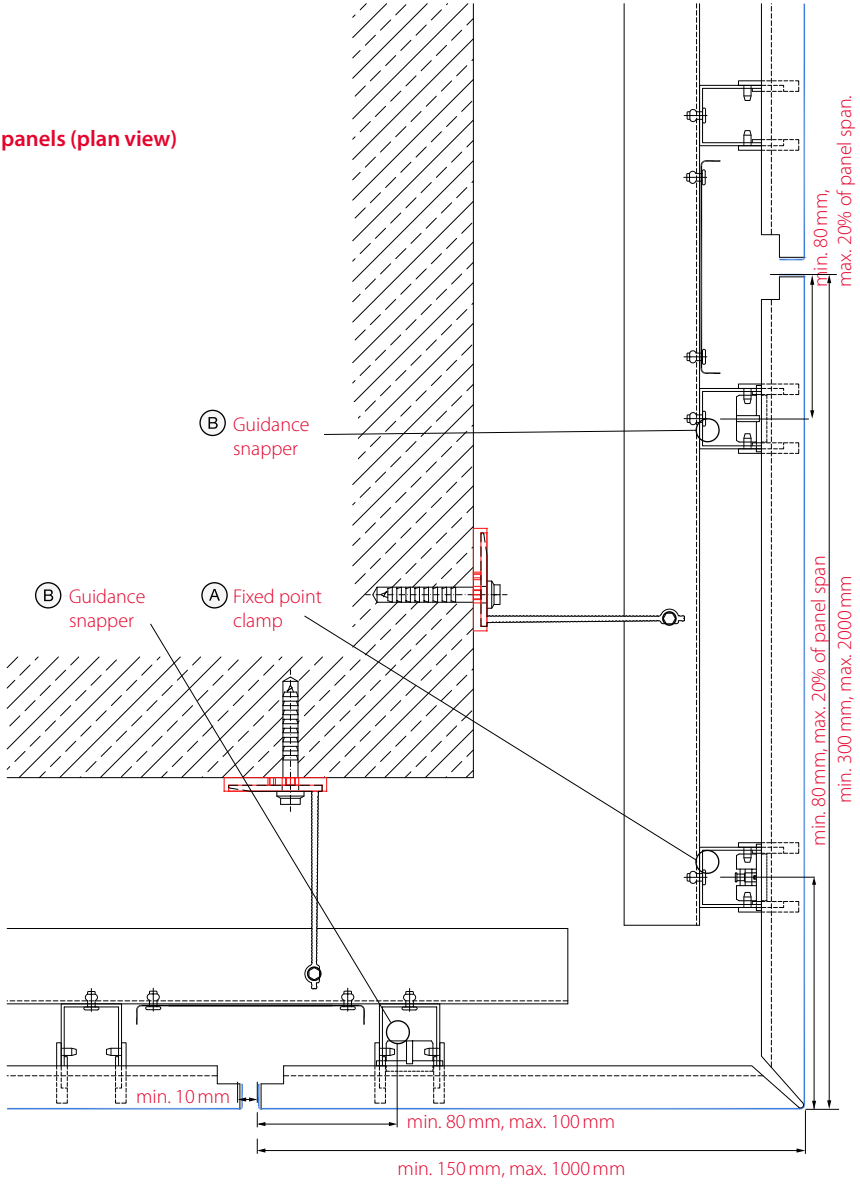
A fixed point clamp must be installed at the support point located at the corner of the panel.

Corner panel guidance snapper

Guidance snappers should be installed at the support points at both ends of the panel. This is to ensure that the panels are properly engaged on both sides. The guidance snapper is simply clipped over the pins at the top of the plastic inlay.



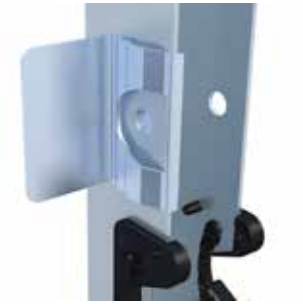
Corner panels (plan view)

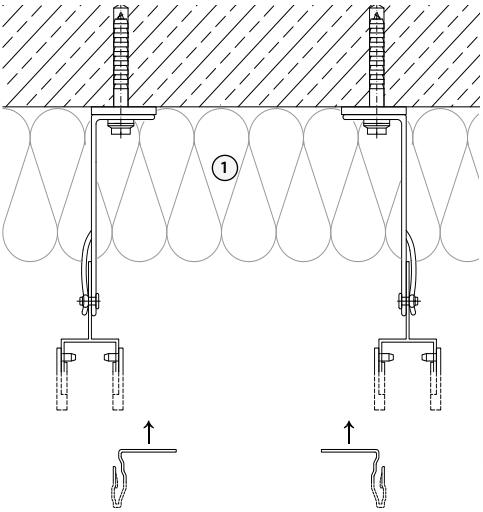


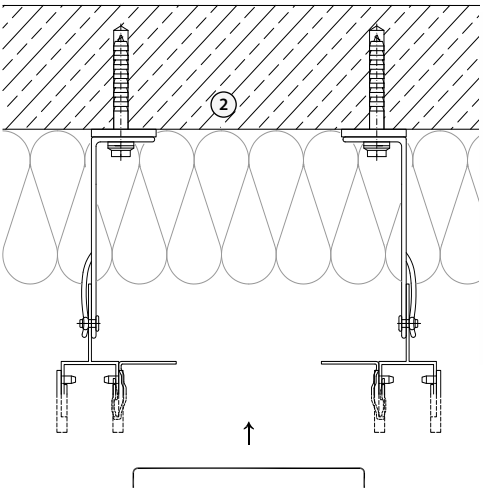
Note

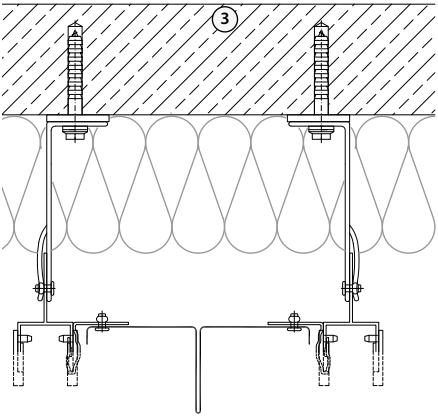
For information on double-corner panels please refer to the separate information sheet.

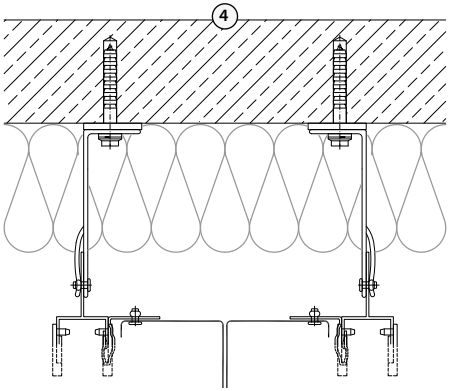
Fixing flashings between panels is made fast and easy using the proprietary flashing support accessory. This component clicks into pre-punched holes in the modular click rails without the need for any additional fixings and provides a flat self-aligned surface to which flashings can be screwed or riveted.

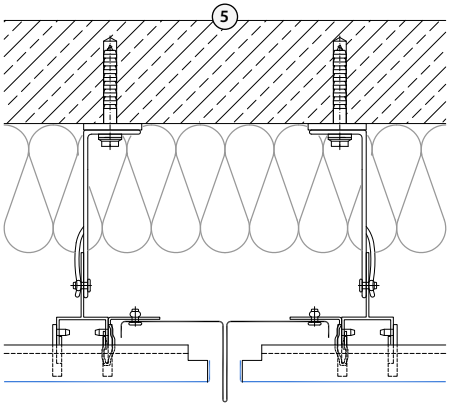












Note

The flashing support should never be used to fix modular click rails to the sub-construction.

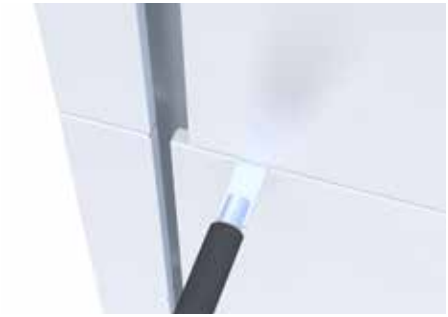
8.0 Panel replacement and tools

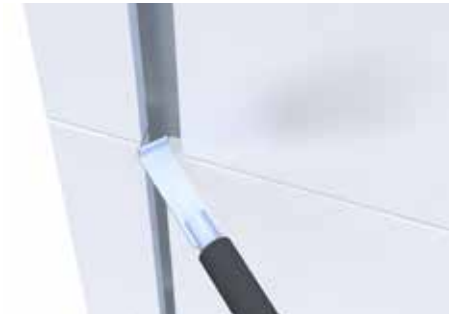
In the event of wall damage, the FC façade click system allows individual panels to be replaced without the need to demount the complete façade.

Individual panels can be removed quickly and easily using the specially developed panel removal tools avail-able in the Kalzip FC Toolkit.

Caution

For the handling and removal of panels it is always necessary to wear adequate protective clothing, in particular safety shoes and protective gloves.





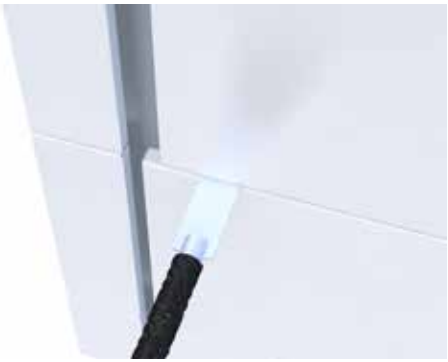
1. To remove an individual panel from the façade, the panel above it must first be unclicked at it lower edge. When using the panel removing tool with round grip, the panle may need to be slid to the one side to create sufficient space to insert the tool into the vertical joint. Insert wedges and unlock the fixed point clamp. Slide the panel to the side and relock the fixed point clamp. Remove the wedges.

Note

- Unclicking the panel is easier when the fixed point clamp is locked
- When using the flat panel removal tool, widening of the vertical joint is not normally required provided it is a minimum of 10 mm.

2. If using the round grip removal tool, insert it into the widened vertical joint at the bottom edge of the panel above that to be removed and rotate it into the horizontal joint (detail A).

Slide along to the first unclicking position. If using the flat grip removal tool the same operation can be achieved without the need to move the panel to the side (detail B).



Detail A

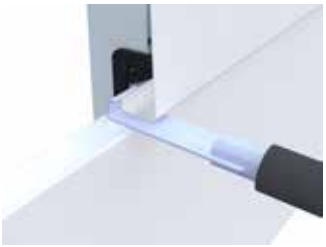
Detail B

Note

To insert the flat grip panel removal tool without moving the panel to the side, the vertical joint width must be a minumum of 10 mm.

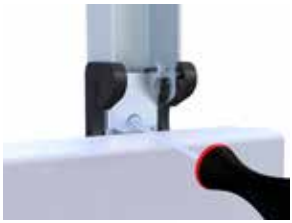
3. Use the panel removal tool (round or flat grip) to release the lower panel edge out of the hooks.

4. Slide the panel removal tool along to the next unclicking position and repeat step 3 until the bottom edge of the panel is completely free from the supports.



5. Repeat 1 to 4 for the panel to be removed.

6. Release fixed point and remove the guidance snapper(s) from the panel to be removed.

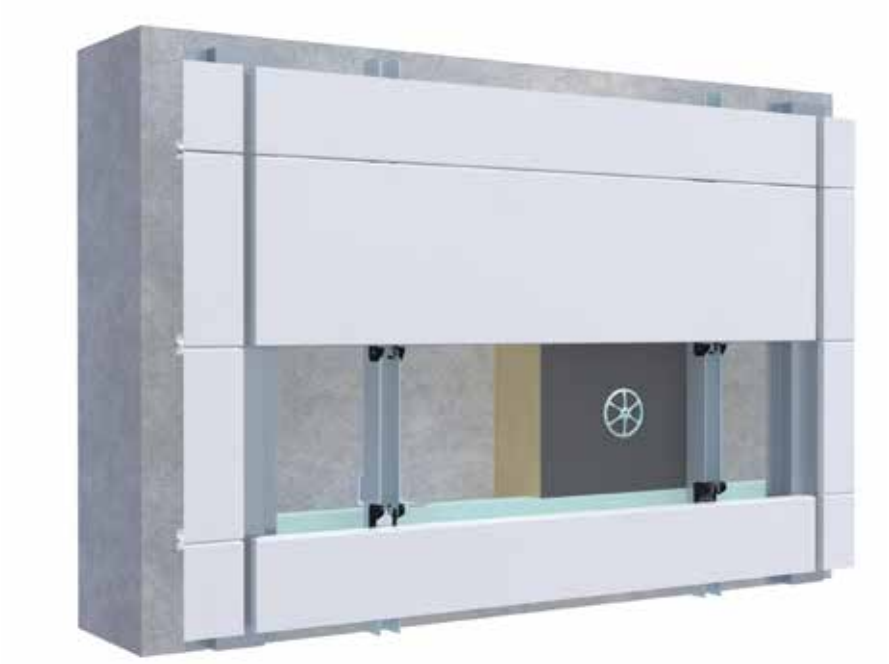


7. Remove the panel. For safety under wind loading, the upper panel should always be clicked in and have its fixed point clamp locked.

8. Insert replacement panel and follow the bottom-to-top installation sequence shown in section 6.1 (page 48).

Note

With care, the same panel can be removed and reinstalled later if access is required to the rainscreen cavity for maintenance.



9.0 Tips and tricks

Portable edge folding device

The edge folding device enables the installer subsequent shortening / adjustment of FC facade panels on the construction site.

The shortening of the FC panels is done by means of templates. The edge returns can be adjusted up to a width of max. 500 mm.

The edge folding device can be rented from Kalzip GmbH for a small fee and includes its own instruction manual.

For more information, please contact your Kalzip dealer or our customer service.

www.kalzip.com

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