Rainscreen Facades

Assembly instruction

Invisible fastening of ALPOLIC™ aluminium composite panels with the EJOT PEARLOCK® system

EJOT. Bringing it together.

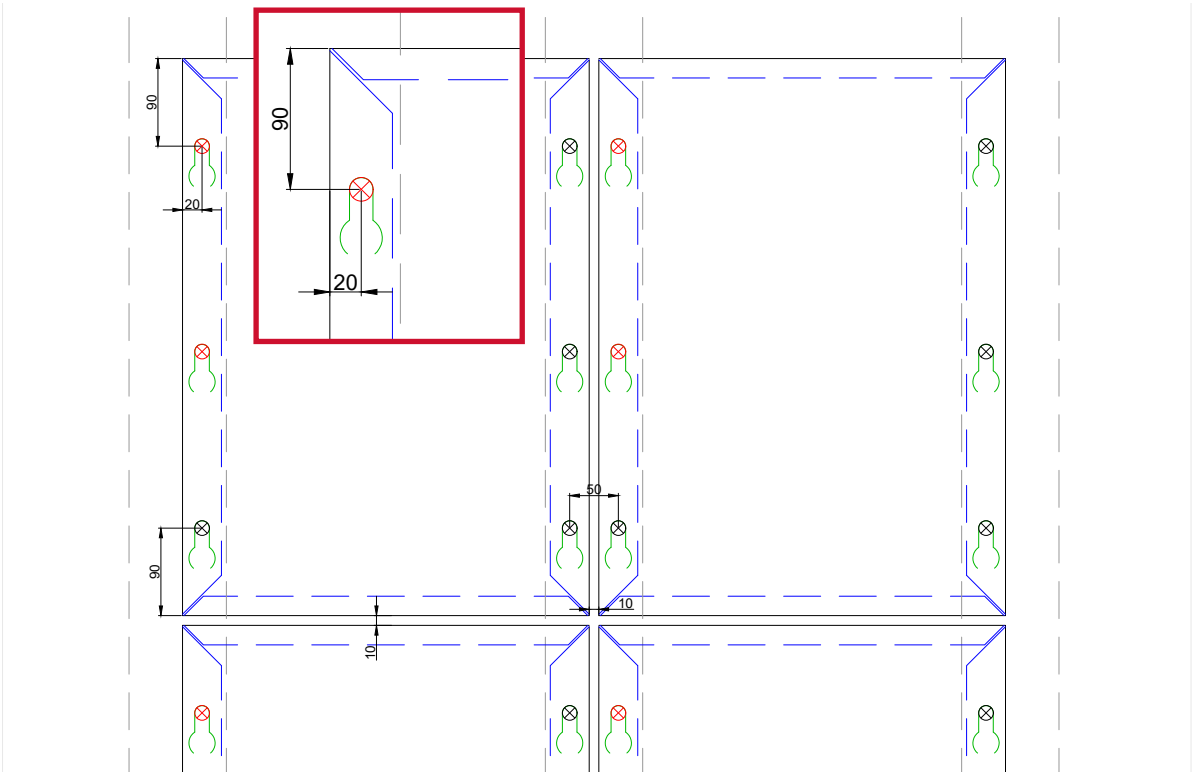
Assembly steps

Step 1: Marking out the fastening points

To install the PEARLOCK® system, the drilling position must first be determined on the substructure. Two methods are available for this purpose:

1. Conventional measuring and marking

> Distance to the vertical joint: 20 mm
> For a 10 mm joint width: distance between the EJOT screws of adjacent cassettes 50 mm
> Distance to the horizontal joint: 90 mm



Fastener spacing

2. Using a drill jig

For recurring cassette folding, the locations of the self-drilling screws can be defined using a drill jig.

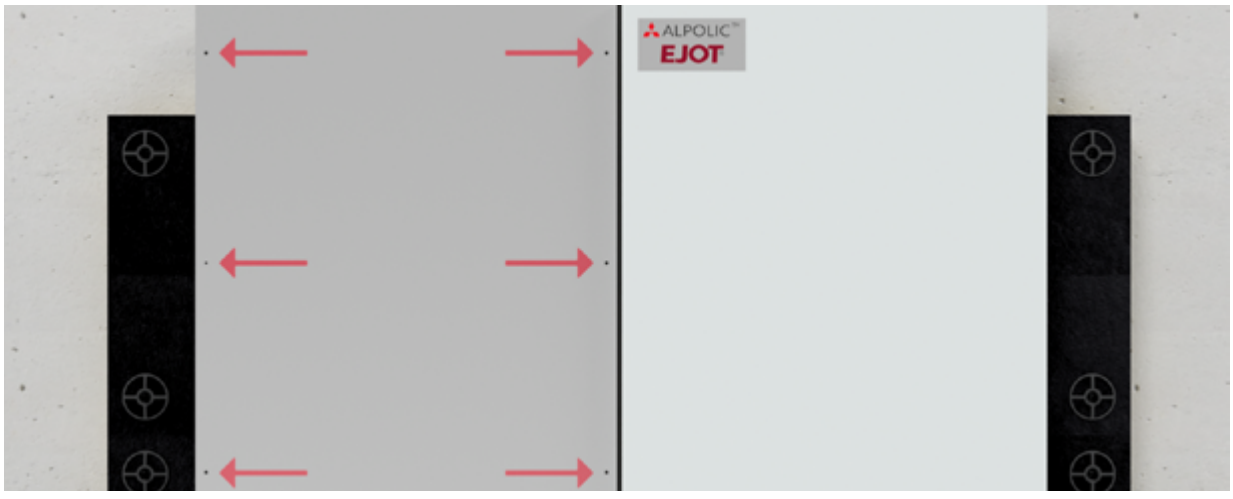


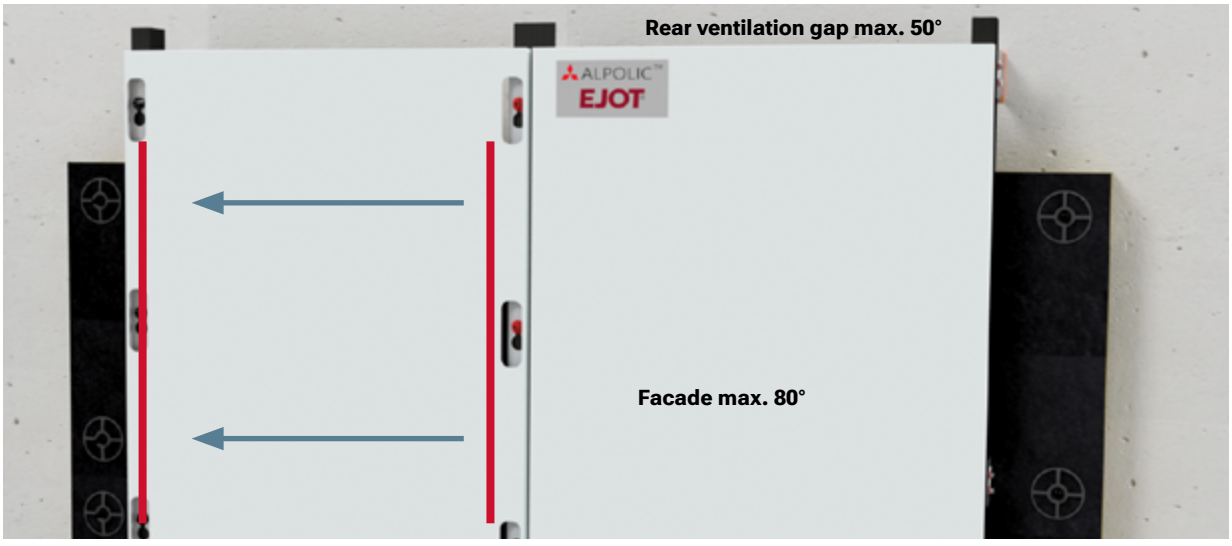
Plate drill jig

Step 2: Fixed and sliding points

Once the position of the PEARLOCK® has been determined and marked out, the fasteners can be installed.

Marked fastening position

Define where the cassette is supported by a fixed point and a sliding point. For a temperature increase of 100°C, aluminium undergoes a thermal expansion of 2.4 mm per metre. In Europe, dark facade surfaces may heat up to as much as 80°C when exposed to direct sunlight. As the facade heats up, the temperature within the ventilation cavity increases as well. The substructure in the rear-ventilated cavity may reach temperatures of up to 50°C during summer conditions. PEARLOCK® offers a simple and reliable solution for defining fixed and sliding points. One side is supported by fixed points, allowing the composite panel to expand horizontally towards the sliding points on the opposite side. Thermal expansion in the vertical direction is accommodated by the pear-shaped holes in the composite panel. To simplify installation, the fixed-point side may be designed with two fixed points, while the remaining fastening points are configured as sliding points.

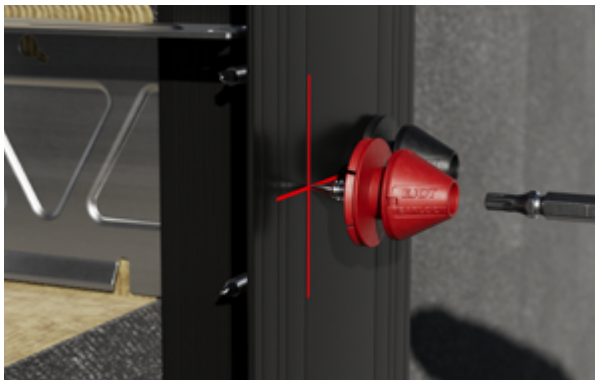


Panel expansion at fixed and sliding points

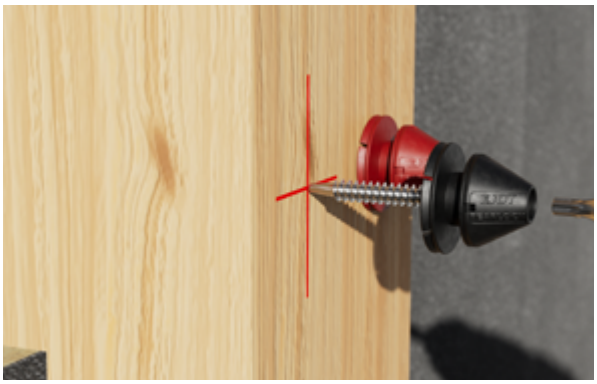
Step 3: Fastening the PEARLOCK® system

By holding the PEARLOCK® cap, the system can be safely guided and secured during screw installation. On aluminium and steel substructures, the stop collar of the LT-TD screws ensures precise perpendicular positioning.

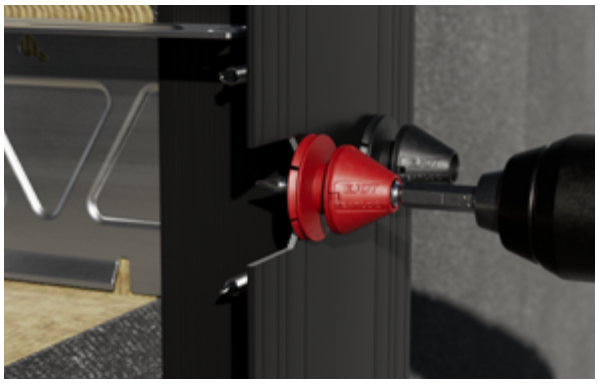
The JT4-LT-XT-2/6-6.0x50 KD16 provides optimum fastening performance for the PEARLOCK® system on timber substructures due to its specially designed thread geometry.



Position the PEARLOCK® system on the aluminium or steel substructure and fasten it with LT-TD screws using the extended TX25x70 bit.



Position the PEARLOCK® system on the timber substructure and fasten it withthe LT-XT screw using the extended TX25x70 bit.



The screw is screwed in up to the stop collar. It ensures a precise installation depth, creates a defined clamping range and guarantees reliable perpendicular alignment of the screw.

Tighten the screw until the plastic "holder" makes contact with the timber substructure. To ensure proper operation of the sliding point, the screw must subsequently be turned back by 90°.

The fixed-point variant (red) completely surrounds the screw's stop collar, preventing relative movement between the components. It provides a reliable fastening of the cladding. The sliding-point variant (black) also engages the stop collar and centres it by means of a ring connected by four fine retaining bars. Under transverse loads, such as those caused by thermal expansion, these bars are designed to break away, allowing controlled movement of up to 3 mm in any direction.

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Step 4: Engaging the cassette

Engaging the screw connection

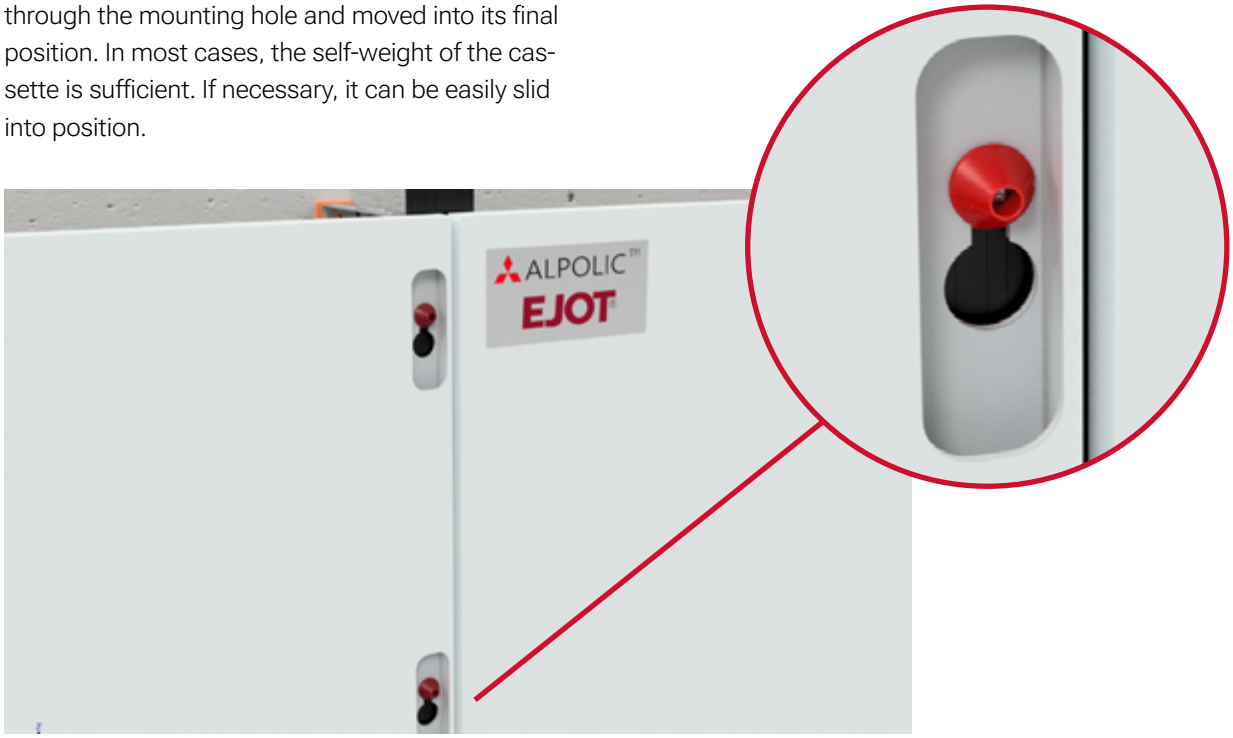
The cassette is slid onto the PEARLOCK® system until it is positioned at the level of the circular keyhole opening.

Easy engagement thanks to cone head for easier assembly

The PEARLOCK® system's cone head facilitates easy installation, even in the presence of fastening tolerances.

Step 5: Slide cassette into its final position

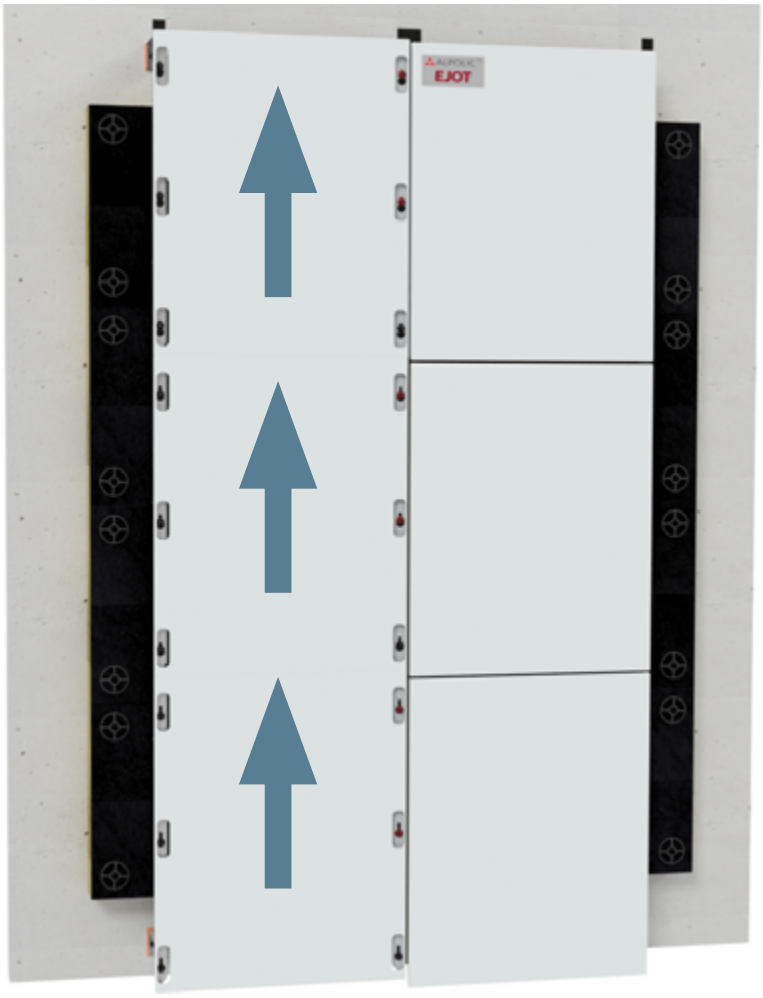
The panel is slid onto the PEARLOCK® system through the mounting hole and moved into its final position. In most cases, the self-weight of the cassette is sufficient. If necessary, it can be easily slid into position.



Composite panel in final position

Special case: dismantling a cassette

In the event of disassembly, the composite panel must be disengaged from the keyhole connection. With a joint width of 10 mm, the two cassettes above must also be lifted slightly.



Special case: cassettes with horizontal folded edge

The horizontal folded edge can be formed outward to close the horizontal joint. For this purpose, the cassette must be notched around the vertical substructure.

Outward-folded horizontal folded edge

Folded edge with notch in the substructure area

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