



R-TEC CI SYSTEM

Mounting guide for a masonry/concrete wall with exterior insulation to achieve ASHRAE 90.1 continuous insulation barrier.

Summary

The R-TEC CI System for affixing facade cladding to a masonry/concrete wall consists of an aluminum-substructure composed of R-Tec Brackets and either a single layer or double layer of aluminum profiles. The Brackets and profiles are applied with fasteners through the external insulation and into the masonry/concrete wall (Definition of ASHRAE 90.1 continuous insulation).

Mounting Steps

1. Determine that the masonry/concrete wall has the sufficient dimensions, strength, weight and density to secure a masonry screw to accommodate the required design loads.

If there is any question as to the masonry/concrete walls holding strength, pull out tests should be conducted with the specified fastener.

2. Review the bracket and profile layout plans provided with the R-TEC System. These plans are unique to each elevation of the building receiving the R-TEC System.

Pay particular attention to the bracket spacing both horizontally and vertically.

3. Determine the location of the first row of R-TEC brackets running horizontally across the wall. The height above grade, distance from the top of the parapet (roof line), etc. will be noted on the bracket and profile layout plans.
4. At the specified vertical spacing, snap horizontal chalk lines or use a laser alignment device to establish vertical reference points for bracket placement. Be careful to ensure your reference lines are level and parallel to the horizontal edges of the wall elevations, windows, doors, and roof line (if not sloping), etc.



5. At the specified horizontal spacing, snap vertical chalk lines or use a laser alignment device to establish horizontal reference points for bracket placement. Be careful to ensure your reference lines are plumb and parallel to the vertical edges of the wall elevations, windows, doors, and roof line (if not sloping), etc.
6. The intersection of these lines/reference points identifies a grid pattern for the location of each bracket.
7. Install the first bracket by doing the following:
 - a. Align the bracket on the wall at the marked intersection point (as described in steps 4-6). For horizontal R-TEC Brackets, center the bracket's flange (located 3 ¾" from the bottom of the bracket) with the intersection point. For vertical R-TEC Brackets, center the bracket's extruded ridge (3 ¾" from the bottom of the bracket) with the intersection point. Then, mark the top hole of the bracket on the insulation.
 - b. Remove the bracket and predrill a 5mm (3/16") diameter hole in the wall. The depth of the hole needs to be 10mm (3/8") longer than the length of the masonry screw (horizontal anchor).

NOTE: Horizontal Screws (anchors) are the shorter of the two versions of masonry screws provided. Diagonal screws (anchor) are the longer.

- c. Place a masonry screw through the top hole of the bracket and through the insulation and fasten into the masonry wall. **BE VERY CAREFUL TO NOT OVER TIGHTEN THE SCREW AS THIS CAN STRIP THE THREADS BEING CUT IN THE PREDRILLED HOLE AND ERODE ITS PULL OUT STRENGTH.**

NOTE! If the exterior insulation is mineral wool, a fiber glass sleeve the length of the insulation thickness is placed through the insulation and the masonry screw is then inserted and fastened.

- d. Plumb the bracket and pre-drill through the bottom hole (10mm longer than the screw length). Fasten screw as described in "C" above. **DO NOT OVER TIGHTEN!**
- e. Locate the correct alignment hole for the insulation thickness (hole is on the bracket face) and predrill a hole penetrating 6mm (1/4") into the masonry wall.



- f. Predrill the hole for the 45° masonry screw (diagonal anchor). It will intersect with the starter hole in “e” above. Depth to be 10mm (3/8”) longer than the length of the screw. Fasten the masonry screw (diagonal screw). **DO NOT OVER TIGHTEN!**
 - g. Apply subsequent horizontal and vertical R-TEC Brackets following the same procedure.
8. R-TEC Systems can be single layer vertical only, single layer horizontal only, or double layer starting with a horizontal profile and then a vertical profile. See the R-TEC brochure for illustrations. **THE SYSTEM REQUIRED DEPENDS UPON THE CLADDING BEING APPLIED, THE PANEL SIZE AND THE JOINT LOCATION REQUIREMENTS.**
9. Vertical Systems use vertical R-TEC Brackets and Horizontal Systems use horizontal R-Tec Brackets.

Note: For Vertical System installations go to page 4. For Horizontal System installations go to page 5.



Vertical Systems

1. Vertical Systems use vertical R-TEC Brackets.
2. For Vertical Systems the “L” Bracket with the hands free clip is affixed to the vertical R- TEC Bracket using two (2) of the JT4-6-5 screws supplied.
3. The Vertical “L” profiles supplied are then applied vertically between the brackets using two (2), per bracket, of the JT4-3H/5-5,5x19 screws supplied. It is noted on the bracket and profile layout plan provided which profiles are affixed through the fixed point holes in the “L” bracket (w/hands free clip) and which are affixed through the sliding point slots. Place screw in center of the slot for sliding points.

Apply all the vertical “L” profiles noting the lengths and locations specified on the bracket and profile layout plan.

Note! Reference the details provided on the bracket and panel layout plans.

Follow the Cladding Manufactures install guidelines for applying the cladding to the vertical profiles.

Also, Reference the Cladding Manufacturers Shop Drawings for panel installation locations, etc.



Horizontal Systems – Single Layer

1. Horizontal Systems use horizontal R-TEC Brackets.
2. The Horizontal “L” brackets supplied are applied horizontally between the brackets using two (2), per bracket, of the JT4-3H/5-5,5x19 screws supplied. It is noted on the bracket and profile layout plan provided which profiles are affixed through the fixed point holes and which are affixed through the sliding point slots. Place screw in center of the slot for sliding points.

Apply all the horizontal “L” profiles noting the lengths and locations specified on the bracket and profile layout plan.

Note! Reference the details provided on the bracket and profile layout plans.

Follow the Cladding Manufacturers install guidelines for applying the cladding to horizontal profiles.

Also, Reference the Cladding Manufacturers Shop Drawings for panel installation, locations, etc.

Horizontal Systems – Double Layer

1. Follow procedure for Horizontal Systems - Single Layer.
2. Apply the vertical “Z” or “Hat Channels” to the horizontal profile using the specified quantity of the JT4-6-5,5x19 screws provided. Note the lengths and locations specified on the bracket and profile layout plan.

Note! Reference the details provided on the bracket and profile layout plans.

Follow the Cladding Manufacturers install guidelines for applying the cladding to vertical profiles.

Also, Reference the Cladding Manufacturers Shop Drawings for panel installation, locations, etc.