

Insulated Panels
CEME Division

PowerWall Karrier

Wall Solar PV Mounting Solution Installation Guide



This installation guide should be read in conjunction with the "project specific" design drawings and method statements.

Although this installation guide is deemed to be correct at the time of publication, Kingspan reserves the right to amend the information at any time in the future. Installation guides are available for all of Kingspan insulated roof and wall panels.

Required Tools



Marker / pencil



Tape measure



Spirit level



Torque wrench



Cordless screw driver with depth locator (impact drivers must not be used)



5 mm Hex bit

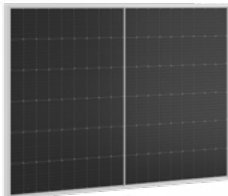


8 mm Hex drive tool

System Components



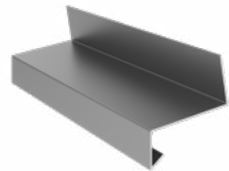
Karrier Architectural Wall Panel



PV module



Z03 starting profile



Drip-flashing



Self-drilling screw (depending on the building structure)



Aluminum Z profile (unpainted, predrilled)



Self-drilling screw JF3-2-5.5x25 + E16



Sealing tape P16



Sealing tape P17



RB Solar profile



Mid clamp



End clamp

Installation Instructions

1

Do not begin installing Karrier panels until the main structure or adjustable rails are properly adjusted. Assembly can only be started after appropriate measurements and checking the position of the structure. For this operation, it is recommended to use a spirit level with a length of min. 1.5 m.



2

Using a spirit level with a length of min. 1.5 m, the exact place of mounting the Z03 starting profiles should be marked on the structure. Z03 starting profiles should be attached to the lower horizontal element of the supporting frame using self-drilling screws. The Z03 profile is the first support for Karrier panels and must be leveled very carefully before installation. The maximum distance between the Z03 starting profile and the end of the facade panel is 150 mm. Z03 profiles are not intended to support the Karrier panel against long-term loads and should not absorb vertical loads after the panels are installed.



NOTE:
Z03 starting profiles should be attached at maximum every 500 mm to reduce possible deflections in the plinth area, where any deflections are easily visible and may affect the final aesthetic effect.

3

The lower drip-flashing should be attached with rivets to the most protruding part of the Z03 starting profile at the height indicated in the project (each drip-flashing is specific to the facility, therefore the solution may be different for each project).



4

Holding the Karrier panel in the appropriate position, place it on the Z03 starting profile and then attach it to the supporting frame with self-drilling screws. The length of the screws and their number should always be confirmed with the Kingspan Technical Department, because in addition to the loads acting on the Karrier board, they must also take the weight of the cladding.



5

The Karrier panel is installed with screws through and through (through the entire thickness of the board) placed evenly along the width of the panel. Each time you should check whether the size of the screw washers complies with the specifications. Only screws with vulcanized EPDM washers should be used.



6

The next Karrier panel should be installed above the previously installed panel. The height of the horizontal joint and its uniformity throughout the panel must be checked. During installation, the position of the panels should be verified using a spirit level. The panel is attached to the supporting frame in the same way as the bottom panel.



7

When installing subsequent Karrier panels, proceed in the same way as when installing the first panel.



8

After installing the Karrier panels on the wall, you can start installing the system substructure made of Kingspan Omega/Z profiles. These profiles are an integral part of the Karrier system. Before starting the installation, please read the drawings showing the arrangement of individual types of profiles on the façade.



NOTE:

Before installing Kingspan Z profiles, attach the P16 separation tape to the back of the profiles. The P16 separation tape is designed to protect against direct contact between steel and aluminum.

9

In the next step, attach the Kingspan Z profiles to the Karrier panels using JF3-2-5.5x25 + E16 system fasteners. Installation should be carried out using JF3-2-5.5x25 + E16 system fasteners, mounted at a spacing of 242 mm consistent with the spacing of the factory bean holes.



NOTE:

Please note that only one system fastener should be placed at the top of the Kingspan Z profile bean hole (fixed point). The remaining screws should be placed centrally in the bean hole.

10

After determining the position of the RB Solar profiles, you can proceed to install them to the Kingspan Omega/Z profiles.



11

Attach the RB Solar profiles to the Kingspan Omega/Z profiles using JF3-2-5.5x25 + E16 system fasteners. There should be two system fasteners (top and bottom) per intersection of the vertical Kingspan Omega/Z profile with the horizontal RB Solar profile.



12

On the extreme horizontal profile of RB Solar, 2 pieces of end-clamp should be installed for mounting photovoltaic modules. The end-clamp should be attached to the RB Solar profile, and they should be screwed together only after the photovoltaic module is installed.



13

If the next photovoltaic module is to be installed in a column, the next step is to install 2 mid-clamp on another horizontal RB Solar profile.



14

Place the photovoltaic module in the prepared end-clamp and mid-clamp. Secure the photovoltaic module by tightening the consoles using an ampoule spanner (5 mm) and a torque of 7 Nm.



15

Continue to install more photovoltaic modules in the column. If this is the last module, end-clamp should be used on the outside.



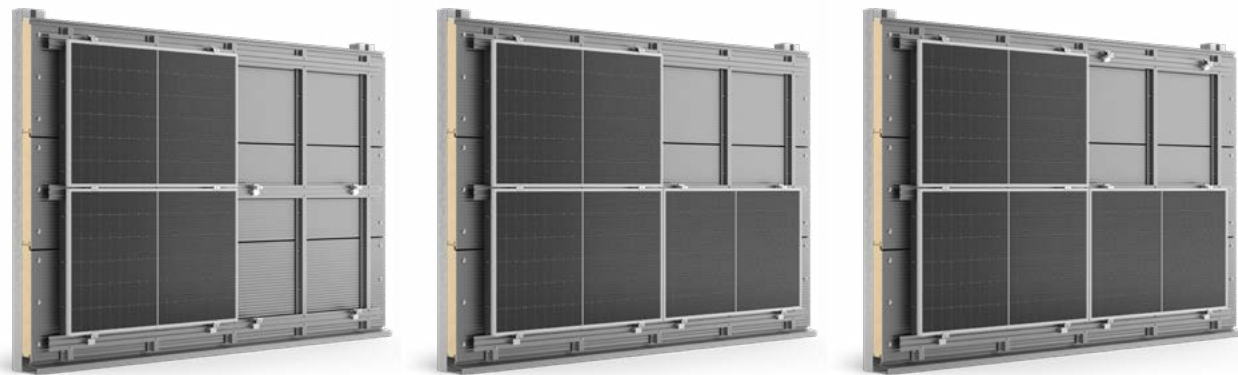
16

After mounting the next photovoltaic module in the column, place it in the prepared end-clamp and mid-clamp, as was the case when installing the first module. Then tighten all the consoles using an ampoule spanner (5 mm) and a torque of 7 Nm.



17 + 18 + 19

Continue installing subsequent photovoltaic modules in the column, proceeding similarly with points 12-16.



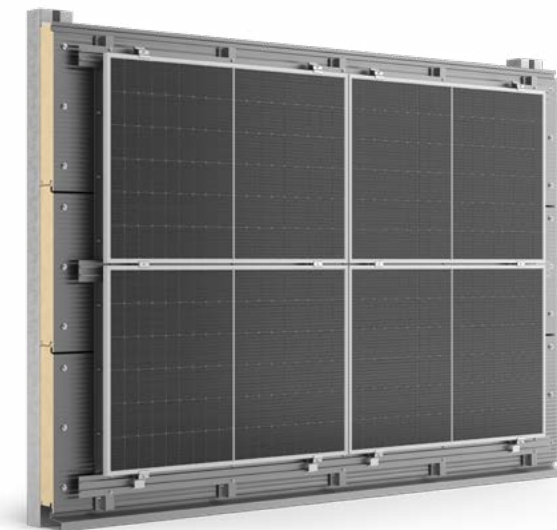
15b + 16b + 17b

When installing photovoltaic modules in rows, remember to use appropriate consoles and proceed in the same way as with the installation of the first module.



20

After installing all photovoltaic modules, make sure that all brackets are tightened with appropriate force (see point 14).



General Notes

- This document should be read by all operatives involved in the installation of the Kingspan PowerWall PV mounting system.
- A copy of this installation manual should always be kept on site during the installation of the Kingspan PowerWall PV mounting system.
- A copy of this installation manual should be kept and added to the operation and maintenance manual for the entire PV system.
- The Kingspan PowerWall PV mounting system may only be installed by persons who are both technically capable and qualified to do so. This includes, but is not limited to, all relevant training in relation to working at height.
- All construction work should adhere to governing, local and national, building permissions and planning regulations.
- Prior to the installation of the Kingspan PowerWall PV mounting system and array, ensure the design has been carried out to all local wind loading requirements.
- Prior to the installation of the Kingspan PowerWall PV mounting system and array, ensure the walling material and the underlying structural components have been assessed and approved for their ability to support the additional loading as a result of the installation of the array, by a suitably qualified Structural Engineering company.
- Prior to the installation of the Kingspan PowerWall RW PV mounting system it is recommended that the Karrier Architectural Wall Panel be surveyed to document its condition. This should include, but is not limited to, the condition of coatings, weather seals, fixings and any existing penetrations in the wall.
- The installation instructions of the solar PV module manufacturer must always be adhered to. Should a conflict arise between the mounting system design and the installation instructions of the solar PV module manufacturer contact the solar PV module manufacturer directly for further technical guidance.
- Consideration must be given to the layout and positioning of the PV array when installing in the presence of Windows products. Adequate clearance should be provided for future maintenance of both the PV array and Windows products. For further information on the layout and positioning of the PV array please contact with Technical department.
- Only the fixings provided with the Kingspan PowerWall PV mounting system are to be used, substitution or modification of these fixings will alter the structural performance of the product and nullify all design calculations and warranties.
- Impact drivers must not be used for the installation of the Kingspan PowerWall PV mounting system. Over tightening of fixings and/or module clamps may impact their structural and sealing performance.
- Array layouts should take into consideration the future maintenance of both the PV array and the Karrier Architectural Wall Panel.
- During installation no tools, materials or any other equipment should be placed on the surface of the PV modules. This can lead to damage of coatings, glass or cells of the PV modules.

Safety Notes

- ⚠ All operatives should wear appropriate personal protective equipment (PPE) as specified in the project health and safety plan as well as site specific RAMs (Risk and Method Statements), during the installation of the Kingspan
- ⚠ Solar PV modules are fragile elements. Installers should never walk on solar PV modules during installation, maintenance or removal. This includes solar PV module frames. Do not subject solar PV modules to any mechanical stress or allow any objects to be dropped on the solar PV modules.
- ⚠ There is an inherent risk of working at height when installing a wall PV array. The installation of the Kingspan PowerWall PV mounting system should adhere to a health and safety plan prepared based on a thorough project risk assessment. Safety equipment should be employed for the project in line with governing regulations.
- ⚠ There is a risk of falling materials when installing a wall PV array. Clear demarcation lines should be specified in the health and safety plan and be set up around the area of installation and any members of the public who have cause to be in the proximity of the site must be warned.
- ⚠ The installation, maintenance and removal of wall PV arrays exposes operatives to risk of electric shock. Solar PV modules generate electricity when exposed to daylight and cannot be switched off. The installation of solar PV modules must be carried out by operatives who are technically capable and qualified to do so.
- ⚠ Beware of all industrial machinery whether it is related to the installation of the wall array or part of the daily operation on the site of installation. The health and safety plan should highlight areas in which industrial machinery is in operation.
- ⚠ Beware of overhead loads while lifting material to and from the wall of installation. Designated lifting areas and clear demarcation lines should be specified in the health and safety plan and be set up as required. Members of the installation team and the public who have cause to be in the proximity of the lifting works must be warned.



Contact Details

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