VAN DER VALK
SOLAR SYSTEMS

Installation manual

ValkAce for Slate Tile roofs

Version: v4
Date: 11-11-2025

Disclaimer

This installation manuals needs to be stored for future use. For project specific guidelines and recommendation it is required to use this document in conjunction with the “Project report” generated by the ValkPVplannerPro. The instructions provided in this Project Report must be strictly observed at all times.

The content of this installation manual has been carefully compiled. Van der Valk Solar Systems does not accept any liability for the correct use of this document. Van der Valk Solar Systems hold the right to update the content of this document without further notice. Please check the website of Van der Valk Solar Systems (www.valksolarsystems.com) for the most recent version of this document.

For the warranty conditions of your installation, please contact your supplier. Further we refer to our General Terms and Conditions, that are available upon request.

General installation guidelines

General

- During installation of the solar mounting system, the instructions and safety precautions presented in this installation manual must be followed carefully. As also stated in the General terms and Conditions of sale and delivery of Van der Valk Solar Systems B.V., non-compliance with the installation guidelines in this document means that the customer can no longer invoke any warranty and Van der Valk is no longer liable for any form of damage.
- The information, comments and advice in this document are binding. Van der Valk Solar Systems reserves the right to update this document without further notice.

Safety

- The installation of the mounting system must be carried out by qualified technical personnel.
- Omitting parts may negatively affect performance and is therefore not allowed.
- Avoid carrying out installation work during bad weather conditions, especially in case of strong winds and a wet (slippery) roof surface.
- During the planning and execution of the installation, always take into account possible changing weather conditions, in particular strong winds or storms. Take the right measures and make sure that no situation can arise where solar panels have already been placed on the system, but other essential parts are still missing.
- During installation work on the roof, always use fall protection and, if necessary, work with safety nets and roof edge protection.
- Always wear appropriate protective clothing and gloves when carrying out the installation work.
- Follow the guidelines in the publication “Health & safety in roof work”.

Environmental factors

- High neighbouring buildings or objects, such as windmills, can affect the wind pressure. In these cases, advice should always be obtained from Van der Valk Solar Systems before installation can take place.
- If during the installation it is determined that the project data and/or environmental factors do not fully correspond to the project report, the project must always be re-calculated first.
- In coastal areas, the system should be placed at least 500 meters from open water to prevent accelerated corrosion by the action of salt water. When buildings are present between the open water and the roof, a minimum distance of 250 meters from open water may be maintained.

Standards and regulations

- For correct and safe installation and use of the solar mounting system, always observe the applicable standards and regulations:
  - EN 1990: Basis of structural design
  - EN 1991-1-3: General actions: snow loads
  - EN 1991-1-4: General actions: wind loads
  - IEC 60364: Electrical Installations for Buildings
  - IEC 62305: Protection against lightnings
  - EN 50110: Operation of electrical installations
  - Working Conditions Act and Safe Working Conditions Regulation

Stability and condition of the roof and roof covering

- The roof pitch should be less than 5 degrees for flat roof systems and between 5 degrees to 75 degrees for pitched roof systems.
- The condition of the roof must be checked upfront for sufficient strength to bear the weight of the mounting system including PV panels ballast and wind and snow loads. Make sure that the load reserve of the roof is not exceeded anywhere.
- Check the stability of the roof and adjust the roof/construction where necessary.
- Check prior to installation whether the roof covering and/or insulation is suitable for the pressure and thermal expansion of the solar mounting system. The maximum pressure is shown in the project report of the ValkPVplanner or can be requested at Van der Valk Solar Systems.
- Bulging of the roof membrane should be prevented. This can lift the solar mounting system and can cause displacement of the mounting system or ballast. It is the installer's responsibility to prevent the roof membrane from bulging.
- Factors such as overhead cranes, seismic activity and others that affect the stability of the roof and/or building can affect the installed solar mounting system. Van der Valk Solar Systems does not take these factors into account, unless confirmed in writing.
- The roof surface on which the solar mounting system is to be installed must be clean, dry and flat.
- The roof height may not exceed 25 meters in case the project has been calculated in the ValkPVplanner must be corresponding to the roof height in the project report. For installations on roofs higher than 25 meters, Van der Valk Solar Systems should always be contacted in advance.

Roof zones

- When installing the solar mounting system, always take the applicable roof zones according to EN1991-1-4 into account. Placing solar panels in the edge zone of the roof (the distance measured from the roof edge, which is equal to 1/5 of the building height) is only possible if this has been explicitly taken into account in the calculation.
- It is possible to position panels in the edge zone of the roof in the ValkPVplanner (calculation software), on the basis of which the required additional ballast or fixation points are automatically calculated. This can only be done using "Satellite" or "White Map" design mode. The edge zone is automatically calculated by the ValkPVplanner, based on the roof height and building circumference, in accordance with the applicable regulations. In case the design mode "Simple mode" is used, the calculation always assumes that the solar panels are in the middle zone of the roof only.

Dilatations

- The maximum allowed dimensions of a coupled mounting system is a 30 meters in the aluminium direction and 60 meters in the steel direction. The maximum dimensions are based on the thermal expansion in case of a maximum temperature difference (Delta T) of 70 degrees Celsius.
- The coupled mounting system must not be placed over a gutter or ridge. In the mounting system is place over a gutter or ridge, the system must be split (dilatation).
- When using the extra wide panel support feet for ValkPro+ with ballast, different dilatation rules apply: in such installations the coupled system may be a maximum of 30 meters in the steel/roof carrier direction and 15 meters in the aluminium direction.

Solar panels

- It is the responsibility of the installer to determine in advance whether the selected solar panel is suitable for the mounting system in terms of dimensions and pressure loads. The calculated loads on the solar panel are shown in the project report of the ValkPVplanner or are available on request at Van der Valk Solar Systems.

Cable management

- In order to create a sound and durable electrical connection between the solar panels, it must be ensured that the cables from the junction box have sufficient length and thus do not cause any mechanical stress on the cable glands. Take into account thermal expansion and contraction of cables and the mounting system.
- Cables and connectors must be kept away from sharp and/or abrasive parts and the roof surface by using sufficient and appropriate cable clamps and cable baskets.

Disassembly and Removal

- Components of the solar mounting system can be easily and completely disassembled at the end of their service life and separated for recycling. The systems only contain nut and bolt, screw and click connections, so nothing is glued or welded. All materials are fully recyclable. Disposal of the components always in accordance with the locally applicable laws and regulations.

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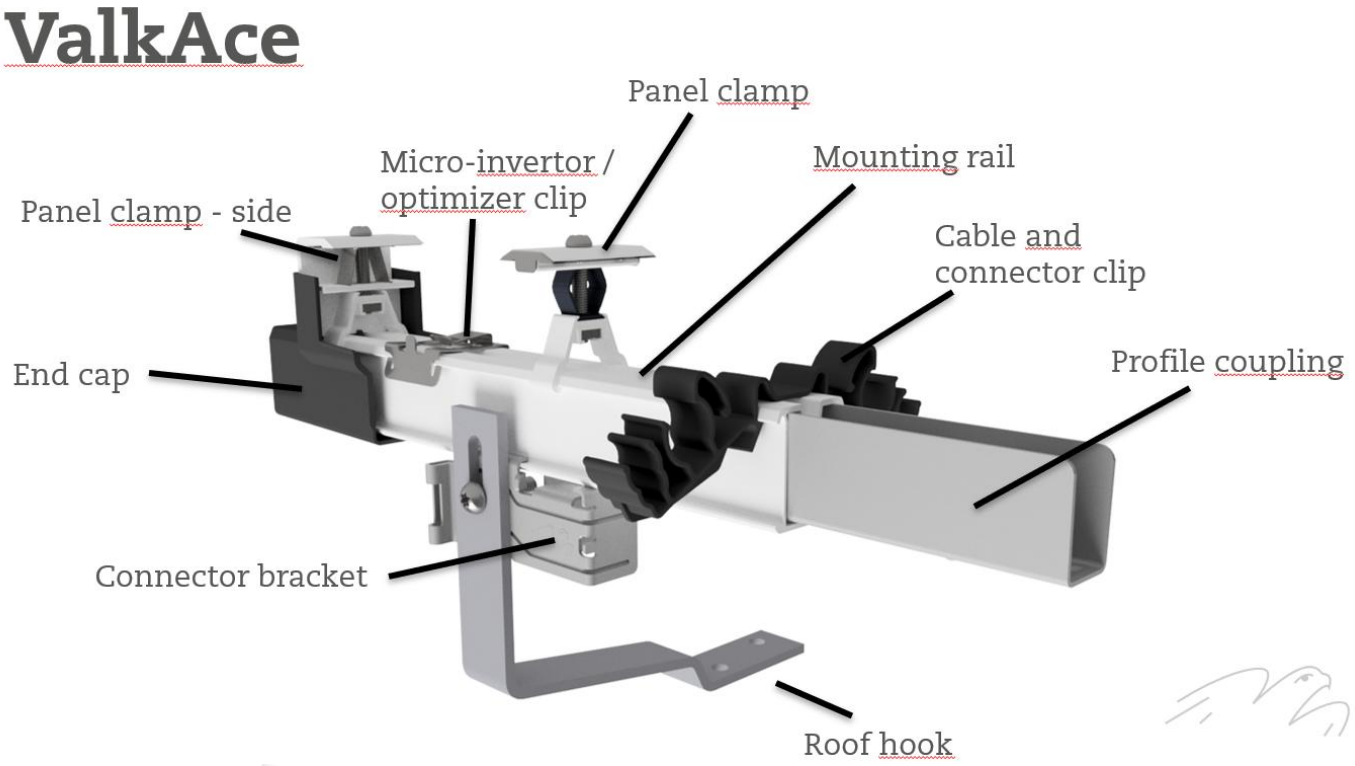


Placement conditions

In order to ensure a safe installation of the ValkAce mounting system for solar panels on roofs with slate tiles, the following conditions must be respected:

- Design your PV-installation using ValkPVplannerPro software prior to installation. This ensures the correct strength calculations are made for each specific project location and roof size and height, in line with the applicable Eurocode building regulations. The program will generate a mounting plan and list of required components.

- The mounting system and flashing may only be installed by qualified and adequately trained installers.

- To ensure water tightness of the roof, SpeedFlash® roof flashing is to be used in combination with the ValkAce roof hook for slate tiles. SpeedFlash® is compatible with 18" to 24" slates. For the correct installation of the flashing, follow the instructions in the appendix of this manual.

- ValkAce for Slate tile roof has been tested and approved to withstand a maximum wind uplift force of 0.55 kPa.

- In coastal areas the mounting system must be placed at a distance of at least 500 meters from open water, to prevent corrosion due to salt water spray. In case there is a building in between the open water and the roof, a distance of 250 meters can be applied.

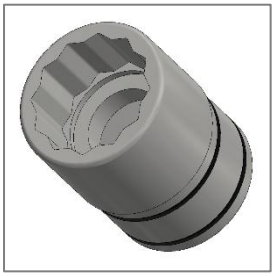
Suitable panel dimensions

ValkAce for Slate tile roofs can accommodate the following panel dimensions:

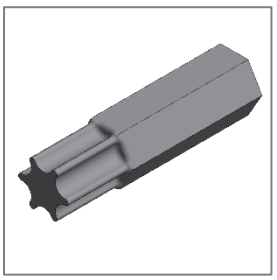
Length	1500 - 2500 mm
Width	900 - 1350 mm
Panel frame height	25 - 40 mm

Required tools for installing ValkAce mounting system for Slate tile roofs

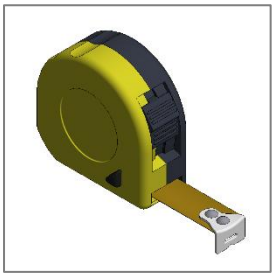
Cordless drill



Socket 13mm

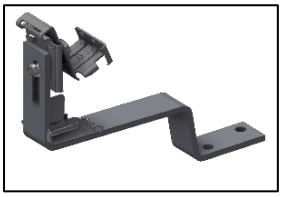


Torx bit T-30
(789530)



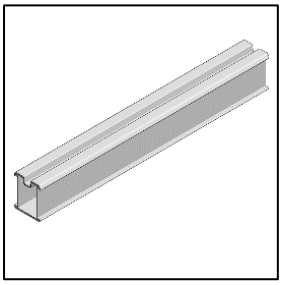
Measuring tape

Components ValkAce mounting system for Slate tile roofs



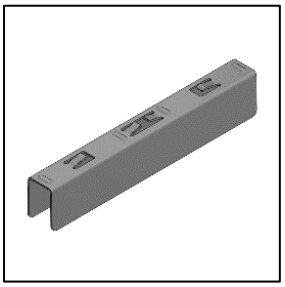
ValkAce Slate tile roof hook
747510

Ss torx-screw 5,5x58mm
773360

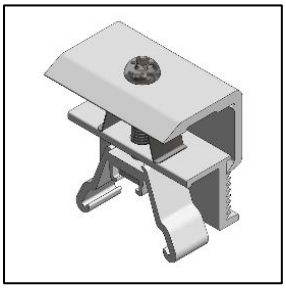


ValkAce profile

Profile length	Art no.
1220 mm	701901220
2370 mm	701902370
3520 mm	701903520
4670 mm	701904670
5820 mm	701905820

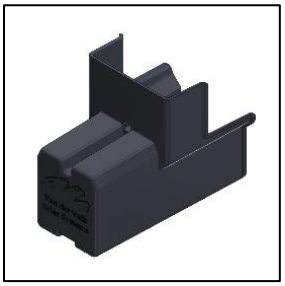


ValkAce coupling for profiles
749502

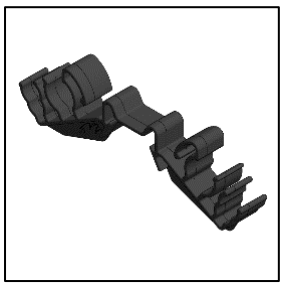


ValkAce clamp side
721412
721412ZW – black finish

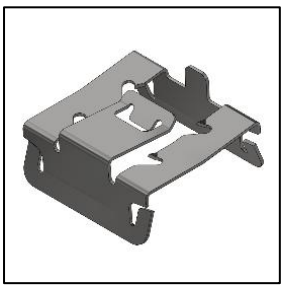
ValkAce clamp middle
721410
721410ZW – black finish



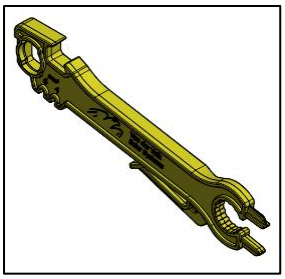
ValkAce end cap
739060



ValkAce cables and connector clip
739061

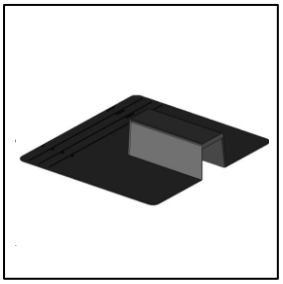


ValkAce microinverter mounting clip
739062

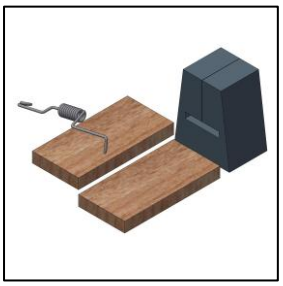


ValkAce disassembly tool
739065

Components SpeedFlash flashing



SpeedFlash® flashing
747775



SpeedFlash® mounting materials
747776

SpeedFlash® shield
747779

ValkAce for Slate tile roof installation

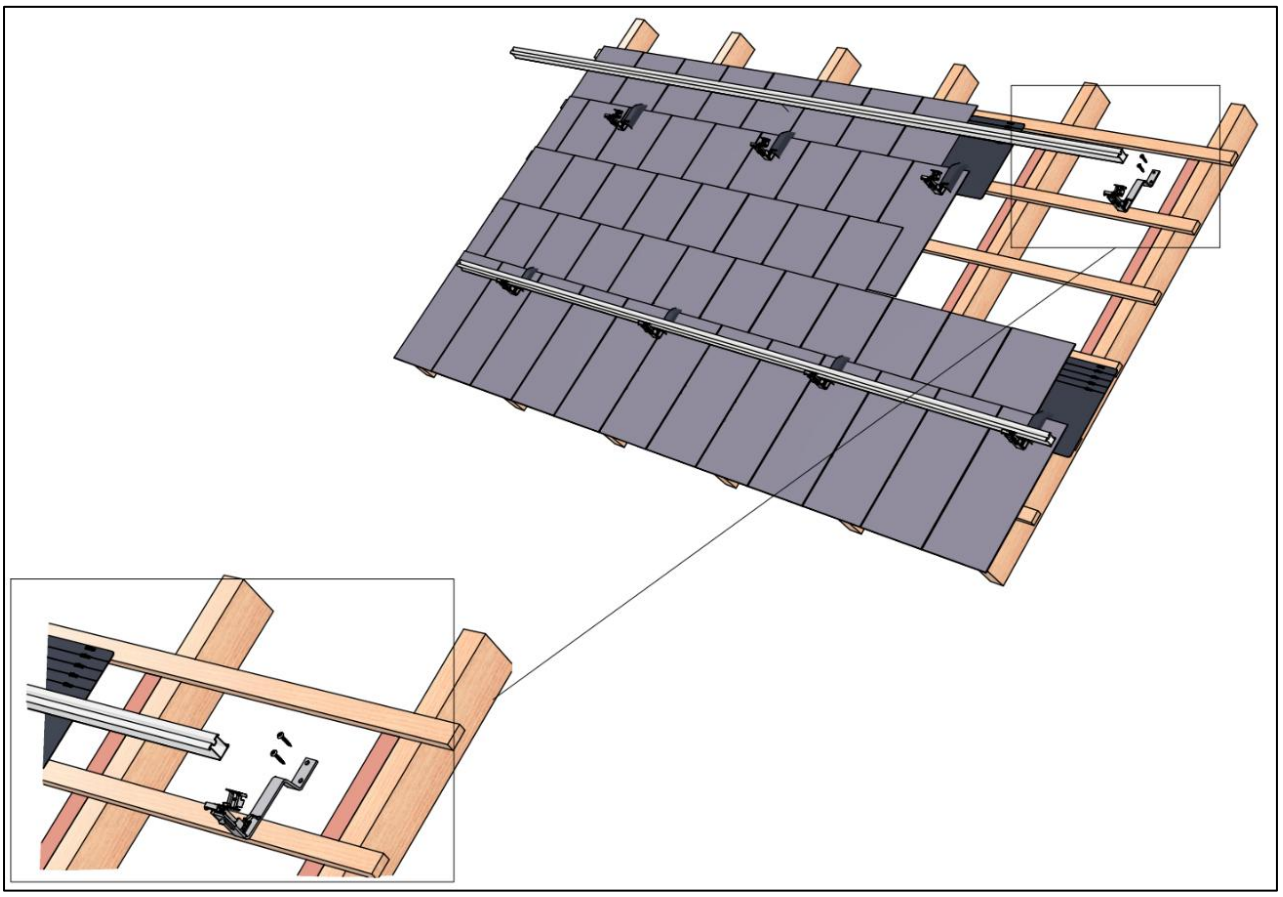
Check the ValkPVplannerPro project report to determine the required number of roof hooks to be used in the installation. Locate the position of the rafters in the roof construction, as the hooks need to be fixed into the rafters to ensure maximum strength.

Roof hooks

Mark each position on the roof where a roof hook needs to be placed. Follow the instructions for cutting and removing the slate tiles and placing the flashing, shown in the Appendix I “Installation of SpeedFlash” (page 21-29).

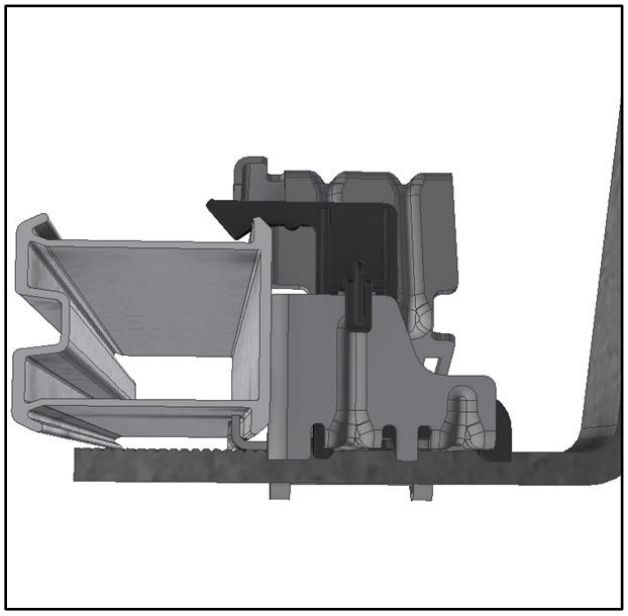
Check if the clearance underneath the roof hook and the surface of the slates is at least 3 mm. Use shims or a piece of wood between the base plate of the hook and the rafter, to achieve this clearance in case needed. The roof hook is then fixed onto the rafters using two screws (item 773360).

Ensure the roof hooks are properly aligned, so the profile can be mounted correctly.

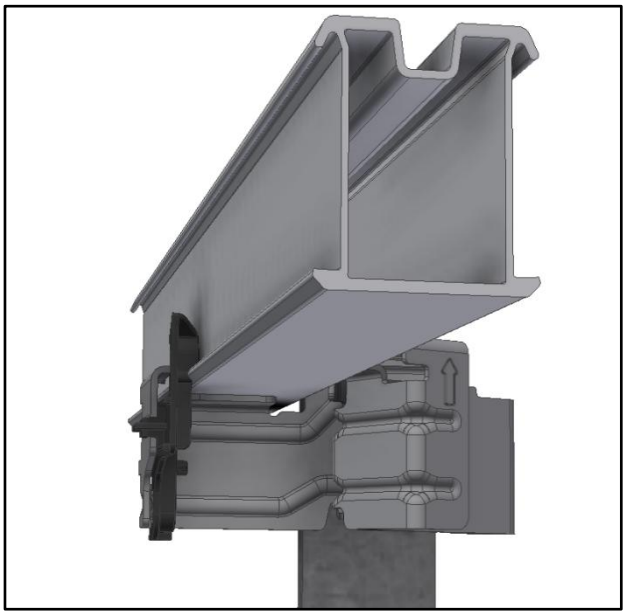


Mounting profiles

When the roof hooks are fixed in the right positions, the profiles can be installed. The profiles are placed into the steel brackets on roof hooks. The profiles can be placed in a horizontal or vertical direction, depending on the desired orientation of the solar panels. The plastic part in the bracket allows for proper positioning of the profiles before the profile is fastened.

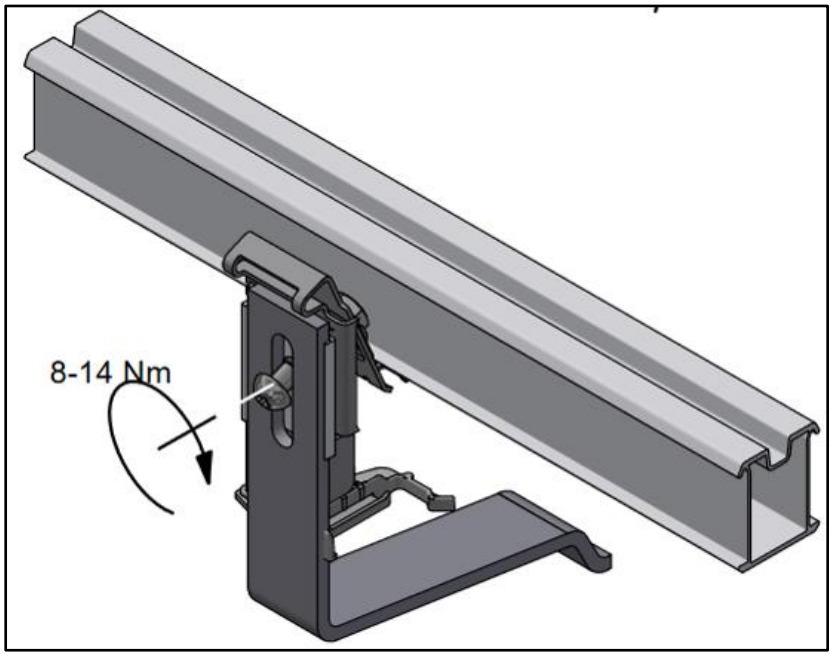


Profile mounted in horizontal position



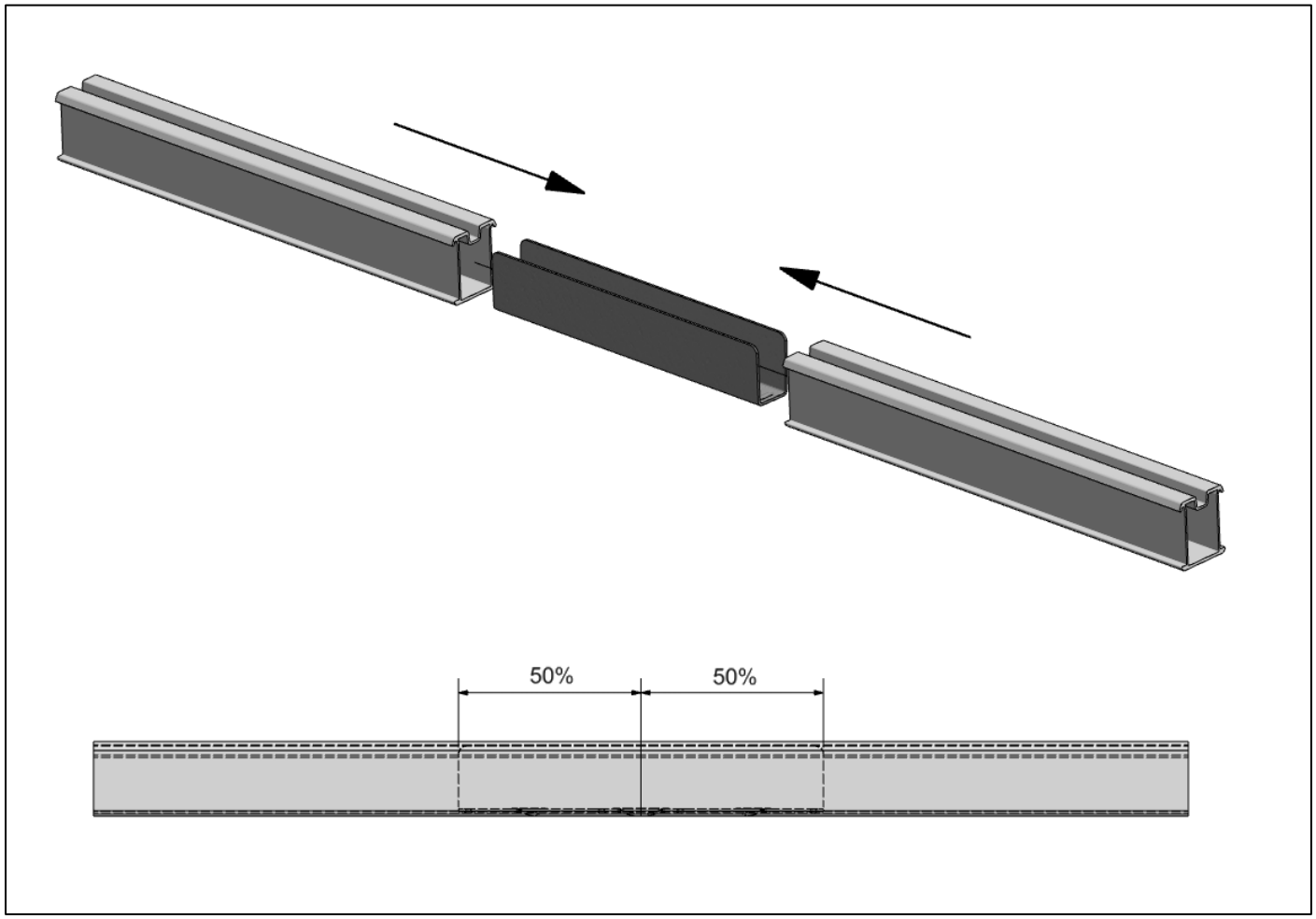
Profile mounted in vertical position

Once the profile is in the correct position and properly aligned, it is fastened to the bracket by tightening the bolt on the underside of the bracket (Torx T30). The required torque range is 8-14 Nm. Make sure that each bracket on every roof hook is properly fastened.



Coupling of profiles

ValkAce profiles can be connected by using the steel coupling piece (749502). The coupling piece can be inserted in both ends of the aluminium profiles, after which the aluminium profiles are pushed towards each other until there is no more gap. The coupling has a stop at the underside, to ensure the coupling profile always has equal length in each profile for maximum strength.



Dilatations

To allow sufficient space for the mounting system to expand and contract due to temperature changes, the system has limitations for the maximum coupled lengths of profile. A “dilatation” is required every 30 meters. The minimal gap distance between the profiles at the dilatation is 150 mm.

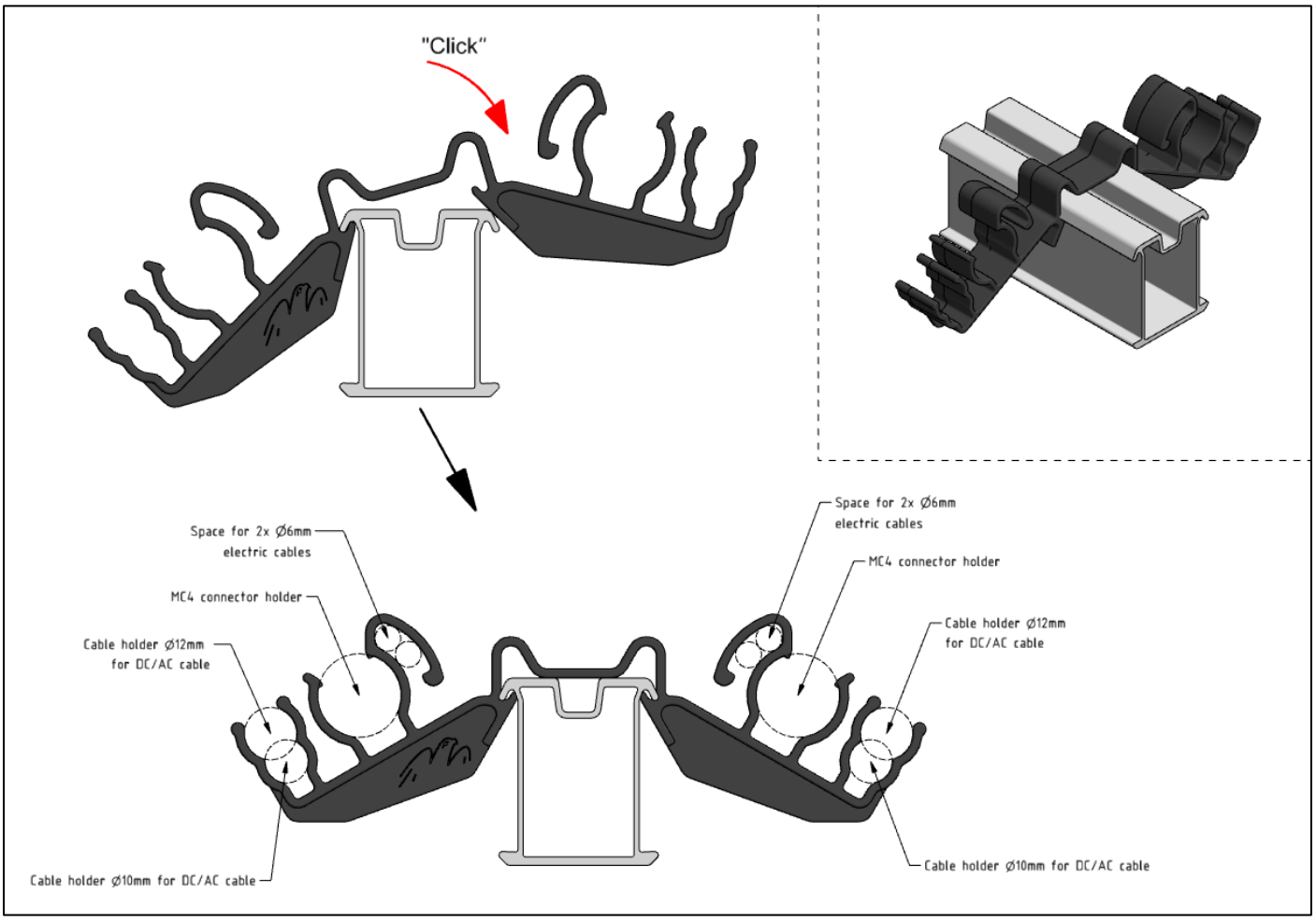
Cable Management

The ValkAce cable and connector mounting clip (739061) can be used for safe and neat fixation of cables and connectors.

Each mounting clip has room for the following items:

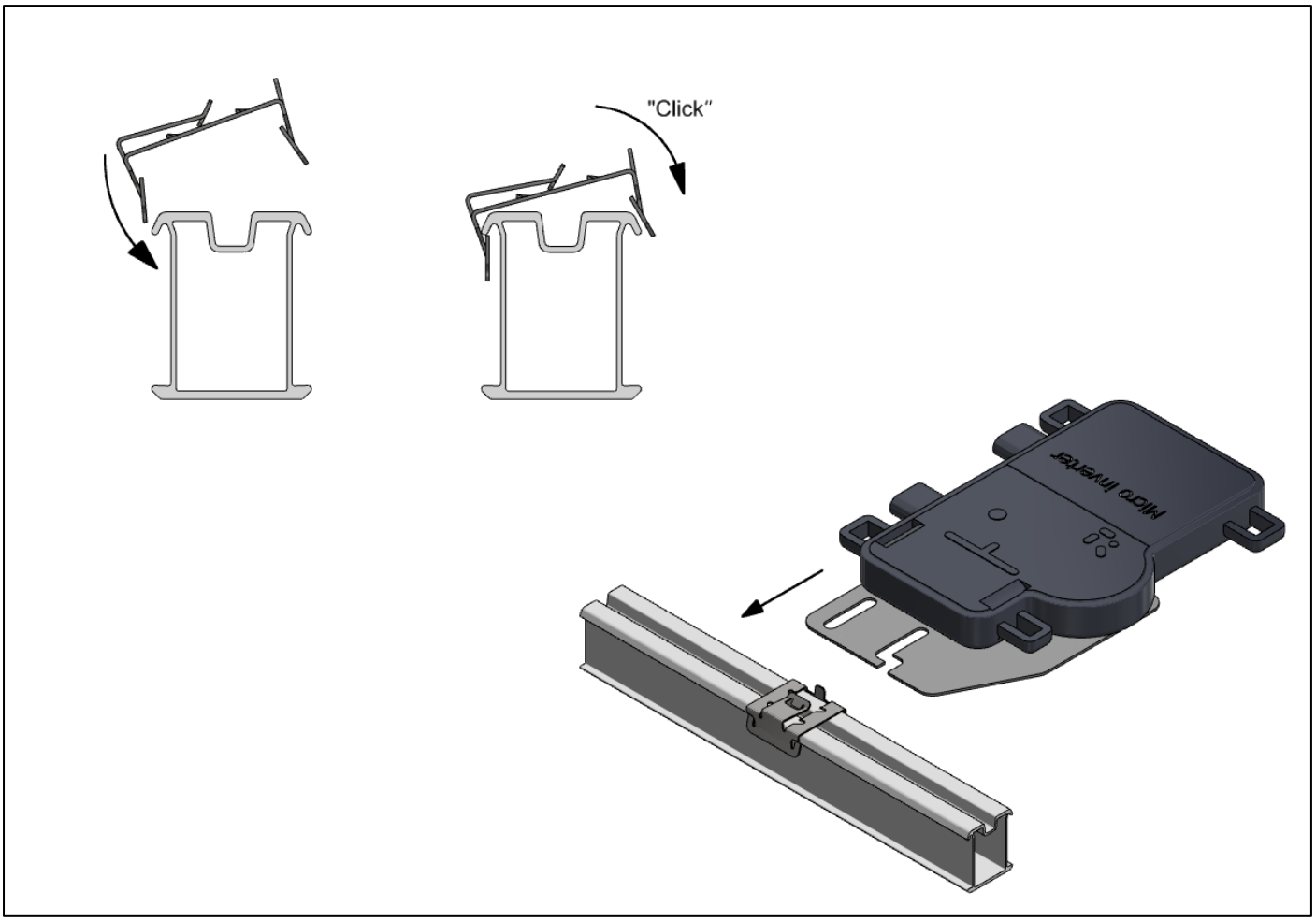
4x cable Ø 6,5mm
1x cable Ø 10mm
1x cable Ø 12mm
2x MC4 connector

The mounting clip can be clicked onto the ValkAce profile in any preferred position.



Micro-inverters

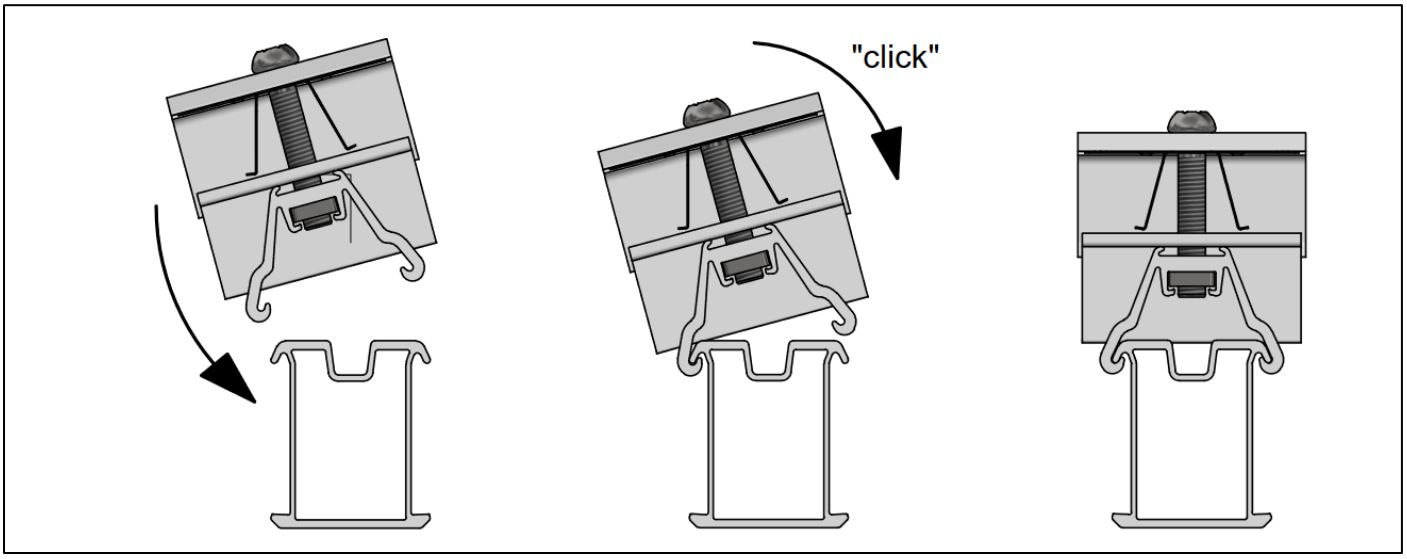
Fixation of micro-inverters to the ValkAce system is fast and easy. The mounting clip (739062) in stainless steel is positioned over the profile on one side and then pushed downwards on the other side. See image for reference. The “click” sound ensure the clip is well positioned. The clip can be placed in any preferred position on the profile.



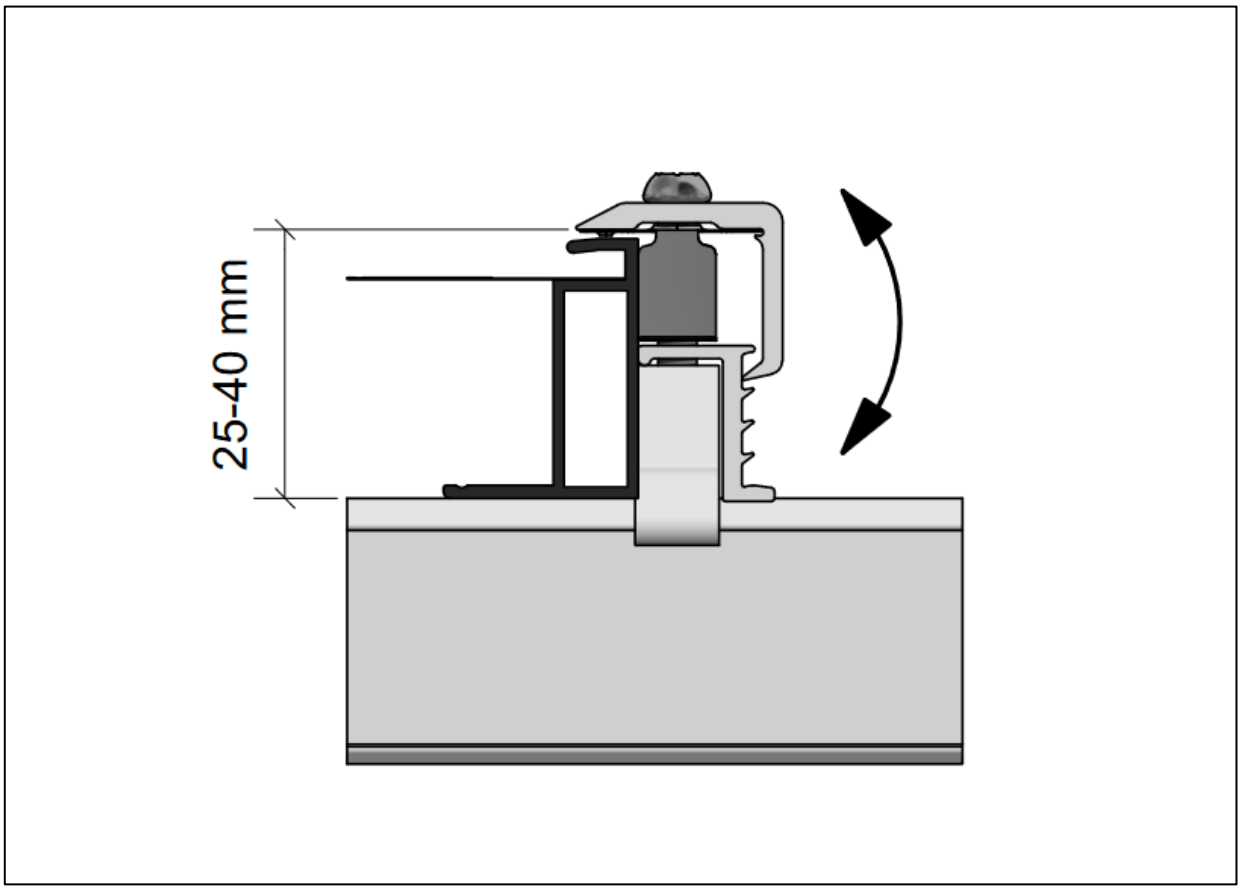
The fixation plate of the micro-inverter can then slide underneath the leg of the mounting clip and is fastened by a “click”.

Panel clamps (side)

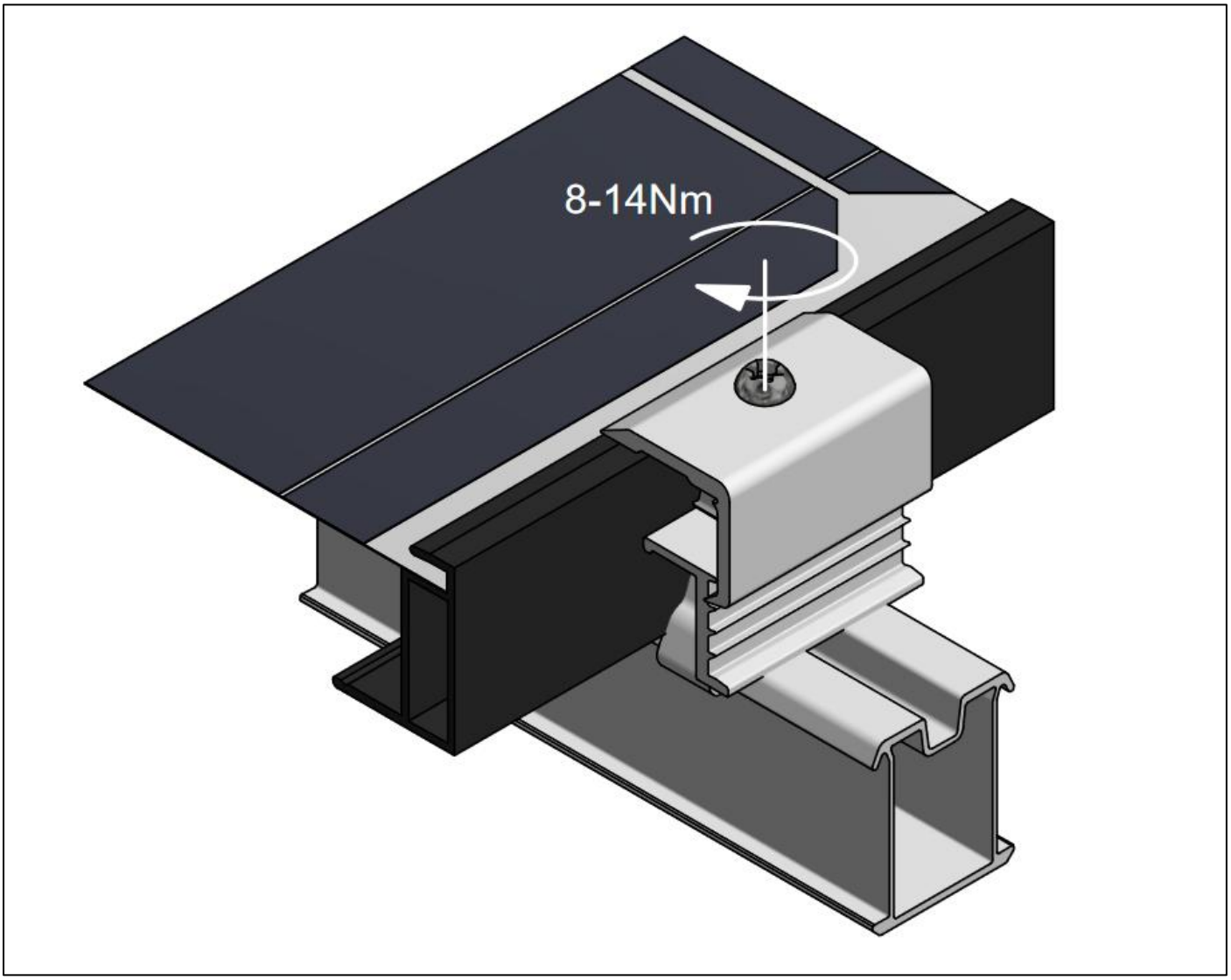
Each side of the panel row is fixed by the side clamps (721412). The side clamps can be easily clicked onto the profile. The side clamps have a range for the panel frame thickness of 25-40 mm.



Set the side clamp to the correct height by placing the top plate in the slot corresponding with the panel frame thickness. See image below.

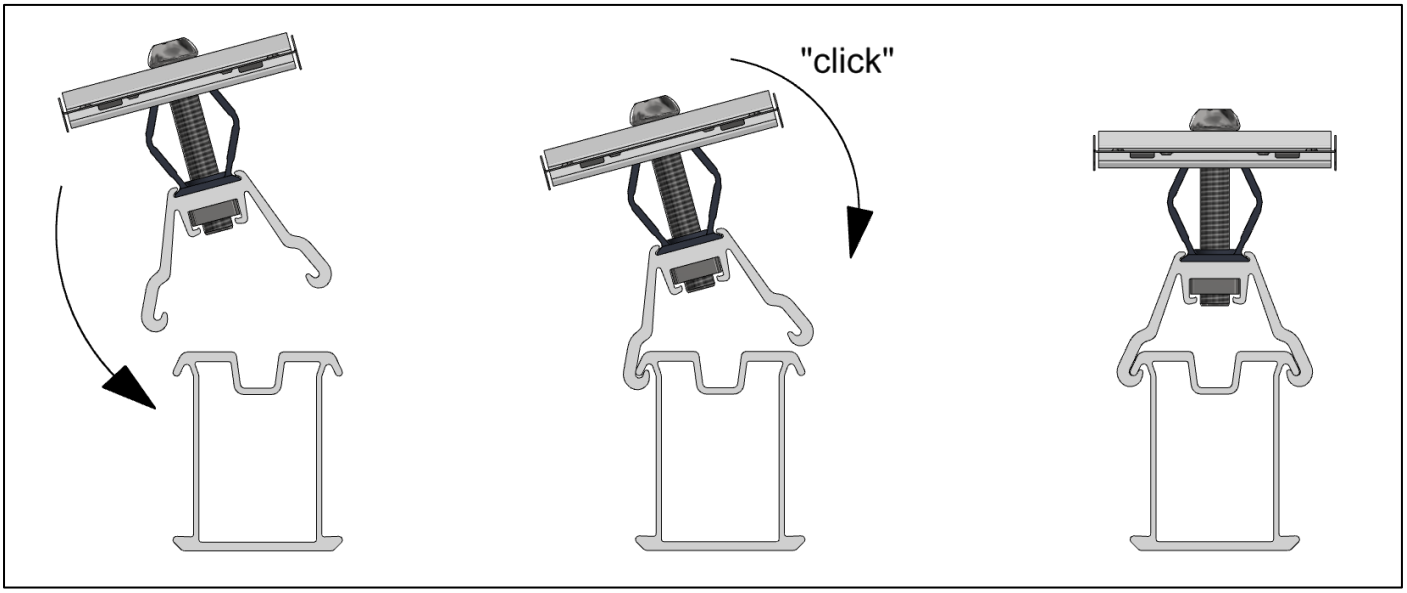


Fix the clamp with the bolt (Torx T30) at torque 8-14 Nm.

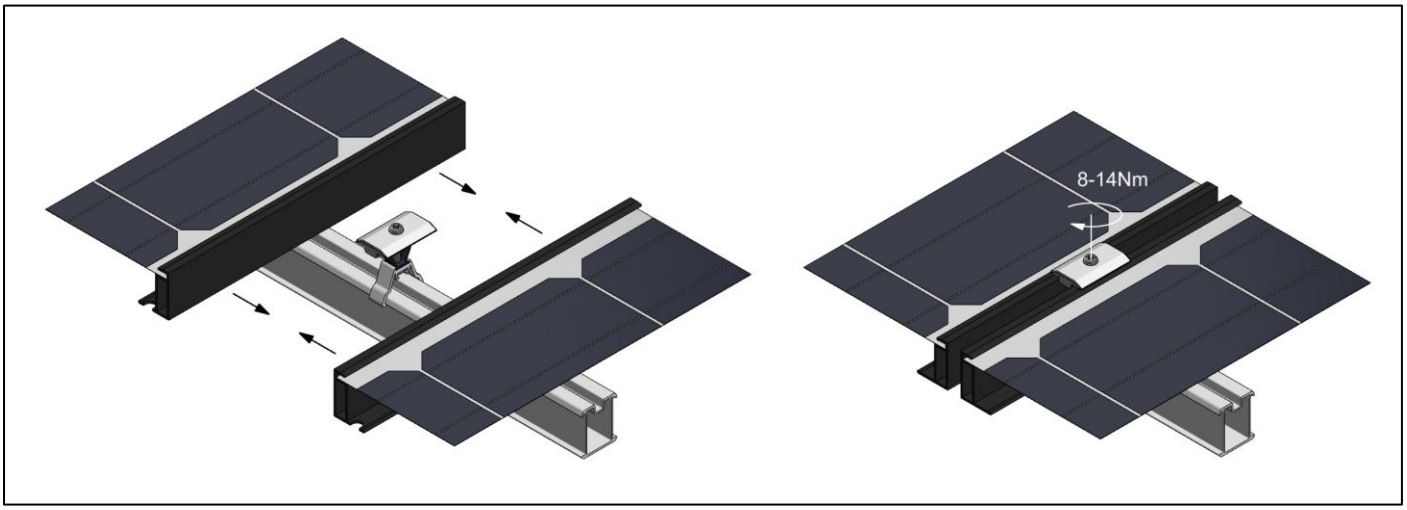


Panel clamps (middle)

The middle clamps are mounted the same way as the end clamps, only the height of the clamp is not set to a certain height. Click the middle clamp onto the profile and place the panel frames against the clamp.

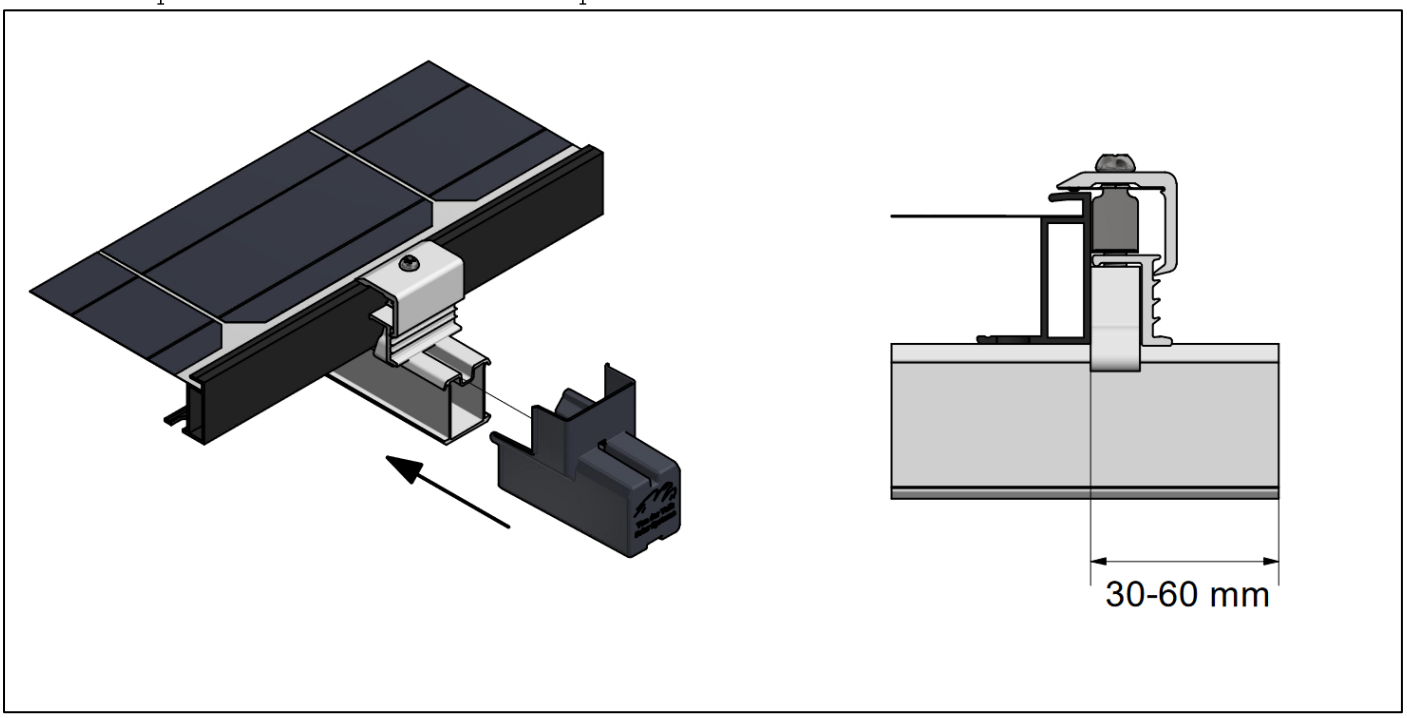


Once the panels and middle clamps are correctly in place, fix with the bolt (Torx T30) (torque 8-14 Nm)



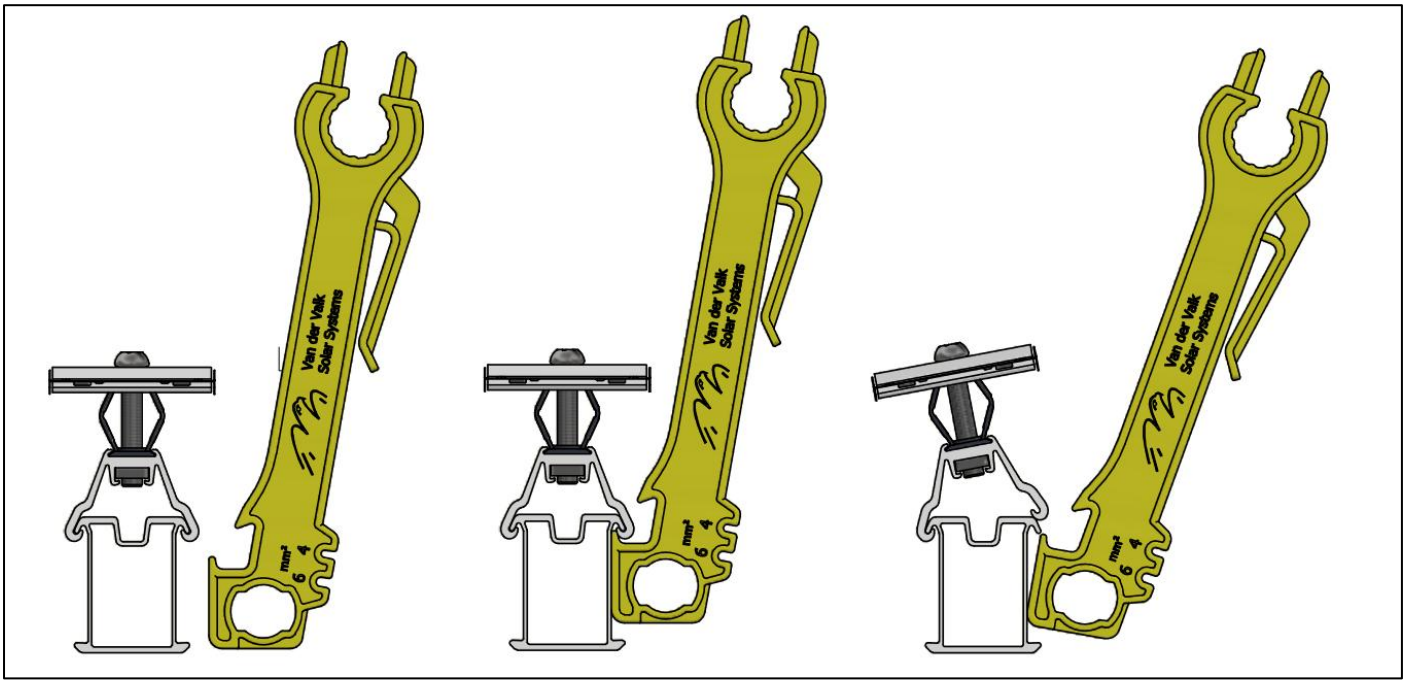
Mounting ValkAce end caps

The end caps ValkAce (729505) are placed over the ends of the aluminium profiles. The end caps cover both the end of the profiles as the sides of end clamps. To mount the end caps properly the profile must have the correct length: the end of the profile must be 30-60mm measured from the side of the panel frame to the end of the profile.

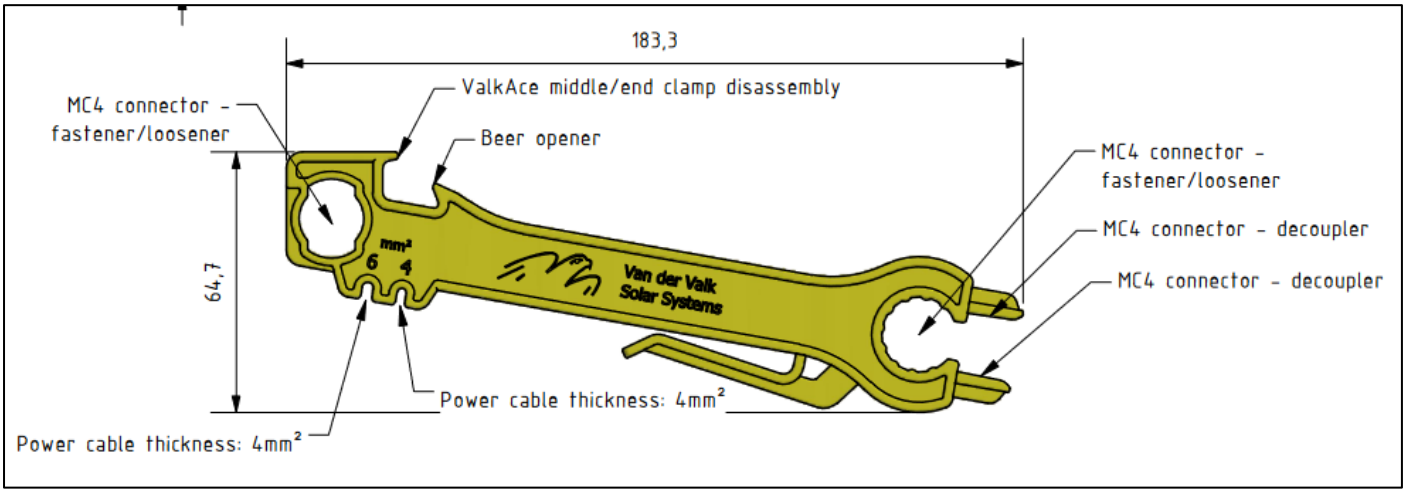


Disassembly tool

The ValkAce middle/end clamps can be disassembled with the Disassembly tool (739065)



It can also be used for a variety of other things:



Appendix I

Installation instructions SpeedFlash®

Genius Roof Solutions™
revolutionising roofs™

Installation Instructions

SpeedFlash®

Flashing solution for bracket mounting on slate roofs

SpeedFlash® Kit

1x SpeedFlash® base and cap
1x Spring support
2x Shims (packings)
1x Foam insert

Tools you will need:

- SpeedFlash® Shield
  Two shields supplied in every box. Also available to buy separately.
- Scissors/Snips
- Angle Grinder
- Impact Driver

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1 Find the rafter positions.

There are several ways to do this:

- Gain access to loft space
- Use a type of Stud Finder tool
- Look under fascia board

If you struggle to find the rafter:

Open a small section of the roof using a slate ripper or our new 'Double Sided Hacksaw Tool' (cuts rather than rips the nails).

Locate the rafter positions. The roof can easily be repaired using the Hallhook®.

Once you have identified the rafter, mark the centre line position of the rafter on the slates.

2 You are now ready to mark the top slate, in preparation for cutting.

Measure upwards 190mm / 7.5" from the bottom of the slate and mark with a line.

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3 To conclude the line drawings for cutting purposes, measure 37.5mm / 1.48" left and right from the centre of the rafter line. Draw vertical lines from the 190mm / 7.5" horizontal line, down to the bottom of the slate.

You now have the full area marked ready for the first cuts.

4 The SpeedFlash® Shield is used to protect a specific area of the course below when cutting the top slate(s).

5 Insert the SpeedFlash® Shield fully as shown.

Using the angle grinder, cut out the marked area (top slates only).

Do not exceed the vertical lines.

NB: The shield's purpose is to protect the lower course of slates. Take care to avoid contact with angle grinder to prolong shield life.

Remove the SpeedFlash® Shield.

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6 Now you have cut the top slate(s), you need to cut the lower course to create the working area (the area in which the bracket will be fixed).

Mark 110mm / 4.33" up, from the bottom of the cut slate(s).

7 Using the angle grinder, cut out the 'working area' on the slate i.e. the area from the 110mm / 4.33" horizontal line and the 190mm/ 7.5" horizontal line.

Cutting at 110mm / 4.33", ensures you leave 10mm above the nail holes on the slate(s) underneath. This protects the area around the nail holes, thus preventing failure.

8 You now have your working area in which to fix the bracket onto the rafter.

Place bracket into position to determine if any shims / packings are required to achieve clearance from the roofing material (slate) underneath.

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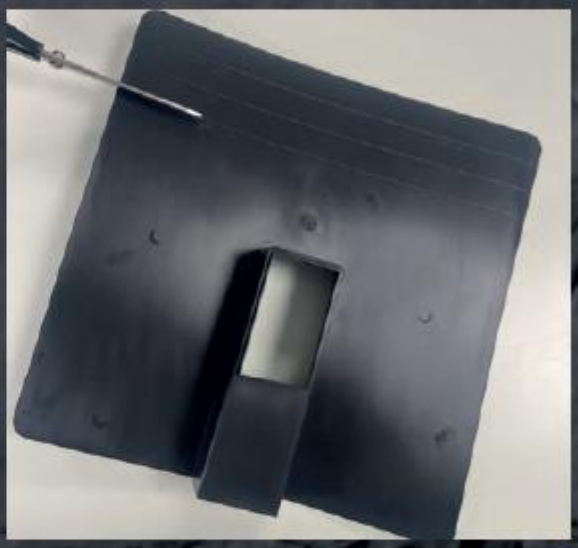
9 Use shims / packings to create clearance between the bracket and the roofing material.

10 Cut down SpeedFlash® to required size (determined by the size of the slate).



11 SpeedFlash® can now be pushed into position.

The SpeedFlash® needs to stay in this position (the top touching the nails on the slate).

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12 To hold the SpeedFlash® in place, use the metal spring support. Insert support via the bottom opening, hooking the support onto the cut under slate.

Then pull down and attach support to the base of the SpeedFlash®.

13 Install bracket.

Install / Fix bracket into position.

14 Insert foam at the bottom opening of the SpeedFlash®.

Around the drop of the bracket, sealing the bottom opening.

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15 Finally, attach the cap.

Starting at the bottom of the SpeedFlash®, the cap slides onto the lip on the base. Then press into place at the top section, allowing clasps to clip into place.

Installation is complete.

SpeedFlash®

- Patent applied for.
- Illustrations used 18" slates, set at 75mm / 3" head-lap. The cuts will always be the same regardless of the size of slate (18" +) and or the rafter position. These cuts allow you to maintain 3" head-lap (as per building regulations).
- SpeedFlash® has been designed in line with standard roofing practices of 75mm / 3" head-lap.

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SpeedFlash®
• SpeedFlash® is compatible with 18" to 24" slates. SpeedFlash® can be used on 16" slates however due to the need to maintain a 3" head-lap, the working area will be reduced. This reduces the compatibility with certain brackets.
• SpeedFlash® is not compatible with Pantile (wide plate) brackets, due to the width of the entry point into the SpeedFlash®.
• The working area will allow for brackets with a maximum fixing plate height of approximately 80mm.
• Plastic can be brittle in cold weather, do not attempt to bend during installation.
• Use appropriate safety PPE.

Van der Valk Solar Systems

Van der Valk Solar Systems is since 2009 one of the fastest growing companies in the solar industry and focuses entirely on the development and production of solar mounting systems for pitched roofs, flat roofs and open fields. Van der Valk Solar Systems also has an office and warehouse in the UK, offices in Sweden and Spain and is currently active in 13 countries.

Our mounting systems are developed and produced in our own factory in the Netherlands and stand out thanks to their broad area of application, the very short time in which they can be installed, and the high quality. They are developed according to the latest Eurocodes and therefore comply with the requirements defined for solar systems by banks and insurance companies.

Van der Valk Solar Systems is part of family-owned company Van der Valk Systemen, which has been a household name in the field of moving systems and mounting components since 1963.

Our shared industrial complex in the Netherlands consists of 35.000m2 of offices and factory spaces. Here we use modern machinery and the latest technologies to quickly and accurately develop, manufacture, and test products and systems.

Solar mounting systems & cable management

Flat roofs

Pitched roofs

Cable management

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