



General installation guidelines

General

- During installation of the solar mounting system, the instructions and safety precautions presented in this document and the accompanying 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 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 prior to, during or after 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 and any required adjustments need to be made.
- 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.

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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

- Placing a mounting system that uses ballast only, is only allowed in case the roof pitch is less than 5°. In case the roof pitch is 5° or more the mounting system always needs to be fixed mechanically to the roof.
- 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.

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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.
- In case solar panels on the ValkPro+ system are fully or partially placed in the edge zone of the roof, it is mandatory to use side plates.
- ValkKITS (ValkBox3, ValkDouble, ValkTriple, ValkQuattro) can only be placed in the middle zone of the roof. Placing these systems in the edge zone of the roof is not allowed.

Ballast

- After installation of the solar mounting system, it must be carefully checked whether the ballast has been placed in accordance with the ballast drawing. Ballast tiles must be neatly stacked, so that they are sufficiently supported by the tile carriers, mass carriers and/or ballast wings.

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), even if the change in roof pitch is minimal.
- 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.

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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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