



EJOT®

**EJOT®
Solar Flashing
for THREE TAB
asphalt shingle
roofs**

Installation Manual

Description:

The EJOT Solar Flashing system is specifically designed for waterproof installations on THREE TAB strip asphalt shingle roofs with a standard 5" to 5 1/2" row course.

With this fastening system, photovoltaic- and solar thermal racking systems, as well as other installations can securely be anchored on existing or new roofs.

The system includes:

- Anodized aluminum flashing (12" x 8" x 0.04") with preassembled sealing features
- EJOT Solar Fastening with nuts, washers and preassembled gasket



Important

- The EJOT Solar Flashing system is specifically designed for waterproof installations on THREE TAB strip asphalt shingle roofs with a standard 5" to 5 1/2" row course. In case of usage of different roofing systems, deviating sizes or setups, than specified, please contact us before starting the job.

Installation tools

- EJOT Click&Drill Hole saw tool (not included in the set, available upon request)
- Drill (rotation speed approx. 500 rpm) with socket
- Hex Driver Bit 3/16" (5mm)
- Wrench 11/16" (A/F 17mm)

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- The structure of the roof / building must be able to absorb all additional forces, which will be added by the new installation
- It is assumed, that the substructure and the shingles are in good condition to secure a permanent fixture and durable sealing performance
- The chosen rail system must be able

to absorb lateral forces with suitable means (supports, chains, etc.)

- To ensure the full load capacity of the fasteners, it is mandatory to install the bolts in the rafters
- To ensure a fast and precise preparation of the mounting position, you should use the EJOT Click&Drill Hole saw. This tool is specifically designed for this application and is available upon request - separately.
- The instructions as well as the data information give detailed information about installation and conditions. Please adhere to these as recommended.
- Claims can only be accepted as provided records have been documented on site.
- In case our product is weaving into the roofing manufacturer's instructions, theirs will supersede our instructions

Additional notes:

- The Click&Drill hole saw needs to be cleaned as soon as you experience loss in drilling-/ milling performance, due to accumulated asphalt. You can use an appropriate cleaning agent.
- Due to our new and sophisticated sealing system in regards to the EJOT Solar Flashing for Asphalt shingle roofs, it is not necessary to use additional sealing agents in general.



- Roofing bar
- Stud Finder
- Tape Measure
- Chalk Line
- Pen

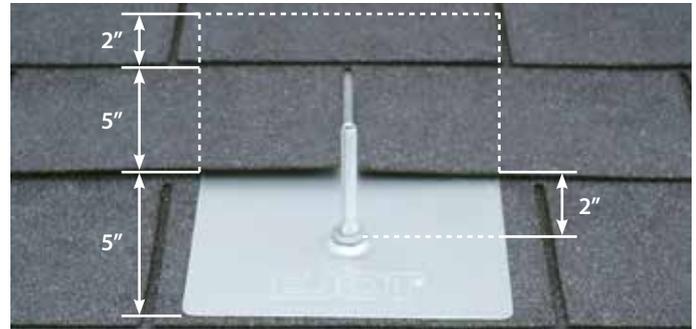
Installation process

1. Locate, choose and mark the centers of the rafters as mounting position references.

Measure and select row course of roofing and snap horizontal lines to mark the installation position for each EJOT flashing. In regards to the usage of standard shingles with 12 inches by 36 inches, follow the rule to allow a 5" exposure of the flashing from the shingle course above.

You may use a flashing as a fixture for correct vertical positioning on the asphalt shingle.

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2. The mounting position can be also performed close to the vertical edge or even right between the shingles - without shimming.



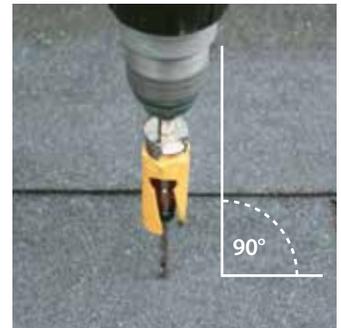
3. When needed, lift roof shingle, right above placement of the fastening position, with roofing bar, to allow the flashing to be shifted in the correct mounting position.



4. Use the EJOT Click&Drill hole-saw tool with end position stop to drill the pilot hole (15/64" diameter - 6.0 mm) in the roof and rafter for the lag bolt and the counter hole in the upper shingle (thickness up to 1/8").



5. Make sure to drill square to the roof surface



6. Drill just deep enough to cut out the countersink in the upper shingle. The end position stop helps to guide to the correct drilling depth.

Note: Perfect drilling depth is performed, when the second asphalt shingle layer is just scratched and the upper cutout can be taken off easily.

Make sure never to cut deeper than about 1/32" in the second layer.



7. Eject the cut out ring of the asphalt shingle from the tool and/or pick the debris out of the produced counter bore

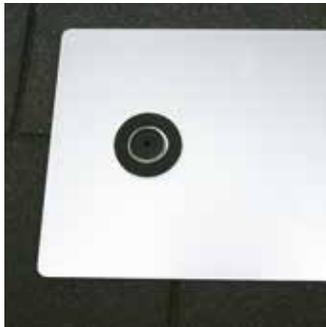


8. Clean the counter bore and the area around from any dirt and sawdust thoroughly



Installation process

9. Before installation, please control that the second sealing element is present and snapped with the hole of the flashing



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10. Slide the flashing in position, so the top part is under the next row of shingles and pushed far enough up slope to prevent water infiltration through vertical joint in shingles. (For dimensions, please refer to step 1.)



11. Line up pilot hole in the rafter with EJOT Flashing hole and make sure, that the sealing element is fitted in the countersunk hole of the shingle.

Note: The sealing ring will be compressed to seal underneath the flashing and the upper asphalt shingle, as soon as the fastener is tied down.



12. Insert the EJOT Fastener through the lined up Flashing and pilot hole in the rafter while using a drilling machine and a rotation speed of about 450 - 500 Rpm.



13. The Solar Fastener has to be installed square to the roof surface. A maximum deviation of about 5° to the roof surface is acceptable.



14. Tighten the fastening element while reviewing the EPDM compression of the sealing ring.

Note: Do not tighten with pre-set torque on the drilling machine – always make sure to review the compression of the sealing ring as explained, to achieve best sealing results.

The compression of the EPDM has to be about 15%, which can be seen when the EPDM is almost flush with the outer diameter of the steel ring.

15. The fastening position is now prepared for attaching the Racking System with Racking Kits of your choice.



All roof manufacturers' written installation instructions must be followed by anyone, working/ modifying a roof system. Please make sure to consult all applicable specifications and instructions, prior to starting the project.

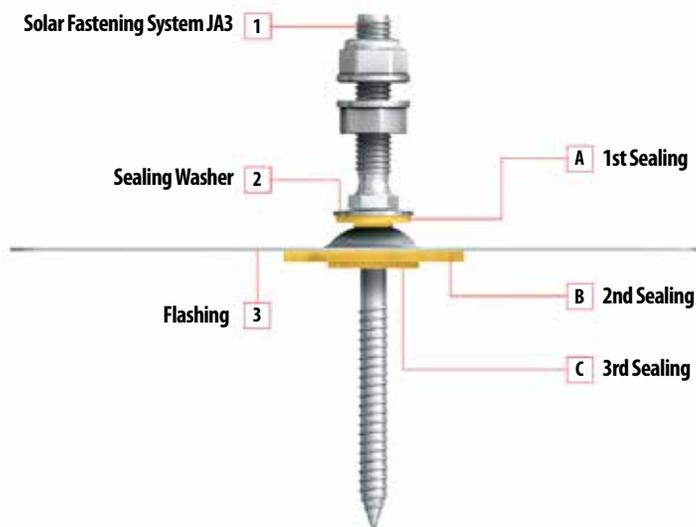
While planning the PV- project, please make sure to review the additional load and remaining bearing capacity of the building, as well as planning of a sufficiently dimensioned amount of fasteners to absorb the additional forces and loads.

For engineering data of the EJOT fastening system please consult an engineer or go to www.ejot.de.

Installation process



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Limited Warranty for function of the EJOT Solar Fastening Systems

Limited Warranty:

The EJOT Group warrants and represents to the purchaser of EJOT Solar Fastening Systems that the products shall be free from defects in material and workmanship under normal and expected use and service for the express period of warranty set forth below.

Period of Warranty:

The period of warranty is 10 years and starts on the date of purchase by the initial purchaser.

Warranty terms:

This warranty is valid only within the express period of warranty. This warranty is limited to either the repair or replacement, at the EJOT Group's sole option, of any defective product. Repair or replacement will only be carried out for the benefit of the direct purchaser of EJOT products. The purchaser shall pay all shipping charges for return of a defective product. For a product returned within 1 year of the date of initial purchase, the EJOT Group shall pay all shipping charges for shipment of the repaired or replacement product, as the case may be, to the purchaser. For a product returned more than 1 year after the initial date of purchase, the purchaser shall pay all shipping charges for shipment of the repaired or replacement product, as the case may be, to the purchaser. A warranty claim can only be confirmed upon presentation of the defective product, the contract receipt and lot number.

Warranty exclusions:

This limited warranty does not apply if the product is improperly installed or assembled, misapplied, abused, altered or otherwise misused in any way, including, without limitation:

- Inappropriate and improper use
- Faulty or negligent treatment
- Failure of installation and assembly instructions
- Changes and self-repairs
- Improper use with chemical and physical resulting effects on the material surface (e.g. damage caused by sharp objects)
- Use of third-party parts (i.e., non-EJOT parts or non-EJOT specified vendor parts)

Note that professional installation by an expert is required.

The following assembly instruction indicates how the installation of the EJOT Solar Fastening is properly carried out and which points must be followed.

Nevertheless, the following points must be guaranteed by the installer:

- It must be ensured that the use of EJOT solutions and other products are suitable for the application and installation environment.
- The project must be confirmed according to structural analysis.
- The installer must have sufficient knowledge and ability to carry out the assembly.
- Only EJOT products or EJOT specified vendor parts are allowed to be used. The use of third-party parts will void the warranty.

DISCLAIMER:

EXCEPT FOR THE WARRANTIES SET FORTH ABOVE, THE EJOT GROUP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHATSOEVER, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY, NONINFRINGEMENT AND FITNESS FOR A PARTICULAR PURPOSE, CONCERNING ANY PRODUCT. ALL OTHER GUARANTEES, WARRANTIES, CONDITIONS AND REPRESENTATIONS, EITHER EXPRESS OR IMPLIED, WHETHER ARISING OUT OF ANY STATUTE, LAW, COMMERCIAL USAGE OR OTHERWISE, ARE HEREBY EXCLUDED.

WHILE THE EJOT GROUP AND ITS REPRESENTATIVES MAY, FROM TIME TO TIME, OFFER RECOMMENDATIONS AND ADVICE WITH RESPECT TO USE OF THE PRODUCTS, IT IS UNDERSTOOD THAT ANY SUCH RECOMMENDATIONS AND ADVICE ARE NOT WARRANTIES BY THE EJOT GROUP AND THE PURCHASER WILL ACT UPON ANY SUCH RECOMMENDATIONS AND ADVICE AT THE PURCHASER'S SOLE RISK.

Purchaser's Remedies:

The purchaser's exclusive and sole remedy on account of or in respect to the furnishing of a defective product shall be to secure repair or replacement thereof as described above. The EJOT Group shall not in any event be liable for the cost of any labor expended on any such product or for any special, direct, indirect, consequential or incidental damages (including, without limitation, loss of business or lost profits) to anyone by reason of a defective product.

The EJOT Group shall not in any event be liable for damages of the purchaser relating to patent or trademark infringements.

Warranty Claim Process:

For complaints, please contact your supplier directly to present the defective product, the contract receipt and lot number.

Validity of general terms and conditions:

Overall the standard business conditions of the EJOT Group are valid. These terms and conditions can be reviewed on our website www.ejot.com under EJOT Group in the footer.



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