

Mounting system

 novotegra

Developed by BayWa





How it should not be...





How it should not be...

Videos

Recent video (from 20.11.2016)

Wind velocity of 90 km/h

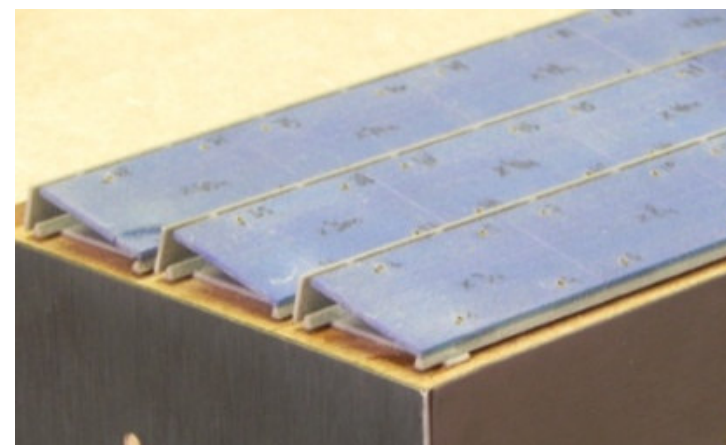
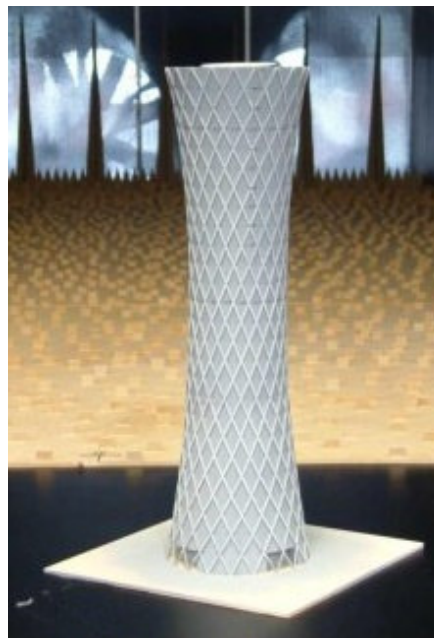




What's important:

What's important for us:
Trust Wind tunnel experts:

- Impressive references
- Big international expertise

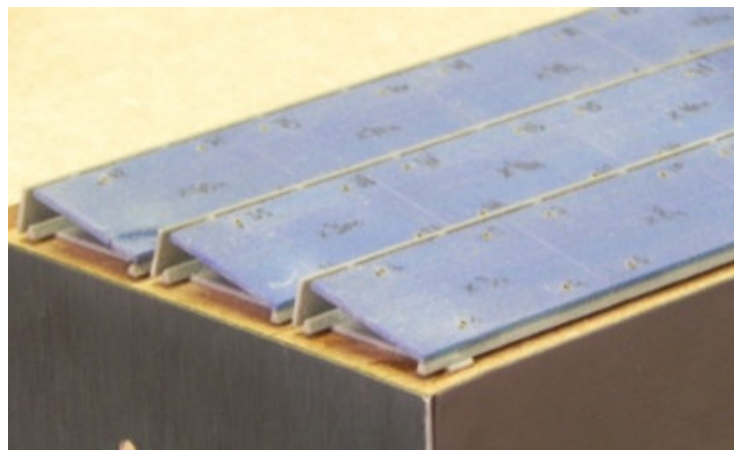




Novotegra for Flat Roof Wind Tunnel Testing

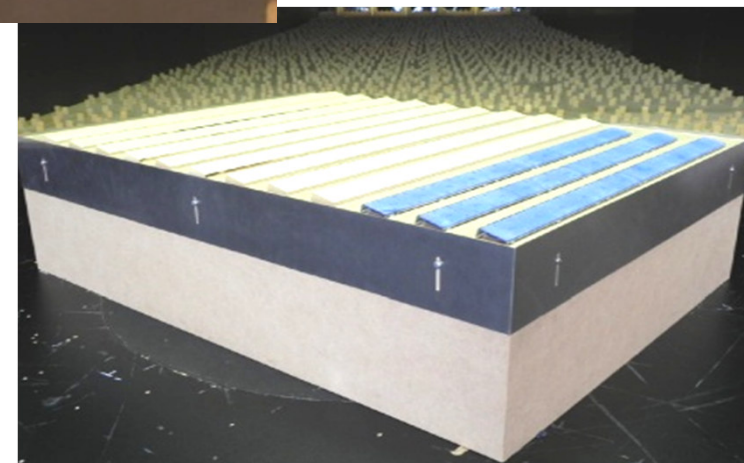
The novotegra Wind tunnel models at scale

- Wind Tunnel Testing with 3D models of the novotegra mounting system
- Testing of the versions South Open, South Closed and East-West



Model at a scale of 1:35 with row distance 1,30 m

Model at a scale of 1:35 with row distance 2,40 m

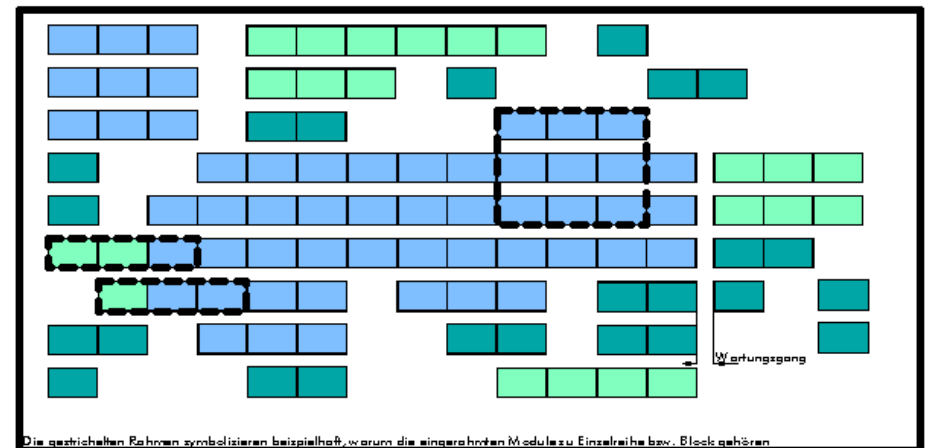
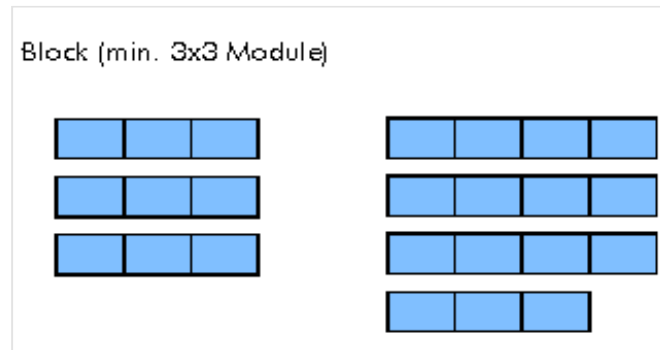
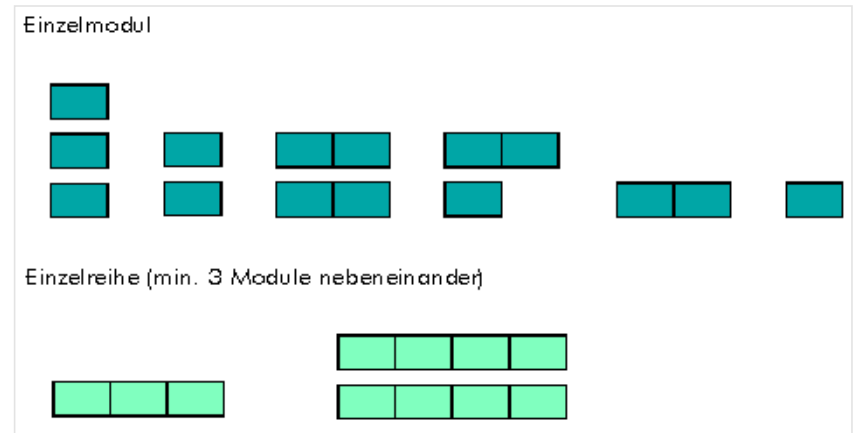
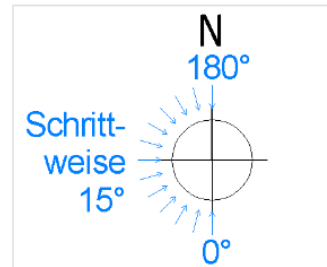




What's important:

Flat Roof – Wind Tunnel Testing
Analysis of module arrays:

- Single rows and single modules
- Module blocks
- Tested in 15° steps i.e. from 0-180° in north-south direction



Die gestrichelten Rahmen symbolisieren beispielhaft, warum die eingekrehten Module zu Einzelreihe bzw. Block gehören

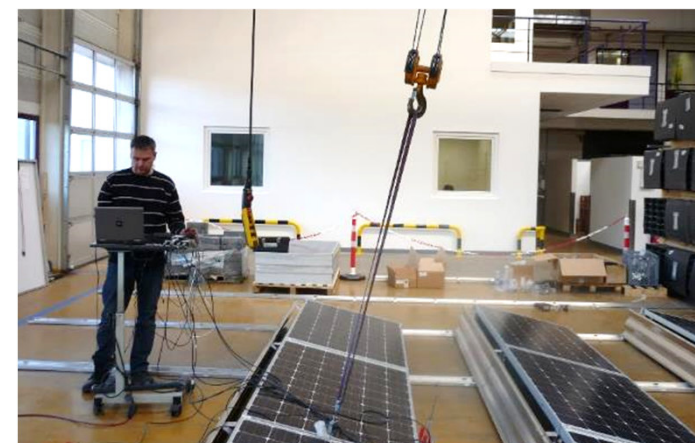


What's important for us:

Flat Roof – Wind Tunnel Testing

Large-scale testing at BayWa r.e. Solar Energy Systems GmbH

- Load exertion at the edge and in the middle of the installation
- Load redistribution possibilities of the entire system






Product Guarantee for the Novotegra;

10 years






TÜVRheinland®

Zertifikat Certificate

Zertifikat Nr. / Certificate No. Blatt / Sheet
R 60118665 0001

Ihr Zeichen / Client Reference	Unser Zeichen / Our Reference	Ausstellungsdatum / Date of Issue
	0001-21222551 004	06.04.2017 (day/month/year)

Genehmigungsinhaber / License Holder	Fertigungsstätte / Manufacturing Plant
BayWa r.e. Solar Energy Systems GmbH Eisenbahnstr. 150 72072 Tübingen Deutschland	BayWa r.e. Solar Energy Systems GmbH Eisenbahnstr. 150 72072 Tübingen Deutschland

Prüfzeichen / Test Mark Geprüft nach / Tested acc. to

2 PFG 1794/10.10

Zertifiziertes Produkt (Geräteidentifikation) / Certified Product (Product Identification) Lizenzentgelt - Einheit / License Fee - Unit

PV Mounting System

Type:
novotegra (flat roof system)


Remarks:
Static calculation according to EN 1991-1-3, EN 1991-1-4 and EN 1990.
Local conditions have to be considered.
The load capacity of the module itself have to be considered.

Conditions:
The product test is voluntary and has been done in accordance with the valid technical regulations. Any change concerning the design, materials, components or production may require the repetition of single or all qualification tests in order to sustain the qualification (certificate).

The certificate has a validity of 5 years counting from date of issue.

Das Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit dem oben genannten Standard und den zugehörigen, Teilen in der Anforderung in Ländern, in denen das Produkt in Verkehr gebracht werden soll, sofern es die in Anhang 1 sind. Die Herstellung der zertifizierten Produkte sind überprüfbar.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements in individual cases. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg
 Tel.: +49 221 308-1371 | e-mail: cert.validation@tuv.com
 Fax: +49 221 308-2939 | http://www.tuv.com/tuvcert

Zertifizierungsfähig

 Dipl.-Ing. M. Adrian



Product Guarantee for the novotegra Mounting System from BayWa r.e. Solar Energy Systems GmbH

Terms of Guarantee

Under the following conditions, BayWa r.e. Solar Energy Systems GmbH guarantees that under normal conditions of installation, application, operation and maintenance the components of the novotegra mounting system are free of construction, processing and material defects, for 10 years from the date of receipt.

Only BayWa r.e. Solar Energy Systems GmbH may approve the warranty claim, and only through an independent test on-site. In the case of an approved warranty claim the liability is effected solely through a replacement delivery of the defective component. An approved warranty claim does not lead to an extension of the guarantee period, nor restart it.

Subsequent to an accepted warranty claim, no further commitments and liabilities for additional and subsequent damages for BayWa r.e. Solar Energy Systems GmbH exist. Thus a limitation of the legal warranty claims and the legal product liability is not given.

Exclusions

Warranty claims under this guarantee cannot be made in the case of:

- faulty or incorrect installation according to the installation instructions
- unauthorised modifications or repairs
- inappropriate installation or use of the mounting system.
- inappropriate transportation, storage or handling of the components.
- optical deficiencies in so far as the appearance does not have any influence on the performance of the component.
- incorrect installation according to the static calculations, or installation instructions of other components (for example, the solar module)
- failure to comply with universally valid norms that have to be respected during installation
- damage through e.g. smoke, exceptional thermal stress, salt loading or other chemical products.
- forces of nature (natural hazard), force majeure, vandalism, destruction through external influences and / or persons / animals.

The cost to BayWa r.e. Solar Energy Systems GmbH for the removal and return of the defective component as well as for the re-assembly of the delivered component are excluded from this guarantee.

Warranty Claim

In order to file a claim within 10 years, you must notify BayWa r.e. Solar Energy Systems GmbH in writing within two weeks of the detection of the fault and supply the purchase date, the original order confirmation and delivery note from BayWa r.e. Solar Energy Systems GmbH as proof of purchase. The guarantor is BayWa r.e. Solar Energy Systems GmbH, Eisenbahnstraße 150, 72072 Tübingen. The areas covered by this guarantee are based upon German law principles. Furthermore, our general terms and conditions apply in addition to this guarantee.

Tübingen, 01. April 2015

BayWa r.e. Solar Energy Systems GmbH | Eisenbahnstraße 150 | 72072 Tübingen | Telefon +49 7071 98987-0 | Telefax +49 7071 98987-10
 solarnergysystems@baywa-re.com | www.baywa-re.com | Geschäftsführer: Alexander Schütz | Firmensitz: Tübingen
 Handelsregister: Stuttgart HRB 301351 | USt-IdNr. DE 148 895 456 | Unternehmens Tübingen | IBAN DE51 6414 0036 0893 6023 00
 SWIFT/BIC: COBADE33 | Kresaparkasse Tübingen | IBAN DE51 6415 0020 0001 3535 03 | SWIFT/BIC: SOLADE33TUS



Who we are ...

- Financially Strong partner
- Many years of experience
- Well known brand



Who we are...



Success based on more than 7,000 MW through our sound energy mix



We provide experience in the development and realisation of wind farms with an installed capacity of more than **1,400 MW**.



We have brought solar farms with an output of more than **1 GWp** to the grid. We have supplied our installers with solar modules with a total output of **2,400 MWp**.



We have developed and set up **34** biogas plants with a total biogas output of **113 MW**.



Who we are...



Turnover 2018

€ 16.6

Billion Euro

EBIT 2018

€ 172.4

Mio. Euro

Employees

~ 18,000 employees

Founded

1923

Core Segment

**Agriculture, energy,
construction**

Locations

More than **3,000** locations
in more than **40 countries**



8

Novotegra documents and instructions...



Novotegra datasheet, mounting instructions, YouTube, warranty

Our novotegra mounting instructions

< To overview

Here you can find all documents for the mounting system novotegra.

Powerful, fast, flexible and stable – our novotegra system has many advantages that make installation easy for you. For optimal support, you will find all documents, such as mountin instructions, on this page as downloads. If you have any questions, please get in touch with your contact person from our sales department.

You will also find helpful installation videos for the different systems on our YouTube channel.

[Take a look right now.](#)



Download

- ✓ novotegra Catalogue mounting system
- ✓ Overview novotegra mounting system
- ✓ novotegra for tile roof
- ✓ novotegra for trapezoidal metal roof
- ✓ novotegra for corrugated and sandwich roof
- ✓ novotegra for seamed metal roof
- ✓ novotegra for flat roof
- ✓ novotegra Facade system
- ✓ novotegra planning sheet
- ✓ novotegra product warranty and certificates

Our installation videos on YouTube



You will find various installation videos for our systems on our YouTube channel. Whether as a preview or for help during an installation - our videos are always there whenever you go.

<https://solar-distribution.baywa-re.de/en/about-us/in-house-installation-system/novotegra-mounting-instructions/>



Novotegra for Flat Roof



Novotegra for Flat Roof Construction

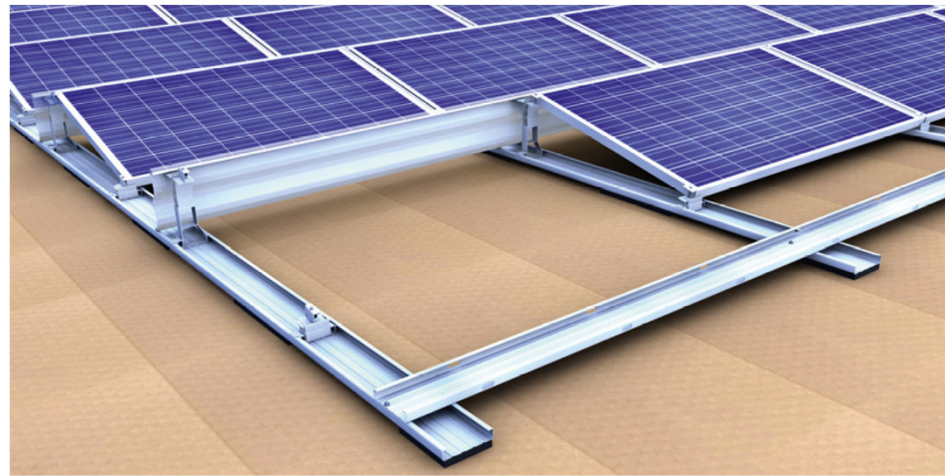
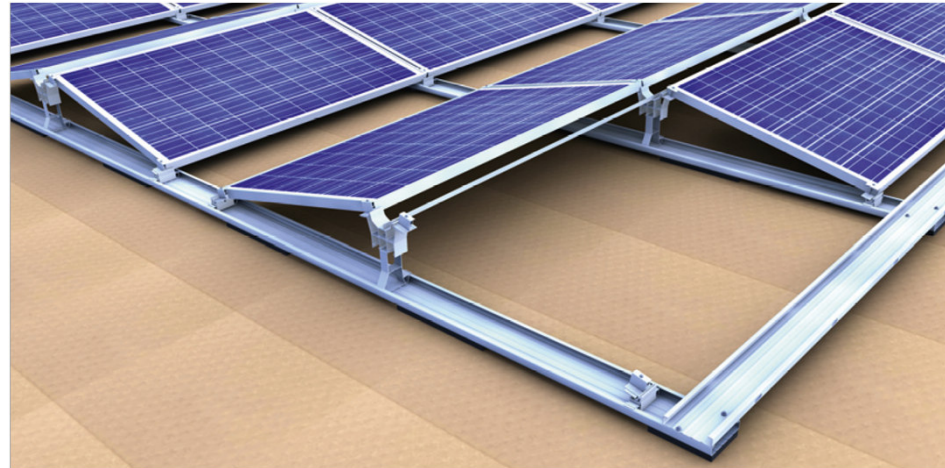
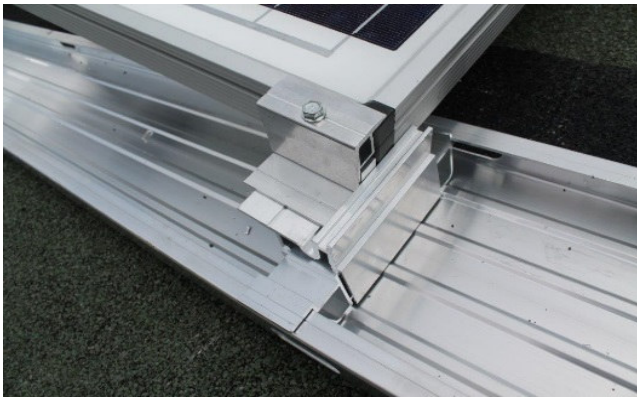
Premises

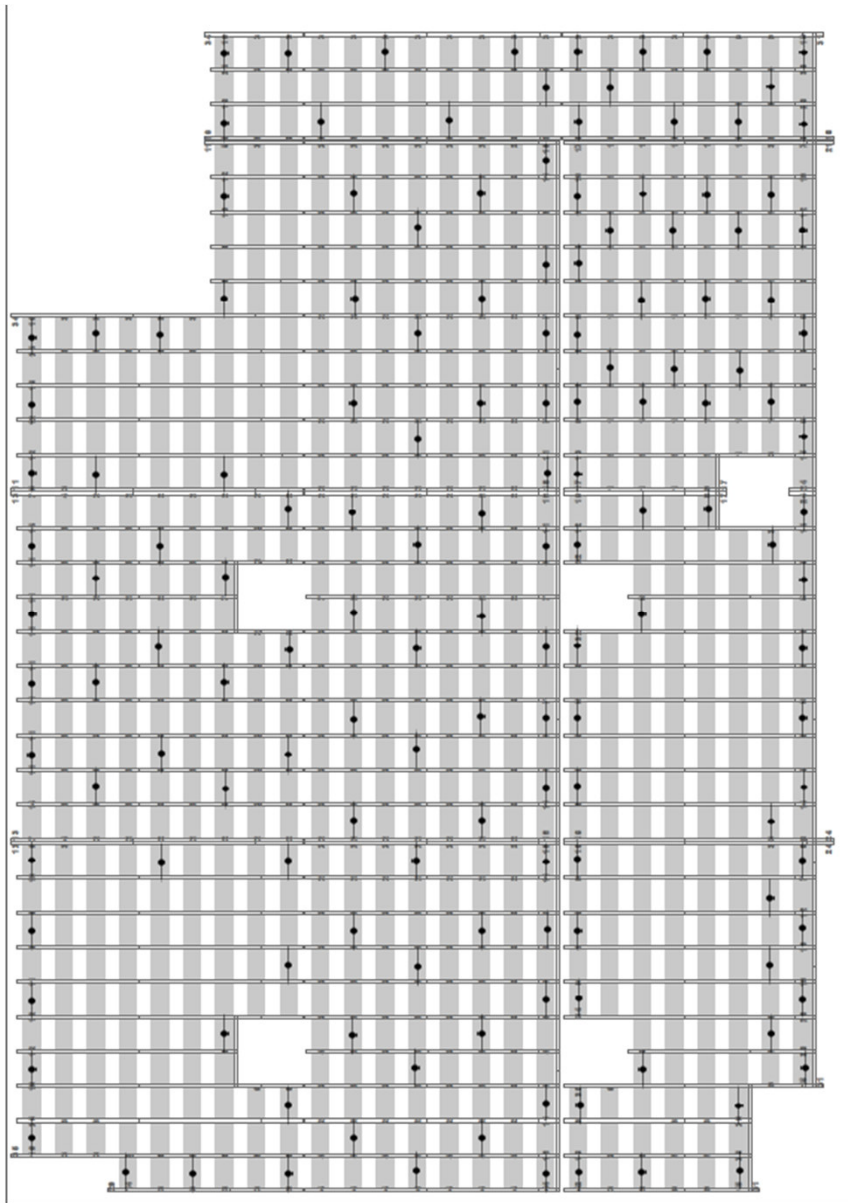
- Max. 5° roof inclination
- Min. edge distance 0,5 m
- Module width approx. 1 m
- Row distance 1,30 m – 2,40 m
- Module inclination 13° fix (closed south and east-west version); 13 – 25° (open south version)





Novotegra for Flat Roof





- System with out ballast by using anchors.



Novotegra - roof parallel



What's important for us: Smart Solutions

Tiled Roof – Clamping system

Roof attachment:

- High load capacity
- Adjustable in height and position

Mounting rails:

- Step-resistant during installation
- Also act as a cable channel – tidy and w/o cables hanging around

Module attachment:

- Only 3 Clamps for frame heights: 28 – 33 | 34 – 42 | 43 – 52 mm
- For aluminum blank and black anodized modules



Clay tile/Concrete tile (ZD)



← flex →



Beavertail tile (BS)



For different span lengths

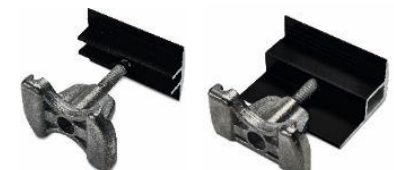
C-Schiene



Covers & End caps (optional)



Middle- and End clamps



Only few components, applicable across systems - easy mounting from above



What's important for us: Smart Solutions

Tiled Roof – Insertion system

Roof attachment:

- High load capacity (DEKRA approved)
- Easy and quick mounting

Mounting rails:

- Material-optimized and cost-efficient
- Models Standard, Premium and L for bigger span lengths

Module attachment:

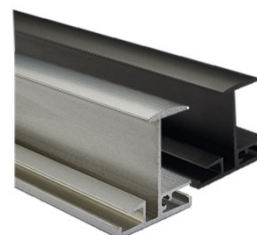
- Floating module installation
- For aluminium blank and black anodized modules



Roof hook 533, vertical M8



N-rail Eco 22x50mm – 6.00 m



Insertion rail 30 to 50 – 6.00 m

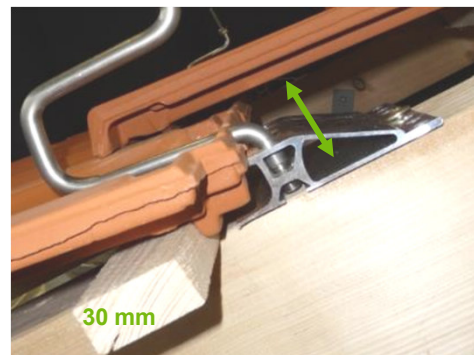
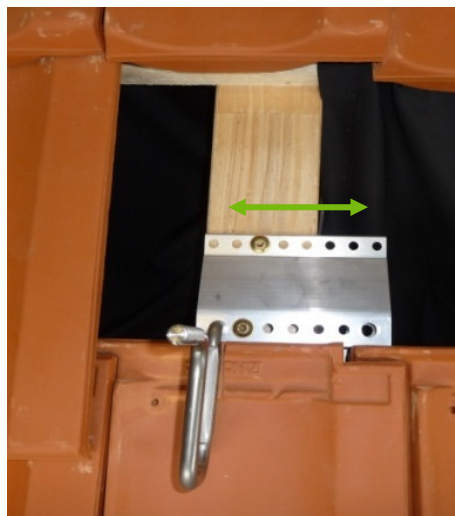
Module installation portrait or landscape – optically premium PV Installation



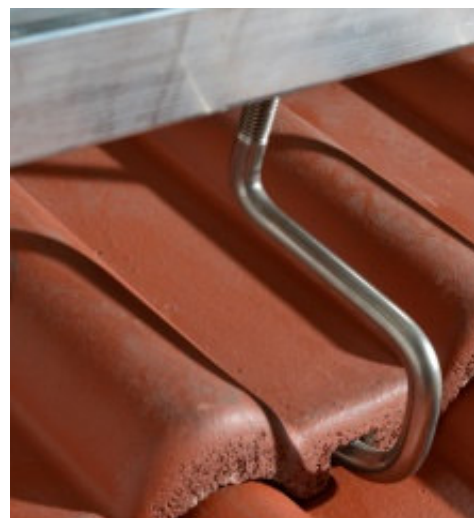
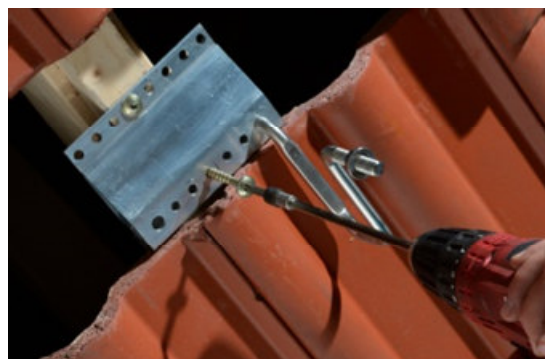
Klemmsystem novotegra top-fix

Roof hook ZD, BS or flex

- Adjustable in 3 ways
- Structural calculation - including rafter fixing
- Roof hook overhang at the side of the rafter possible
- Narrow tile gap

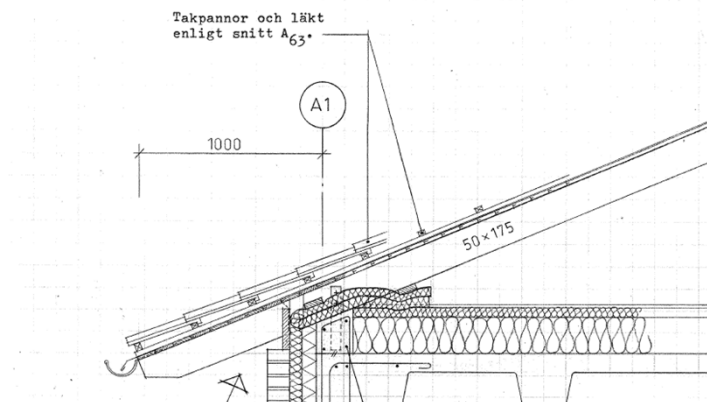


- Minimum 45 mm rafter.
(6 mm screws)

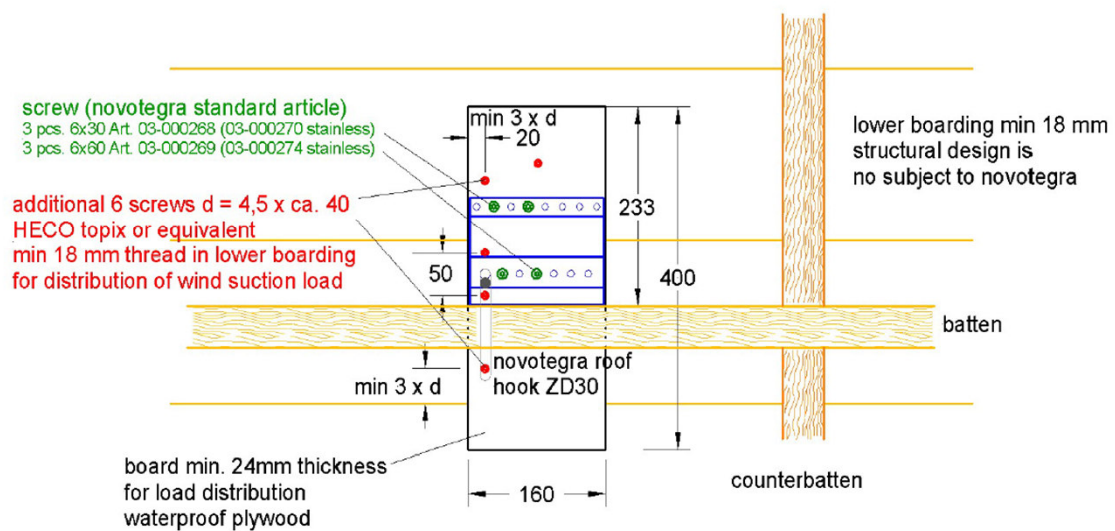




Fixation of novotegra roof hooks on boarding.



Fixation of novotegra roof hooks on boarding





What's important for us: Smart Solutions

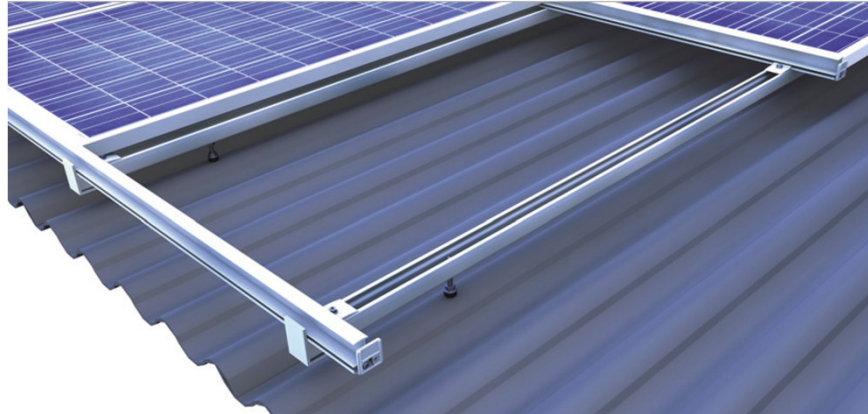
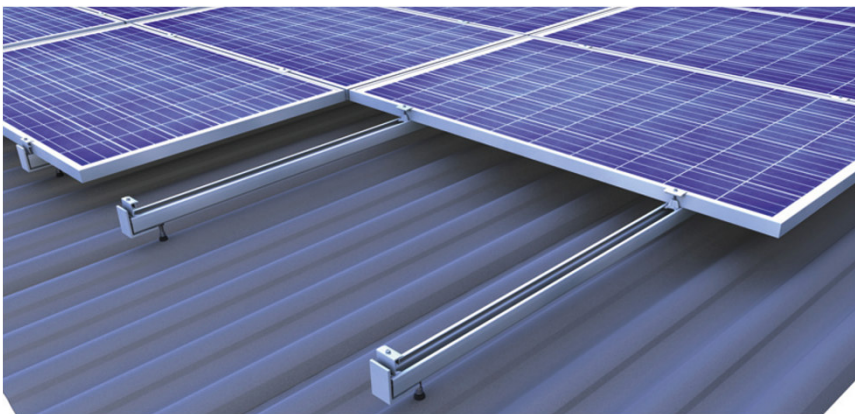
Step-resistant and stable



Easy mounting from above

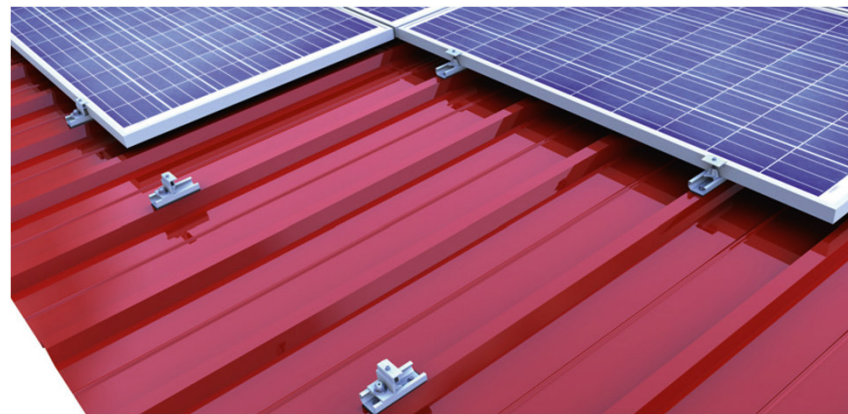
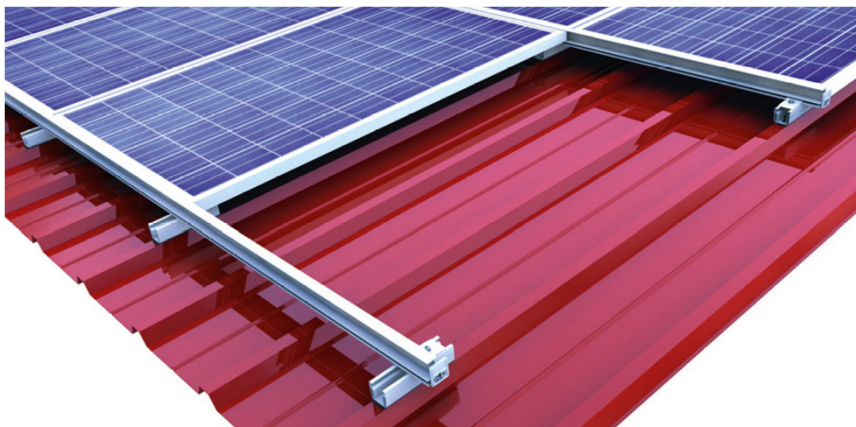


 **Roof parallel systems for tile and corrugated roof...**





Roof parallel systems for metal roof...





Solar-Planit – in-house,
free of charge planning tool



Complete design

Plan your complete PV system easily and quickly. In addition to a simple mounting system plan, Solar-Planit can suggest the matching inverters and storage solution for your project. Yield and efficiency calculations can be documented in a clear project report.



Mounting system design

Plan module arrays for your projects independently, quickly and easily. Get BOMs and costs for the entire substructure – taking into account the structural calculations in line with Eurocode standards – all in just a few clicks.



Inverter design

Plan the right inverter and storage for your photovoltaic system. Solar-Planit proposes the right system for your project and creates a yield and profitability analysis. Simple and clear with everything visible.



Solar/Planit



BayWa re. Projects Modules Address book Finn Skov

Roof Roof covering Roof construction Environment Mounting system Module layout Results Documentation Export

Roof construction

Roof construction: Rafter (wc) ↕

Distance Number

Rafter spacing: 75 cm

Number of rafters: 14

Rafter width: 8 cm

Rafter height: 16 cm

Distance of first ra...: 8,5 cm

Distance of last ra...: 8,5 cm

Mounting system

Location: ✕

Please select a module: ✕

Top-fix Side-fix

Portrait Landscape

Single layered syst Cross railed system

Clamping system Insertion system

Calculate constructions

Module layout

Roof surface 1 Roof surface 2 3D view Rail cut plan

Calculate the mounting system ⚠

X: 9.25 m Y: 3.63 m 0 Modules (0,0 kWp)

Environment

Address:

Terrain category: II Rural Altitude (m...): 0 m Windload zo...: Snowload z...:



Solar/Planit



Test (Project Malmø)

System Plan



YOUR PHOTOVOLTAIC SPECIALIST

Company	BayWa r.e. solar systemer ApS
Contact	Finn Skov
Address	Kullinggade 31E DK-5700 Svendborg
Phone	+4562211000
Email	finn.skov@baywa-re.com

CUSTOMER

Name
Address

SYSTEM INFORMATION

Number of modules	10
System Output	3.3 kWp
Modules	10 x JA Solar JAM60S10-330/PR - 330 Wp (3.3 kWp)

<https://www.solar-planit.de/solarplanit/>



Summary



Summary

- Practical solutions due to intensive customer proximity
- Few components, quick installation, high degree of pre-fabrication
- Stable and resistant
- Trustworthy partner (e.g. initial assembly service)
- Personal contact person
- Short ways, direct contact, efficient problem solving
- Solar-Planit – in-house, free of charge planning tool

BayWa r.e. as a strong partner





novotegra

Thank you !



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