novotegra

Mounting system novotegra 2020 | 2021

The perfect solution for every roof

BayWa r.e.

We have developed the most efficient mounting system on the market. Because we do market research not in the office, but on the roof. We listened, watched and worked together to create a product that makes installation quick and easy.

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r.e.think energy

BayWa r.e. is the energy designer of the future: we are setting new renewable energy standards worldwide with innovative solutions. In all relevant areas, we support our customers as a reliable market partner with a full-service range of technical, planning and commercial services.

We make sure that more and more regions worldwide produce and consume renewable energy and that our customers profit from this added value.

For the best products

We subject our products to the highest requirements. Our technicians look for the best solution for every requirement while conscientiously taking the feedback we receive from our customers into consideration. This is how we contribute to the continuous optimisation of components and, thus, yield increases. We stay in contact with leading specialists in the solar sector to continuously expand our knowledge and give the further development of photovoltaics crucial momentum.

For equal opportunity for our fellow human beings

For years, we have worked together with sheltered workshops in Baden-Württemberg to preassemble individual parts of our novotegra mounting system. This collaboration offers people with disabilities and mental illness diverse chances and opportunities to be involved in working life and to develop themselves further. As an IHK-certified company, we continuously provide young people with official training and increase their chances in the job market.

„We do a lot to ensure the success of our customers.
That is why BayWa r.e. regularly receives top marks..“

Thomas Pfaff, Head of novotegra **Alexander Schütt, Managing Director**

novotegra
by BayWa r.e.

1

Introduction

That's why we are the right partner

Technical innovations and products alone are not enough.
With the right partner at your side, you benefit as well.

Innovative solutions for the future

BayWa r.e. is the energy designer of the future
The parent company BayWa AG recognised the challenges early on and in 2009 founded BayWa r.e renewable energy, which combines all renewable energy commitments in the solar energy, wind energy and bioenergy business units. Since then BayWa r.e. has grown into one of the most renowned project developers and trading companies in Germany and Europe, Asia, the USA and Australia.

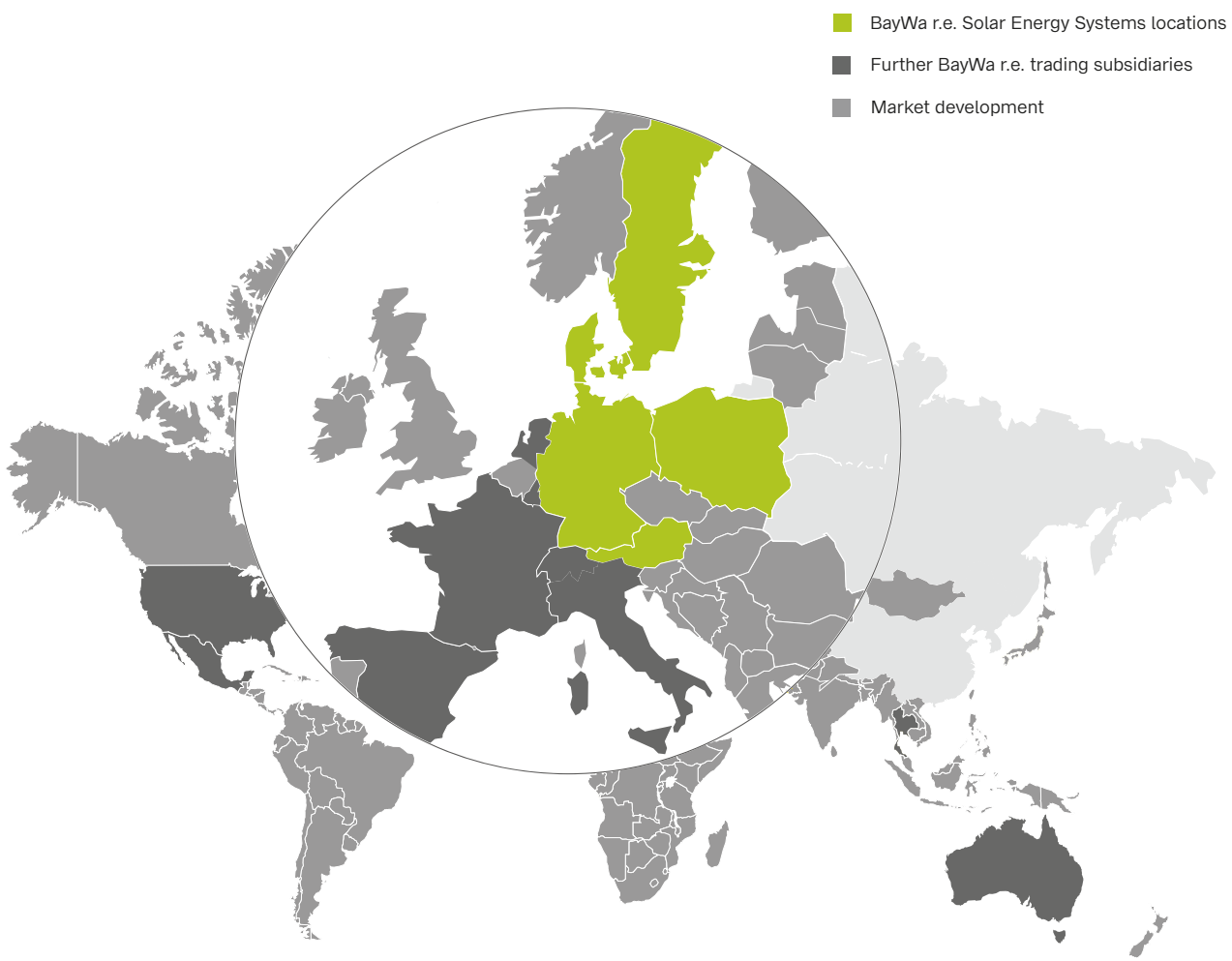
The BayWa r.e. Solar Energy Systems trading company
Quality that pays BayWa r.e. Solar Energy Systems GmbH has been banking on the sun as the number one energy supplier since 1991. Since then, we have actively been involved in the evolution of solar energy in Germany and continuously deepened our expertise in the area of photovoltaics. And because the obvious is not always the best, we go one step further and rethink systems.

"Smart energy solutions, mobility and heat. Photovoltaics can do more than just get electricity from the roof. We actively support you with our solutions and products."

Elke Dehlinger, Product manager

Figures we want to be measured by

Quality and good service can only be reflected in figures to a limited extent. Nevertheless, the following values say a lot about our performance.



3.400 MWp
The output of the solar panels that we delivered world-wide

6.200 MW
The total ouput of all inverters that we sold

>111.000
shipments were successfully delivered by our logistics department in 2019

>450
employees will assist you with any questions you may have about PV systems – from choosing the right product to planning your system

Quality on all levels

More than 25 years of experience, expertise and passion –
we are your partner who can do more.

What you get from us

Personal and always nearby
With our five sites in Germany and further offices in Austria, Poland, Denmark and Sweden, a complete international sales team of photovoltaic experts is at your disposal. It is particularly important to us that we know you and that you know us. This is why we do not have a general service hotline, but a direct line to your contact person in our sales department.

Support for the perfect results
We see ourselves not just as business people, but also as partners to the trade. That is why our experts are at your side right from the start. We help you to plan your system and our novotegra mounting system, and help you to choose suitable components as well as providing support in after sales service. If you are installing our novotegra mounting system for the first time, our experts will accompany you on site for a whole day free of charge and will show you the best tips and tricks for installations with novotegra.

Seminars and professional events
The photovoltaic industry is a sector that is developing constantly and strongly. New technologies, new options and new products also require new knowledge. With our range of specialist seminars, webinars and information events, we ensure that you are always up to date.

**Exploring new paths together –
the BayWa r.e. sales partnerships**
In our partner-based sales network, BayWa r.e. cooperates with sales partners who are very close to potential end customers. Together, we develop individual business models with which we inform end customers about all aspects of photovoltaics and provide tailor-made and attractive offers. All with the aim of getting even more people interested in photovoltaics. How do you benefit from this? The photovoltaic system at the end customer's site is exclusively implemented by selected specialist installers and solar technicians from our network.

It's all here - our warehouse and logistics centre
To be able to deliver you with everything that you want from the following catalogue reliably, safely and on time, we place great importance on a high-performance warehouse and logistics centre. More than 15.000 square metres of storage space offer sufficient space to keep all components constantly available. Short delivery times and punctual delivery directly to the construction site guarantee you the best possible level of reliability for your planning.

Planning and ordering online, all around the clock
In our online shop you can quickly and easily check availability, prices and the latest products. Use the product comparison feature for a better overview or use the shopping lists to organise your project. In your personal customer account, all of your information is available at any time. It would be best to take a look right now, under solar-distribution.baywa-re.de.

Long-term outstanding quality

Quality and good service are our top priorities. We have also had this confirmed by TÜV SÜD and certified to ISO 9001.

But good collaboration with you is particularly important to us. For the eighth time in a row we have been given the "TOP PV Supplier" award by the renowned Bonn market research institute EuPD Research.

We are setting new standards with novotegra

We have developed a highly efficient mounting system.
Because we do market research not in the office, but on the roof.

Make it easy for yourself

A good photovoltaic mounting system is the basis for every photovoltaic system. When choosing the right system, you should therefore pay attention to a lot of details. novotegra makes the choice easy for you.

Guaranteed to hold
Our novotegra mounting system is manufactured from durable and corrosion-resistant materials and is extremely stable and resilient as well as meeting the Eurocode load standards. It can withstand even high snow and wind loads.

Suitable for every application
As diverse as the requirements may be, with novotegra you will find the right system for every application. Whether piched or flat roof, facade or special solutions – we have the right answer for your project.

Certified and approved

We regularly verify our quality standards. For this purpose we have our own in-house test facility, where our mounting system experts regularly test novotegra. In addition, our system has also been tested and certified by independent bodies. Whether CE marking, certification from TÜV Rheinland, building authority approvals or even for other european markets e.g. with MCS or ETN. With our mounting system you are on the safe side.

novotegra

Finishing what you start

A good system is one thing, but the right service is just as important.
Our free services will allow you to become a novotegra expert in no time.

Free first-time installation support

Are you using novotegra for the first time? We will support you – free of charge and directly on site! One of our installation technicians will come to your site for a whole day, install the system together with you and give you tips and tricks to help you on your way. This makes optimal installation very easy – and you will become a true novotegra expert.

10 year product warranty

We give you a 10-year product warranty on the novotegra mounting system, because:

- all components are made of durable materials,
- all components are optimally matched to each other,
- the mounting system is designed according to the Eurocode generation of standards.

Have you seen them? Our installation videos

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 wherever you go. Just click on www.youtube.de/novotegra or scan this QR-code with your smartphone:

Everything at a glance

Visit our website and click your way through the advantages of our mounting system. We will introduce you to the systems there and give you an overview of our services and solutions. In the download area you will find all of our data sheets and other information about novotegra.

Our specialist seminars

We offer Europe-wide mounting system workshops for our customers – at our sales locations in various countries and at our BayWa r.e. Solar Energy Systems headquarters in Tuebingen, Germany. At these workshops, you can install the system on the novotegra test roof, exchange information with colleagues in the industry and learn everything you need to know from our experts.

„The first novotegra prototype was developed by us in 2006 and produced in a blacksmith's shop in Stuttgart. Even 14 years later and the product is still unique on the market.“

Martin Schäfer, Inventor and product manager of novotegra

Certifications and Approvals

novotegra stands for quality, high-quality materials and reliable production. Together with our long-standing partners and independent instances, we ensure that it remains like this in the future.

TÜV Rheinland certification

The reliability and quality of our mounting system has been certified with the TÜV Rheinland test mark.
The inspection catalogue for the certification includes all building law and technical requirements that mounting systems must meet. This ensures that all our photovoltaic mounting systems are produced in the same way as the tested systems – with the same materials and processes and thus with the same quality.
By the way: our sales and support services also convinced the auditors.

TÜVRheinland® CERTIFIED
Type Approved
Regular Production Surveillance
www.tuv.com
ID 1111212187

General approvals by building authorities

For your safety, we had the static calculations of relevant parts of the system checked by independent authorities. We prepared the approvals required for this in cooperation with an independent inspector and received the following general approvals from Deutsches Institut für Bautechnik (German Institute for Structural Engineering):

- Z-14.4-716: Connections for PV mounting systems
- Z-14.4-723: Rail connectors and base profile
- Z-14.4-735: Module attachments, module supports, cross rail connectors
- Z-14.4-741: Roof hooks, stock screws, attachments to the rail base

Deutsches Institut für Bautechnik DIBt

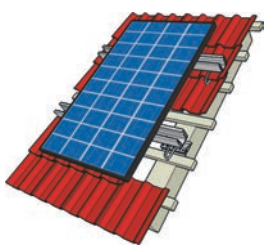
CE Marking

The in-house monitoring for the novotegra mounting system by BayWa r.e. Solar Energy Systems GmbH meets all mandatory requirements stipulated in EN 1090-1:2009+A1:2011,
Annex ZA as the foundation of the CE marking within the framework of the EU Regulation no. 305/2011 (Construction Product Regulation – CPR). Execution in accordance with EN 1090-2 and EN 1090-3, EXC1.

CE

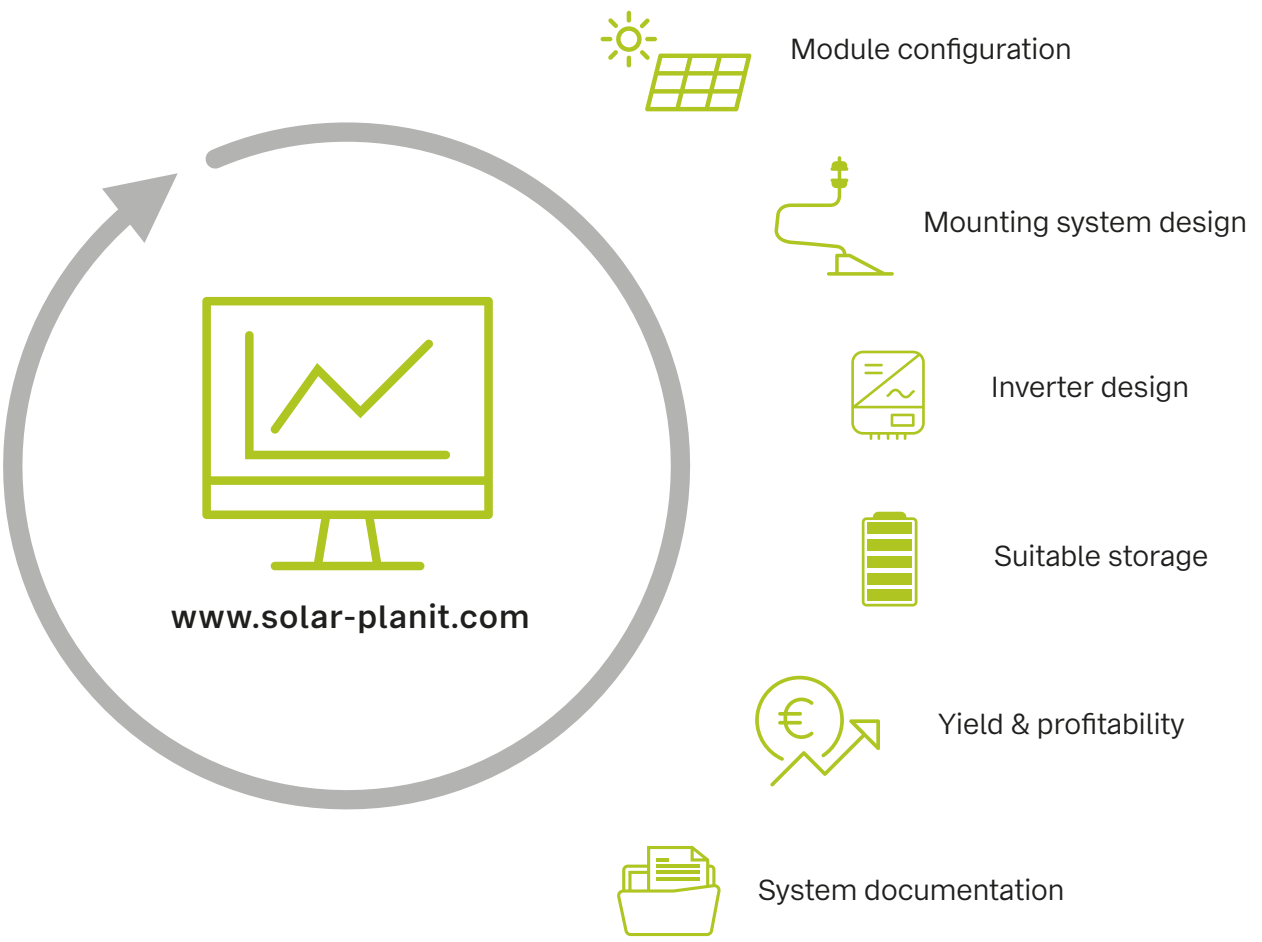
Structural analysis calculation with Solar-Planit

With our planning tool Solar-Planit, you can see the system structural analysis of our mounting system at the push of a button – and for free! The load determination for the structural analysis of the substructure is based on the specifications of Eurocode 1 – taking into account the national specifications of the countries that can be selected in the software. The only exception is Switzerland, where load is determined according to SIA 261 (2003) specifications.



Information on further international certificates can be obtained from your contact person.

A perfect affair: system planning with Solar-Planit



Your benefits

- Complete system planning, from installation to economic efficiency
- Free and web-based
- Recommendation of suitable components for your best price-to-performance ratio
- Static calculation according to Eurocode
- Determination of yield, profitability and own consumption ratio
- Clear documentation for you and your customers
- Transmission to our webshop
- Free webinars on how to use Solar-Planit

Photovoltaic system planning "from A to Z" with Solar-Planit

Simple, clear, free of charge and web-based planning for your next installation.

We take "from A to Z" literally

From accessories to connections and from the mounting system to battery storage – with Solar-Planit, you will succeed in designing a complete system that is perfectly suited to your site and your requirements. The geodata stored in Solar-Planit calculates all static requirements in accordance with Eurocode, depending on site and roof type – so you can always stay on the safe side. Solar-Planit also provides active assistance with component selection: you will receive suggestions based on the details you provide. Of course, you can also choose the components yourself – the program then checks whether everything is technically feasible. Register easily and free of charge at **www.solar-planit.com**.

Also visit our free Solar-Planit webinars and learn from our experts what you should pay attention to in your next planning.

Going the extra mile

The system design is one thing – Solar-Planit provides you with even more advantages that go beyond the pure design.

Parts list and price determination
When you have finished planning, you will receive an exact parts list including article numbers and prices. This means that you can provide your customers with a representative offer in shortest time. In addition, you can transfer your parts list to our web shop with one click and order it immediately.

Sawing plan
A sawing plan for our novotegra mounting system saves you time and calculations.

Plant documentation and economic efficiency
When planning is complete, Solar-Planit can provide clear plant documentation for you and your customers. This contains additional information on economic efficiency and a yield forecast.

Teamwork – you determine the team
Because Solar-Planit is web-based, anyone can log in. So simply share your projects with your colleagues who have registered or your contact in our sales department and work together on planning.

Free of charge
Yes, all functions and accounts are completely free. No licences are required for Solar-Planit.

"Working with Solar-Planit is varied and never boring. New ideas, requirements and products require solutions and constant further development. Direct contact with our sales department enables us to respond to individual needs and close cooperation with our product management enables us to react quickly to product changes.
Solar-Planit: for us, an exciting task from A to Z."

Daniel Gauggel, IT/software development

Mounting system layout with Solar-Planit

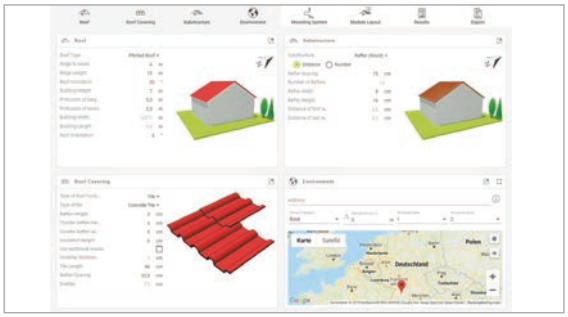
Project planning – self-contained, quick and simple.

Your benefits

- Define location and roof features individually for your project
- Select module and mounting system design – from tile roof to flat roof
- Plan the module configuration – easily plan around chimneys, skylights and dormers
- Perform a structural analysis and optimise the system – in line with the Eurocode standard for many European countries

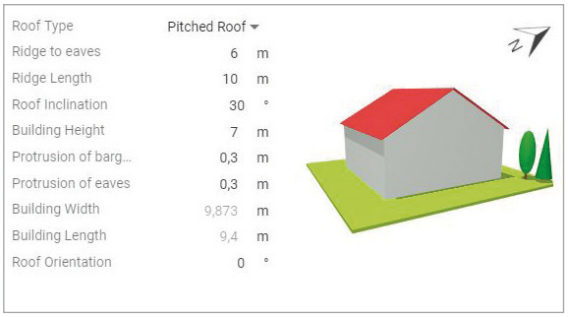
Project data

Entering data is quick, clear and easy!



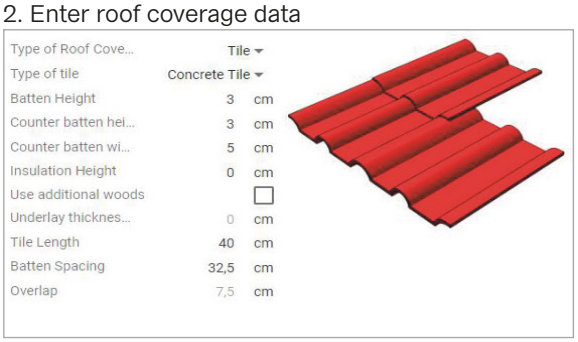
Roof

1. Input roof dimensions



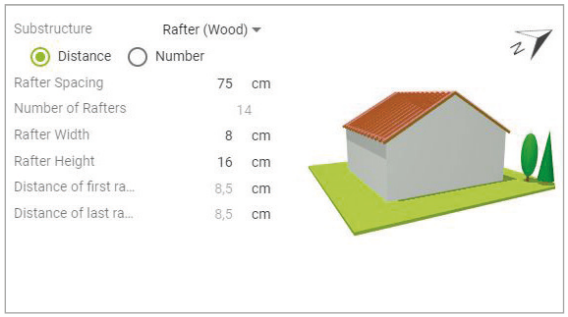
Coverage

2. Enter roof coverage data



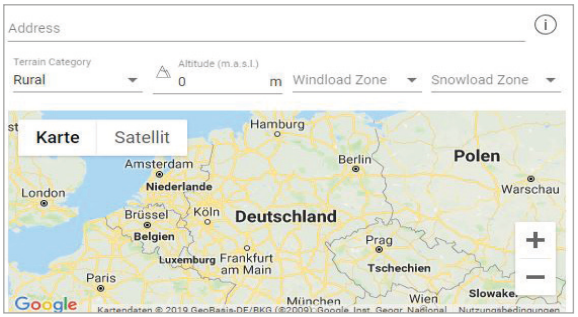
Roof construction

3. Input roof construction details



Environment

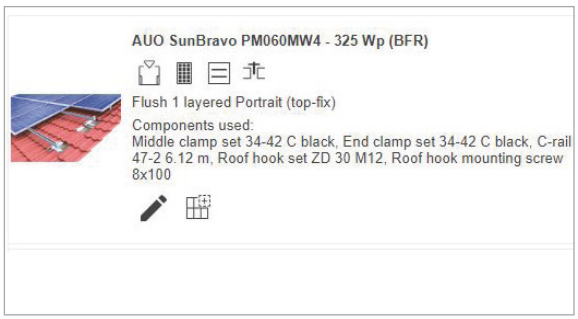
4. Select the location



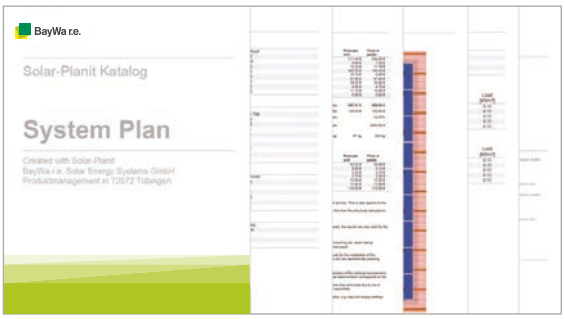
Mounting system layout with Solar-Planit

Solar-Planit lets you keep control of costs and statics.

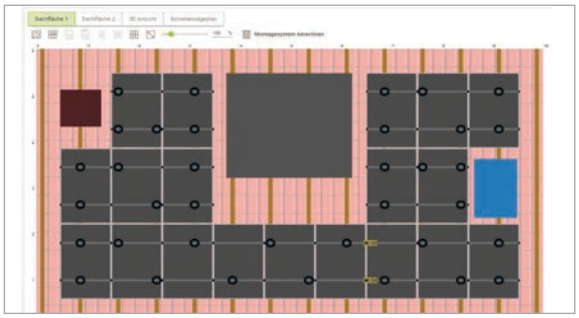
Mounting system
5. Choose the module and construction



Documentation
Clear project report at the push of a button

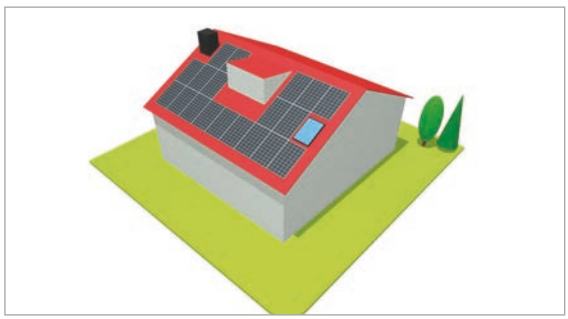


Module configuration
6. Position hindering objects and modules

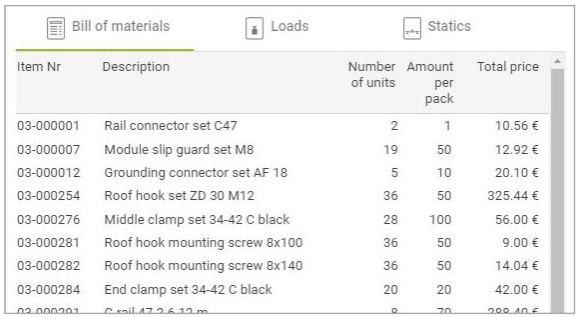


Webshop
Transfer of the parts list to our webshop

3D preview
7. Optional 3D preview



Results
8. Material parts list including costs and statics



Item Nr	Description	Number of units	Amount per pack	Total price
03-000001	Rail connector set C47	2	1	10.56 €
03-000007	Module slip guard set M8	19	50	12.92 €
03-000012	Grounding connector set AF 18	5	10	20.10 €
03-000254	Roof hook set ZD 30 M12	36	50	325.44 €
03-000276	Middle clamp set 34-42 C black	28	100	56.00 €
03-000281	Roof hook mounting screw 8x100	36	50	9.00 €
03-000282	Roof hook mounting screw 8x140	36	50	14.04 €
03-000284	End clamp set 34-42 C black	20	20	42.00 €
03-000291	C-rail 47-2 6.12 m	8	70	288.40 €

Your benefits

- The result: complete overview of the structural analysis, material requirements and costs
- System project reports – documentation for you and your customers at the push of a button
- Independent and self-contained planning – for our mounting system solutions
- This web-based solution makes short administrative paths possible for project collaboration either with your team or with our sales team

Know-how, expertise and years of experience

Our photovoltaics mounting system has performed successfully on the market for several years now – and worldwide as well.

From development to the first prototypes to series maturity

Every component of our photovoltaic mounting system has its origin in our company. All components are tested extensively at our test bench with calibrated measurement instruments. Our international experience gained through sales and deployment across Europe and worldwide is incorporated into the further development of our products: This is why our mounting system takes country-specific details into account.

Well explained: our workshops and promotional material

We offer Europe-wide mounting workshops for our customers – at our sales locations in various countries and at our BayWa r.e. Solar Energy Systems headquarters in Germany. We are very happy to provide you with promotional material which you can use to show your customers the benefits of our photovoltaic mounting system in an attractive and descriptive way. In addition to our catalogue, our brochures, the data sheets and the comprehensive information you can find on our website, you can also rent diverse promotional material for use at in-house exhibitions or during customer visits, for example – from models to promotional gifts to show trailers. We offer small mounting system models free of charge. If you want to learn more about our promotional materials: we are happy to help you personally.

Our free first-time installation support

Are you installing one of our mounting systems for the first time? Then take advantage of our free initial assembly service. This way you can get to know your mounting system from the inside out in a practical scenario. One of our technical consultants will spend an entire day with you on site. Our expert will give you a briefing, support you regarding any questions about the mounting system and help with the installation. He will go over the results of the structure analysis calculation by our Solar-Planit planning tool. Furthermore, you will get helpful tips and tricks related to our mounting system.

Security: wind tunnel tested flat roof system

Our aerodynamic flat roof systems were tested in a boundary layer wind tunnel by experts from Wacker engineers in Birkenfeld, Germany according to the specifications in Eurocode DIN EN 1991-1-4/NA in. Only a boundary layer wind tunnel can accurately model the profiles of medium wind speed and turbulence intensity. The results of the wind tunnel tests are reflected in the system plans by our planning tool Solar-Planit – minimum ballast with maximum security.

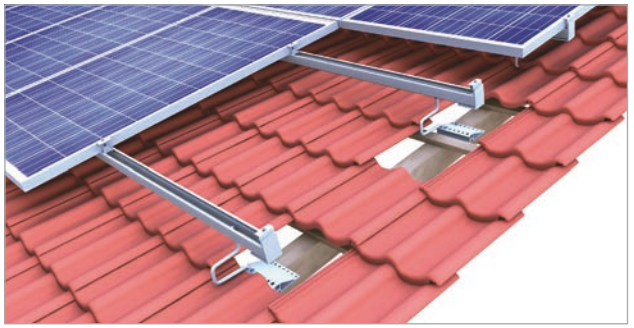
novotegra workshops also directly at your location

2

Pitched roof

Mounting solutions for tile roof

novotegra top-fix

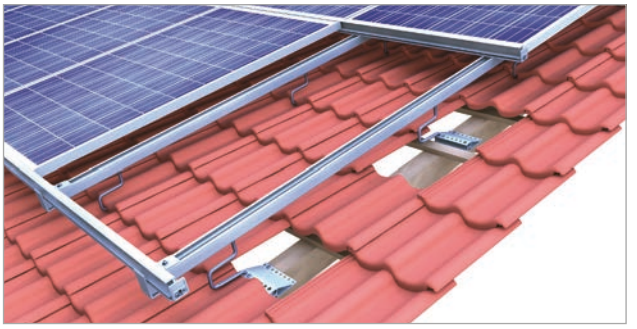


Clamping system: Single-rail in portrait

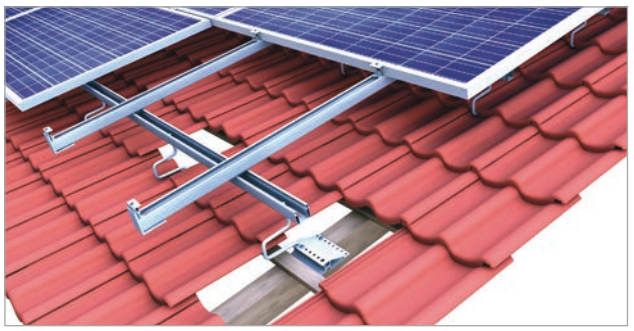
Your benefits

- Clamping and insertion systems for mounting modules in portrait and in landscape
- Multiply adjustable roof hooks – unique design
- Rail with an integrated cable channel and room for plugs
- Quick mounting from above with easily graspable components

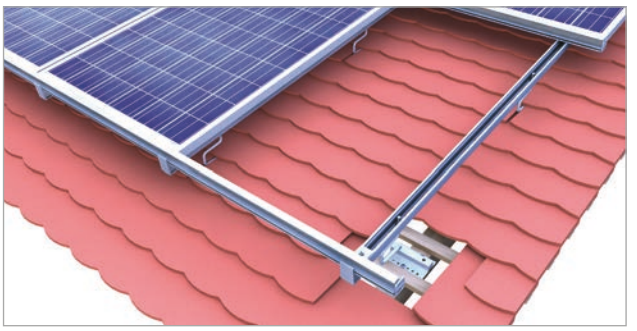
Clamping system: Single-rail in portrait on beavertail tiles



Insertion system: In portrait



Clamping system: Cross-rail in landscape



Insertion system: In portrait on beavertail tiles

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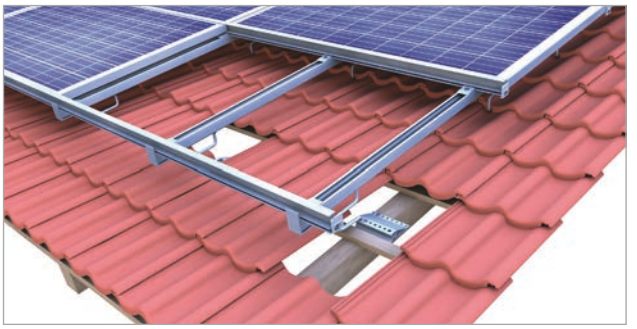
www.tuv.com ID 1111212187

PRODUCT GUARANTEE 10 Year PRODUCT GUARANTEE



Insertion system: In landscape

Mounting solutions for tile roof

novotegra side-fix

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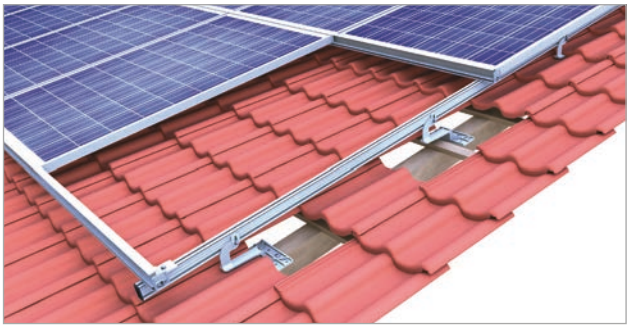
PRODUCT GUARANTEE 10 Year PRODUCT GUARANTEE

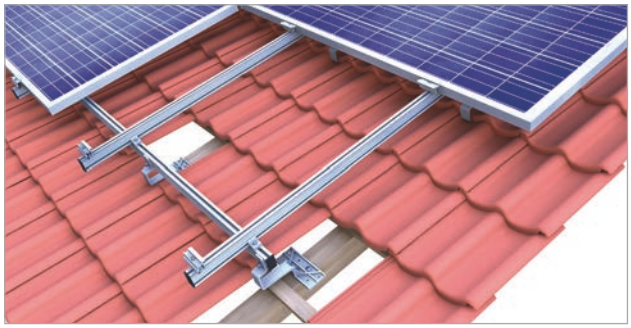
New!

Insertion system: In portrait

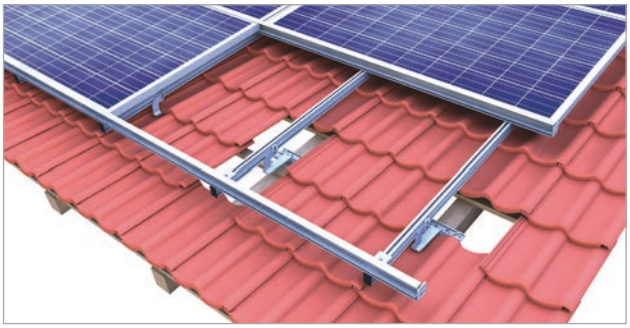
Clamping system: Single-rail in portrait



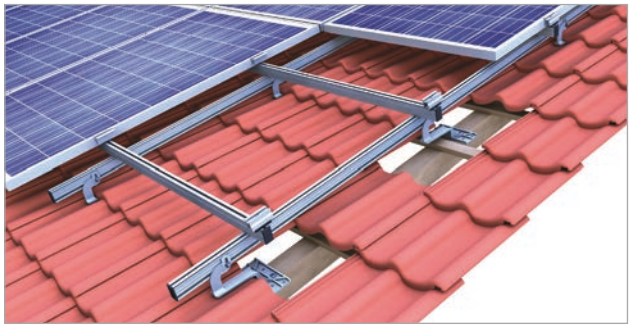
Insertion system: In portrait



Clamping system: Cross-rail in landscape



Insertion system: In landscape



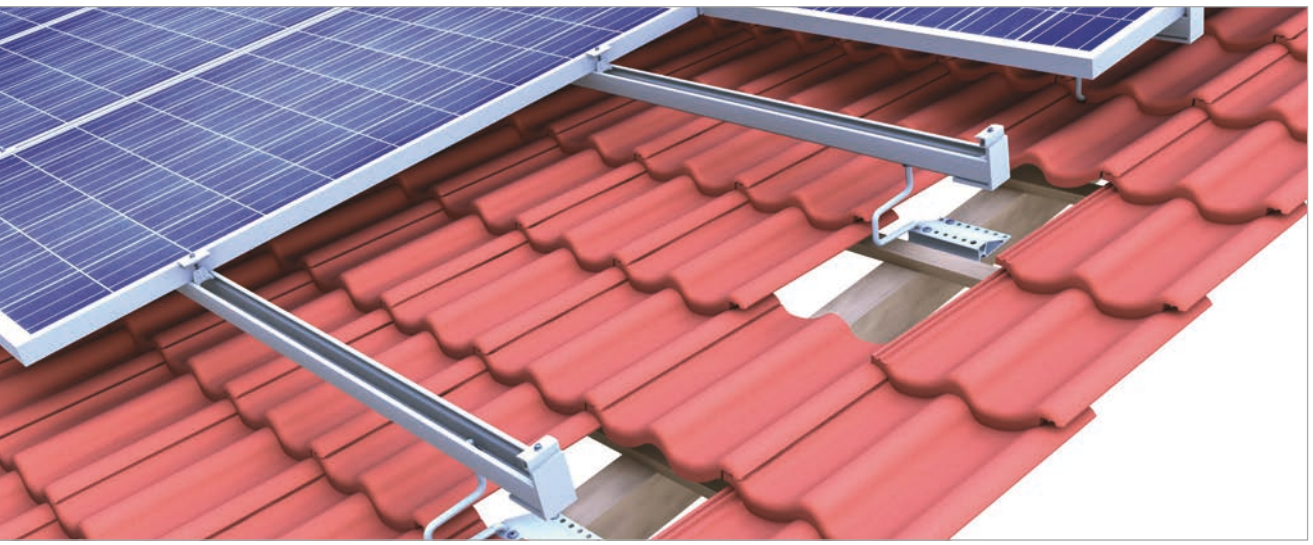
Clamping system: Cross-rail in portrait

Your benefits

- Clamping and insertion systems for mounting modules in portrait and in landscape
- Robust, die-cast aluminium roof hooks – unmistakable
- Mounting the rail from the side with view on the mounting spot
- Clamping system with click mechanism, impossible to lose during mounting

Tile roof | clamping system

novotegra top-fix



novotegra top-fix – single-rail clamping system with modules installed in portrait

Powerful, stable and flexible

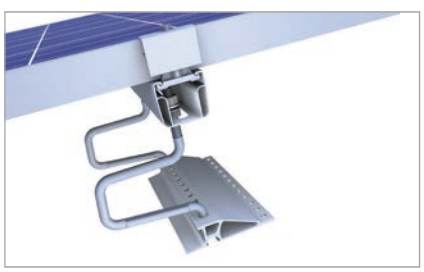
Our roof hook sets from the novotegra family are ideal for roof attachment when mounting modules on tile roofs. The various sets consist of a base profile and a bracket which is screwed into the base profile. Because they are three-way adjustable, the roof hook sets are perfectly adaptable to any tile roof. This way you can always achieve a homogenous module field, even on uneven roofs. Whether you choose a large base profile with a second bracket for heavy snow loads or the flex roof hook set for light loads – we always have a simple, stable and flexible solution for your tile roof.

C-rails are always mounted using the same principle: The classic screw connection with a locking nut ensures a quick, strong and permanently reliable connection for both single-rail and cross-rail connections. At the same time, the interior of the rail acts as a cable channel with enough room for cables and plugs.

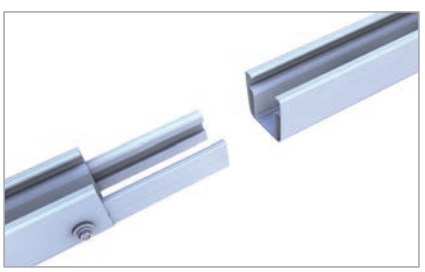
All end and middle clamps are pre-assembled and also available in a black anodised variant. Be it vertically or horizontally installed modules or a single-rail or cross-rail installation, thanks to reliable clamping technology, modules can be attached to C-rails quickly and securely. The end clamps close the module field flush to the C-rails, making the substructure nearly invisible – for visually perfect installations.

Your benefits

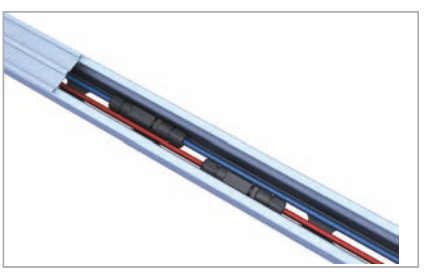
- Secure, stable and durable
- Three-way adjustable roof hooks
- The C-rail also acts as a cable channel
- Double roof hooks for heavy snow loads
- High-quality production and proven clamping technology
- Installation-friendly clamps with a click-in mechanism for all frame heights
- For all conventional tiles and minimal tile adjustment
- Excellent rear ventilation of the module
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Double roof hooks for heavy snow loads

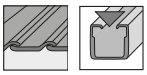


C47 S rail connectors for profile clambers



C-rail as cable channel

Clamping system



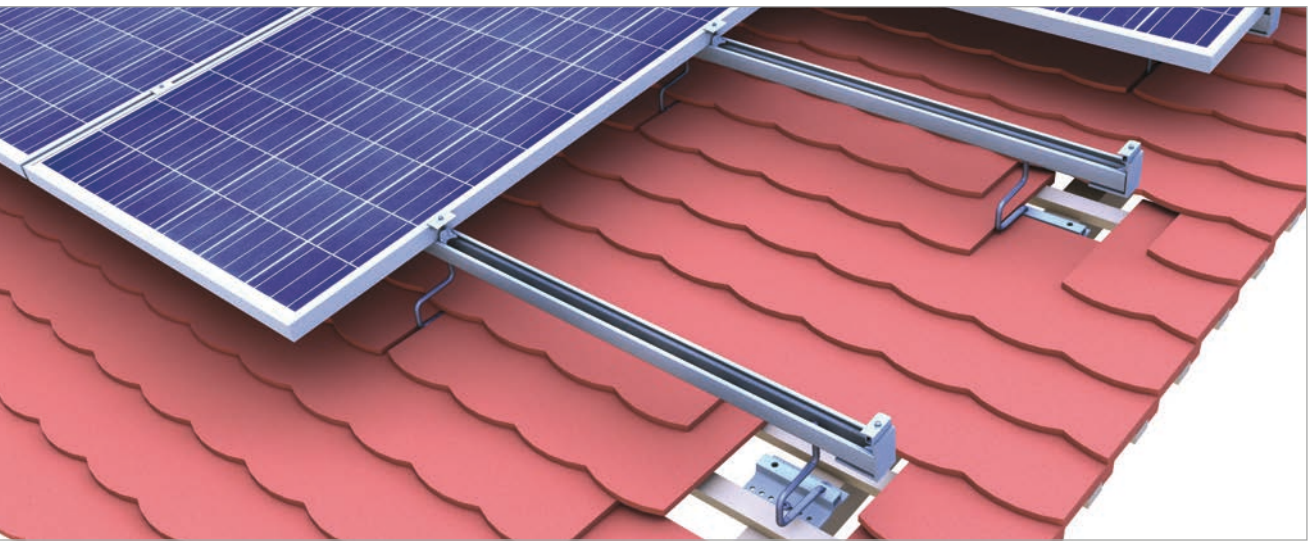
Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000284 Item no. 03-000275 Item no. 03-000277	Page 105

novotegra top-fix

End cap	Item no. 03-000259	Page 102
Connector	Item no. 03-000001	Page 95
Rail	Item no. 03-001369	Page 90
Roof hook	Item no. 03-000254	Page 80
Screws	Item no. 03-000281	Page 86

Beavertail tile roof | clamping system

novotegra top-fix



novotegra top-fix – single-rail clamping system on beavertail tile roofing with modules installed in portrait.

Solution for beavertail tiles

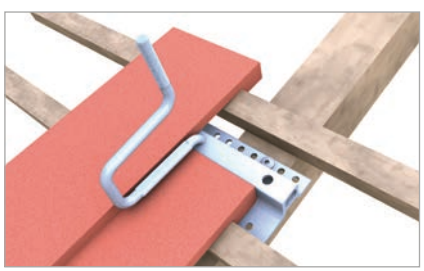
For the installation of our system on a beavertail tile roof, you can use the beavertail roof hook set or for lesser loads the flex roof hook set. The various sets consist of a base profile and a bracket which is screwed into the base profile. Due to their special shape, both the beavertail and the flex roof hooks are ideal for the small spaces between roof battens on a beavertail tile roof. In addition: The bracket fits between two tiles and not under the tile.

The roof hook sets are three-way adjustable and thus allow for the levelling of uneven roof surfaces to achieve a homogeneous module field. Because the bracket does not sit on the roof tile, you don't need any expensive underlay plates. This reduces the overall system costs.

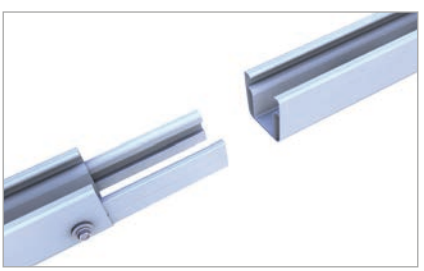
The C-rail is connected easily, quickly and permanently to the roof hook using a conventional screw connection with a locking nut – it then serves simultaneously as a cable channel.
All end and middle clamps are pre-assembled and also available in a black anodised variant. Be it modules installed in portrait or landscape or a single-rail or cross-rail installation, thanks to reliable clamping technology, modules can be attached to C-rails quickly and securely. The end clamps close the module field flush to the C-rails, making the substructure nearly invisible – for visually perfect installations.

Your benefits

- Secure, stable and durable
- Three-way adjustable roof hooks
- The C-rail also acts as a cable channel
- Double roof hooks for heavy snow loads
- Quick and easy mounting from above
- Excellent rear ventilation of the module
- Installation-friendly clamps with a click-in mechanism for all frame heights
- Simple, Eurocode-compliant layout with our Solar-Planit online tool
- No beavertail sheet metal tile required



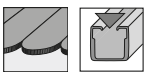
Position of the bracket with beavertail tiling



Rail connector C 47 S for profile chambers

End cap on the edge of the installation

Clamping system



Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000284 Item no. 03-000275 Item no. 03-000277	Page 105

novotegra top-fix

End cap	Item no. 03-000259 	Page 102
Connector	Item no. 03-000925 	Page 101
Rail	Item no. 03-001369 	Page 90
Roof hook	Item no. 03-000258 	Page 81
Screws	Item no. 03-000281 	Page 86

Tile roof | clamping system

novotegra side-fix

New!

novotegra side-fix – single-rail clamping system with modules installed in portrait

Quick and easy fixing

This is how easy and fast our new roof hooks of the novotegra side-fix series can be mounted on roofs with clay roof tiles or concrete roof tiles. Properties such as stability and load capacity are a matter of course for us and the flexibility in the application must not be missing either.

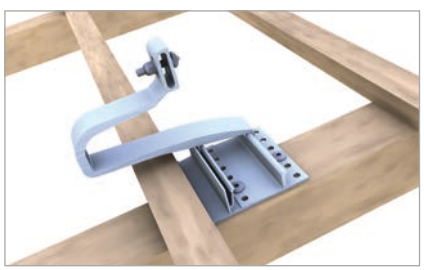
The shape of the roof hook allows a safe mounting even with large tile overlaps of up to approx. 11 cm. In combination with the new C-N-rail the perfect clamping system for your projects on tile roofs. The C-N rail combines the advantages of our proven module support rails - namely the lateral height-adjustable connection to the roof hook and the use of the rail as a cable channel.

Thanks to the internal connector in the chamber of the C-N-rail, you are flexible in terms of mounting and do not have to take the position of the roof hooks or the module clamps into consideration. Our black end caps, which are simply pushed over the end of the rail, ensure the visual closure of the C-N-rails at the edge of the module field.

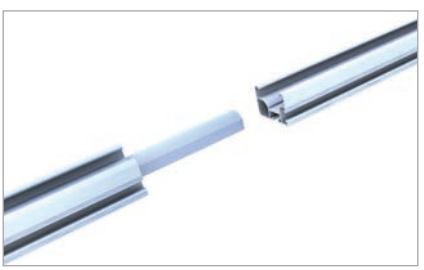
For module clamping on the C-N-rails, you can use our proven middle and end clamps of the related C-rails. Whether for blank or black anodized modules, the completely pre-assembled module clamps hold the modules securely and firmly on the rail. Regardless of whether the modules are mounted portrait in one layer or landscape in a cross rail connection - with our clamping system, you can rely on quality and safety.

Your benefits

- Quick roof hook installation through click technology
- Roof hooks for large tile overlap up to approx. 11 cm
- C-N-rail can be used as cable channel
- Easy to assemble connection from the side
- Internal connector for maximum assembly freedom
- Easy to assemble due to pre-assembled components
- Installation-friendly clamps with click-in mechanism for all frame heights
- High manufacturing quality and durability
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Position of base profile on rafters



Connector C-N-rail 37

End clamp and end cap in C-N-rail

Clamping system

Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000275 Item no. 03-000284 Item no. 03-000277	Page 105

novotegra side-fix

End cap	Item no. 03-001343	Page 103
Connector	Item no. 03-001347	Page 96
Rail	Item no. 03-001328	Page 90
Roof hook	Item no. 03-001351	Page 82
Screws	Item no. 03-000281	Page 86

Tile roof | clamping system

novotegra side-fix

novotegra side-fix – single-rail clamping system with modules installed in portrait

Quick and easy fixing

From roofing shingles to concrete roofing tiles: novotegra is perfect for every tile roof. It is quick and easy to fix, offers several individual solution options and is extremely stable and able to withstand stress.

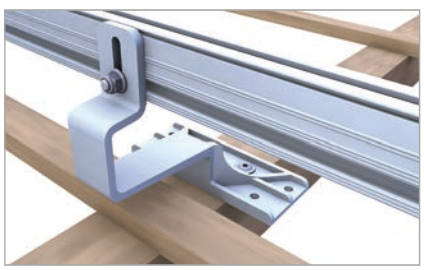
Our roof hooks facilitate the height-adjustable connection of the rail with the groove. The grooved guide rail can be connected to the slot bolt though the slot on the head of the roof hook and securely clamped over the fluting. The side connection eliminates high-effort mounting from below and provides a good view of the attachment point. The roof hooks are simply attached to the rafter and do not contact the roof, even under stress – expensive sheet metal tiles therefore are not necessary.

The grooved guide rails enable rail overhang beyond the attachment point on the roof hook. Depending on the rail diameter, they are available for various spans and can easily be extended using plug-in connectors which are screwed in from the side.

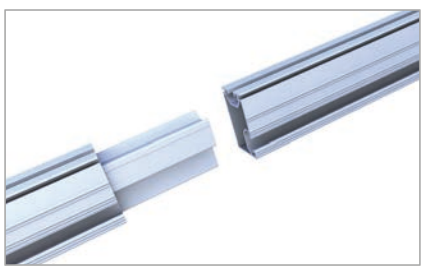
With its click-in mechanism, the clamping system comes with an extremely comfortable and secure mounting technology for attaching modules. You can install the modules vertically or horizontally, with a single rail or with cross-rails and benefit from low installation workload thanks to pre-assembled module clamps. The module clamps are available in blank aluminium or black. This creates a visually attractive, homogenous module field.

Your benefits

- Secure, stable and durable
- Die-cast aluminium roof hooks without a welding seam
- Height-adjustable rail connection
- Easy-to-mount connection from the side
- Installation-friendly clamps with a click-in mechanism
- Pre-assembled components
- Quick and efficient mounting
- Only two clamps for all frame heights
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Roof hook with height-adjustment N-rail



Connector N-rail standard

End clamp with spacer in N-rail

Clamping system

Middle clamp or end clamp	Item no. 03-000569	Item no. 03-000964	Page 105 / 106
	Item no. 03-000572	Item no. 03-000553	Item no. 03-000615

novotegra side-fix

End cap	Item no. 03-000529		Page 103
Connector	Item no. 03-000524		Page 96
Rail	Item no. 03-001404		Page 90
Roof hook	Item no. 03-000613		Page 82
Screws	Item no. 03-000281		Page 86

Tile roof | insertion system

novotegra top-fix

novotegra top-fix – insertion system with modules installed in portrait

Position, insert – finished!

Simple and elegant – our insertion system for tile roofs. Precisely adjust the substructure to your roof, and you will have a visually perfect PV installation thanks to the insertion system.

The insertion rails are available in either blank aluminium or black to match the frame colour, and the thought-through technology ensures security and mounting efficiency. As a floating installation, the module frame – vertical or horizontal – transfers the load to the rails. Insert the modules in the blink of an eye and lay the cables, including plugs, in the lower rail of the cross connection. The combination of the C-rail as a supporting rail and the cable channel makes it unique – tidy and efficient.

The connection of the C-rail to the rail bottom using a traditional screw connection on the three-way adjustable roof hook set enables continuous adjustment and levelling of the lower rail position. The adjustable bracket which is screwed into the base profile makes the roof hook easy to adapt to the roof coverage. The base profile facilitates precise positioning of the bracket over the tile – the roof hook set is available in different variations, perfect for your project.

The installation is completed with end caps and edge stops and can also be equipped with a snow guard – design and quality, that is what our insertion system stands for.

Your benefits

- High-quality installation aesthetics
- Tension-free module mounting
- Easy and secure – stable and durable
- Three-way adjustable roof hooks
- Roof hooks for light and heavy loads
- The C-rail also acts as a cable channel
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Excellent rear ventilation of the module
- Simple, Eurocode-compliant layout with our Solar-Planit online tool

Height-adjustable flex roof hook set

Rail connector insertion rail

Closing insertion rail and C-rail

Insertion system

Insertion rail	Item no. 03-001388		Page 88
Connector	Item no. 03-000499		Page 94
Edge stop	Item no. 03-000693		Page 101

novotegra top-fix

Cross-rail connector	Item no. 03-000321		Page 99
Slip guard	Item no. 03-000260		Page 102
Connector	Item no. 03-000001		Page 95
Rail	Item no. 03-001369		Page 90
Roof hook	Item no. 03-000254		Page 80
Screws	Item no. 03-000281		Page 86

Beavertail tile roof | insertion system

novotegra top-fix

novotegra top-fix – insertion system on beavertail tile roofing with modules installed in portrait

Classic meets modern – beavertail with insertion system

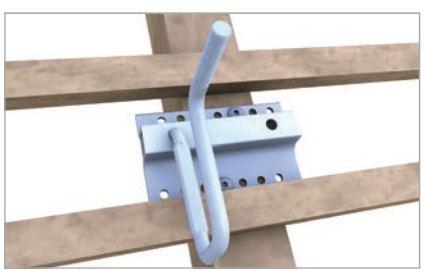
Are you looking for a photovoltaic mounting system for beavertail tile roofs with double tiling? By choosing our insertion system, you are choosing top-quality stability and safety and also an attractive appearance for your system – that matches the delicate and timelessly elegant beavertail tiling.
Our insertion rails are available in blank aluminium or black, depending on the colour of your module frames. You get the best look for your project. The very slim and unobtrusive roof hooks and the C-rail to store the cables mean the substructure is nearly invisible.

Whether you choose the flex roof hooks for light loads or the BS roof hooks for higher loads, our roof hooks do not rest on the tiling, so they do not need expensive sheet metal tiles.

The adjustable roof hook set can be adjusted perfectly to the shape of the roof – the bracket is simply inserted between two neighbouring tiles. Stress-free storage of the modules in landscape or portrait, expertly laid cables in the integrated C-rail cable channel and secure fastening and flexible adjustment of the roof hooks to the roof – our system is unparalleled for this roof coverage.

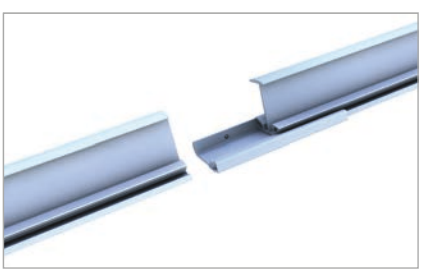
Your benefits

- Attractive and unmistakable appearance
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Module installation – landscape and portrait – floating and tension-free
- Insertion rails in blank aluminium or black
- Excellent rear ventilation of the module
- Three-way adjustable roof hooks
- Roof hook without resting on tile – no sheet metal tiles required
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Position of base profile BS on rafters

Closing insertion rail and C-rail



Rail connector insertion rail

Insertion system

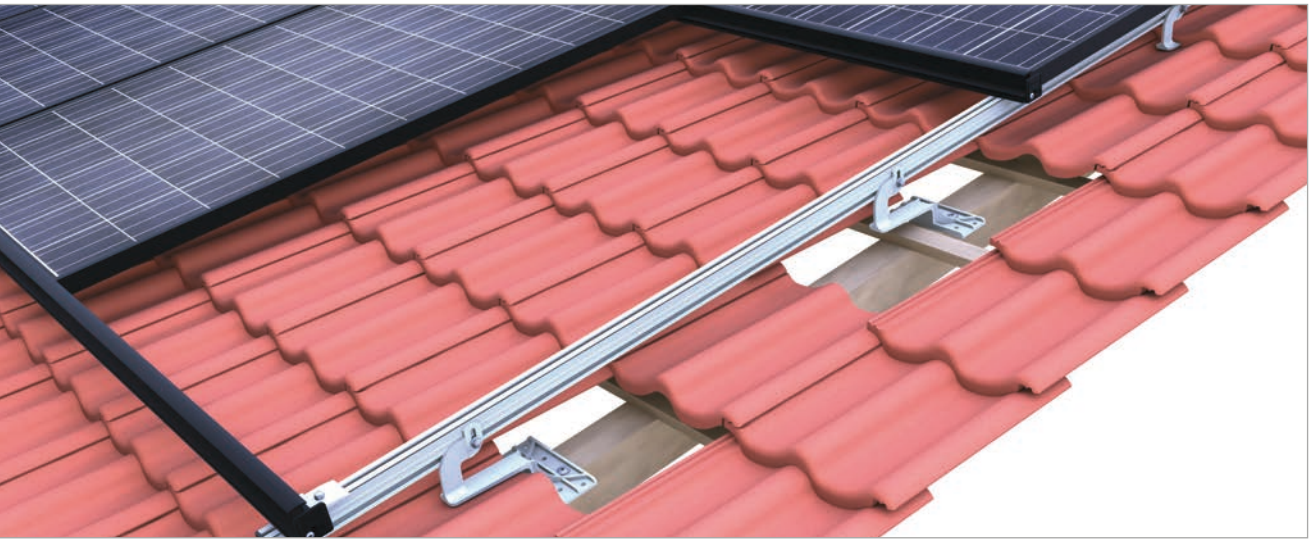
Insertion rail	Item no. 03-001388	Page 88
Connector	Item no. 03-000499	Page 94
Edge stop	Item no. 03-000693	Page 101

novotegra top-fix

Cross-rail connector	Item no. 03-000321	Page 99
End cap	Item no. 03-000260	Page 102
Connector	Item no. 03-000001	Page 95
Rail	Item no. 03-001369	Page 90
Roof hook	Item no. 03-001149	Page 80
Screws	Item no. 03-000281	Page 86

Tile roof | insertion system

novotegra side-fix



novotegra side-fix – insertion system with modules installed in portrait

Proven and attractive

By choosing our insertion system for tile roofs, you are not only choosing top-quality, stability and security but also a highly attractive appearance for your photovoltaic installation.

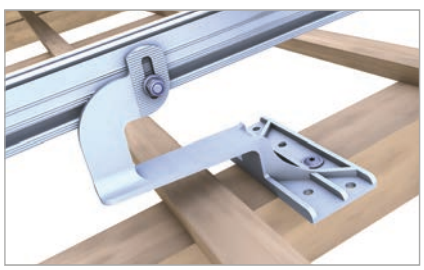
The insertion rails hold the modules securely and gently: The floating installation of the modules in the rails distributes the load across the entire length of the module frame. The insertion system makes quick and easy installation of modules in landscape or portrait possible, ensures excellent rear ventilation and is also available with a snow guard.

The installation in a cross connection construction gives you the highest degree of flexibility. Our roof hooks are three-way adjustable for flexible adjustment on existing uneven roofs or one-way adjustable for quick fixing on new roofs. They are simple to fix – without broken tiles or expensive sheet tiles – and enable a height-adjustable connection of the lower rail with the groove. The insertion rails are connected to the grooved guide rails with the preassembled cross-rail connector set. The insertion rails are available in blank
aluminium or black, depending on the colour of your module frames.

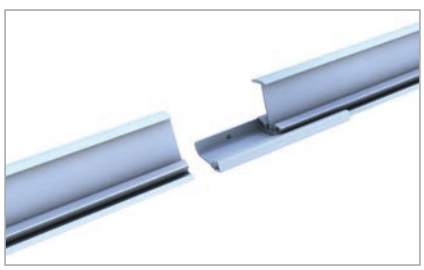
When used together with other decent mounting system components, this system creates an attractive, highly homogenous module field. Every roof turns into a design object with a uniform construction of black anodised insertion rails and dark modules.

Your benefits

- Attractive and unmistakable appearance
- Floating and tension-free module installation
- Easy and secure – stable and durable
- Die-cast aluminium roof hooks without a welding seam
- Height-adjustable rail connection
- Easy-to-mount connection from the side
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Low substructure clearance to the roof coverage
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Roof hook with height-adjustment N-rail



Rail connector insertion rail

Insertion rail on N-rail

Insertion system

Insertion rail	Item no. 03-001388	Page 88
Connector	Item no. 03-000499	Page 94
Edge stop	Item no. 03-000693	Page 101

novotegra side-fix

Cross-rail connector	Item no. 03-000409	Page 99
End cap	Item no. 03-000529	Page 103
Connector	Item no. 03-000524	Page 96
Rail	Item no. 03-001404	Page 90
Roof hook	Item no. 03-000612	Page 82
Screws	Item no. 03-000281	Page 86

Mounting solutions for trapezoidal roofs

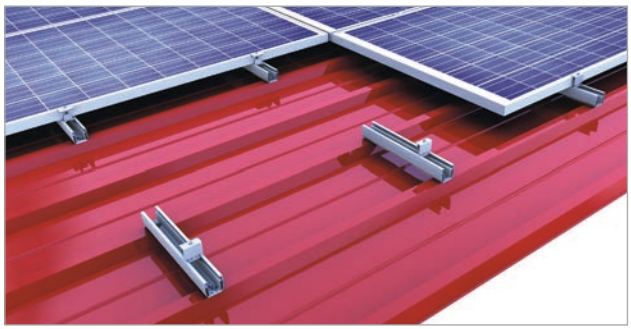
Roof-parallel applications with direct fixing

TÜVRheinland CERTIFIED
Type Approved
Regular Production Surveillance
www.tuv.com
ID 1111212187

PRODUCT GUARANTEE 10 Year PRODUCT GUARANTEE

Your benefits

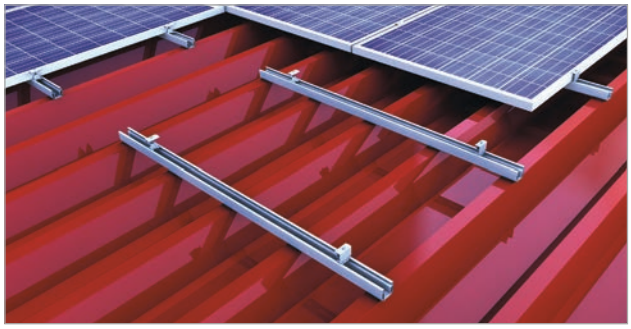
- Clamping and insertion systems for mounting modules in portrait or in landscape
- Only a handful of components, low installation workload and cost-effective
- Fastening with building authority-approved thin sheet screws
- Quick mounting thanks to direct fixing with chipless screws
- Easy layout planning with Solar-Planit – 10-year product guarantee



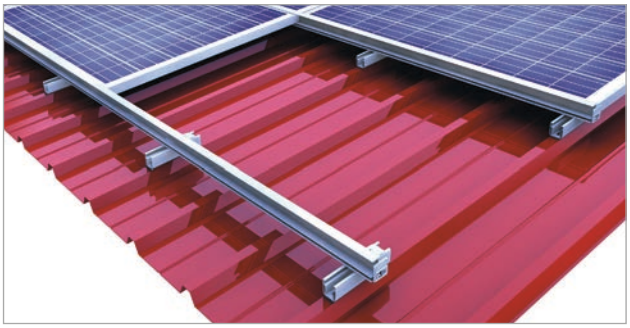
Clamping system: In portrait short rail

Clamping system: In landscape short rail

Insertion system: In portrait trapezoidal sheet bracket



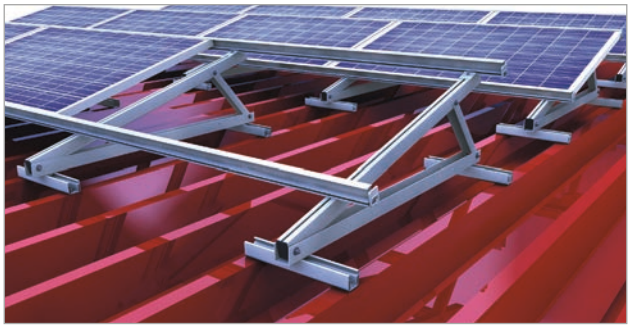
Clamping system: In portrait rail pieces



Insertion system: In landscape short rail

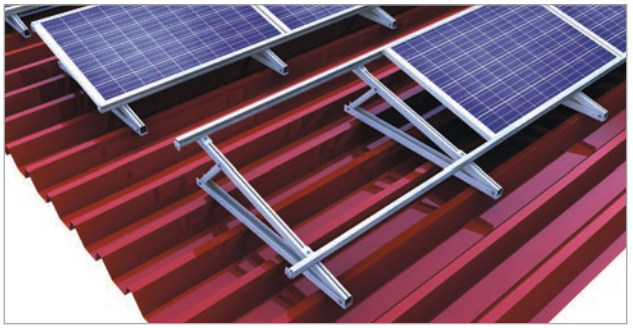
Mounting solutions for trapezoidal roofs

Elevated applications with direct fixing

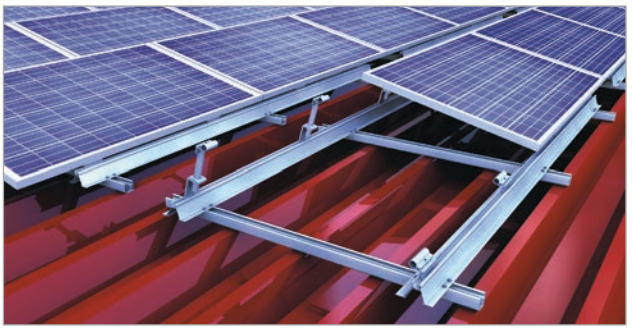


Insertion system: South-facing with triangle on bridge

Clamping system: South-facing



Insertion system: South-facing with triangle on east-west roof



Clamping system: South-facing on east-west roof

Clamping system: In portrait

Your benefits

- For elevation angles of 3 - 18° or 13 - 40°
- Module elevation solutions for all roof orientations
- Insertion system with elevation triangles for direct fixing
- Rail solutions with module attachment according to manufacturer specifications

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Trapezoidal metal roof | clamping system

Modules in landscape

Clamping system with direct fixing and modules installed in landscape

Pre-assembled components – quick assembly

With our clamping system for trapezoidal metal roofs, we always have the right solution completely pre-assembled for you. Whether for the yield-optimised system or the project business, or blank aluminium or black – you get a proven mounting system with a high quality of finish and made from durable and corrosion-resistant materials. Our clamping system for trapezoidal metal roofs also gives you an attractive price-performance ratio.

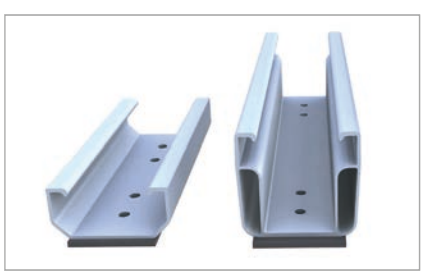
With the building authority-approved thin sheet screws, you can attach the pre-cut short rails, which are pre-equipped with EPDM sealing strips, directly to the trapezoidal raided beads. The modules are then attached with the tried and tested middle and end clamps – we cover all frame heights from 28 – 52 mm with only three different clamps.

Easy on-site handling guarantees quick and efficient mounting from above without saw or drill chips. You only need one tool to complete the installation, as the thin sheet screws and the clamps use an identical drive.

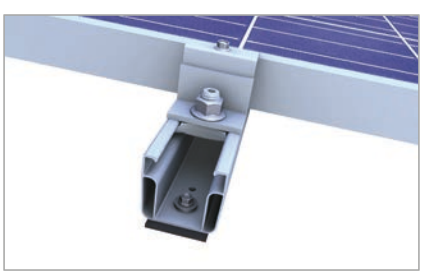
Excellent rear ventilation of the modules, electrical conductivity between mounting systems and the roof membrane as well as minimal material use and attractive aesthetics are all additional advantages of our mounting system, leaving no wish unfulfilled.

Your benefits

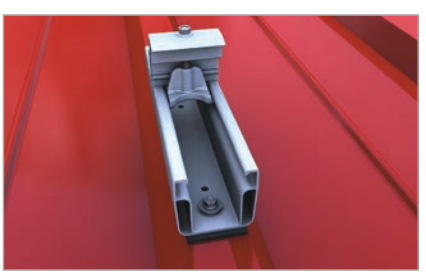
- Only a handful of components – entirely pre-assembled
- Only one mounting tool necessary
- Easy and secure – attached directly to the trapezoidal sheet
- Electrically conductive connection between the mounting system and the roof membrane
- Installation-friendly clamps with a click-in mechanism for all heights
- For steel panel thicknesses from 0.4 mm
- Quick mounting from above
- Short rails available in two different heights
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Short rail variations with EPDM seal



Slip guard on short rail for landscape



Hole pattern short rail for landscape

Clamping system

Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000275	Item no. 03-000284 Item no.03-000277

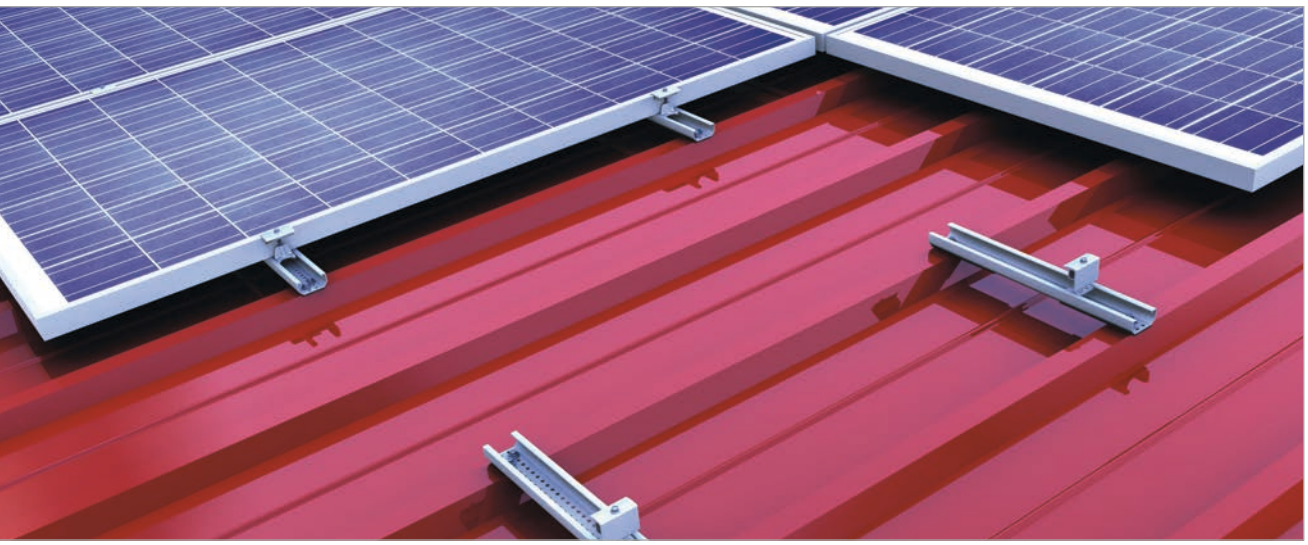
Page 105

Module in landscape

Slip guard	Item no. 03-000233	Page 103
Rail	Item no. 03-000841 Item no. 03-001108	Page 91
Roof attachment	Item no. 03-000880	Page 87

Trapezoidal metal roof | clamping system

Modules in portrait



Clamping system with direct fixing and modules installed in portrait

Vertical module installation – always the right solution

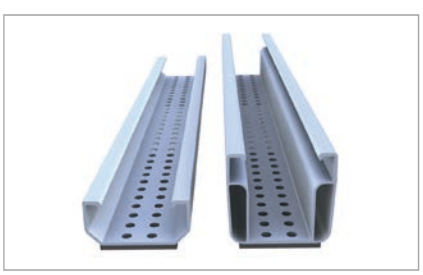
Our systems – your choice! The versions with the short rail C24 and C47 are easy to handle on site thanks to their pre-assembled components. Or you might decide on the C-rail assembly. Then you'll get neat cable routing and a load-distributing connection to the trapezoidal sheet. Our clamping systems for modules in portrait meet every requirement.

When assembling on short rails, you use our 385 mm long, pre-punched module support profiles pre-assembled with EPDM seal. The short rails can be adjusted flexibly to all trapezoidal sheet corrugation grids and are available in two different heights. With the short rail C24, you get a material-saving and economical solution for your projects. Or you can use the short rail C47 and get the ideal rear ventilation of the modules due to sufficient space to the roof coverage. Whichever way you decide, with our short-rail versions, every choice is the right one!

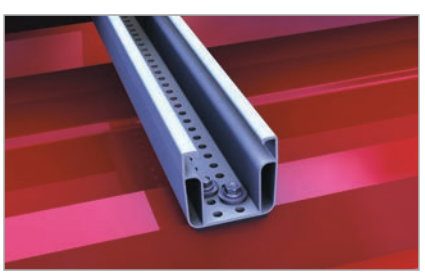
To meet your requirements for even load distribution on a trapezoidal sheet and for neat cable routing at the same time, we recommend our C-rail solution. These rails are mounted on pre-stuck EPDM sealing strips using several raided beads. Whether you are using material-optimised C-rail 38 or proven C-rail 47, you get both rails in a length of 2.10 m – just lay them, screw them in and you're finished!

Your benefits

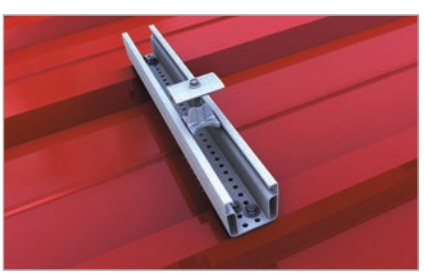
- Quick mounting from above
- Only one mounting tool necessary
- Only a handful of components – entirely pre-assembled
- Short rails or C-rails in two different heights
- Installation-friendly clamps with a click-in mechanism for all heights
- Fastening with building authority-approved thin sheet screws
- Conductive connection between the mounting system and the roof membrane
- Solution for roofs with low load reserves
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Versions of short rail 385 mm with EPDM seal



Hole pattern short rail for portrait



Middle clamp in short rail C47

Clamping system

Middle clamp or end clamp

Page 105

Item no. 03-000276

Item no. 03-000284

Item no. 03-000275

Item no. 03-000277

Module in portrait

Slip guard

Page 102

Item no. 03-000007

Rail

Page 91

Item no. 03-001081

Item no. 03-000873

Roof attachment

Page 87

Item no. 03-000880

Trapezoidal metal roof | insertion system

Trapezoidal sheet bracket

Insertion system with direct fixing and modules installed in portrait

Convincing quality for your trapezoidal roof

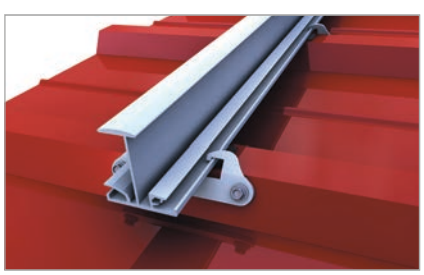
The insertion system from novotegra enables tension-free, floating – and at the same time very secure and stable – installation of your photovoltaic modules. The modules are gently placed in our insertion rails, which are available in either blank aluminium or black, with their entire frame length. Depending on the combination of rail and module, you can create a very aesthetic and homogeneous installation surface with the insertion mounting system. The insertion mounting system is also popular because of its thought-through construction, resulting in a quick and easy assembly with high-quality, durable and corrosion-resistant components.

The insertion rail is attached directly to the trapezoidal sheet using a fixing clamp which is attached to the side of the raised bead. Our insertion system for trapezoidal roofs can be used starting at a steel plate thickness of 0.4 mm. It provides excellent rear ventilation of the modules, which can be installed either vertically or horizontally.

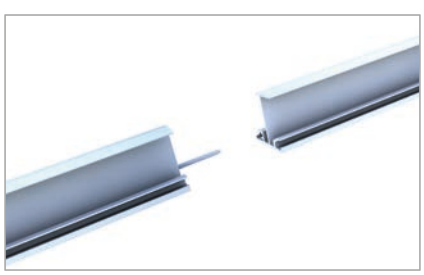
Very practical for installation on the roof: the insertion system for trapezoidal roofs consists of only a handful of individual components, greatly simplifying installation. For trapezoidal roofs, we use building authority-approved chipless thin sheet screws which are screwed into the trapezoidal metal without producing any chips which could corrode.

Your benefits

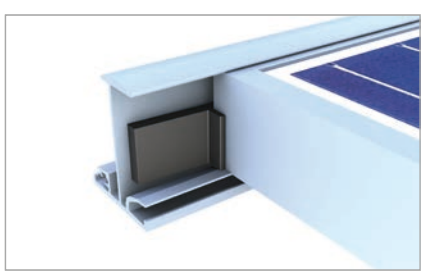
- Attractive and unmistakable appearance
- Only a handful of components – entirely pre-assembled
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Floating and tension-free module installation
- Insertion rails in blank aluminium or black
- Easy and secure – attached directly to the trapezoidal sheet
- For steel panel thicknesses from 0.4 mm
- Excellent rear ventilation
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Insertion rail on EPDM with trapezoidal bracket

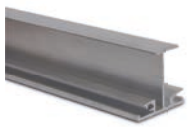


Connecting insertion rails on trapezoidal sheet



Module security at low roof inclination

Insertion system

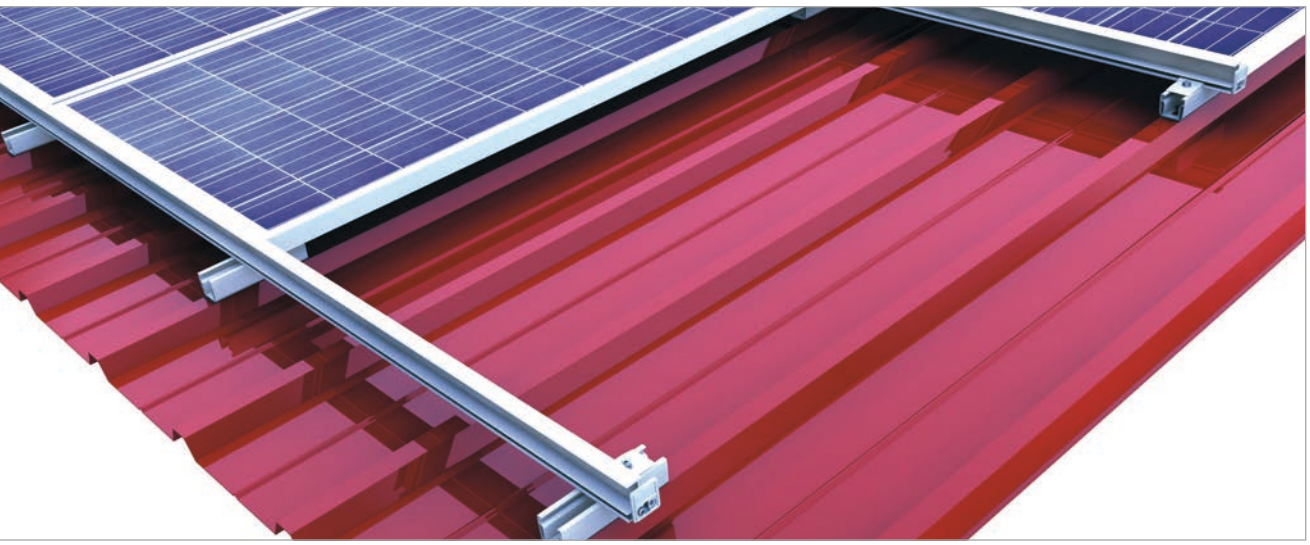
Insertion rail	 Item no. 03-001387	Page 88
Connector	Item no. 03-000647	Page 94
Edge stop	Item no. 03-000691	Page 101

Attachment system

EPDM sealing strips	Item no. 03-000633	Page 115
Roof attachment	Item no. 03-000459	Page 85

Trapezoidal metal roof | insertion system

Short rail



Insertion system with direct fixing and modules installed in portrait

Combined – insertion rails on short rail

Do you value the advantages of quick module assembly with our insertion system and would also like excellent rear module ventilation? Then we have exactly the right solution for your trapezoidal metal roofs, using the combination of our insertion rails and our various short rails.

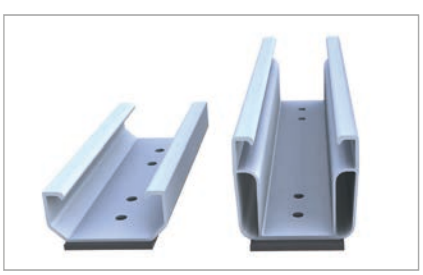
Regardless of whether the modules are portrait or landscape, the substructure is constructed according to the same principle. You decide, depending on your rear module ventilation requirements, on the height of your short rail, and fasten these directly to the trapezoidal roof using building authority-approved thin sheet screws – this means you can choose between two short rails of different heights.

The insertion rails are placed on the short rails and are fastened with pre-assembled cross rail connector set C ES M8. The complete assembly of the components – whether the short rails are assembled or insertion rails fastened – is done from above.

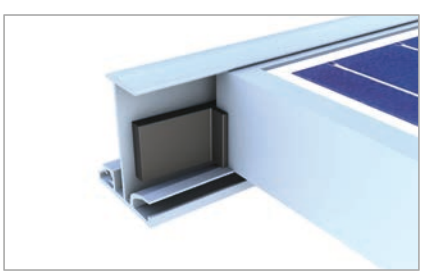
With the combination of our insertion rails on short rails, you can combine the aesthetic appearance of your PV system thanks to the insertion system with optimal rear module ventilation for yield optimisation. Fewer components – completely pre-assembled – make assembly easy and quick.

Your benefits

- Attractive and unmistakable appearance
- Short rails available in three different heights
- Only a handful of components – entirely pre-assembled
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Floating and tension-free module installation
- Insertion rails in blank aluminium or black
- Easy and secure – attached directly to the trapezoidal sheet
- For steel panel thicknesses from 0.4 mm
- Yield optimisation due to excellent rear ventilation of the module
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Short rail variations with EPDM seal



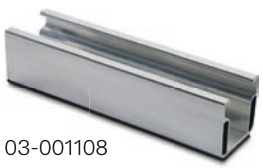
Module security at low roof inclination

Insertion rail attached to short rail

Insertion system

Insertion rail	Item no. 03-001387	Page 88
Connector	Item no. 03-000648	Page 94
Edge stop	Item no. 03-000691	Page 101

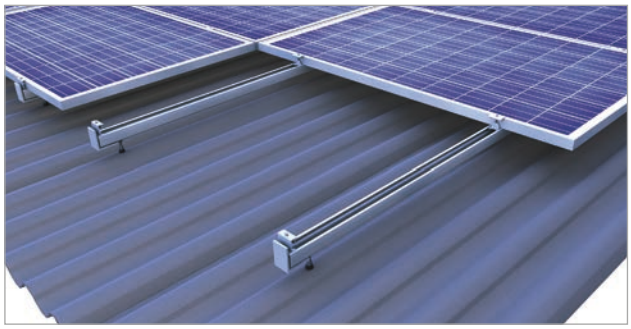
Short rail C24 | C47

Cross-rail connector	Item no. 03-000321	Page 99
Rail	Item no. 03-000841 Item no. 03-001108 	Page 98
Roof attachment	Item no. 03-000880	Page 87

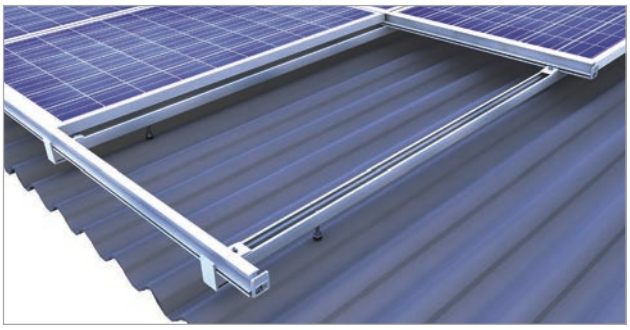
Extremly resiliant –
novotegra for corrugated
and sandwich roof

Mounting solutions for corrugated and sandwich roof

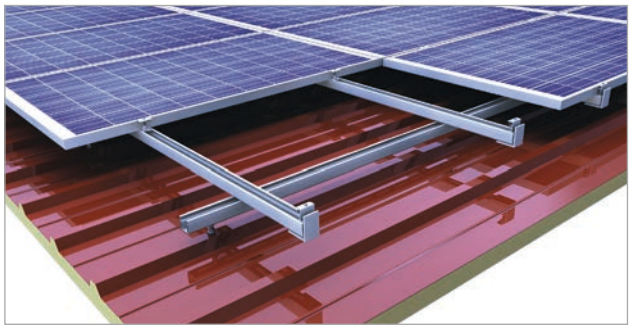
novotegra top-fix



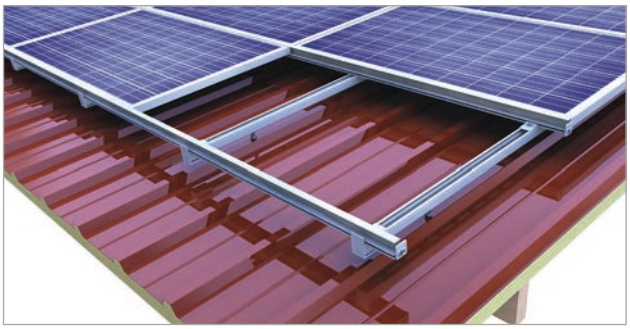
Clamping system: Single-rail in landscape



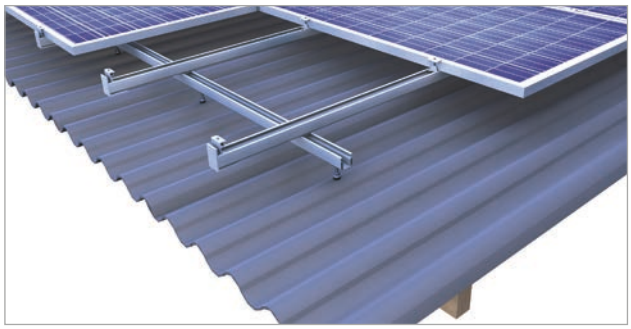
Insertion system: In portrait



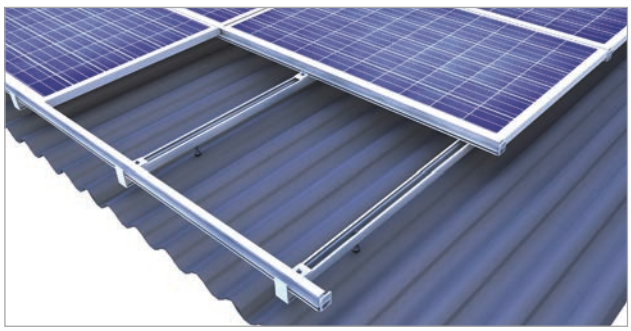
Clamping system: Cross-rail in portrait



Insertion system: In landscape



Clamping system: Cross-rail in landscape



Insertion system: In landscape

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Type Approved
Regular
Production
Surveillance
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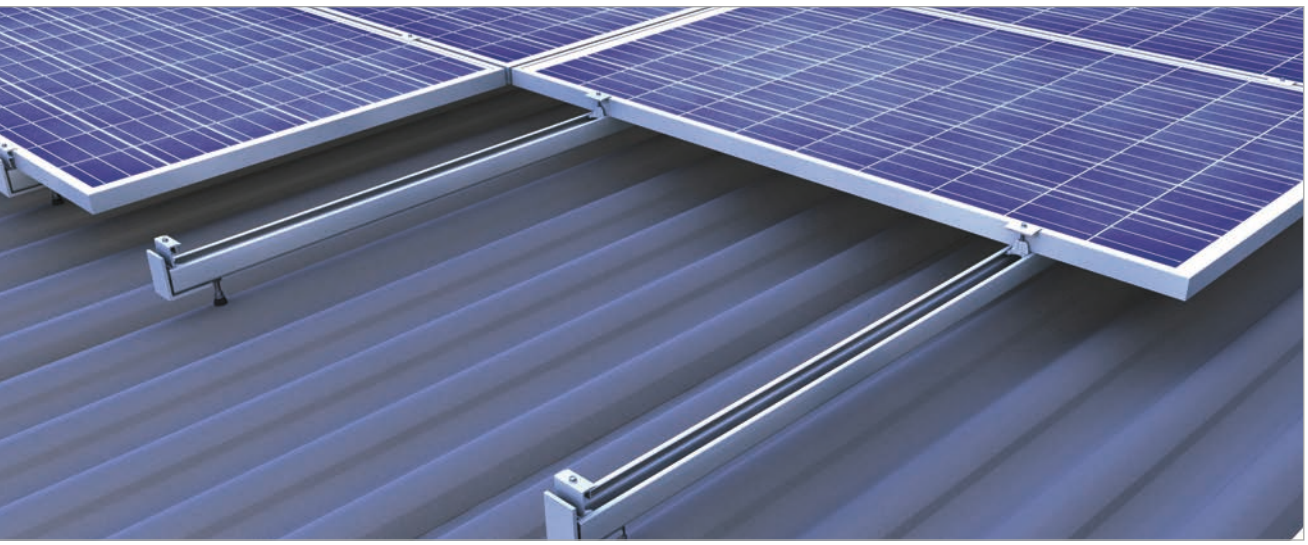
PRODUCT GUARANTEE 10 Year PRODUCT GUARANTEE

Your benefits

- Clamping and insertion systems for mounting modules in portrait and in landscape
- Centric load distribution to the stock screw, making the system suitable for very heavy loads
- Rail with an integrated cable channel and room for plugs
- Quick mounting from above with easily graspable components

Corrugated and sandwich roof | clamping system

novotegra top-fix



novotegra top-fix – single-rail clamping system with modules installed in landscape

Simple mounting system technology

When mounting on corrugated and sandwich roofs, you fix the photovoltaic installation directly to the purlins of the roof construction. For wooden purlins, you need the stock screw set for wood and for steel purlins the stock screw set for steel. The centric connection of the C-rails to the stock screw transfers the load centrally on the stock screw – this means that it is not additionally subjected to bending stress.

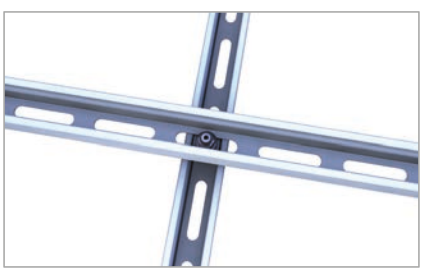
C-rails are always mounted using the same principle: The classic screw connection with a locking nut ensures a quick, strong and permanently reliable connection for both single-rail and cross-rail connections. At the same time, the interior of the rail acts as a cable channel with enough room for cables and plugs. The connection of the stock screw to the rail bottom makes height adjustment possible, and the installation can be levelled – this way you can achieve a homogenous module field, even on uneven roofs.

All end and middle clamps are pre-assembled and also available in a black anodised variant. Be it modules installed in portrait or landscape or a singlerail or cross-rail installation, thanks to reliable clamping technology, modules can be fixed to C-rails quickly and securely. The end clamps close the module field flush to the C-rails, making the substructure nearly invisible – for visually perfect installations.

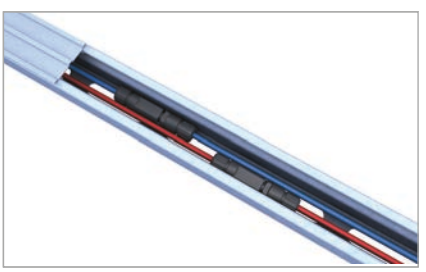
Your benefits

- Centric load distribution
- The C-rail also acts as a cable channel
- For wooden and steel purlins
- Secure, stable and durable
- High-quality production and proven clamping technology
- Installation-friendly clamps with a click-in mechanism for all heights
- Also suitable for trapezoidal roofs
- Excellent rear ventilation of the module
- Simple, Eurocode-compliant layout with our Solar-Planit online tool

Centric load distribution in to the stock screw



Cross-rail connection C-rail



C-rail as cable channel

Clamping system

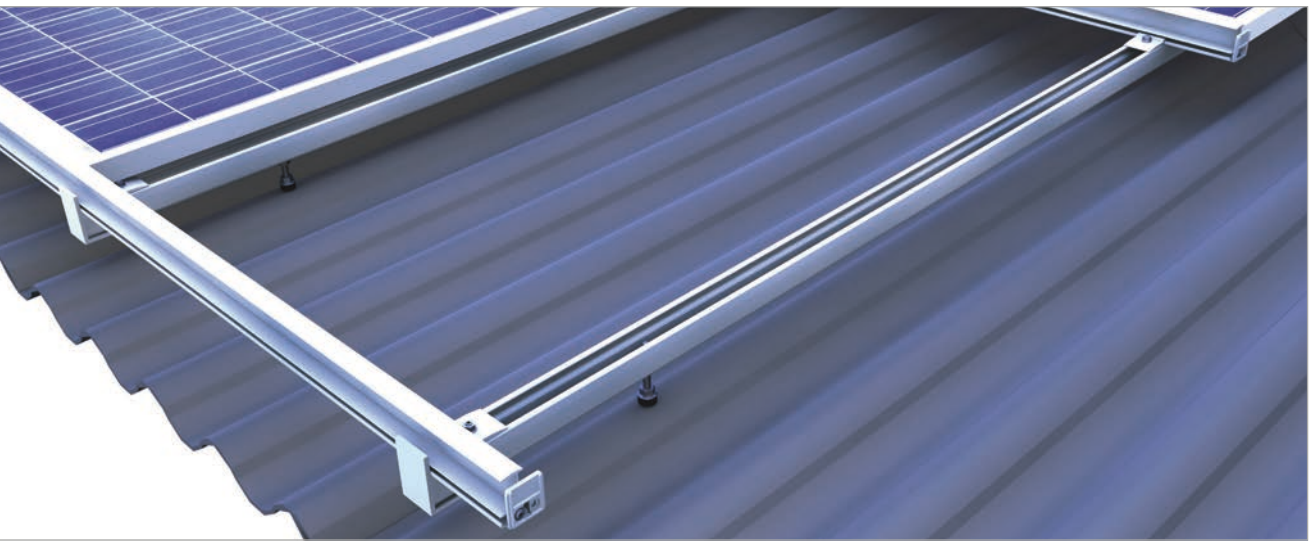
Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000275	Item no. 03-000284 Item no. 03-000277	Page 105

novotegra top-fix

Slip guard	Item no. 03-000259	Page 102
Connector	Item no. 03-000001	Page 95
Rail	Item no. 03-001369	Page 90
Stock screw	Item no. 03-000222	Page 84

Corrugated and sandwich roof | insertion system

novotegra top-fix



novotegra top-fix – insertion system with modules installed in portrait

Easy, stable and flexible

Whether you have a purlin roof with wooden or steel purlins, or a roof covering with corrugated or sandwich elements, with our stock screw set you can use our insertion system quickly and easily in your projects.

The insertion rails are available in either blank aluminium or black to match the frame colour. The well-thought-out technology ensures security and mounting efficiency. As a floating installation, the module frame – vertical or horizontal – transfers the load to the rails. Insert the modules in the blink of an eye and lay the cables, including plugs, in the lower rail of the cross connection. The combination of the C-rail as a supporting rail and the cable channel makes it unique – tidy and efficient.

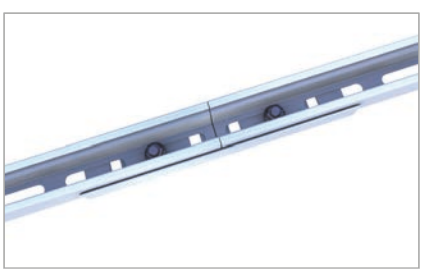
The connection of the C-rail to the stock screws using a traditional screw connection on the rail bottom enables continuous adjustment and levelling of the lower rail position. The centre connection of the C-rails to the stock screw transfers the load centrally on to the stock screw, meaning that it is not additionally subjected to bending stress – the stock screw set is available in various lengths and widths, perfect for any roof.

The installation is completed with end caps and edge stops and can also be equipped with a snow guard – design and quality, that is what our insertion system stands for.

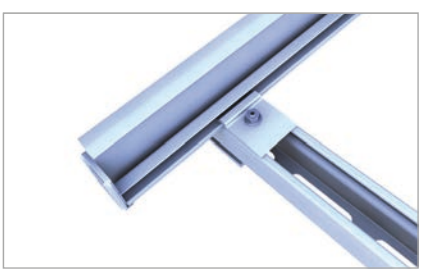
Your benefits

- High-quality installation aesthetics
- Tension-free module mounting
- Quick and efficient thanks to insertion technology and pre-assembled parts
- Centric load distribution
- The C-rail also acts as a cable channel
- For wooden and steel purlins
- Secure, stable and durable
- Also suitable for trapezoidal roofs
- Simple, Eurocode-compliant layout with our Solar-Planit online tool

C-rail for various spans



C-rail connector extern



Fixation insertion rail to C-rail

Insertion system

Insertion rail	Item no. 03-001387	Page 88
Connector	Item no. 03-000648	Page 94
Edge stop	Item no. 03-000691	Page 101

novotegra top-fix

Cross-rail connector	Item no. 03-000321	Page 99
Slip guard	Item no. 03-000259	Page 102
Connector	Item no. 03-000001	Page 95
Rail	Item no. 03-001369	Page 90
Stock screw	Item no. 03-000222	Page 84

Low installation workload – novotegra for seamed metal roofs

Mounting solutions for seamed metal roof

Main applications

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Type Approved
Regular Production Surveillance
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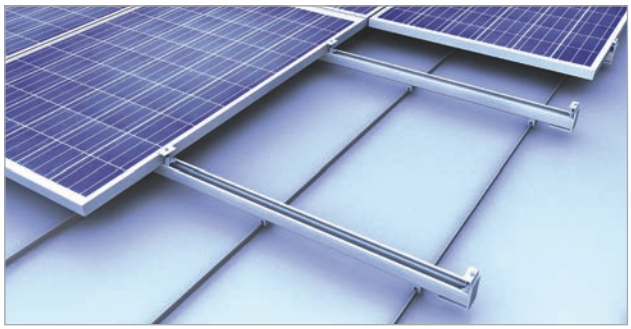
PRODUCT GUARANTEE – 10 Year – PRODUCT GUARANTEE

Your benefits

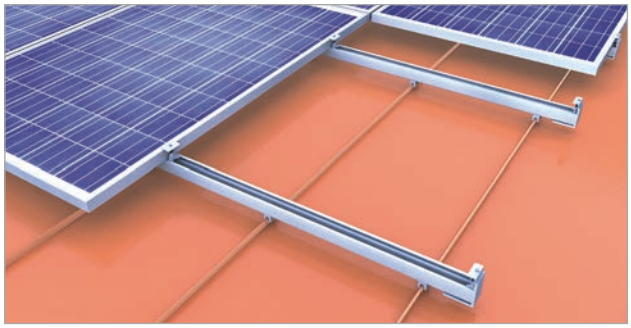
- Seam clamps for standing and round seams
- Installation-friendly clamps with a click-in mechanism for all heights
- Rail with an integrated cable channel and room for plugs
- Quick mounting with only a handful of components thanks to a rail connection from above
- Insertion systems for module mounting in protrait or in landscape



Clamping system: In portrait on standing seam

Clamping system: In portrait on round seam

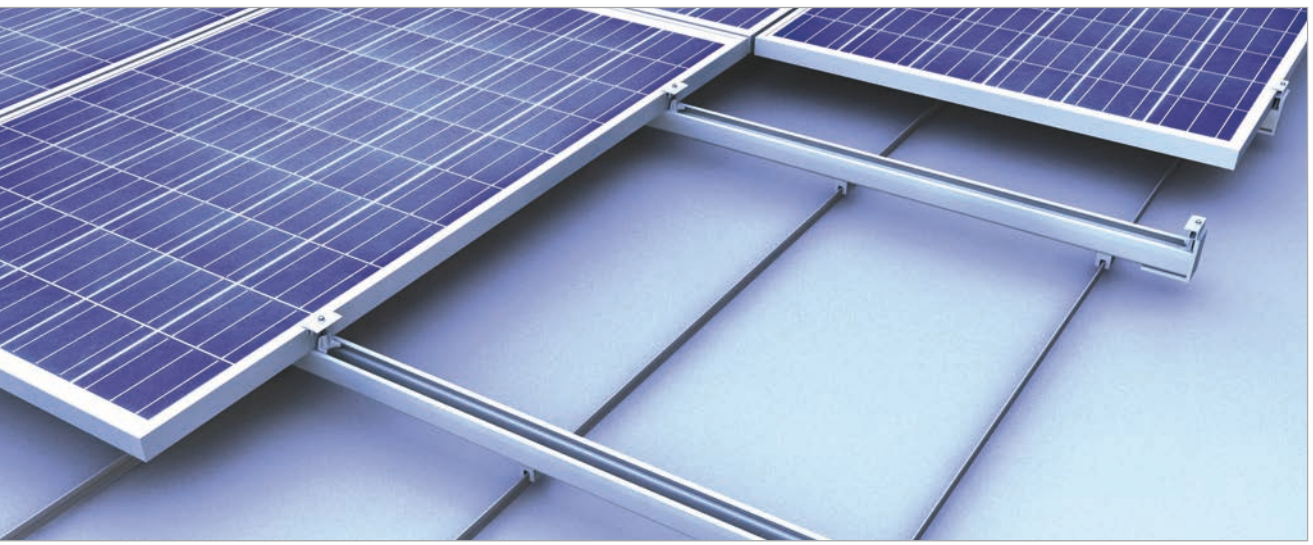
Insertion system: In portrait on standing seam



Clamping system: In portrait on standing seam copper roof

Insertion system: In landscape on standing seam

Seamed metal roof | clamping system



Single-rail clamping system with modules installed in portrait

Perfect for seamed metal roofs

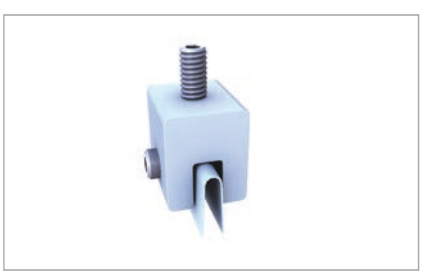
Be it a standing seam roof, a rounded seam roof or a profiled sheet roof, such as a Zambelli RibRoof or Domico GBS: Our novotegra clamping system, which has proven itself over years of service, ensures the reliable, stable and secure attachment of your photovoltaic installation on any seamed metal roof.

With the roof seam clamping technology, our mounting system is attached directly to the roof seam: The load is transferred centric in to the seam. Our clamping system for seamed metal roofs can also be used on standing seam roofs made of copper. They have a high production quality and comprise durable and corrosion-resistant components – perfect for the individual requirements of the photovoltaic installation on site.

Our clamping system is quick and easy to fix to the seamed metal roof. It comprises only three components: the C-rails, the seamed metal and the module clamps. The modules are installed vertically. The module clamps are available in three sizes – and in either blank aluminium or black. Mounting is done comfortably form above. The rails can also be extended with connectors as needed. Our mounting system for seamed metal roofs provides excellent rear ventilation of the modules and – with decent system components and homogenous module fields – attractive aesthetics.

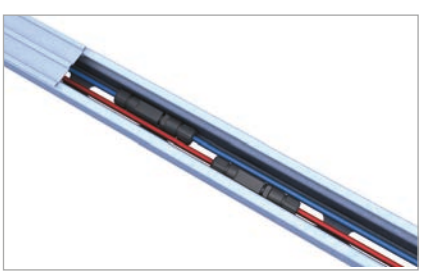
Your benefits

- Only a handful of components – entirely pre-assembled
- Quick mounting from above
- The C-rail also acts as a cable channel
- Installation-friendly clamps with a click-in mechanism for all heights
- Secure, stable and durable
- For all conventional seamed metal and profile sheet roofs
- Also suitable for standing seam roofs made of copper
- Excellent rear ventilation
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Clamp with VA saddle for copper seam roofs

Centric load distribution in to the seam clamp



C-rail as cable channel

Clamping system

Middle clamp or end clamp	Item no. 03-000276 Item no. 03-000284 Item no. 03-000275 Item no. 03-000277	Page 105

Attachment system

Connector	Item no. 03-000925	Page 95
Rail	Item no. 03-001369	Page 90
Seam clamp	Item no. 03-000219	Page 85
VA saddle (only for copper roofs)	Item no. 03-000338	Page 85

Seamed metal roof | insertion system

Single-rail insertion system with modules installed in landscape

Perfect aesthetic and high efficiency – the insertion system for standing seam roofs

Proven clamping technology on standing seams and elegant system aesthetics thanks to our insertion system – the combination of extended standing seam clamps and proven insertion rails makes it possible.

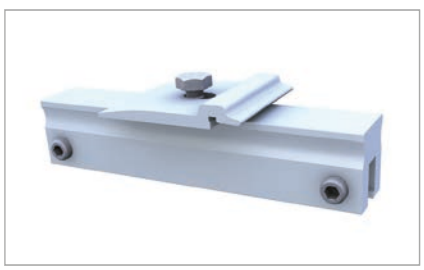
Whether on a gabled roof or a mono-pitch roof, with our insertion system for standing seam roofs, you can install the modules in portrait or landscape on the roof coverage. You can choose between blank aluminium and black insertion rails – we have both versions ready for you and suitable for all module frame heights.

The design of the standing seam clamp allows for gentle fastening to the standing seam flanging and at the same time for simple direct fastening of the insertion rail with the proven holding bracket on the standing seam clamp. This makes our system efficient in assembly and economical because there is no need for a cross rail. We make sure the system looks good as well: the edge stop forms the closure at the edge of the system and also secures the modules in place.

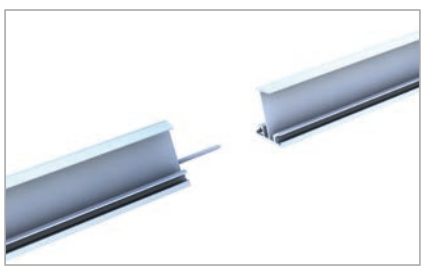
Fewer components, completely pre-assembled – designed for quick and easy assembly.

Your benefits

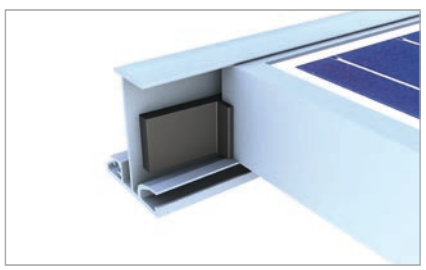
- Discreet system aesthetics with insertion system
- Proven module insertion technology
- Insertion rails match colour of module frame
- Fewer components – quick assembly
- Cost-optimised single-rail system
- Completely pre-assembled seam clamp with connector for insertion rail
- Clamping technology with clamping points on the seam flanging
- Secure, stable and durable
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Clamp for insertion system on standing seam roof completely pre-assembled



Insertion rail connection



Module security at low roof inclination

Insertion system

Insertion rail	Item no. 03-001387	Page 88
Connector	Item no. 03-000647	Page 94
Edge stop	Item no. 03-000691	Page 101

Attachment system

Roof attachment	Item no. 03-001028	Page 85

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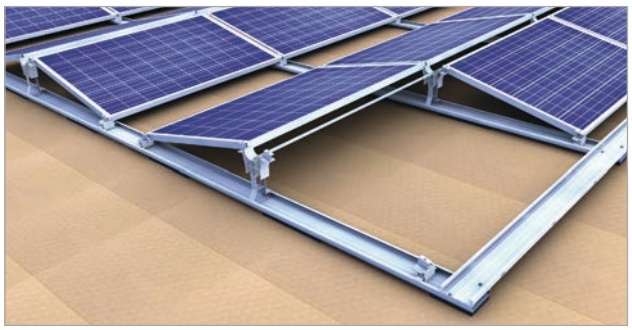
3

Flat roof

Minimal ballasting possible –
novotegra for flat roof
south-facing system

Mounting solutions for flat roof

Main applications



Foil roof: East-West system II

Foil roof: South system closed II

Gravel: East-West system I with cross rail

Gravel: South system I with cross rail

Your benefits

- Aerodynamic system tested in a wind tunnel – reliable security!
- Only a handful of components which are quickly and easily assembled – a cost-effective system
- Minimal need for ballasting due to load redistribution through wide base trough with rounded edges
- Alternative solutions with a stable cross-rail system and elevation triangles

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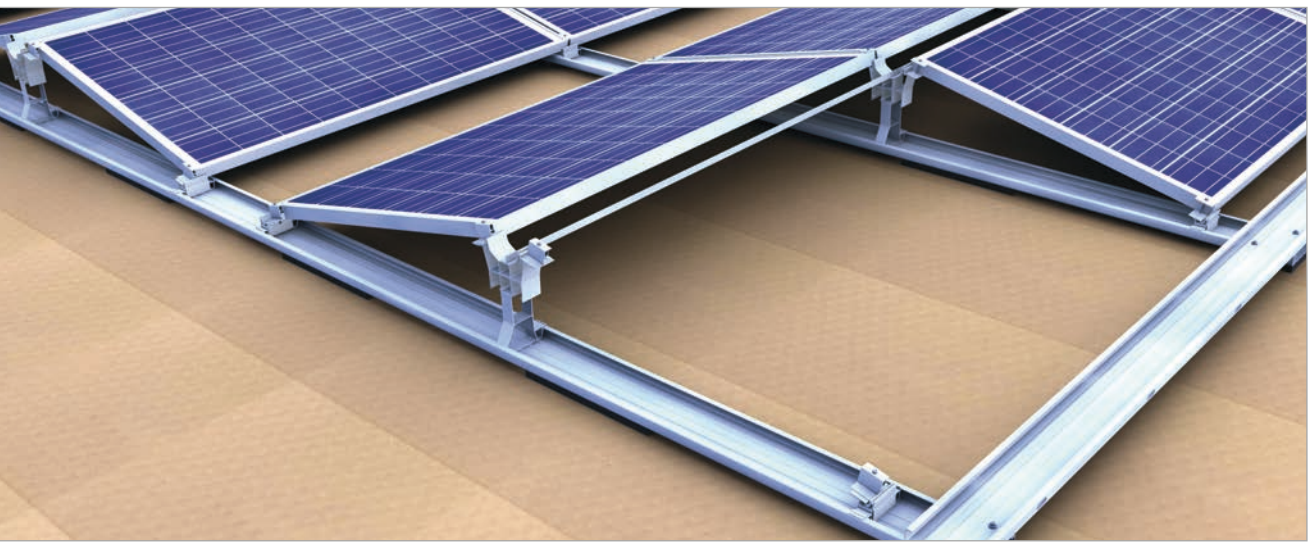
PRODUCT GUARANTEE 10 Year PRODUCT GUARANTEE

Foil roof: South system closed II with 3. base trough

Foil roof: East-West system II with 3. base trough

Flat roof | east-west system II



Flat roof system east-west II

Our solution for the east-west direction

With our east-west II mounting system, you can optimise the use of the surface area of your flat roof: Compared to south-facing elevations, you can install nearly twice the module surface area. Electricity production is thus distributed more evenly throughout the entire day. The east-west II mounting system is a very secure and stable system for flat roofs with a pitch of up to 5° – and, what is more, it is quick and easy to assemble.

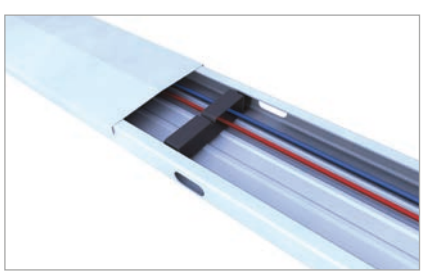
The mounting system is fixed on the roof with its own weight and, if necessary, ballast stones, although the optimised aerodynamics of our system require little to no ballasting: an advantage for flat roofs with low load reserves.

The mounting system consists of only a few components. The substructure is installed in a modular grid. The base foot and the module support are clicked together, and the module fastened by the short side of the frame. The base trough, which can be used as a cable channel, has rounded edges and a separation layer to protect the roof membrane. The system is installed on foil and bitumen roofs and can also be installed on gravel roofs.

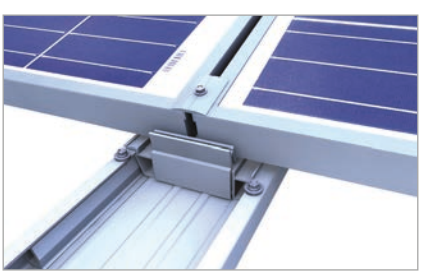
Our various supports allow us to tailor solutions to the specific loads – even with heavy load requirements. Per default, we can subject the east-west II mounting system to loads of 2.4 kN/m², and with a module clamp on the long side, even up to 4.8 kN/m².

Your benefits

- Secure, stable and quick to install
- Wind-tunnel tested aerodynamics
- No penetration of the roof membrane
- Minimal ballasting
- Optimal elevation angle of 13°
- More module surface area possible
- Wide base trough with rounded edges
- Ballast trough for large-format stones
- Double support for heavy loads
- Rail with pads for cross drainage
- Only three clamps for all frame heights
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Base rail with cover and cable holder



Base foot in base trough with connector

Wind deflector East-West for roof obstacles

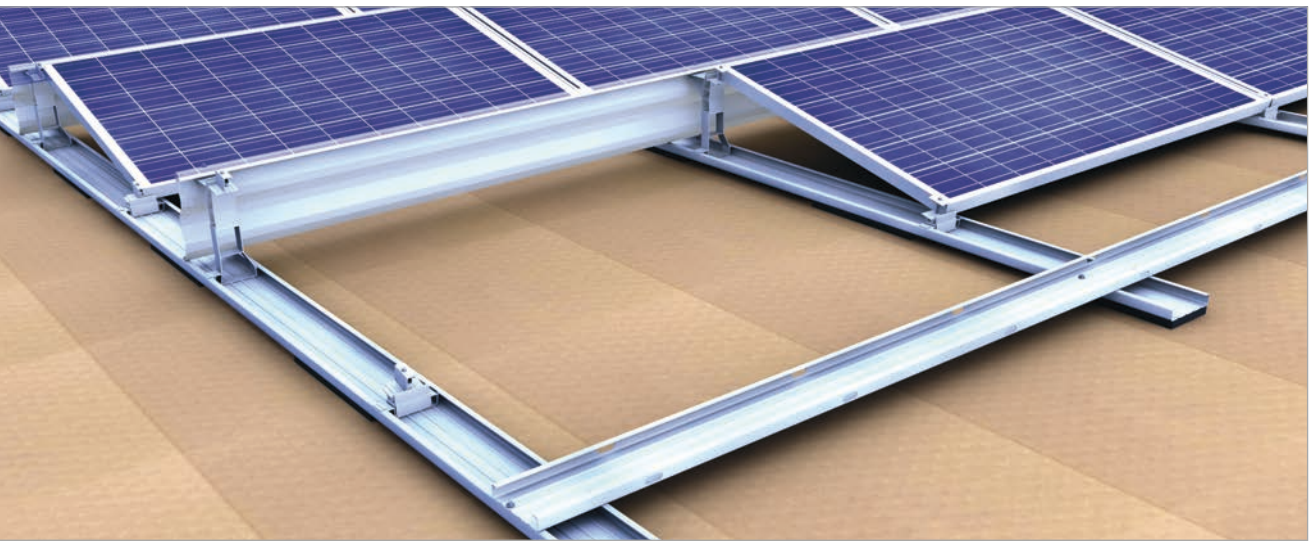
Basic components

Base trough	Item no. 03-000989		Page 92
Connector set base trough	Item no. 03-000370		Page 97
Aluminium edge protector self-adhesive	Item no. 03-000407		Page 115
Flat roof mounting screw	Item no. 03-000383		Page 87
Base foot	Item no. 03-000343		Page 108

East-west variant

Module support	Item no. 03-001324		Page 108
Ballast redistribution	Item no. 03-000314		Page 93
Module bracket	Item no. 03-000324		Page 108 / 109
	Item no. 03-000326		
	Item no. 03-000310		

Flat roof | south system II



Flat roof system closed II

Our solution for the south-facing direction

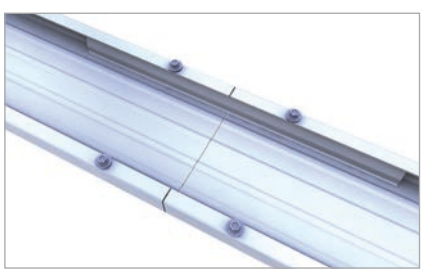
Our "Flat Roof Closed II" system – the perfect solution for the south-facing elevation of your modules on flat roofs with a pitch of up to 5°! We had our system tested by Wacker engineers in a boundary layer wind tunnel with high wind peaks. The result confirms our quality which has proven itself for years: with our flat-roof system, you are choosing unparalleled security and stability.

The closed II system convinces with its quick and easy installation, consists of only a handful of components and click-in system parts – the roof is not punctured during installation. The optimised aerodynamics required little to no ballasting with stones – perfect for your flat roof. This is made possible by our wind deflector which is installed in an overlapping fashion on the closed II elevation and fixed to the supports and rails. This increases the overall stability and ensures optimised load transfer through its attachment to the base rails.

The wide base rail has rounded edges and is pre-assembled with a continuous separation layer or individual pads for cross drainage, as desired. With a suitable cover and cable holder, it can also act as the cable channel for the cables on the base rails. Per default, this mounting system can support loads of up to 2.4 kN/m²; and can be expanded to loads of up to 4.8 kN/m² if necessary.

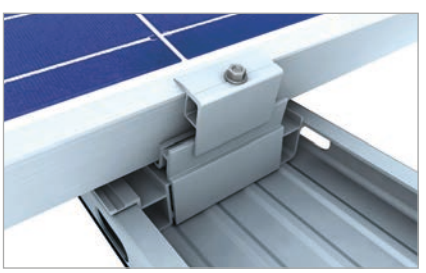
Your benefits

- Secure, stable and quick to install
- Wind-tunnel tested aerodynamics
- No penetration of the roof membrane
- Minimal ballasting
- Load redistribution across the wind deflector and base troughs
- Optimal elevation angle of 13°
- Roof edge clearance of only 0.5 m
- Wide base trough with rounded edges
- Ballast trough for large-format stones
- Only three clamps for all frame heights
- Simple, Eurocode-compliant layout with our Solar-Planit online tool



Base trough extension

Wind deflector and module support

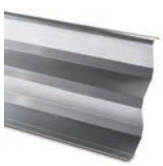


Module clamp long frame side for 3. base trough

Basic components

Base trough	Item no. 03-000879		Page 92
Connector set base trough	Item no. 03-000370		Page 97
Aluminium edge protector self-adhesive	Item no. 03-000407		Page 115
Flat roof mounting screw	Item no. 03-000383		Page 87
Base foot	Item no. 03-000343		Page 108

South variant

Module support	Item no. 03-001243		Page 108
Ballast redistribution	Item no. 03-001281		Page 109
Module bracket	Item no. 03-000324		Page 108 / 109
	Item no. 03-000326		
	Item no. 03-000310		

Flat roof | east-west system I

Flat roof system east-west I for gravel

Our flexible solution for east-west-facing systems

Do you value flexible assembly and simple ballasting for your flat roof project? Then we have exactly the right solution with our flat roof east-west I system with 13° elevation angle.

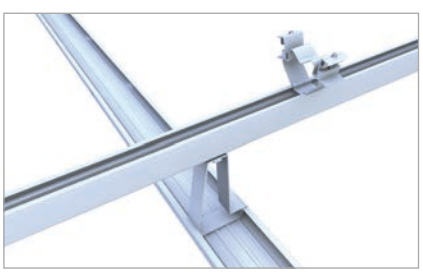
With our base trough in the gravel rail version, you use the existing gravel to ballast the PV system. The gravel is simply poured into the 230 x 90 mm gravel rail as ballast. Our base profile is used as a module-bearing rail; it is then fastened flexibly as a cross rail to the bottom gravel rail using thin sheet screws. Reliable, solid and effective – this describes our cross-rail solution for gravel roofs.

The flexible installation means you can also use the east-west I system with the normal base trough with pre-assembled separation layer. Or you can insert the base trough with pads for horizontal drainage. For both base trough types, we have the right support set for you to elevate the modules on the C-rails.

The module bracket set back for connecting to frame holes on the module elevate the module securely in the base profile using form closure. The module bracket set back for clamping the modules are clicked into the C-rails and can be attached to the clamping points provided by the module manufacturer. The C-rail can be used at the same time as a cable channel for the string cables.

Your benefits

- More kilowatts per roof surface
- Simple ballasting using existing gravel
- Stability and flexibility thanks to cross system
- Optimal module clamping at assembly holes
- Tested in a wind tunnel
- Optimised 13° elevation for roof inclination up to 5°
- Edge spacing of just 0.5 m possible
- No penetration of the roof membrane
- Can also be used on foil roofs with normal base trough
- C-rail with optional cover as a cable channel for string cables

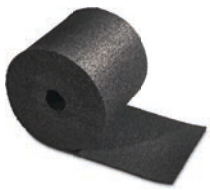


Module support and C-rail

Base profile fastening to base trough

Module bracket set front

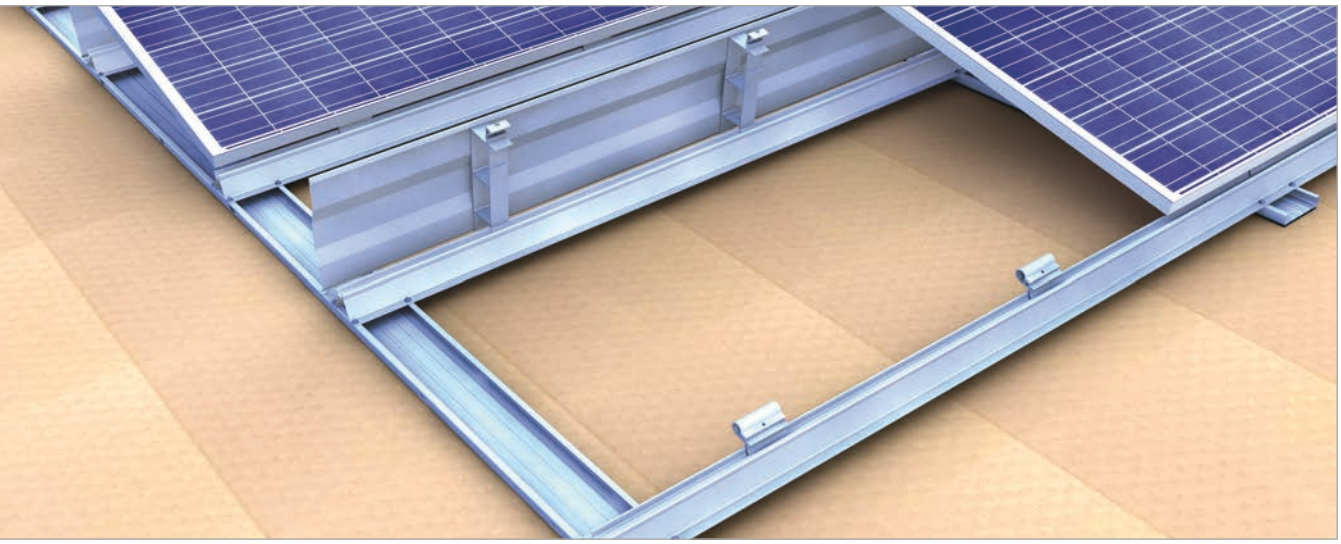
Basic components

Separation layer	Item no. 03-000105		Page 115
Base trough	Item no. 03-000092		Page 93
Flat roof mounting screw	Item no. 03-000383		Page 87
Base profile	Item no. 03-000193		Page 93
Base profile connector	Item no. 03-000021		Page 98

Module in landscape

Support	Item no. 03-000181		Page 112
Ballast redistribution	Item no. 03-001371		Page 90
Rail connector	Item no. 03-000151		Page 95
Module bracket	Item no. 03-000078 Item no. 03-000322		Page 110 / 112

Flat roof | south system I



Flat roof system closed I

Our flexible solution for south-facing systems

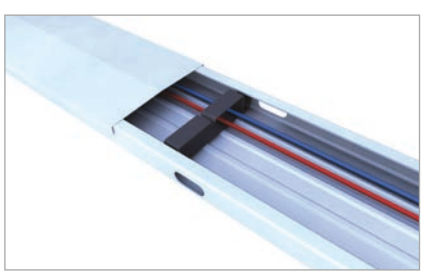
Flexible, stable, proven – that's our closed flat roof system I for south-facing roofs! It is easy to mount, versatile and extremely stable. The aerodynamic flat roof system has been tested in the Wacker Ingenieure boundary layer wind tunnel and combines maximum safety with outstanding stability and flexible assembly. Whether it is mounted on a foil or gravel roof, whether snow loads above 2.4 kN/m² or ideal module clamping in ¼-point are expected – the south system closed I is the ideal solution for demanding flat roof systems.

The substructure is constructed as a cross-rail system with a base trough and module-bearing rail on top. Here, the base trough serves as a base for the ballast and at the same time fastens the module-bearing rails. Our proven base profile is used as a module-bearing rail. Wind and snow loads on the module are safely transferred by the module supports to the base profile. Form closure instead of a screw connection – secure and stable, quick and simple!

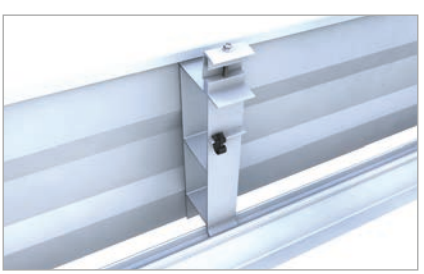
The module bracket set front, which is fastened at the frame holes and therefore at the ideal clamping point for the modules, serves as the front bearing on the base profile. The module support set elevates the module, while also being used to support and clamp the module and to fasten the wind deflector.

Your benefits

- Tested in a wind tunnel
- Optimised 13° elevation for roof inclination up to 5°
- Edge spacing of just 0.5 m possible
- No penetration of the roof membrane
- Individual adjustment to the roof
- Flexibility thanks to cross system
- Stable cross-rail system
- Can also be used with gravel base trough
- Optimal module clamping at assembly holes
- Use of proven system components



Base rail with cover and cable holder



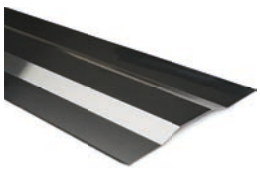
Module support and wind deflector closed I

Module bracket set front in base profile

Basic components

Base trough	Item no. 03-000989		Page 92
Connector set base trough	Item no. 03-000370		Page 97
Aluminium edge protector self-adhesive	Item no. 03-000407		Page 115
Flat roof mounting screw	Item no. 03-000383		Page 87
Base profile	Item no. 03-000193		Page 93
Base profile connector	Item no. 03-000021		Page 98

South variant

Module support	Item no. 03-000330		Page 111
Wind deflector	Item no. 03-000013		Page 112
Module bracket	Item no. 03-000078		Page 110
	Item no. 03-000239		

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4

Custom solutions

Facade system

Using facade surfaces optimally

Clear added value for your facade

With the novotegra facade mounting system, you use the exterior wall of a building to generate electricity: The photovoltaic installation is hung vertically in front of the facade – but it does not touch the building and is well-ventilated from behind. Our facade mounting system is installed on a solid exterior wall out of, for example, brick, stone or concrete – and exclusively on cold facades, meaning on walls without external insulation.

Regardless of whether the exterior wall is on an industrial building or a single-family home: with our photovoltaic mounting system, we create modern, highly-aesthetic facades which give buildings visual added value. All visible mounting system components are available in blank aluminium or black anodised and can be combined with blue or black modules.

The modules are placed in the rail with their entire frame length and held in place gently, firmly and securely. The insertion rails make module mounting quick and easy, even when installed vertically. The small handful of individual components and pre-assembled parts make assembly even easier. With the novotegra facade mounting system, you can mount all framed modules in portrait as well as landscape.

Furthermore you can complete your facade system on all sides with a perforated sheet cladding that prevents birds and small animals from accessing the installation but still ensures excellent rear ventilation.

Your benefits

- The facade is used to generate electricity
- Creates modern, visually attractive facades
- Flexible system size:
  From a single module to the entire facade surface
- A construction with excellent rear ventilation which hangs in front of the building but does not touch it
- For solid exterior walls
- For cold facades without insulation

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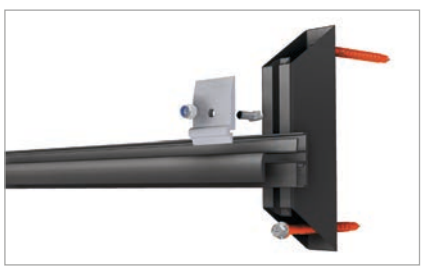


Few components - simple and fast installation

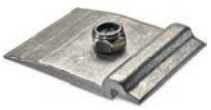
Very good rear ventilation of the modules

Dowels with technical approval

Insertion system

Insertion rail	Item no. 03-001388		Page 88
Connector	Item no. 03-000499		Page 94
Edge stop	Item no. 03-000693		Page 101

Attachment system

Cross-rail connector	Item no. 03-000409		Page 99
Slip guard	Item no. 03-000404		Page 114
Socket insertion rail	Item no. 03-000581		Page 113
Perforated sheet	Item no. 03-000549		Page 114
Adapter plate	Item no. 03-000385		Page 114
Connector perforated sheet	Item no. 03-000497		Page 114

In-roof system

The in-roof system solution – PV generator and roof coverage in one

Instead of tiles and co: The in-roof system

It simply looks great: With the Arres in-roof system for mounting photovoltaic modules, your roof turns into an aesthetic, homogeneous surface. The photovoltaic installation replaces the roof covering on the entire roof surface – or only in selected areas of the roof. Easy-to-handle blind modules and visually matching, high-quality skylights complete the in-roof system; all components are manufactured in black. Our in-roof mounting system ensures security and a high production quality and durability. It is suitable for any roof and is easy and – compared to other in-roof systems on the market – very quick to install.

The photovoltaic modules are mounted directly on the roof battens without hooks. The special module frames developed specifically for the in-roof system come from Switzerland, where the modules and frames are assembled.
Our in-roof system fulfills the same water-resistance requirements as roof tiles – which has been confirmed through analogue tests by the test and inspection institute in Sursee. It can be used for loads of up to 5.4 kN/m^2; with heavier loads possible if additional supportive roof battens are used. The modules are mounted horizontally and their frames are scaled over one another.

Stable blind modules, which can easily be fit using a circular saw or a jigsaw, ensure a closed roof surface and an aesthetic result. A snow guard can also be integrated with snow guard blind modules. The visually matching skylights developed for the Arres in-roof system are available in various sizes and as a double window. The high-quality energy-saving windows, which are equipped with a supportive gas pressure spring, comprise a wood-glass constriction. Blind modules and windows can be seamlessly integrated in the module grid.

For our in-roof mounting system we offer modules in three different performance classes – to meet all customer needs. The selection is yours.

Your benefits

- Highly homogenous and aesthetic surface
- Flexible thanks to various module types
- Visually attractive integration of obstacles with blind modules
- Visually matching high-quality skylights
- Quick mounting – no hooks
- High-quality production and durability
- Excellent rear ventilation of the module
- Snow guard for blind module

novotegra facade system
Modern, attractive and efficient

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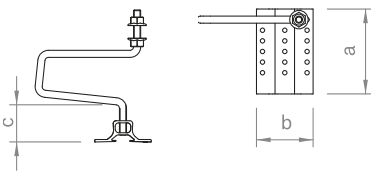
5

Single items

Roof attachment

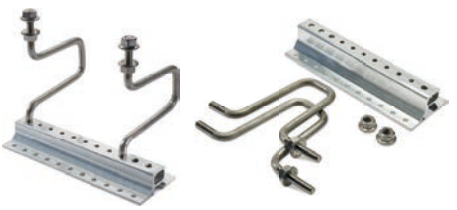
Roof hook tile roof and beavertail

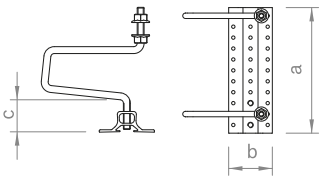


Roof hooks for mounting C-rails as vertical and horizontal rails, optimised for narrow rafters, rail-roof hook connection height-adjustable up to 30 mm, roof hook-base profile connection height-adjustable for 18 – 24 mm, 24 – 30 mm or 31 – 40 mm batten, for tile overlap up to approx. 80 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001109	Flex roof hook set 18 M10	120	80	23 – 47	Alu / A2SS
03-001149	Flex roof hook set 30 M10	120	80	40 – 52	Alu / A2SS
03-001151	Flex roof hook set 40 M10	120	80	50 – 62	Alu / A2SS

Double roof hook tile roof and beavertail

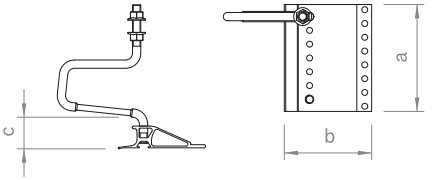




Roof hooks for mounting C-rails as horizontal rails, optimised for narrow rafters and heavy loads, rail-roof hook connection height-adjustable up to 30 mm, roof hook-base profile connection height-adjustable for 24 – 30 mm or 31 – 40 mm batten, for tile overlap up to approx. 80 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001150	Flex double roof hook set 30 M10	230	80	40 – 52	Alu / A2SS
03-001152	Flex double roof hook set 40 M10	230	80	50 – 62	Alu / A2SS

Roof hook tile roof

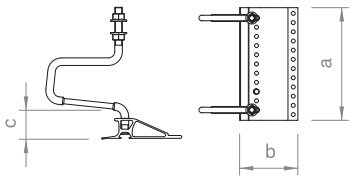


Roof hooks for mounting C-rails as vertical and horizontal rails, rail-roof hook connection height-adjustable up to 35 mm, roof hook-base profile connection height-adjustable for 24 – 30 mm or 31 – 40 mm batten, for tile overlap up to approx. 80 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000254	Roof hook set ZD 30 M12	155	126	43 – 49	Alu / A2SS
03-000256	Roof hook set ZD 40 M12	155	126	57 – 63	Alu / A2SS

Roof attachment

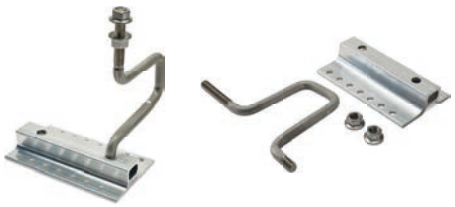
Double roof hook tile roof

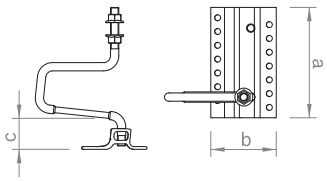


Roof hooks for mounting C-rails as horizontal rails, optimised for heavy loads, rail-roof hook connection height-adjustable up to 35 mm, roof hook-base profile connection height-adjustable for 24 – 30 mm or 31 – 40 mm batten, for tile overlap up to approx. 80 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000255	Double roof hook set ZD 30 M12	245	125	43 – 49	Alu / A2SS
03-000257	Double roof hook set ZD 40 M12	245	125	57 – 63	Alu / A2SS

Roof hook beavertail

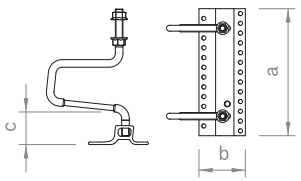




Roof hooks for mounting C-rails as vertical and horizontal rails on roofs with beavertail tiles, rail-roof hook connection height-adjustable up to 35 mm, roof hook-base profile connection height-adjustable for 24 – 30 mm batten, for beavertail double tile formation.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000258	Roof hook set BS 30 M12	160	95	42 – 48	Alu / A2SS

Double roof hook beavertail

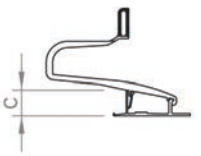


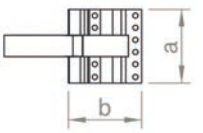
Roof hooks for mounting C-rails as horizontal rails on roofs with beavertail tiles, optimised for heavy loads, rail-roof hook connection height-adjustable up to 35 mm, roof hook-base profile connection height-adjustable for 24 – 30 mm batten, for beavertail double tile formation.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000267	Double roof hook set BS 30 M12	260	95	42 – 48	Alu / A2SS

Roof attachment

Roof hook tile roof

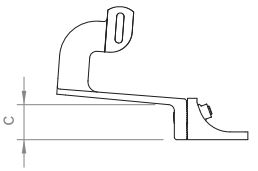


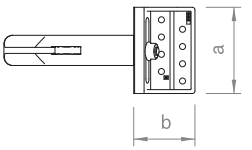


Roof hooks for mounting C-N-rails and N-rails as vertical and horizontal rails, rail-roof hook connection height-adjustable in slot with fluting up to approx. 20 mm, for tile overlap up to approx. 110 mm, including screws M8 for rail connection.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001350	Roof hook set ZD 30 N35 vertical	120	119	45	Alu / A2SS
03-001351	Roof hook set ZD 30 N35 horizontal	120	119	45	Alu / A2SS

Roof hook tile roof

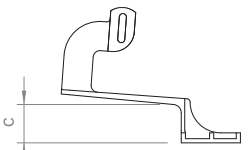


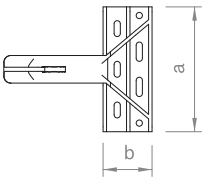


Roof hooks for mounting N-rails as vertical rails, rail-roof hook connection height-adjustable in slot 8.5 × 35 mm up to 26 mm, brackets on both sides 32.5 mm, in height 15 mm in slot adjustable, tile overlap up to approx. 100 mm for 30 mm roof battens, optionally pre-assembled with slot bolt M8.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000756	Roof hook adjustable 633 vertical	100	70	41 – 56	Alu cast
03-000949	Roof hook set adjustable 633 vertical M8	100	70	41 – 56	Alu cast / A2SS

Roof hook tile roof

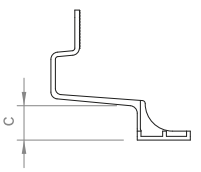


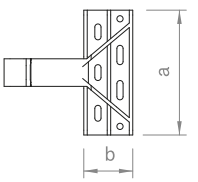


Roof hooks for mounting N-rails as vertical rails, rail-roof hook connection height-adjustable in slot 8.5 × 35 mm with fluting up to 26 mm, for tile overlap up to approx. 100 mm and 30 mm roof battens, optionally pre-assembled with slot bolt M8.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000731	Roof hook ZD 533 vertical	181	71	46	Alu cast
03-000612	Roof hook set ZD 533 vertical M8	181	71	46	Alu cast / A2SS

Roof hook tile roof



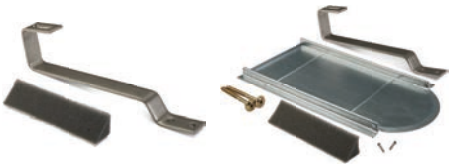


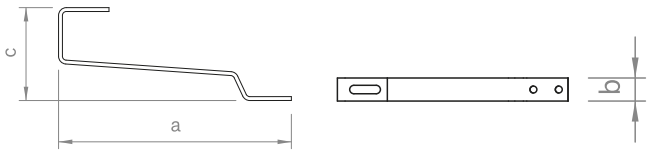
Roof hooks for mounting N-rails as horizontal rails, rail-roof hook connection height-adjustable in slot 8.5 × 35 mm with fluting up to 26 mm, for tile overlap up to approx. 100 mm and 30 mm roof battens, optionally pre-assembled with slot bolt M8.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000611	Roof hook ZD 544 horizontal	181	71	46	Alu cast
03-000613	Roof hook set ZD 544 horizontal M8	181	71	46	Alu cast / A2SS

Roof attachment

Roof hook beavertail

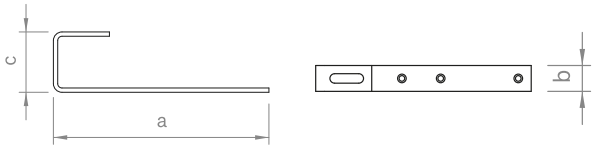




Roof hooks for mounting N-rails as vertical and horizontal rails on roofs with beavertail tiles, rail-roof hook connection with L-adapter in slot 11 × 41 mm, for 24 mm roof battens. As a set with underlay plate, screws and sealing wedge, for beavertail double tile formation.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000410	Roof hook BS C-shape A2SS	300	30	120	A2SS
03-000411	Roof hook set BS C-shape A2SS with sheet	300	30	120	A2SS / St. galv.

Roof hook slate

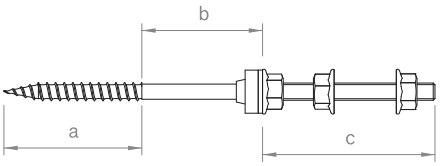


Roof hooks for mounting N-rails or C-rails as vertical and horizontal rails on roofs with slate or shingle roofing, rail-roof hook connection with L-adapter in slot 11 × 41 mm or as a set with round-head screw M10, with flat foot area.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000694	Roof hook S C-shape A2SS	250	30	70	A2SS
03-001219	Roof hook set S C-shape A2SS M10	250	30	70	A2SS

Roof attachment

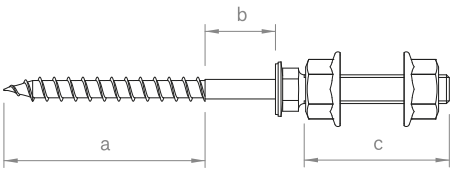
Stock screws (for wood)



Stock screw for timber purlins with hexagon drive 7 AF or 9 AF, for mounting C-rails, base plates or stock screw bridges, with EPDM seal and 18 AF locking nuts.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000222	Stock screw set (for wood) M10 200 mm	75	25	100	A2SS / EPDM
03-000223	Stock screw set (for wood) M10 250 mm	75	75	100	A2SS / EPDM
03-000224	Stock screw set (for wood) M10 300 mm	75	75	150	A2SS / EPDM
03-000211	Stock screw set (for wood) M12 200 mm	75	25	100	A2SS / EPDM
03-000210	Stock screw set (for wood) M12 250 mm	75	75	100	A2SS / EPDM
03-000216	Stock screw set (for wood) M12 300 mm	75	75	150	A2SS / EPDM

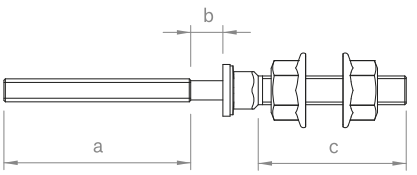
Stock screws (for wood)



Stock screw for timber purlins with hexagon drive 5 AF, for mounting C-rails, base plates or stock screw bridges, with 18 AF locking nuts, combinable with EPDM round seal d = 25 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000894	Stock screw set (for wood) 8.4-M10 160 mm	70	10	70	A2SS
03-000895	Stock screw set (for wood) 8.4-M10 190 mm	90	20	70	A2SS
03-000940	Stock screw set (for wood) 8.4-M10 210 mm	100	30	70	A2SS
03-000941	Stock screw set (for wood) 8.4-M10 240 mm	120	40	70	A2SS
03-000942	Stock screw set (for wood) 8.4-M10 260 mm	130	50	70	A2SS

Stock screws (for steel)

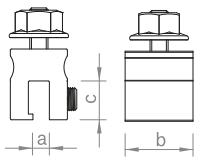


Stock screw for steel purlins with hexagon drive 5 AF, for mounting C-rails, base plates or stock screw bridges, with 18 AF locking nuts, combinable with EPDM round seal d = 25 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000199	Stock screw set (for steel) 8.0-M10 140 mm	65	10	50	A2SS
03-000202	Stock screw set (for steel) 8.0-M10 185 mm	65	55	50	A2SS
03-000203	Stock screw set (for steel) 8.0-M10 220 mm	65	90	50	A2SS
03-000943	Stock screw set (for steel) 8.0-M10 260 mm	65	130	50	A2SS

Roof attachment

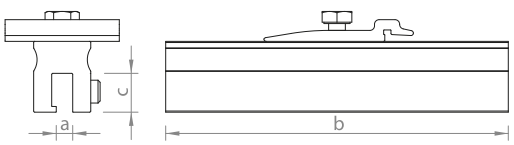
Standing seam clamp



Clamp with grub screw for standing seam roofs and an 18 AF locking nut for fixing C-rails, optionally with stainless steel saddle for mounting on copper roofs.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000219	Standing seam clamp set M8	7.4	30	17	Alu / A2SS
03-000369	Standing seam clamp set M8 for copper	7.4	30	17	Alu / A2SS

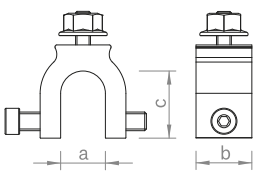
Standing seam clamp insertion system



Clamp with grub screws for standing seam roofs, grub screw with hexagon AF 5 drive, pre-assembled with cross rail connector IR and hexagon screw AF 13 for direct fixing of insertion rails. An additional stainless steel saddle is required for mounting on copper roofs.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001028	Standing seam clamp set 150 M8 IR	7.4	150	17	Alu / A2SS
03-001135	A2SS-saddle for standing seam clamp 150	7.4	150	17	A2SS

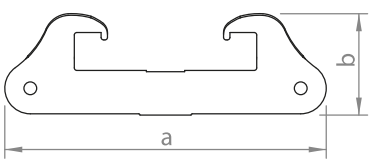
Rounded seam clamp



Clamp with grub screw and cylinder head screw with hexagon drive AF 5 for round seam roofs and an 18 AF locking nut for fixing C-rails.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001069	Rounded seam clamp set M8	24	30	36	Alu / A2SS

Trapezoidal sheet brackets

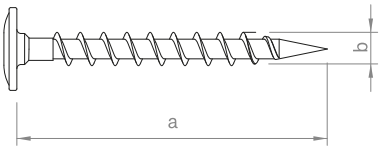


Bracket with EPDM seal for fixing insertion rails on trapezoidal sheet, with two thin sheet screws with 8 AF hexagon drive, for bead heights from 25 mm or 35 mm, for framed or frameless module insertion rails.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000459	Trapezoidal sheet bracket IR set 40 × 126 mm	126	40		A2SS
03-000451	Trapezoidal sheet bracket IR FL set 45 × 141 mm	141	45		A2SS

Roof attachment

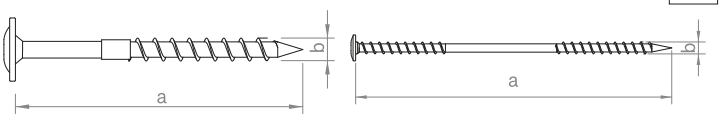
Roof hook mounting screws



6 mm wood screw with flange head and Torx drive 25, can be used for various roof hooks.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000268	Roof hook mounting screw 6×30	30	6		St. galv.
03-000269	Roof hook mounting screw 6×60	60	6		St. galv.
03-000271	Roof hook mounting screw 6×90	90	6		St. galv.
03-000272	Roof hook mounting screw 6×120	120	6		St. galv.
03-000273	Roof hook mounting screw 6×150	150	6		St. galv.
03-000270	Roof hook mounting screw 6×30 A2SS	30	6		A2SS
03-000274	Roof hook mounting screw 6×60 A2SS	60	6		A2SS
03-000278	Roof hook mounting screw 6×90 A2SS	90	6		A2SS
03-000279	Roof hook mounting screw 6×120 A2SS	120	6		A2SS
03-000280	Roof hook mounting screw 6×150 A2SS	150	6		A2SS

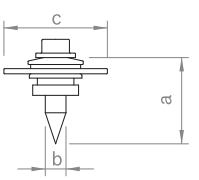
Roof hook mounting screws



8 mm wood screw with flange head and Torx drive 40, can be used for various roof hooks, with underhead thread for lengths longer than 180 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000281	Roof hook mounting screw 8×100	100	8		St. galv.
03-000282	Roof hook mounting screw 8×140	140	8		St. galv.
03-000283	Roof hook mounting screw 8×180	180	8		St. galv.
03-000303	Roof hook mounting screw 8×220	220	8		St. galv.
03-000304	Roof hook mounting screw 8×260	260	8		St. galv.
03-000305	Roof hook mounting screw 8×300	300	8		St. galv.
03-000306	Roof hook mounting screw 8×340	340	8		St. galv.

Direct mounting set trapezoidal sheet

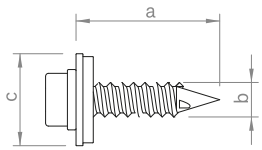


Mounting set for chipless fixing of C-rails on the trapezoidal sheet, pre-assembled thin sheet screw with washer and EPDM seal, 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000197	C-rail direct mounting set cl	25	6	30	A2SS / EPDM

Roof attachment

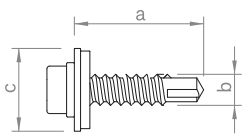
Direct mounting screws trapezoidal sheet



Thin sheet screw for chipless attachment of short rails on the trapezoidal sheet, with 16 mm or 11 mm sealing washer depending on the fixing variation on the raised bead, 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000880	Trapez. mounting screw cl 6.0 x 25 E16	25	6	16	A2SS
03-000893	Trapez. mounting screw cl 5.5 x 25 E11	25	5.5	11	A2SS

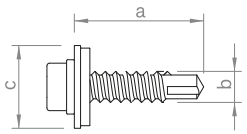
Direct mounting set trapezoidal sheet



Mounting set consisting of 2 self-drilling screws with 8 AF hexagon drive and an EPDM sealant strip 130 x 45 mm for fixing base profiles on the trapezoidal sheet.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000062	Direct base profile mounting set	25	6	16	A2SS / EPDM

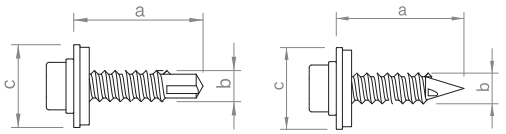
Indirect mounting set base profile



Mounting set consisting of 4 self-drilling screws with 8 AF hexagon drive for fixing the base profile on the C-rail.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000065	Indirect mounting set for base profile	25	6	16	A2SS

Flat roof mounting screws

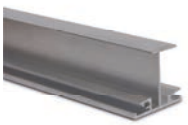


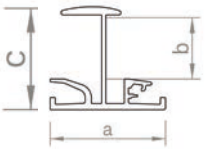
Self-drilling screw or thin sheet screw with 8 AF hexagon drive for connecting flat roof components.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000132	Flat roof mounting screw	25	6	16	A2SS
03-000383	Flat roof mounting screw cl 5.5	25	5.5	16	A2SS

Profile rails

Insertion rails framed modules



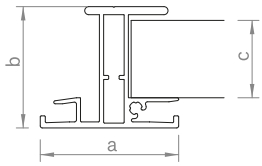


Insertion rail for inserting framed modules with a frame height of 30 - 50 mm, available in blank or black anodised variations.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001373	Insertion rail 32 5.40 m	56	32	52	Alu
03-001375	Insertion rail 35 2.20 m	56	35	55	Alu
03-001379	Insertion rail 35 5.40 m	56	35	55	Alu
03-001381	Insertion rail 36 5.40 m	56	36	56	Alu
03-001383	Insertion rail 38 5.40 m	56	38	58	Alu
03-001385	Insertion rail 40 2.20 m	56	40	60	Alu
03-001387	Insertion rail 40 5.40 m	56	40	60	Alu
03-001389	Insertion rail 41 5.40 m	56	41	61	Alu
03-001391	Insertion rail 42 5.40 m	56	42	62	Alu
03-001393	Insertion rail 43 5.40 m	56	43	63	Alu
03-001395	Insertion rail 45 5.40 m	56	45	65	Alu
03-001397	Insertion rail 46 5.40 m	56	46	66	Alu
03-001399	Insertion rail 50 5.40 m	56	50	70	Alu
03-001374	Insertion rail 32 5.40 m black	56	32	52	Alu
03-001378	Insertion rail 35 2.20 m black	56	33	55	Alu
03-001380	Insertion rail 35 5.40 m black	56	35	55	Alu
03-001382	Insertion rail 36 5.40 m black	56	36	56	Alu
03-001384	Insertion rail 38 5.40 m black	56	38	58	Alu
03-001386	Insertion rail 40 2.20 m black	56	40	60	Alu
03-001388	Insertion rail 40 5.40 m black	56	40	60	Alu
03-001390	Insertion rail 41 5.40 m black	56	41	61	Alu
03-001392	Insertion rail 42 5.40 m black	56	42	62	Alu
03-001394	Insertion rail 43 5.40 m black	56	43	63	Alu
03-001396	Insertion rail 45 5.40 m black	56	45	65	Alu
03-001398	Insertion rail 46 5.40 m black	56	46	66	Alu
03-001400	Insertion rail 50 5.40 m black	56	50	70	Alu

Profile rails

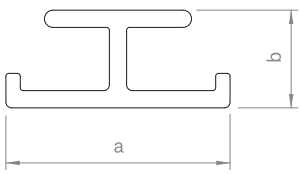
Insertion rails Plus snow guard



Insertion rail for inserting framed modules with a frame height of 35 mm or 40 mm for heavy snow loads, with the option of attaching a snow guard system.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001401	Insertion rail Plus 35 5.40 m	69	55	35	Alu
03-001402	Insertion rail Plus 40 5.40 m	69	60	40	Alu

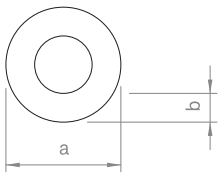
Support rail module insertion system



Support rail to brace modules between the insertion rails of a module row in case of heavy snow loads.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000555	Support rail IR 6.00 m	39	17		Alu

Snowguard insertion system

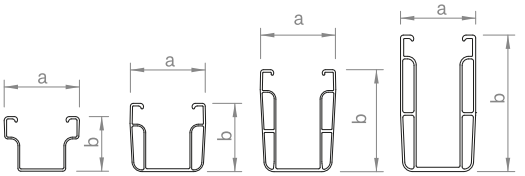


Round pipe in combination with the mounting set snow guard for use on insertion rail Plus as a snow stop system.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000406	Snow guard IR 20x5 Alu round pipe 6.00 m	20	5		Alu
03-000408	Snow guard IR 20x5 Alu round pipe 0.80 m	20	5		Alu

Profile rails

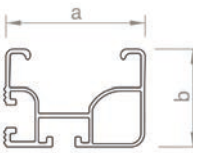
C-rails



Mounting rail with cable channel, for use as a module support rail in clamping systems or as a cross rail, available in different dimensions for various spans and loads depending on structural requirements. Rail bottom with slots 75x15mm in 100mm grid for easy fixing from above.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001362	C-rail 38-1,6 2.20m	52	38		Alu
03-001364	C-rail 38-1,6 5.40m	52	38		Alu
03-001366	C-rail 47-2 2.20m	52	47		Alu
03-001368	C-rail 47-2 4.30m	52	47		Alu
03-001369	C-rail 47-2 5.40m	52	47		Alu
03-001371	C-rail 71-2 5.40m	52	71		Alu
03-001372	C-rail 95-3 5.40m	52	95		Alu
03-001363	C-rail 38-1,6 2.20m sw	52	38		Alu
03-001365	C-rail 38-1,6 5.40m sw	52	38		Alu
03-001367	C-rail 47-2 2.20m sw	52	47		Alu
03-001370	C-rail 47-2 5.40m sw	52	47		Alu

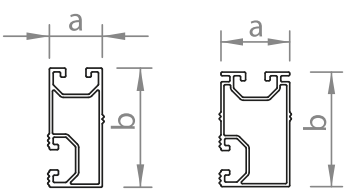
C-N-rail



Mounting rail with cable channel and groove, for use as a module support rail in clamping systems or as a cross rail, side groove with fluting for easy fixing from the side.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001328	C-N-rail 37 5.40 m	52	37		Alu

N-rails

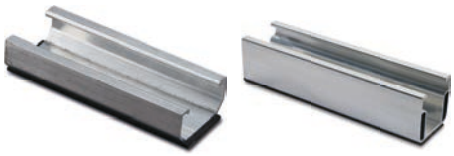


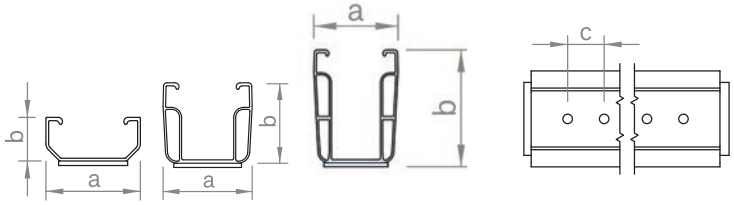
Mounting rail with groove, for use as a module support rail in clamping systems or as a cross rail, available in different dimensions for various spans and loads depending on structural requirements, side groove with fluting for easy fixing from the side.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001403	N-rail Eco 22x50 5.40m	22	50		Alu
03-001404	N-rail Standard 20x50 5.40m	30	50		Alu

Profile rails

Short rails trapezoidal metal sheet module landscape

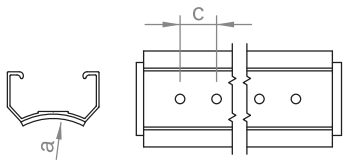




Short rail with 5.2 mm perforation and pre-assembled sealant strip for mounting modules in landscape on trapezoidal sheet. Chipless mounting is accomplished using the trapezoidal sheet mounting screw.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000841	Short rail C24 with EPDM 125 mm	52	24	20	Alu / EPDM
03-001108	Short rail C47 with EPDM 200 mm	52	47	20	Alu / EPDM
03-000158	Short rail C71 with EPDM 200 mm	52	71	20	Alu / EPDM

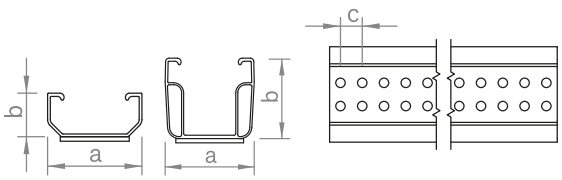
Short rails corrugated metal sheet module landscape



Short rail with 5.2 mm perforation and pre-assembled sealant strip for mounting modules in landscape on corrugated sheet, radius 39.4 mm. Chipless mounting is accomplished using the trapezoidal sheet mounting screw.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001223	Short rail C33 R39.4 with EPDM 125 mm	39.4	33	20	Alu / EPDM

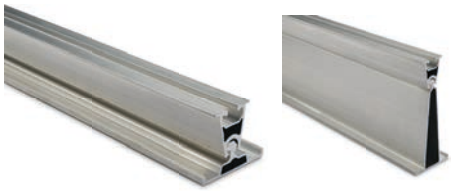
Short rail trapezoidal and corrugated metal sheet module portrait

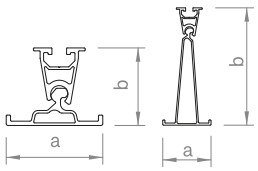


Short rail with 5.2 mm perforation and pre-assembled sealant strip for mounting modules in portrait on trapezoidal or corrugated sheet. Chipless mounting is accomplished using the trapezoidal sheet mounting screw.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001081	Short rail C24 with EPDM 385 mm	52	24	12	Alu / EPDM
03-000873	Short rail C47 with EPDM 385 mm	52	47	12	Alu / EPDM

Elevation profile pairs



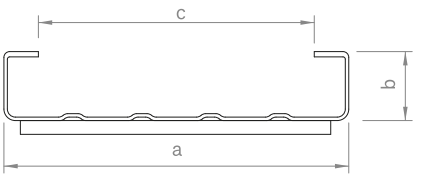


Articulated jointed rail pairs as foot and head rails, for variable module elevation at an angle of approx. 3 – 18° by combining two rail pairs.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000646	Elevation profile pair H45 6.00 m	56	45		Alu
03-000470	Elevation profile pair H136 6.00 m	56	136		Alu

Profile rails

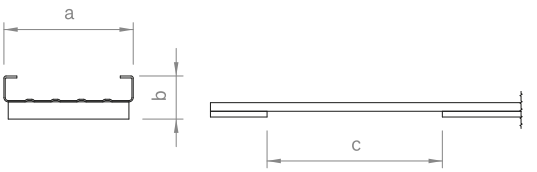
Base troughs flat roof



Base trough for flat roof elevations for click-fit of the base foots and module supports (flat roof system II) or for fixing the base profile (flat roof system I) and inserting the ballast. Constructed as a base trough without or with a pre-assembled separation layer.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001407	Base trough 150-30 2.20 m	150	30	120	Alu
03-000087	Base trough 150-30 6.00 m	150	30	120	Alu
03-001408	Base trough 150-30 w/protection layer 2.20 m	150	30	120	Alu / PE
03-000989	Base trough 150-30 w/protection layer 6.00 m	150	30	120	Alu / PE

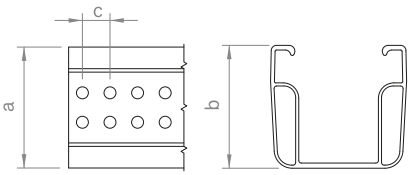
Base troughs cross drainage flat roof



Base trough for flat roof elevations for click-fit of the base foots and module supports (flat roof system II) or for fixing the base profile (flat roof system I) and inserting the ballast. Pre-assembled with PE pads, grid 610 mm, as separation or drainage layer when placed transversely to the roof pitch.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001409	Base trough 150-30 w/cross drainage 2.20 m	150	50	610	Alu / PE
03-000879	Base trough 150-30 w/cross drainage 6.00 m	150	50	610	Alu / PE

Coupling profile

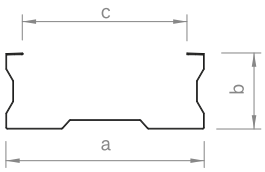


Coupling profile for reducing the ballast of adjacent module fields with expansion gaps in between on flat roof elevations through coupling of the bordering base troughs.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000929	Coupling profile C47 385 mm	52	47	12	Alu

Profile rails

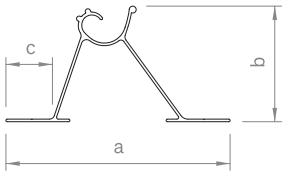
Gravel base trough



Base trough for flat roof elevations to fix the base profiles and for ballasting with existing gravel.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000092	Base trough 230-90 6.00 m	230	90	190	Alu

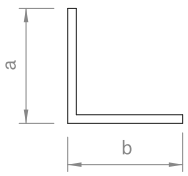
Base profile elevation



Module support rail for module elevation on flat roofs as well as for trapezoidal sheet, corrugated and sandwich roofs.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000193	Base profile 6.12 m	130	67	27	Alu
03-000194	Base profile 5.06 m	130	67	27	Alu
03-000195	Base profile 3.37 m	130	67	27	Alu

Support brace east-west II

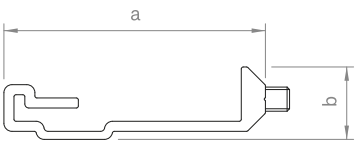


Support brace for load transfer, fixed on the flat roof module support sets east-west II.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000314	Support brace 20 × 20 × 1.5 5.15 m	20	20		Alu
03-001247	Support brace 20 x 20 x 1.5 4.25 m	20	20		Alu
03-000722	Support brace 20 × 20 × 1.5 1.75 m	20	20		Alu

Rail connectors and expansion joints

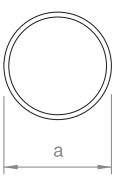
Rail connector insertion rail



Connector insertion rail for framed modules, l = 150 mm, available in blank or black anodised variations.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000648	Rail connector set IR	65	18		Alu / A2SS
03-000499	Rail connector set IR black	65	18		Alu / A2SS

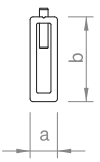
Rail connector insertion rail trapezoidal sheet bracket and seamed metal roof



Connector insertion rail for framed modules, l = 100 mm, for direct mounting on trapezoidal sheet.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000647	Rail connector IR 5x100 A2SS	5			A2SS

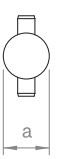
Rail connector insertion rail Plus



Connector insertion rail Plus for framed modules, l = 200 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000471	Rail connector set IR Plus	10	30		Alu

Rail connector snow guard insertion rail Plus

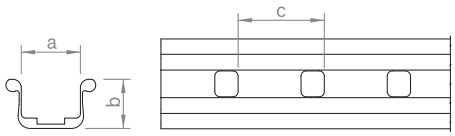


Connector for snow guard stop IR 20 x 5, l = 200 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000494	Rail connector set snow guard IR	8			Alu

Rail connectors and expansion joints

Rail connector C-rail 38



Connector C-rail 38, l = 325 mm, with two round-head screws and locking nuts with 18 AF hexagon drive, available as expansion joint construction with four round-head screws.

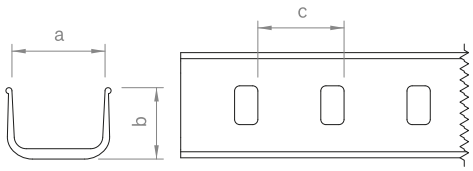
Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001105	Rail connector set C38	35	28.5	50	Alu / A2SS
03-001106	Expansion joint C38	35	28.5	50	Alu / A2SS

Rail connector C-rail 47 profile chambers

Connector C-rail 47, l = 200 mm, screw connection with four self-drilling screws with 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000925	Rail connector set C47 S	30			Alu / A2SS

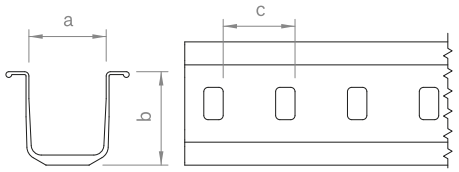
Rail connector C-rail 47



Connector C-rail 47, l = 325 mm, with two round-head screws and locking nuts with 18 AF hexagon drive, available as expansion joint construction with four round-head screws.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000001	Rail connector set C47	52	40	50	Alu / A2SS
03-000138	Expansion joint C47	52	40	50	Alu / A2SS

Rail connector C-rail 71

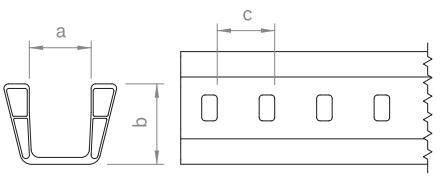


Connector C-rail 71, l = 490 mm, with four round-head screws, washers and locking nuts with 18 AF hexagon drive, available as expansion joint construction.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000151	Rail connector set C71	52	67	50	Alu / A2SS
03-000265	Expansion joint C71	52	67	50	Alu / A2SS

Rail connectors and expansion joints

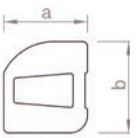
Rail connector C-rail 95



Connector C-rail 95, l = 500 mm, with four round-head screws, washers and locking nuts with 18 AF hexagon drive, available as expansion joint construction.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000130	Rail connector set C95	52	70	50	Alu / A2SS
03-000173	Expansion joint C95	52	70	50	Alu / A2SS

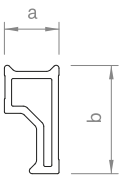
Rail connector C-N-rail 37



Connector C-N-rail 37, l=250 mm, screw connection with two thin sheet screws with 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001347	Rail connector set C-N 37 S	17,5	19	250	Alu / A2SS

Rail connector N-rail

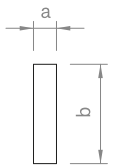


Connector N-rail, l = 200 mm or l = 150 mm, screw connection with two self-drilling screws with 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000500	Rail connector set N Eco	19	38	200	Alu / A2SS
03-000524	Rail connector set N Standard	27	41	150	Alu / A2SS

Rail connectors and expansion joints

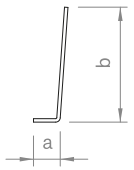
Rail connector elevation profile pair H45



Connector elevation profile pair H45, l = 160 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000496	Rail connector set elevation profile pair H45	5	22		Alu

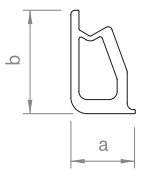
Rail connector elevation profile pair H136



Connector elevation profile pair H136, l = 150 mm, screw connection with four thin sheet screws with 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000525	Rail connector set elevation profile pair H136	12	50		Alu / A2SS

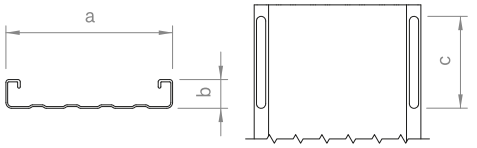
Base trough connector 150-30 I



Connector Base trough 150-30, l = 380 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000370	Base trough connector set 150-30 I	16	26		Alu

Base trough expansion joint



Base trough expansion joint 150-30, l = 380 mm, single-sided with slots.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000128	Base trough expansion joint 150-30	150	25	80	Alu

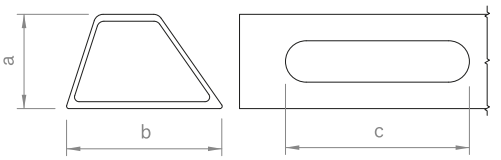
Rail connectors and expansion joints

Angled base trough connector 150-30

Connector base trough, l = 380 mm, for ridge and throat formation 2° – 5°.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000161	Angled base trough connector 150-30 3°	25	25	180	Alu

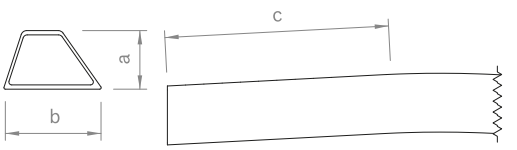
Base profile connector



Connector base profile, l = 380 mm, available as expansion joint construction single-sided with slots.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000021	Base profile connector	41	68		Alu
03-000129	Base profile expansion joint	41	68	80	Alu

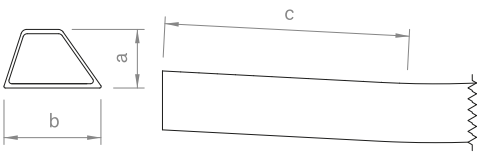
Angled base profile connector (rise)



Connector base profile, l = 380 mm, for ridge formation 2° – 5°.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000162	Angled base profile connector 3° (rise)	41	68	150	Alu

Angled base profile connector (dip)

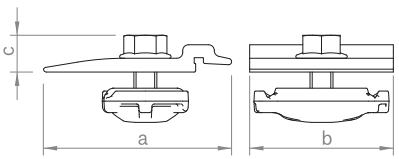


Connector base profile, l = 380 mm, for throat formation 2° – 5°.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000163	Angled base profile connector 3° (dip)	41	68	150	Alu

Cross rail connector

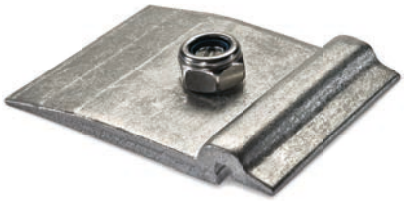
Connection insertion rail on C-rail

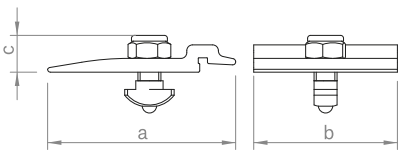


Connector for fixing insertion rails on C-rails and mounting triangles, locking nut with 13 AF hexagon drive, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000321	Cross rail connector set C IR M8	66	50	13	Alu / A2SS

Connection insertion rail on N-rail

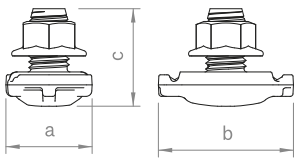




Connector for fixing insertion rails on N-rails, slot bolt M8 and locking nut with 13 AF hexagon drive, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000409	Cross rail connector set N IR M8	66	50	13	Alu / A2SS

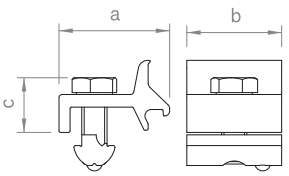
Connection C-rail on C-rail



Connector for fixing C-rails to create a cross rail configuration, locking nut M14 with 18 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000226	Cross rail connector set C M14	30	46	34	Alu / A2SS

Connection N-rail on N-rail

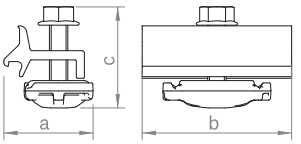


Connector for fixing N-rails to create a cross rail configuration, slot bolt M8 13 AF hexagon drive and slot nut, l = 30 mm or l = 65 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000599	Cross rail connector set N 30 mm M8	35	30	22	Alu / A2SS
03-000904	Cross rail connector set N 65 mm M8	35	65	22	Alu / A2SS

Cross rail connector

Connection N-rail on C-rail

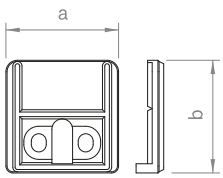


Connector fixing N-rails on C-rails to create a cross rail configuration, locking nut with 13 AF hexagon drive, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000919	Cross rail connector set NC M8	38	65	44	Alu / A2SS

Module protection and rail top cover

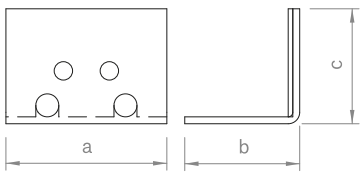
Edge stops insertion rail



Edge stop for insertion rails, fixing with tapping screw Torx drive 30.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000691	Edge stop set IR	49	49		Alu / A2SS
03-000693	Edge stop set IR black	49	49		Alu / A2SS

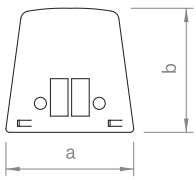
Edge stop insertion rail frameless modules



Edge stop for insertion rail FL with EPDM seal, fixing with self-drilling screw 8 AF hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000692	Edge stop set IR FL	70	50	50	Alu / A2SS

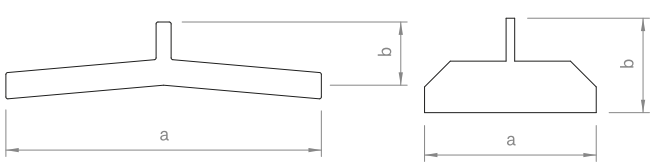
Edge stop insertion rail Plus



Edge stop for insertion rails Plus, fixing with self-drilling screw Torx drive 30.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000732	Edge stop set IR Plus	75	75		Alu / A2SS

Module protections insertion rail

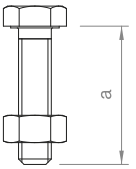


EPDM-T protection for fixing modules in insertion rails with minimal module slope, for framed or unframed modules.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000631	EPDM-T protection IR	84	17		EPDM
03-000630	EPDM-T protection IR FL	40	22		EPDM

Module protection and rail top cover

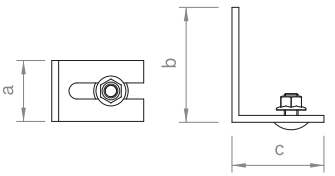
Module slip guards portrait orientation



Slip guard for fixing modules with and without mounting holes for mounting modules in portrait.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000006	Module slip guard set M6	25			A2SS
03-000007	Module slip guard set M8	25			A2SS
03-000372	Module slip guard set box frame	20			A2SS

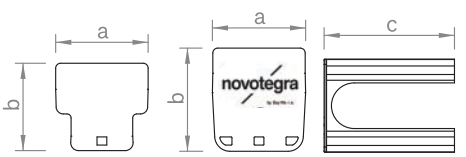
Slip guards and end caps C-rail



Slip guard for fixing modules mounted in landscape or as an end cap for the C-rail, available in blank or black.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000259	Slip guard/ End cap set C47	53	80	80	Alu / A2SS
03-000261	Slip guard/ End cap set C71	53	100	80	Alu / A2SS
03-000263	Slip guard/ End cap set C95	53	130	80	Alu / A2SS
03-000260	Slip guard/ End cap set C47 black	53	80	80	Alu / A2SS
03-000262	Slip guard/ End cap set C71 black	53	100	80	Alu / A2SS
03-000264	Slip guard/ End cap set C95 black	53	130	80	Alu / A2SS

End caps C-rail

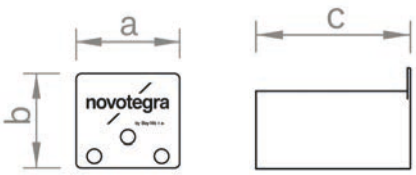


End cap in black for C-rail 38 and C-rail 47, UV and weather resistant.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001110	End cap C-rail C38 black	57	54	80	PP
03-001111	End cap C-rail C47 black	57	63	80	PP

Module protection and rail top cover

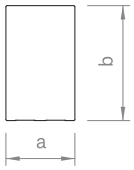
End cap C-N-rail



End cap in black for C-N-rail 37, UV and weather resistant.

Art.-Nr.	Bezeichnung	a in mm	b in mm	c in mm	Material
03-001343	End cap C-N 37 black	57	52	80	PP

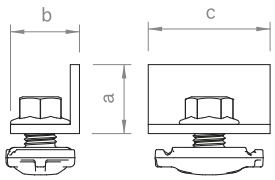
End caps N-rail



End cap in black for N-rails, UV and weather resistant.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000527	End cap N-rail Eco	22	50		PA 6.6
03-000529	End cap N-rail Standard	30	50		PA 6.6

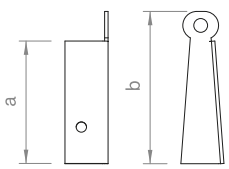
Slip guard short profile trapezoidal short rail



Slip guard with 18 AF locking nut for securing the modules mounted in landscape on short rails.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000233	Slip guard set for short rail profile M14	30	30	53	Alu / A2SS

Edge stop elevation profile pair

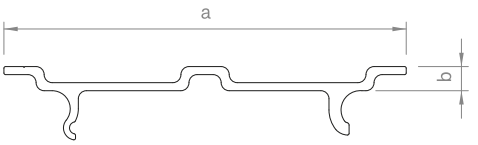


Edge stop for elevation profile pair H136, fixing with 8 AF hexagon drive thin sheet screw.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000593	Edge stop set elevation profile pair H136	71	88		Alu / A2SS

Module protection and rail top cover

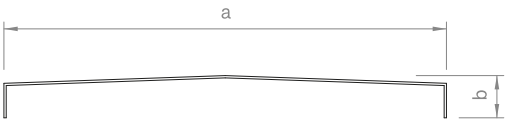
Top cover C-rail



Cover to clip on to the C-rail if using as cable channel.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000134	Top cover C-rail 2.00 m	50	3		Alu

Top cover base trough

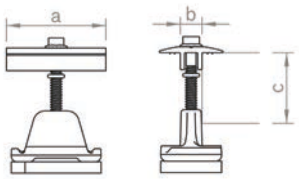


Cover for the base trough if using as cable channel.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000133	Top cover base trough 150-30 3.00 m	154	15		Alu

Module attachment

Middle clamps C-rail

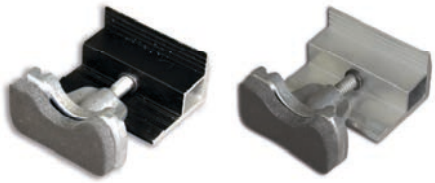


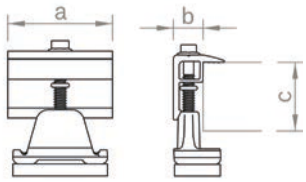
Coming soon: 2 clamps for all module frame heights

Middle clamp for fixing the modules on the C-rail. Installation-friendly thanks to click-in mechanism. Clamping screw with 8 AF hexagon drive. For frame heights of 28–33 mm, 34–42 mm or 43–52 mm, available in blank or black anodised variations.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000301	Middle clamp 28-33 Set C	52	11.4	28–33	Alu / A2SS / PE
03-000275	Middle clamp 34-42 Set C	52	11.4	34–42	Alu / A2SS / PE
03-000285	Middle clamp 43-52 Set C	52	11.4	43–52	Alu / A2SS / PE
03-000302	Middle clamp 28-33 Set C black	52	11.4	28–33	Alu / A2SS / PE
03-000276	Middle clamp 34-42 Set C black	52	11.4	34–42	Alu / A2SS / PE
03-000286	Middle clamp 43-52 Set C black	52	11.4	43–52	Alu / A2SS / PE

End clamps C-rail



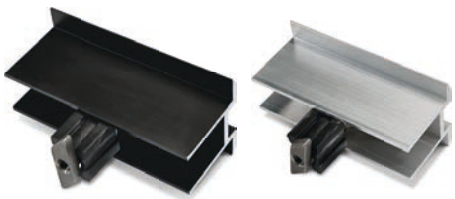


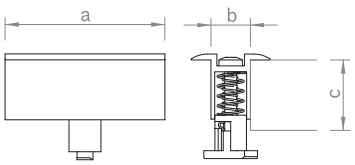
Coming soon: 2 clamps for all module frame heights

End clamp for fixing the modules on the C-rail. Installation-friendly thanks to click-in mechanism. Clamping screw with 8 AF hexagon drive. For frame heights of 28–33 mm, 34–42 mm or 43–52 mm, available in blank or black anodised variations.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000298	End clamp 28-33 Set C	52	14	28–33	Alu / A2SS / PE
03-000277	End clamp 34-42 Set C	52	14	34–42	Alu / A2SS / PE
03-000287	End clamp 43-52 Set C	52	14	43–52	Alu / A2SS / PE
03-000299	End clamp 28-33 Set C black	52	14	28–33	Alu / A2SS / PE
03-000284	End clamp 34-42 Set C black	52	14	34–42	Alu / A2SS / PE
03-000288	End clamp 43-52 Set C black	52	14	43–52	Alu / A2SS / PE

Middle clamps N-rail



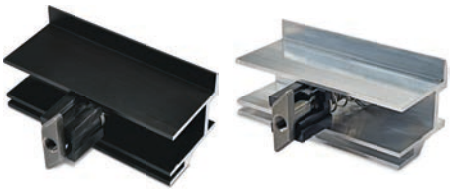


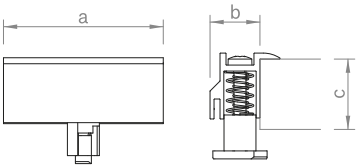
Middle clamp with spring mechanism for fixing the modules on the N-rail. Clamping screw with AW 30 drive. For frame heights of 31–40 mm or 41–50 mm, available in blank or black anodised variations.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000570	Middle clamp 31-40 Set N	80	20	31–40	Alu / A2SS
03-000572	Middle clamp 41-50 Set N	80	20	41–50	Alu / A2SS
03-000569	Middle clamp 31-40 Set N black	80	20	31–40	Alu / A2SS
03-000571	Middle clamp 41-50 Set N black	80	20	41–50	Alu / A2SS

Module attachment

End clamps N-rail





End clamp with spring mechanism for fixing the modules on the N-rail. Clamping screw with AW 30 drive. For frame heights of 31–40 mm or 41–50 mm, available in blank or black anodised variations.

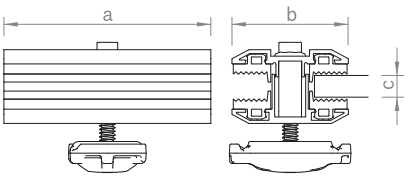
Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000551	End clamp 31-40 Set N	80	25	31–40	Alu / A2SS
03-000553	End clamp 41-50 Set N	80	25	41–50	Alu / A2SS
03-000964	End clamp 31-40 Set N black	80	25	31–40	Alu / A2SS
03-000552	End clamp 41-50 Set N black	80	25	41–50	Alu / A2SS

Spacers end clamps N-rail

Spacer for the end clamps of the N-rail, height is dependent on the frame height.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000614	Spacer end clamp N 31-32 mm	60	11		Alu
03-000615	Spacer end clamp N 33-35 mm	60	15		Alu
03-000616	Spacer end clamp N 36-38 mm	60	18		Alu
03-000617	Spacer end clamp N 39-40 mm	60	20		Alu
03-000618	Spacer end clamp N 41-42 mm	60	22		Alu
03-000619	Spacer end clamp N 43-46 mm	60	25		Alu
03-000620	Spacer end clamp N 47-48 mm	60	29		Alu
03-000621	Spacer end clamp N 49-50 mm	60	30		Alu

Middle clamp frameless 6.8 - 8.0 C-rail

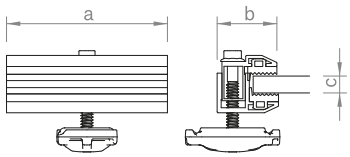


Middle clamp for fixing frameless modules on the C-rail, permissible glass thickness 6.8–8.0 mm, completely pre-assembled. Clamping screw with AF 8 hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000312	Middle clamp FL 6.8-8.0 mm Set C	80	45	6.8–8.0	Alu / EPDM

Module attachment

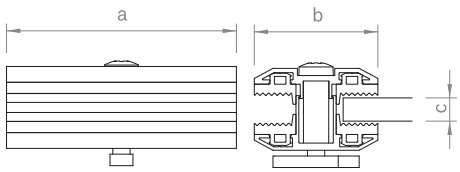
End clamp frameless 6.8–8.0 C-rail



End clamp for fixing frameless modules on the C-rail, permissible glass thickness 6.8–8.0 mm, completely pre-assembled. Clamping screw with AF 8 hexagon drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000317	End clamp FL 6.8–8.0 mm Set C	80	30.5	6.8–8.0	Alu / EPDM

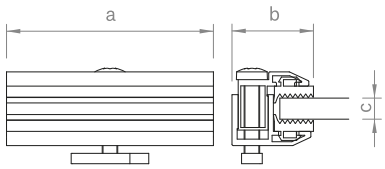
Middle clamp frameless 6.8–8.0 N-rail



Middle clamp for fixing frameless modules on the N-rail, permissible glass thickness 6.8–8.0 mm, completely pre-assembled. Clamping screw with AW 30 drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000547	Middle clamp FL 6.8–8.0 mm Set N	80	45	6.8–8.0	Alu / EPDM

End clamp frameless 6.8 - 8.0 N-rail

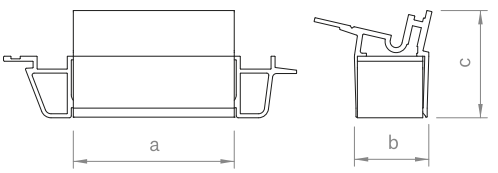


End clamp for fixing frameless modules on the N-rail, permissible glass thickness 6.8–8.0 mm, completely pre-assembled. Clamping screw with AW 30 drive.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000532	End clamp FL 6.8–8.0 mm Set N	80	30.5	6.8–8.0	Alu / EPDM

Module elevation

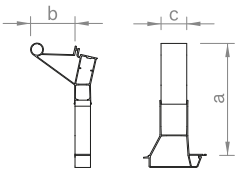
Base foot



Front module support of the flat roof system generation II, to clip into the base trough.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000343	Base foot set 13° 150-30	80	37	53	Alu

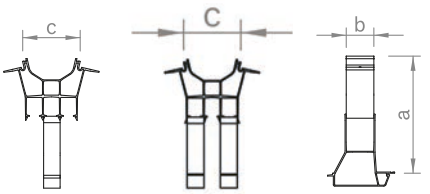
Module support closed II



Rear module support of the closed flat roof system II, to clip into the base trough and to fix the wind deflector 13° on it.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001243	Module support set 13° 150-30	260	104	60	Alu

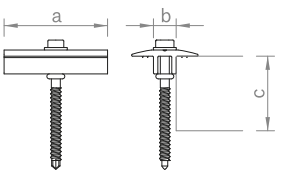
Module support east-west II



Rear module support for flat roof system east-west II, to clip into the base trough and to connect the support brace, constructed as a one-hip or two-hip support.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001324	Module support set 13° 150-30 e/w single	255	60	125	Alu
03-001325	Module support set 13° 150-30 e/w double	255	60	125	Alu

Flat roof mid clamp (short side)

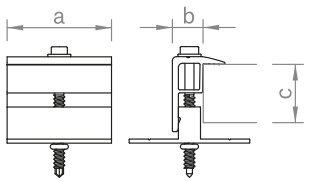


Middle clamp for flat roof system generation II, for fixing modules on the short side of the frame. Clamping screw with 8 AF hexagon drive, for frame heights of 28 – 42 mm or 43 – 52 mm, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000324	Flat roof mid clamp 28-42	52	11.4	28 - 42	Alu / A2SS
03-000323	Flat roof mid clamp 43-52	52	11.4	43 - 52	Alu / A2SS

Module elevation

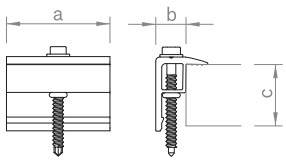
Flat roof end clamp (short side)



End clamp with T-adapter for flat roof system generation II, for fixing modules on the short side of the frame. Clamping screw with 8 AF hexagon drive, for frame heights of 28 – 33 mm, 34 – 42 mm or 43 – 52 mm, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000310	Flat roof end clamp (short side) 28-33	52	14	28 – 33	Alu / A2SS
03-000309	Flat roof end clamp (short side) 34-42	52	14	34 – 42	Alu / A2SS
03-000311	Flat roof end clamp (short side) 43-52	52	14	43 – 52	Alu / A2SS

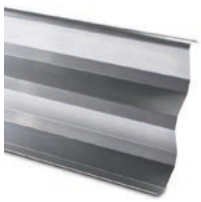
Flat roof end clamp (long side)

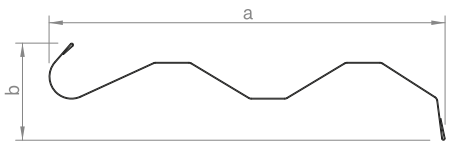


End clamp for flat roof system generation II, for securing modules on the long side of the frame for example in the case of a 3. base trough. Clamping screw with 8 AF hexagon drive, for frame heights of 28 – 33 mm, 34 – 42 mm or 43 – 52 mm, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000326	Flat roof end clamp 28-33	52	14	28 – 33	Alu / A2SS
03-000396	Flat roof end clamp 34-42	52	14	34 – 42	Alu / A2SS
03-000397	Flat roof end clamp 43-52	52	14	43 – 52	Alu / A2SS

Wind deflector closed II



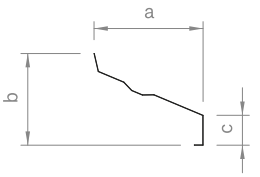


Wind deflector for flat roof system closed II for wind deflection and ballast reduction.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-001281	Wind deflector 13° 1.95 m	270	70		Alu
03-001227	Wind deflector 13° 2.25 m	270	70		Alu

Module elevation

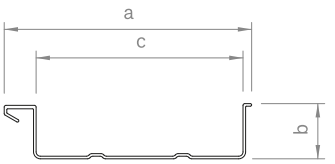
Wind deflector east-west II



Wind deflector for flat roof system east-west II for mounting areas with missing module due to obstacles.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000786	Wind deflector 13° 1.85 m e/w	241	175	65	Alu

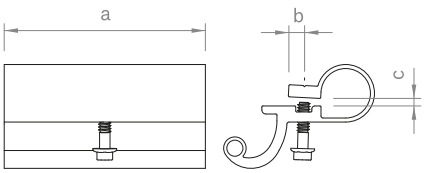
Ballast troughs base trough



Ballast trough to clip into the base trough and secure placement of large format ballast. Constructed as a ballast trough without or with a pre-assembled separation layer.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000131	Ballast trough 120-30 530 mm	144	32	120	Alu
03-000977	Ballast trough 530mm w/protection layer	144	32	120	Alu / PE
03-000910	Ballast trough w/cross drainage 530 mm	144	32	120	Alu / PE

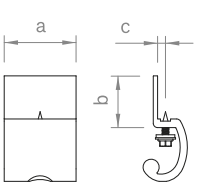
Module bracket front mounting hole



Front module support for flat roof system generation I or elevation on pitched roof, to connect to the module frame holes, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000078	Module bracket set front	100	8	4	Alu / A2SS

Module bracket set direct box frame

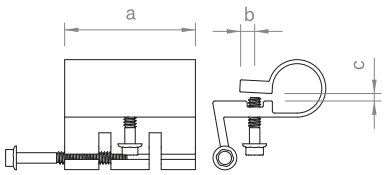


Front module support for flat roof system generation I or elevation on pitched roof, to directly connect to the module frame without frame holes, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000239	Module bracket set front direct (box fr.)	50	36	5.5	Alu / A2SS

Module elevation

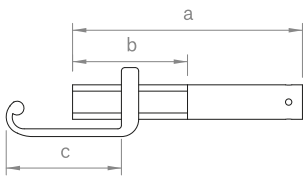
Module bracket back mounting hole



Rear module support for flat roof system open or elevation on pitched roof, to connect to the module frame holes, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000061	Module bracket set back	65	8	4	Alu / A2SS

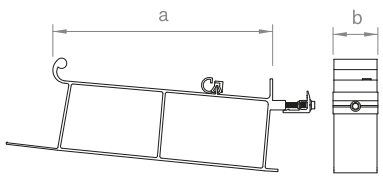
Module support 13° - 40° open



Rear module support for flat roof system open or elevation on pitched roof, in different lengths to elevate modules, continuous adjustable elevation angle, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000070	Module support set 200 mm	200	100	100	Alu
03-000071	Module support set 280 mm	280	100	100	Alu
03-000083	Module support set 360 mm	360	100	100	Alu
03-000022	Module support set 440 mm	440	100	100	Alu
03-000072	Module support set 520 mm	520	100	100	Alu

Module support closed I

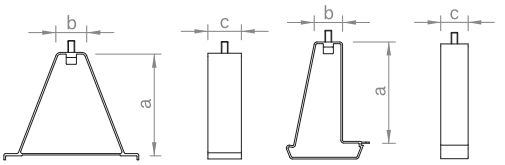


Module support for flat roof system closed I, for fixed elevation of modules at an angle of 13° and to connect the wind deflector 13° on it, securing the modules on the long side of the frame, for frame heights 28 – 33 mm, 34 – 42 mm or 43 – 52 mm, completely pre-assembled.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000330	Module support set 13° 28 – 33 mm	255	50		Alu / A2SS
03-000030	Module support set 13° 34 – 42 mm	255	50		Alu / A2SS
03-000031	Module support set 13° 43 – 52 mm	255	50		Alu / A2SS

Module elevation

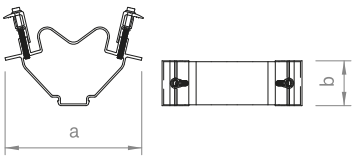
Module support east-west I



Module support for flat roof system east-west I for placement and fixing of the C-rail 71, available for the base trough 150-30 or the base trough 230-90.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000181	Module support set east-west 230	180	50	60	Alu / A2SS
03-000180	Module support set east-west 150	180	50	50	Alu / A2SS

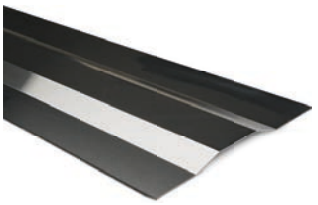
Module bracket back east-west I

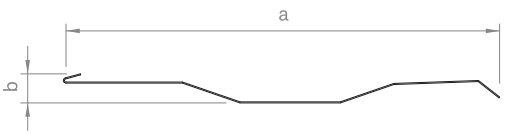


Module support for flat roof system east-west I, to clip into the C-rail, fixing the modules on the long side of the frame, for frame heights 28 – 33 mm, 34 – 42 mm or 43 – 52 mm.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000322	Module bracket set back east-west 28 – 33 mm	159	52		Alu / A2SS
03-000098	Module bracket set back east-west 34 – 42 mm	159	52		Alu / A2SS
03-000095	Module bracket set back east-west 43 – 52 mm	159	52		Alu / A2SS

Wind deflector closed I



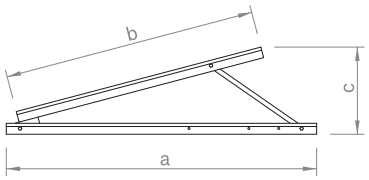


Wind deflector for flat roof system closed I for wind deflection and ballast reduction.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000013	Wind deflector 13° 1.72 m	330	23		Alu

Module elevation

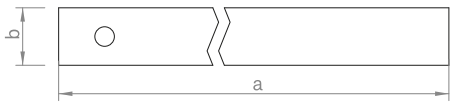
Mounting triangles



Triangles in different sizes with four variable elevation angles, mountable on flat and pitched roofs, module fixation possible with module clamps or insertion rails.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000931	Mounting triangle 15/20/25/30° 1100	1350	1100	285 – 550	Alu / A2SS
03-000932	Mounting triangle 15/20/25/30° 1300	1600	1300	336 – 650	Alu / A2SS
03-000933	Mounting triangle 15/20/25/30° 1500	1900	1500	388 – 750	Alu / A2SS

Cross bracing mounting triangles

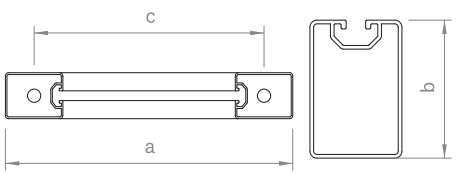


For cross bracing of mounting triangles, consisting of flat aluminium material 25 x 4, l = 1800 mm and two 8 AF hexagon drive self-drilling screws.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000685	Cross bracing set elevation triangle rack	1800	25		Alu / A2SS

Facade

Sockets insertion rail

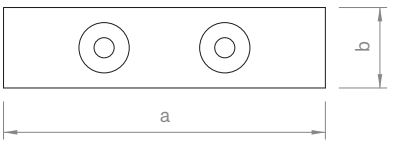


Socket for fixing insertion rails on building facades, drill holes d = 11.5 mm, delivered with two facade dowels and the matching screws.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000580	Socket set 250 mm 11.5	250	60	200	Alu / A2SS
03-000581	Socket set 250 mm 11.5 black	250	60	200	Alu / A2SS

Facade

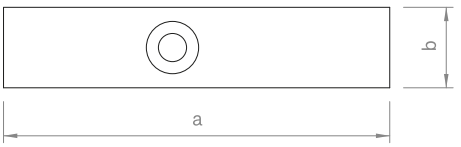
Adapter plates module protection and perforated sheet fixing



Adapter plate for securing the modules against slipping and for fixing perforated sheets. Prefabricated with two 5 mm drill holes for attachment on the socket as well as two countersunk washers and four countersunk head self-drilling screws with Torx drive 25.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000384	Adapter plate set 80 × 20 × 8 mm	80	20		Alu / A2SS
03-000404	Adapter plate set 80 × 20 × 8 mm black	80	20		Alu / A2SS

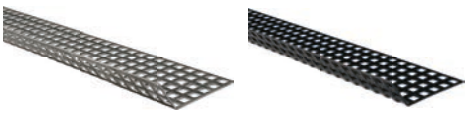
Adapter plates edge stop and perforated sheet fixing

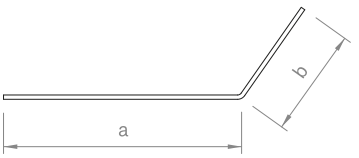


Adapter plate for lateral fixing of perforated sheets and as an edge stop for the modules. Prefabricated with a 7 mm drill hole for a countersunk head sheet screw with Torx drive 30 as well as two countersunk self-drilling screws with Torx drive 25.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000385	Adapter plate set 96 × 20 × 3 mm	96	20		Alu / A2SS

Perforated sheets

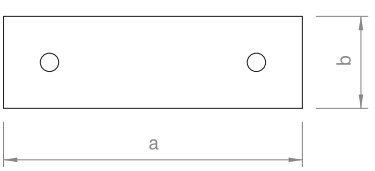




Perforated sheet to close the gap between the facade and module, enables rear ventilation and quick access to the rear of the modules, available in blank or black.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000548	Perforated sheet 1500 × 120 mm 125°	83	38		St. galv.
03-000549	Perforated sheet 1500 × 120 mm 125° black	83	38		St. galv.

Connector perforated sheet



Connector for blank and black anodised perforated sheets, prefabricated with two drill holes, set with two countersunk washers and countersunk head self-drilling screws with Torx drive 25.

Item no.	Designation	a in mm	b in mm	c in mm	Material
03-000497	Connector set perforated sheet	65	20		Alu / A2SS

Sealing parts and protective devices | Cable management

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Item no.	Designation	Image number
03-000184	EPDM round seal d = 25 mm	1
03-000082	EPDM sealant strip for C-rail 50 x 35 mm	2
03-000407	Aluminium edge protector self-adhesive	3
03-000831	PE-Pad 140 x 390 x 20 mm	3
03-000105	Protective roof mat 10,000 x 250 x 6 mm	4
03-000113	Synthetic fibre strips 50,000 x 320	5
03-000627	EPDM tape 10,000 x 54 x 3 mm IR	6
03-000633	EPDM sealant strip 70 x 28 x 2 mm IR	7
03-000628	EPDM edge protection 7 mm laminate, L 40	8
03-000629	EPDM edge protection 7 mm laminate, L 80	8
03-000099	Cable clip d = 10 mm	9
03-000510	Cable collector N-rail PA 4 cables	9
03-000508	Cable-tie clip for profile flange 1-3 mm	10
03-000509	Cable-tie clip for profile flange 3-6 mm	10
03-000175	Base trough cable bracket	11
03-000504	Cable tie black, 140 mm	12
03-000505	Cable tie black, 200 mm	12
03-000506	Cable tie black, 280 mm	12
03-000507	Cable tie black, 360 mm	12

Accessories and optional components

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Item no.	Designation	Image number
03-000329	Mounting Set C-Rail M8	1a
03-000373	Plate 50x50x3 D8.5 Alu	1b
03-000337	Mounting-Set Optimizer FR	2
03-000979	Shim for roof hook PP blue, 2mm	3
03-000980	Shim for roof hook PP grey, 5mm	3
03-000589	Slot nut A2SS with spring ball M8 30mm	4
03-000600	Slot nut Alu with spring ball M8 22mm	4
03-000682	Slot bolt M8 with serrated locking nut	5
03-000683	Slot nut set with screw M8x18 A2SS	6
03-000684	Slot nut set with screw M8x16 A2SS	6
03-000476	Mounting set snow guard IR	7
03-000535	Metal shingle 280x230mm, with sealing	8
03-000536	Metal shingle 390x230mm, with sealing	8
03-000537	Metal shingle 580x230mm, with sealing	8
03-000412	Metal sheet zinc-plated, for plain tile	9
03-000924	Perforated Alu-tape 10,000x20x1mm	10
03-000012	Grounding connector set AF 18	11
03-001185	Contact latch module clamp	12

Accessories and optional components

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Item no.	Designation	Image number
03-000446	Stock screw bridge long up to 360 mm	1
03-000530	Slot nut set with screw M8x16 A2SS	2
03-000486	Roof hook mounting screw 6x80 countersunk head	3
03-000778	Flat roof mounting screw cl 5.5	4
03-000968	Fixing anchor 15-35 95 mm A4SS for concrete	5
03-000319	Adapter top cover C-rail	6

Tools

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Item no.	Designation	Image number
03-000315	Torx drive TX-25 length = 70 mm	1
03-000104	Torx drive TX-40 length = 70 mm	1
03-000316	Torx drive TX-30 length = 70 mm	1
03-000038	Torx extension 305 mm	2
03-000011	Special long nut socket 18 mm	3
03-000100	Special nut socket 8 mm	4
03-000966	Hexagon drive for stock screw M10	5
03-000930	Hexagon drive for stock screw M12	5
03-000114	Drill bit 6.8 mm length 230 mm	6
03-000115	Drill bit 7.0 mm length 230 mm	6
03-000116	Drill bit 7.2 mm length 230 mm	6
03-000117	Drill bit 7.4 mm length 230 mm	6
03-000245	Drill bit 7.5 mm length 225 mm	7
03-000108	Drill bit 9.0 mm length 230 mm	7
03-000246	Drill bit 14 mm HSS short	7
03-000107	Drill bit 16 mm HSS short	7
03-000036	Torque wrench 1/4", 4 - 20 Nm	8

Tools

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Item no.	Designation	Image number
03-000037	Torque wrench 1/2", 20-100 Nm	9
03-000362	Mounting and removal tool 150-30	10
03-000602	Adapter 1/4" hexagonal to 1/2" square	11
03-000604	Bit for triple-square screws, size AW25	12
03-000603	Bit for triple-square screws, size AW30	12
03-000605	Bit for triple-square screws, size AW40	12
03-000576	Assembling jig 800 - 1200 mm, C-shaped	13
03-000574	Assembling jig 1300 - 1700 mm, C-shaped	13
03-000577	Assembling jig 800 - 1200 mm, bar type	13
03-000575	Assembling jig 1300 - 1700 mm, bar type	13
03-000579	Assembling jig set 800 - 1200 mm, 2-piece	13
03-000578	Assembling jig set 1300 - 1700 mm, 2-piece	13
03-000462	Mounting tool trapezoidal sheet bracket IR	14
03-000464	Mounting tool trapezoidal sheet bracket IR FL	14
03-000463	Mounting tool trapezoidal sheet bracket elevation profile pair	14
03-001323	Mounting tool roof hook ZD 30 N35	15

More kilowatts per roof surface with the flat roof system from novotegra.

Terms of Guarantee

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 legalwarranty claims and the legal product liability is not given.

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 Tuebingen. The areas covered by this guarantee are based upon German law principles. Furthermore, our general terms and conditions apply in addition to this guarantee.

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.

Hand-in-hand for your success

Are you looking for a mounting system for a flat roof with a low load reserve, or want to find out which modules combine best with a certain inverter? We are happy to help you plan your installation and support you with our professional expertise.

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BAYWA R.E. RENEWABLE ENERGY

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As a leading global renewable energy developer, service supplier, distributor and energy solutions provider we are actively shaping the future of energy and helping to combat climate change.

We deliver end-to-end project solutions involving planning, project development, turnkey construction, and ongoing technical and commercial operations management. We bring innovation, creativity and the expertise of successfully bringing over 3GW of renewable energy online, while managing over 8.3GW of renewable energy assets for our customers.

Based in over 20 countries, BayWa r.e. is working with businesses worldwide to reduce carbon footprints and drive down energy costs.

A leading global supplier to the solar distribution market, BayWa r.e is a preferred partner for thousands of installers. We also have a rapidly growing energy trading business and supply tens of thousands of customers with green power.

Every day, we are working hard to find new solutions, push technological boundaries and redefine service standards to make renewable energy even better.

We are part of BayWa AG, a €16.6 billion group of businesses. Headquartered in Munich, BayWa has been providing market leading solutions within agriculture energy and building services for over 90 years.

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