## MHHnovotegra for Corrugated Eternit and Sandwich Roof
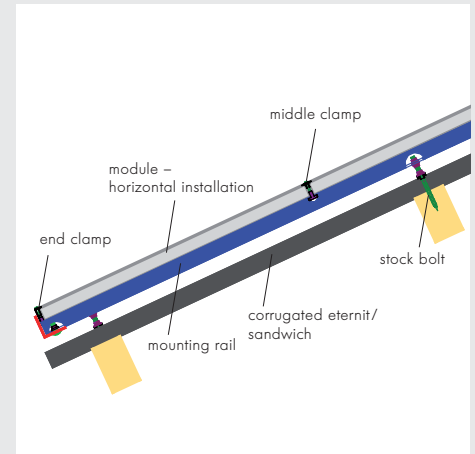


Roof parallel horizontal installation

Construction of a roof parallel horizontal installation
Below: Construction of a roof parallel installation in a cross rail configuration

### Easy, Stable, and Flexible

MHHnovotegra is our mounting system with exceptional qualities: it is easy to install on a variety of roof types and remains extremely stable, no matter what application you choose. Constructed from durable and corrosion resistant materials under DIN 1055 regulations*, it is extremely resilient—even under high snow and wind load conditions.
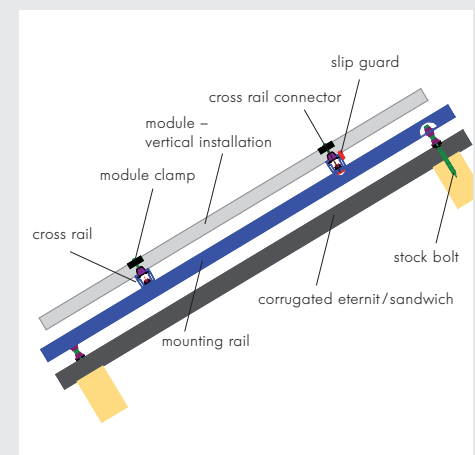
### Roof Parallel Installation

The type of underconstruction is critical in determining how your modules will be mounted on Corrugated Eternit and Sandwich Roofs. On roofs with a wooden substructure, our standard stock bolts can be used to fasten the railing directly into the roof beams; the roof remains watertight due to the specially designed EPDM seals on the bolts. In a roof parallel horizontal configuration, the C-rails are attached to the stock bolts with a simple screw fastener with an M12 locking bolt. This secures a quick, strong and reliable connection. For a vertical configuration, the C-rails are installed in a cross configuration and are also fastened with reliable locking bolts. The two internal chambers of the C-rails stabilize the entire system and reduce torsion. The chambers also serve as channels with enough room for both wiring and module connectors. Thanks to proven MHH clamp technology, modules can be quickly and safely mounted onto the railing, regardless of whether they are horizontally or vertically mounted. Individual modules can even be easily removed and remounted at will. All of our end and middle clamps are shipped ready to install and are also available in anodized black.

### Advantages

→ Very lightweight and durable
→ Quick and easy installation
→ Direct and central load distribution
→ Modules can be installed parallel to the roof or at an angle between 13° and 40° from the roof surface
→ Material saving design
→ Easy layout to DIN 1055 regulations
→ 10 year product guarantee



**MHH**solartechnik

# MHHnovotegra for Corrugated Eternit and Sandwich Roof

## Roof Parallel Installation

| Roof Mounting Hardware | Description | Material | Pieces / Pkg. | Art. Nr. |
|---|---|---|---|---|
| Stock bolt set 200 mm | 200 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21420 |
| Stock bolt set 250 mm | 250 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21422 |
| Stock bolt set 300 mm | 300 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21424 |

**Mounting Rails**

| | | | | |
|---|---|---|---|---|
| C-rail 4,20 m | with slotted holes every 10 cm | Alu | 70 | 21500 |
| C-rail 6,12 m | with slotted holes every 10 cm | Alu | 70 | 215110 |
| Rail connector set | for end to end rail connections | Stainless Steel / Alu | 50 | 21530 |
| Cross rail connector set | for cross rail mounting configurations | Stainless Steel / Alu | 50 | 21540 |

**Module Clamps**

| | | | | |
|---|---|---|---|---|
| Middle clamp set 34–42 | for frame heights between 34–42 mm | Stainless Steel / Alu | 100 | 216010 |
| Middle clamp set 34–42 in black | for black frame heights between 34–42 mm | Stainless Steel / Alu | 100 | 216011 |
| Middle clamp set 43–52 | for frame heights between 43–52 mm | Stainless Steel / Alu | 100 | 216012 |
| Middle clamp set 43–52 in black | for black frame heights between 43–52 mm | Stainless Steel / Alu | 100 | 216013 |
| End clamp set 34–42 | for frame heights between 34–42 mm | Stainless Steel / Alu | 20 | 216210 |
| End clamp set 34–42 in black | for black frame heights between 34–42 mm | Stainless Steel / Alu | 20 | 216211 |
| End clamp set 43–52 | for frame heights between 43–52 mm | Stainless Steel / Alu | 20 | 216212 |
| End clamp set 43–52 in black | for black frame heights between 43–52 mm | Stainless Steel / Alu | 20 | 216213 |
| Module slip guard M6 | for frame holes between 6–8 mm | Stainless Steel | 50 | 21640 |
| Module slip guard M8 | for frame holes between 8–10 mm | Stainless Steel | 50 | 21645 |
| Slip guard for horizontal modules | slip guard for modules mounted horizontally | Stainless Steel / Alu | 50 | 216500 |
| Slip guard for horizontal installation in black | slip guard for black framed modules mounted horizontally | Stainless Steel / Alu | 50 | 216502 |

**Accessories**

| | | | | |
|---|---|---|---|---|
| Screw bit for M12 stock bolts | screw bit for M12 stock bolts without head | Stainless Steel | 1 | 21915 |
| C-rail end cap | for an asthetic look for rail ends | Stainless Steel / Alu | 50 | 210600 |
| Grounding connector set SW18 | mounting system grounding | Stainless Steel | 10 | 21700 |
| Special lock nut SW18 deep | socket with clamp effect for M12 stock bolts | | 1 | 21900 |
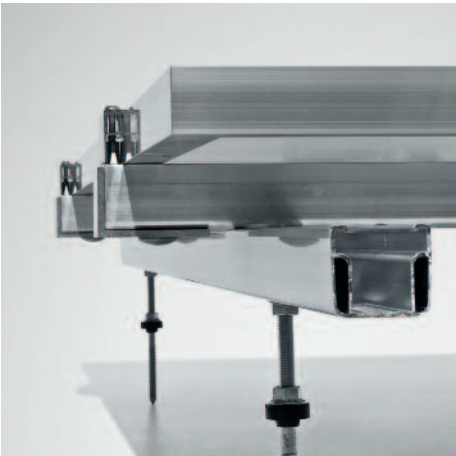


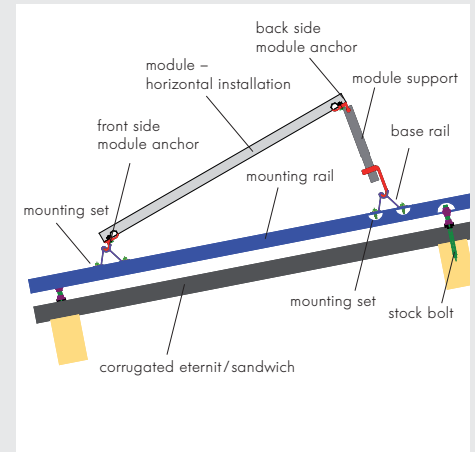Direct and central load distribution in a stock bolt installation
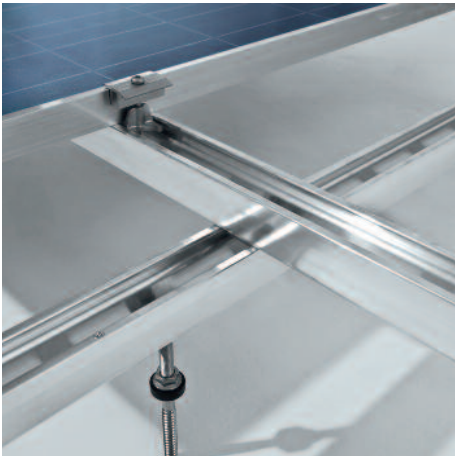


Installation of C-rails in a cross configuration



End clamp with slip guard for horizontal configurations

# MHHnovotegra for Corrugated Eternit and Sandwich Roof
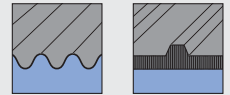
Elevated installation



Construction of an elevated installation

## Elevated Installation

At an installation angle above 20 degrees, rain and snow wash rinse the solar modules, keeping the surface of the solar array clean. If the roof angle is below 20 degrees, an elevated installation is recommended for Corrugated Eternit and Sandwich Roofs. We offer additional components from the MHHnovotegra family for exactly this purpose. The first step is to secure our stock bolt set directly into the wooden underconstruction of your Corrugated Eternit or Sandwich Roof. This ensures that the system is stabilized by the roof beams and not just the superstructure. The MHHnovotegra C-rail is then attached to the stock bolts with the use of a simple lock bolt.

The C-rail functions as the mounting frame upon which the base railing can be securely installed with our mounting set. Depending on the desired angle of elevation of your modules, you can then choose from five different lengths of module supports. This flexibility enables installed arrays to be pointed at the southern sky, even on north facing roofs and east-west facing roofs. The specially designed module anchors are attached directly to the module frames, the whole module is mounted diagonally into the base rail, and the module supports are attached to the elevated edge of the module frame. Each module support has ten centimetres of threading so that the angle of the modules can be fine-tuned. This allows you to achieve the exact desired angle and to create a perfectly uniform module array.

## Advantages

→ Very lightweight and durable
→ Quick and easy installation
→ Direct and central load distribution
→ Material saving design
→ Extremely stable
→ Pre-configured fasteners for quick installation
→ Easy layout to DIN 1055 regulations
→ 10 year product guarantee

### * New DIN 1055 Load Norms

The MHHnovotegra system has been developed within the guidelines for load bearing structures set out by the German Institute for Norms (DIN) in section 1055. This guarantees a stable construction that can withstand extremely high snow and wind loads. Due to country specific variations in load bearing regulations, an independent assessment of building and mounting system statics maybe required for the installation of MHHnovotegra components outside of Germany.

## MHHnovotegra for Corrugated Eternit and Sandwich Roof

### Elevated Installation

| Roof Mounting Hardware | Description | Material | Pieces/Pkg. | Art. Nr. |
|---|---|---|---|---|
| Stock bolt set 200 mm | 200 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21420 |
| Stock bolt set 250 mm | 250 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21422 |
| Stock bolt set 300 mm | 300 mm M12 stock bolts with EPDM seals | Stainless Steel | 50 | 21424 |

### Mounting Rails

| | | | | |
|---|---|---|---|---|
| C-rail 4,20 m | with slotted holes every 10 cm | Alu | 70 | 21500 |
| C-rail 6,12 m | with slotted holes every 10 cm | Alu | 70 | 215110 |
| Base rail 6,18 m | for the elevated installation of modules | Alu | 28 | 215500 |
| Rail connector set | for end to end rail connections | Stainless Steel/Alu | 50 | 21530 |
| Indirect mounting set | to attach base rail to C-rails | Stainelss Steel | 125 | 210060 |

### Supports and Module Anchors

| | | | | |
|---|---|---|---|---|
| Module anchor set front | pre-assembled with all necessary mounting hardware; 2 per module required | Stainless Steel/Alu | 50 | 210030 |
| Module anchor set back | pre-assembled with all necessary mounting hardware; 2 per module required | Stainless Steel/Alu | 50 | 210035 |
| Module support set 200 mm | module support for elevated installation with threading for fine tuning; 2 per module required | Alu | 25 | 210010 |
| Module support set 280 mm | module support for elevated installation with threading for fine tuning; 2 per module required | Alu | 25 | 210012 |
| Module support set 360 mm | module support for elevated installation with threading for fine tuning; 2 per module required | Alu | 25 | 210014 |
| Module support set 440 mm | module support for elevated installation with threading for fine tuning; 2 per module required | Alu | 25 | 210016 |
| Module support set 520 mm | module support for elevated installation with threading for fine tuning; 2 per module required | Alu | 25 | 210018 |
| Self-locking cable tie | with clip to attach to module frame, UV stabilized and weatherproof | | 100 | 213600 |

### Accessories

| | | | | |
|---|---|---|---|---|
| Screw bit for M12 stock bolts | screw bit for M12 stock bolts without head | Stainless Steel | 1 | 21915 |
| C-rail end cap | for an aesthetic look for rail ends | Stainless Steel/Alu | 50 | 210600 |
| Grounding connector set SW18 | mounting system grounding | Stainless Steel | 10 | 21700 |
| Special lock nut SW18 deep | socket with clamp effect for M12 stock bolts | | 1 | 21900 |
| Special lock nut SW8 | lock nut SW8 with clamp effect for module supports and elevated mounting set | | 1 | 219001 |
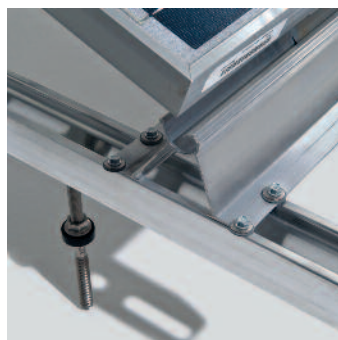
Base rail mounted onto C-railing



Front edge of mounted module



Module supports for elevaten configuration are threaded for fine-tuning

Your specialty dealer:

**MHH**solartechnik
www.mhh-solartechnik.de