

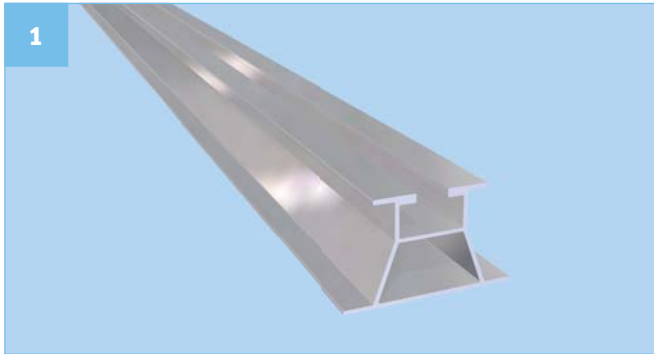
# **ALTEC *FD\_COMPACT\_EW***

**East-west system with optimized ballast**

Assembly instruction

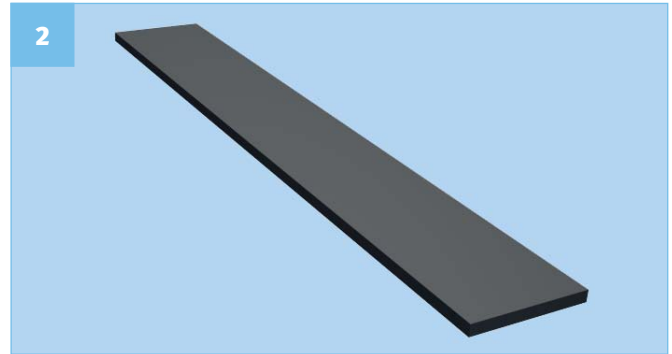


## Parts overview



### **Basic profile 60 × 36**

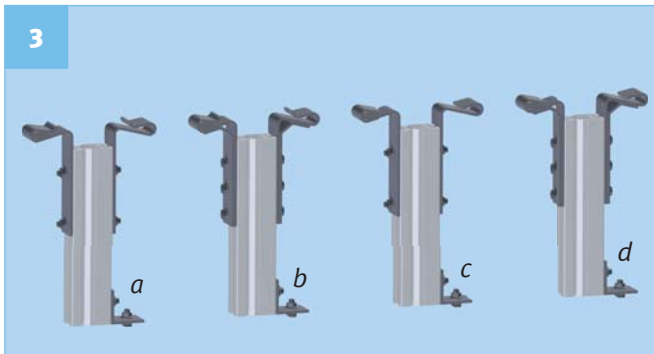
(Lengths 6000, 4500 mm and customization) according to system sketch



### **System mat**

400 × 120 × 6 mm

Quantity according to system sketch



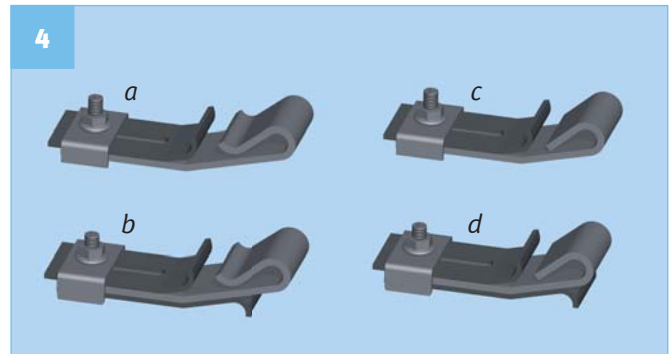
### **Support 15° E/W (2 × per module set), pre-assembled**

Var. a) for module frames with wide clamping area

Var. b) as a) and for higher snow loads

Var. c) for module frames with narrow clamping area

Var. d) as c) and for higher snow loads



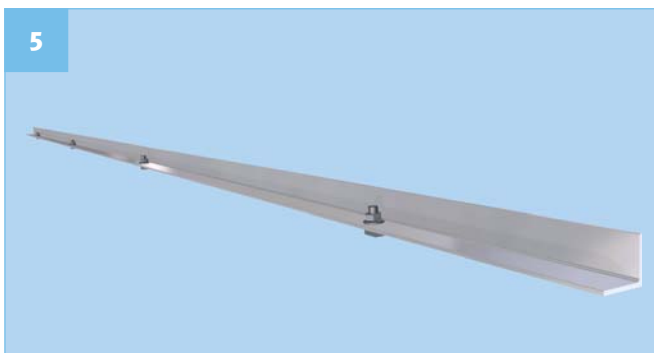
### **Front module fastener 15° E/W (4 × per module set)**

Var. a) for module frames with wide clamping area

Var. b) as a) and for higher snow loads

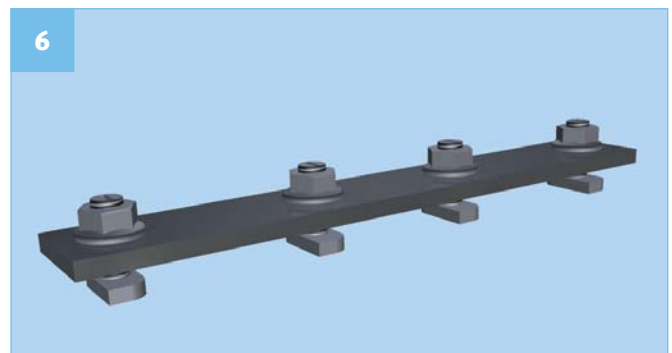
Var. c) for module frames with narrow clamping area

Var. d) as c) and for higher snow loads



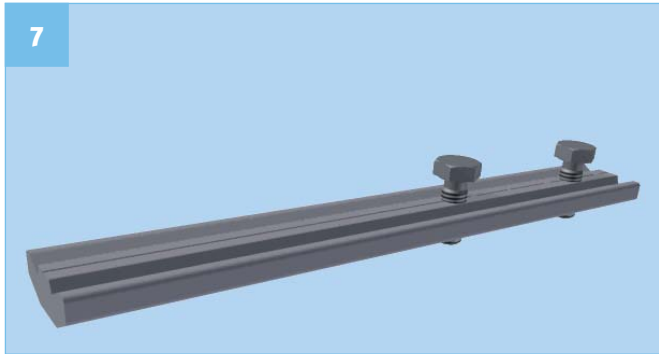
### **Slot connector: beginning and finishing of the array**

Angle 30 × 30 × 3 (Lengths 6000, 4500, 2995 mm and customization), pre-assembled with hammer head screws M8 × 20 and locking nuts M8

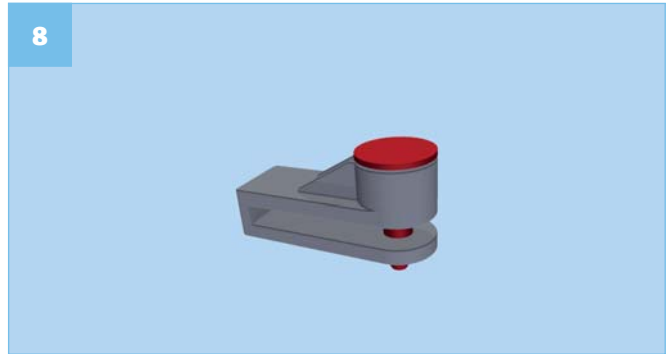


### **Profile connector (according to system sketch)**

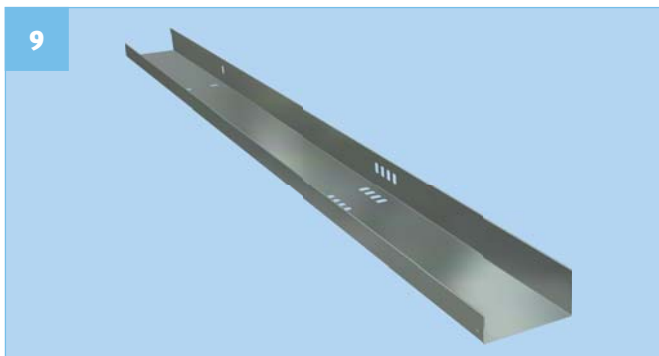
A2, 4-hole, with hammer head screws and locking nuts



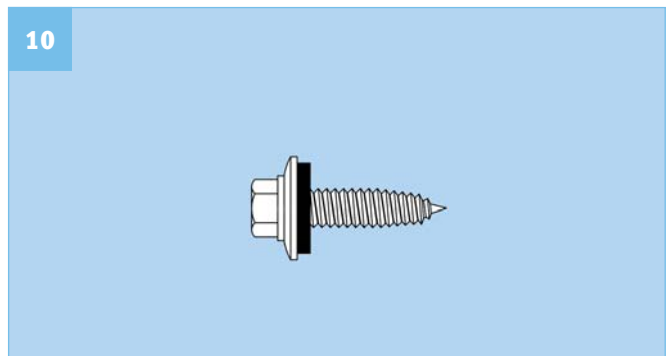
**Expansion connector (according to system sketch)**  
depending on requirements



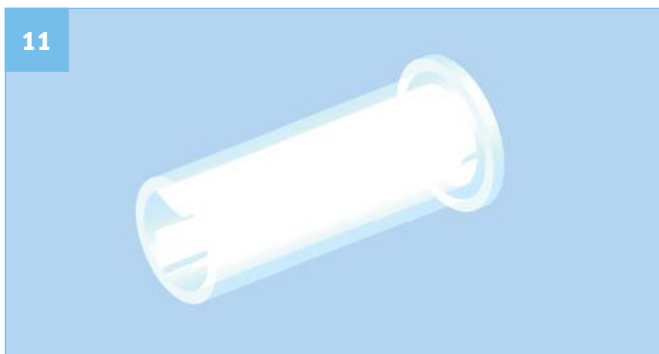
**Position lock**



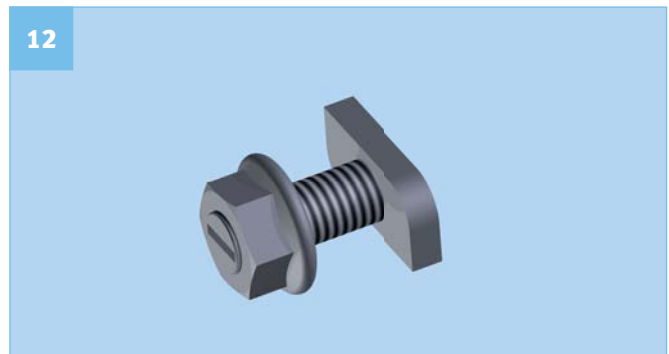
**Metal sheet to take ballast and cables**



**Thin metal screw 6 x 25**



**Protection cap**



**Hammer head screw (set)**

## Safety instructions

This manual contains important information for safe and proper installation and use of the ballast-optimized flat roof installation. Please follow these information and protection notes in this manual. Keep the general legal rules (accident prevention regulations) as well as the safety instructions. Fence off resp. secure the working area before installation starts, for protection against unauthorized access or accident. Perform installation on safe ground!

If components of this assembly system have to be changed during installation or at a later date, these structural changes must be cleared with the manufacturer. In case of non-compliance the manufacturer is not liable in the event of damage. Damages of any sort which are resulting from interference by the customer are excluded from the guarantee.

Concerning the warranty please note the general terms and conditions of ALTEC Metalltechnik GmbH.

During installation work it is necessary to wear proper protective clothing. You have to ensure that all components listed are available. Place the components in order to installation process. For installation two people are needed at least. It may be necessary to free the surfaces from water, snow or dirt. Please store the components dry before installation starts to avoid stains or other damages. The manufacturer is not responsible for damages caused by improper storage/installation or force majeure. It is absolutely necessary to switch off the power supply before working on electrical components!

We point out that, for necessary removal of roof-related components / PV systems, applicable regulations must be kept. Please instruct

a specialized company in this case. Changes to the roof structure and/or roofing, which are caused by the PV system, must be released by the building owner or constructor. This concerns all roof components as well as roof constructions. It must be ensured, that the roof static is able to bear the additional loads of the installed system.

Based on the building documentation it must be ensured, that the roof structure and roofing is suitable for the project. All issued documents are project-related. These are calculated on static and structural aspects individually for each project.

the existing roof covering must be cleaned at least within the area of the basic profiles of pollution (algae, moss, mud, etc.). Optionally we can offer membrane roof cleaner. Without a pre-cleaned roofing ALTEC Metalltechnik GmbH cannot provide any warranty.

### Tools for installation:

- Measuring equipment: laser or measuring tape
- Screwdriver or ratchet with a 13 mm socket for the nuts on the head bolts
- Installation aid (optional)
- Roofing film cleanser (optional)

## Assembly instruction *Positioning system mats*

The system mat is laminated on one side to protect against all harmful influences, which may be occurred as result of different roofing. System mat ② has to be placed under the load point of the base profile 60 × 36 ① (under front and rear module fastener), with aluminum side on the roof skin. The system mat may not be placed to the terminal of the profiles, as well as it should be avoided to place it in the range of the profile connector/ expansion connector.

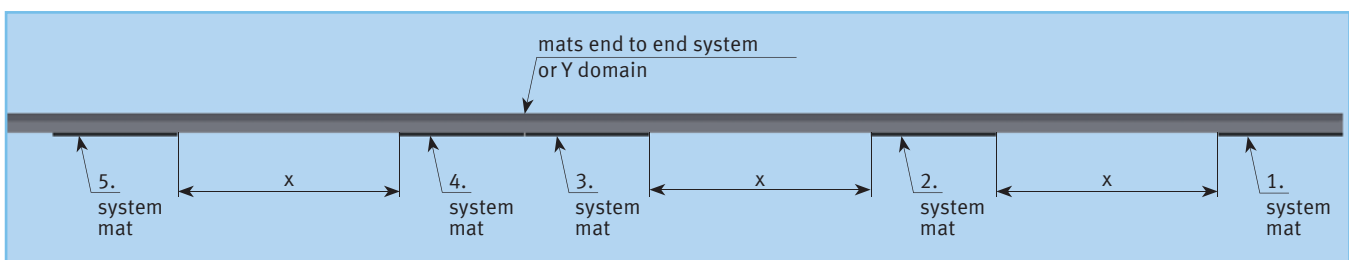
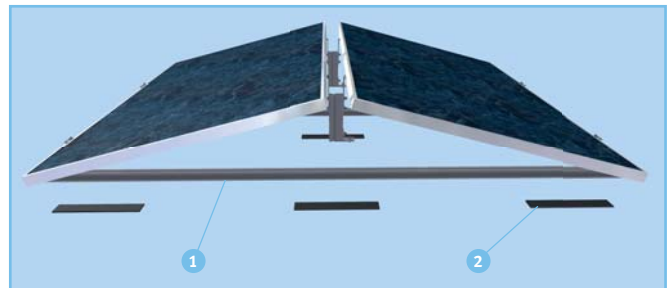
### Please note:

The distance between the mats depends on the width of the modules.

- Attach the first system mat at the beginning of the base rail
- Attach the second system mat at distance x to the base rail
- Fasten the third system mat at distance x to the base rail
- fourth system mat attached end to end (or Y range) to the base rail
- fifth system mat ... x ... (additional repetition)

The system is designed for the following module sizes:

Module width in mm	Module length in mm
982	1638
990	1330
990	1650
991	1665
992	1636
992	1640
992	1640
992	1655
994	1652
1000	1640
1000	1650
1000	1652
1065	1596
1069	1580
1100	1640



$X$  = System mat distance, depending on module width

$Y$  = End to end or when the base rail is extended by rail connector, the distance has to be increased that the connector is not placed in the range of the system mat.

By arranging the mats in this way, drainage of the surface water is possible – even crosswise to the base profile.

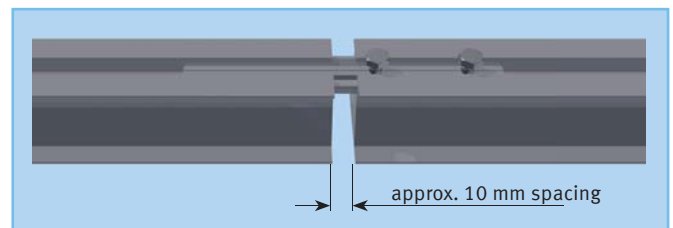
## Assembly instruction *Installation of the base rail and slot connector*

The extension of the base rail is optimal up to 12 m, maximal up to 15 m has to be realized with the rail connector. The extension points of the base profile should be below the modules or in the maintenance walk way between the module rows!

An extension over 15 m an expansion connector must be placed in the maintainance walk way. Between the profiles a distance of 10 to 15 mm has to be kept.



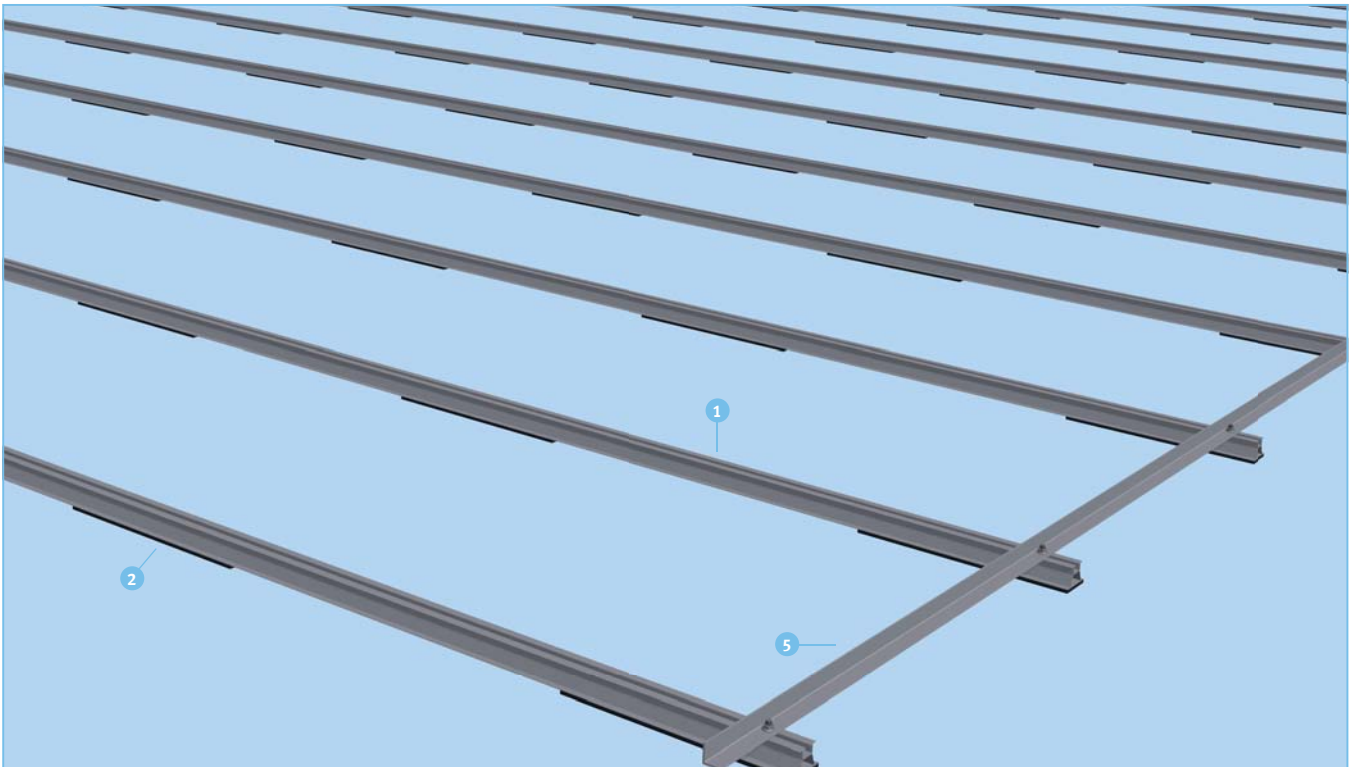
*Rail connector*



*Expansion connector*

### **Please note:**

**The expansion connector must be placed in the maintenance walk way between the module rows!**

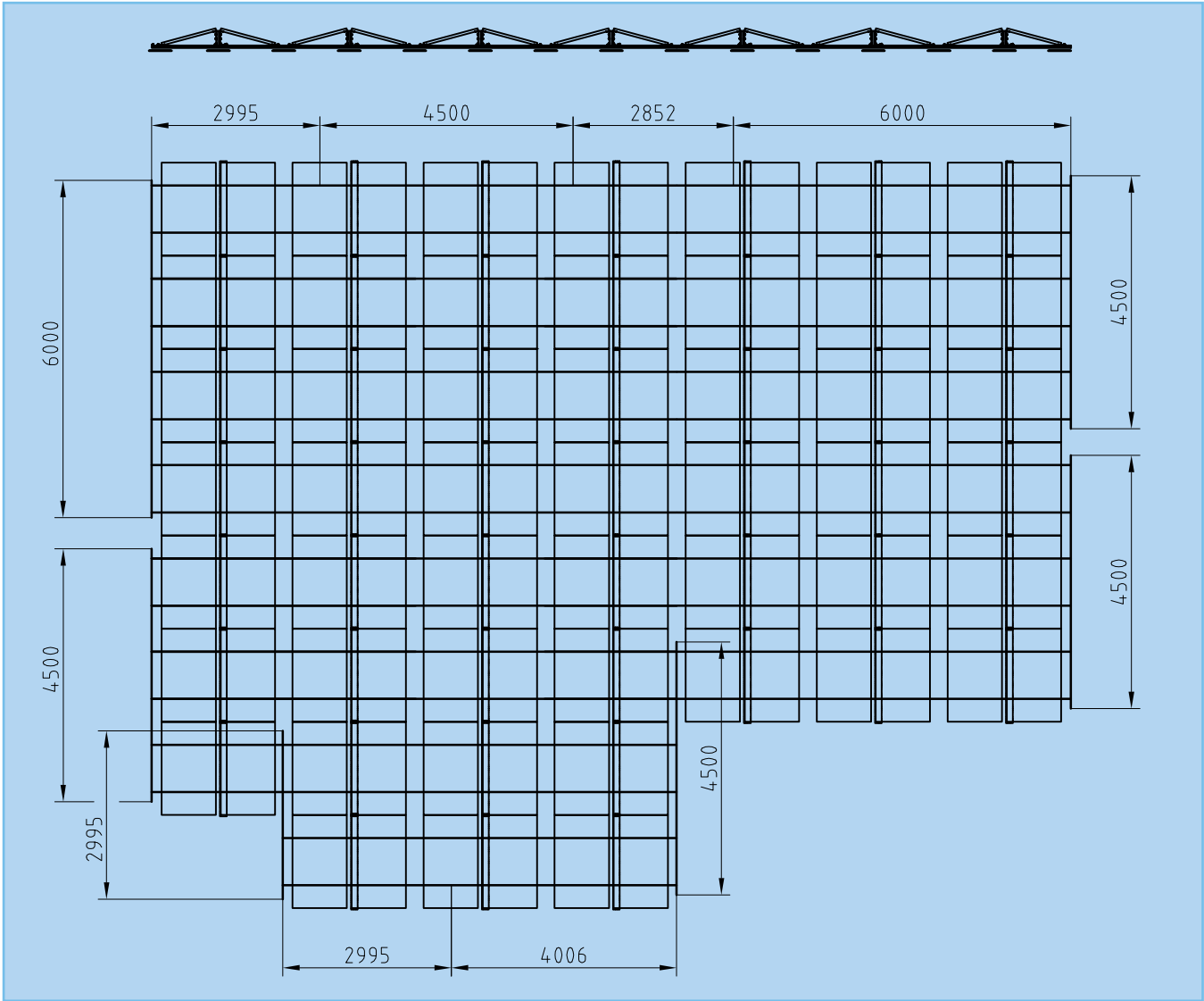


### **Note:**

**Please refer to the separate drawing concerning quantity and position of the base rails and slot connectors, which had been issued before start of construction.**

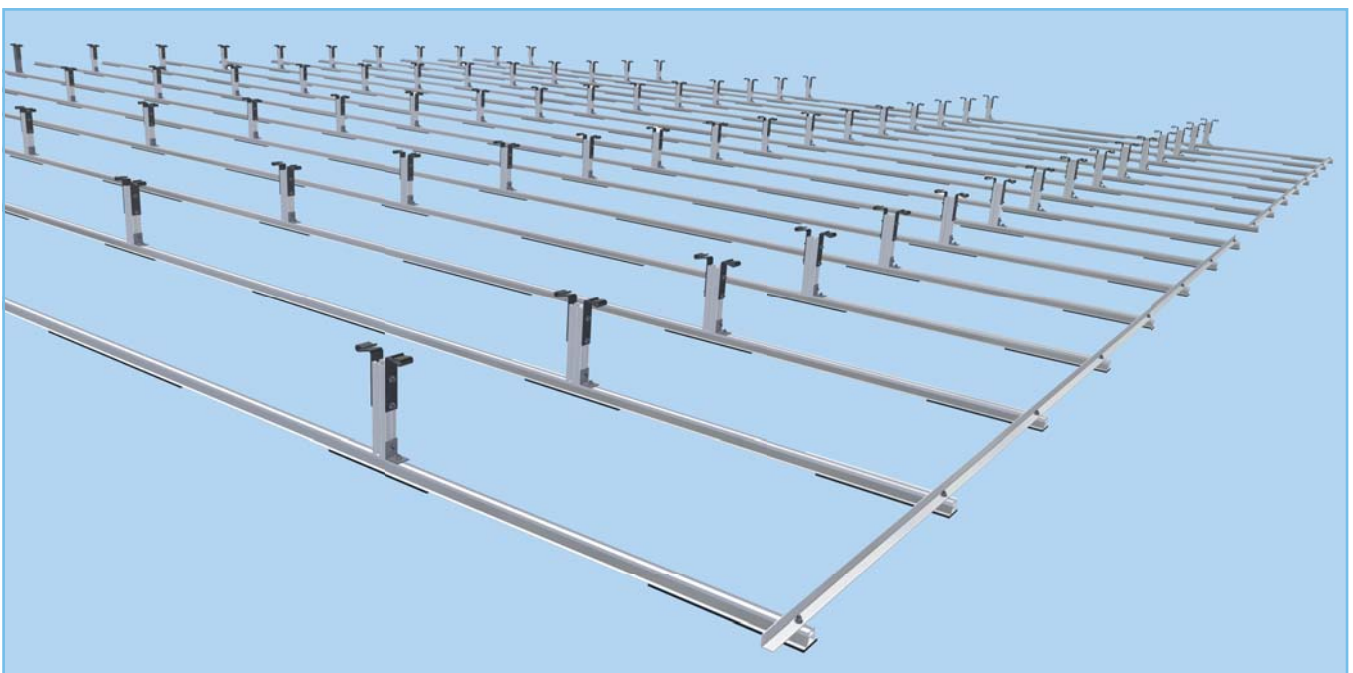
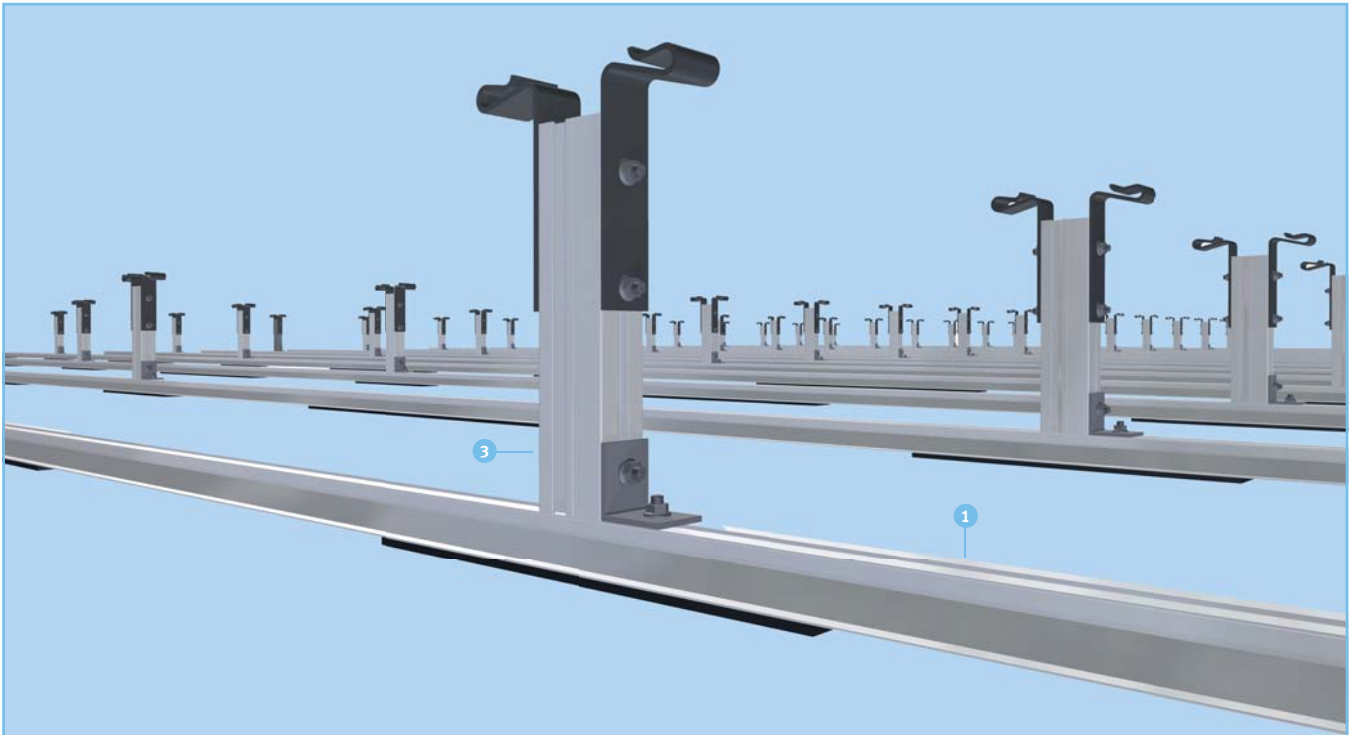
Assembly instruction *Example roof layout plan (detail)*

**Note:**  
Documents are issued before construction starts.



## Assembly instruction *Positioning of the supports*

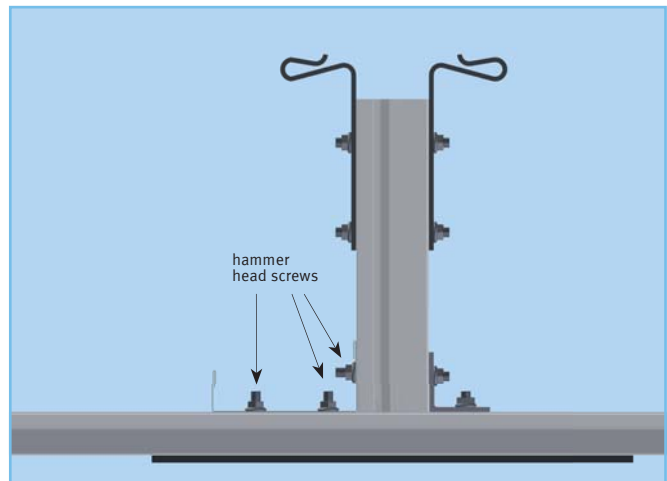
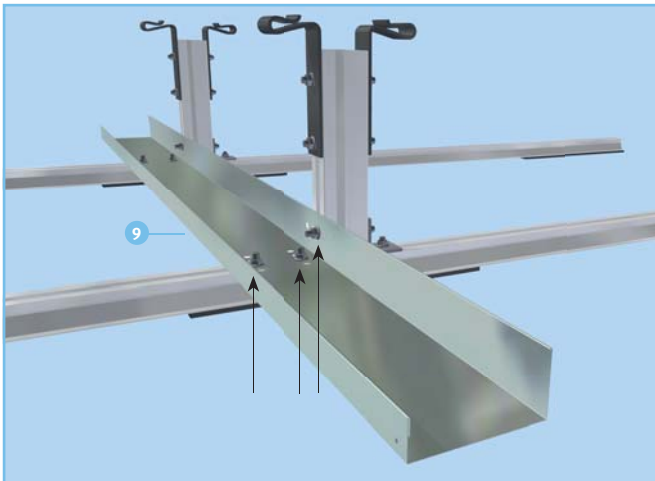
Please refer to the separate drawing concerning the distance/position of the supports. The support will be fastened by tightening the lock nut with 14–16 Nm.



## Assembly instruction *Metal sheet to take the ballast*

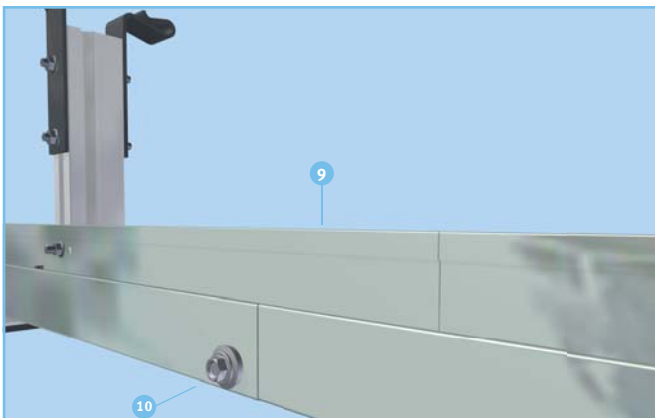
### Fixation of the metal sheet:

Screw the metal sheet 9 by using the hammer head screws 3 on the support 3 and basic profile 1.



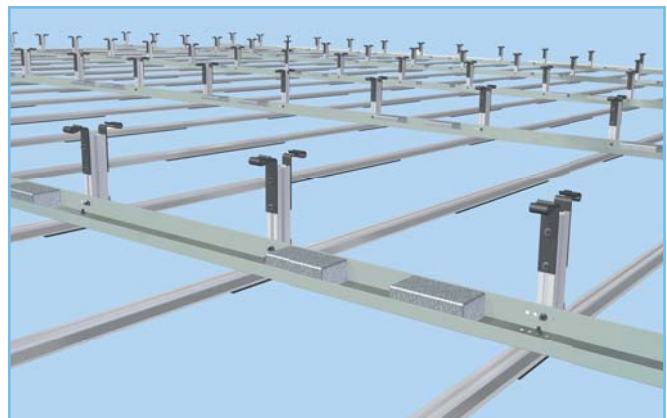
### Connecting the metal sheets:

The metal sheets will be connected with thin metal screws 10 (side by side, overlapping).



### Ballast:

The weighting elements are arranged according load protocol on the base profiles in the immediate vicinity of the module supports.



### Attention:

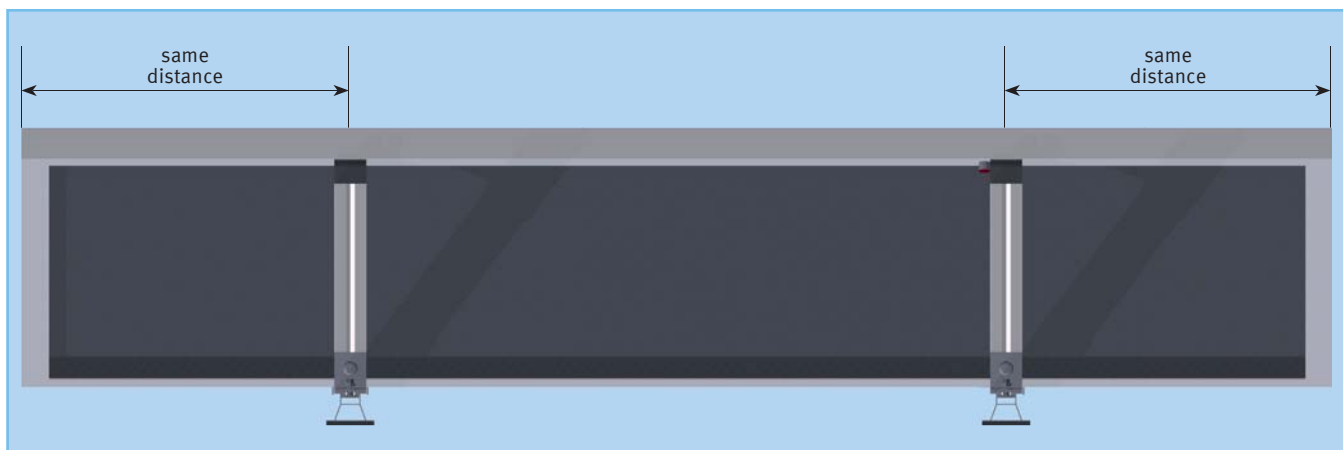
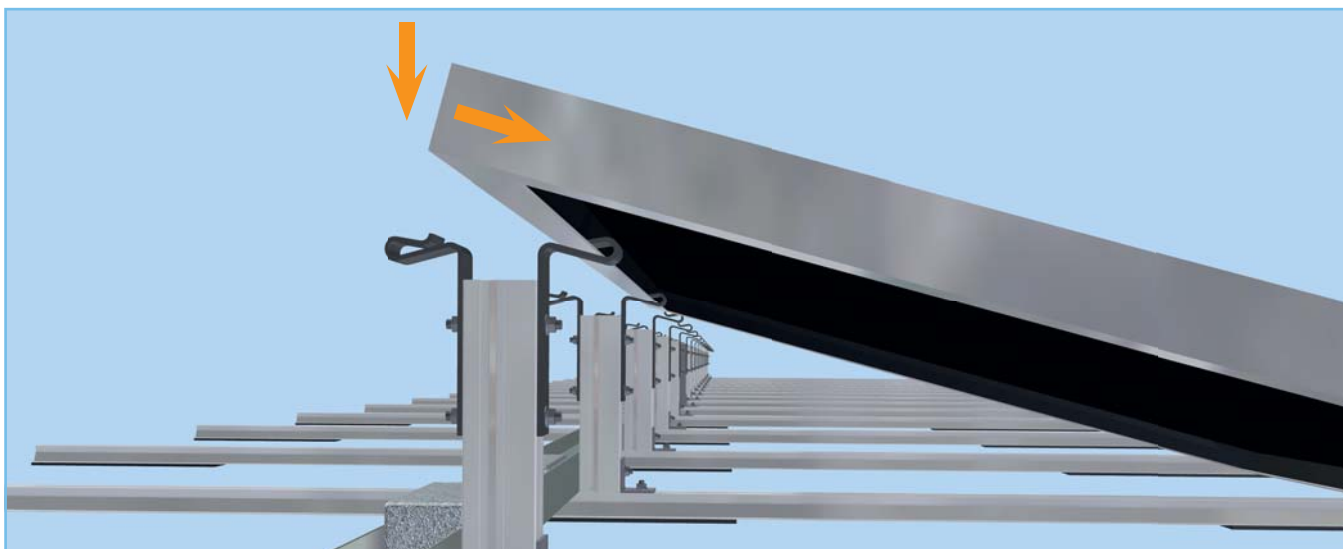
Cover the screws of the metal sheet with a protection cap. 11 to avoid injuries during installation and damage to the solar cable afterwards.



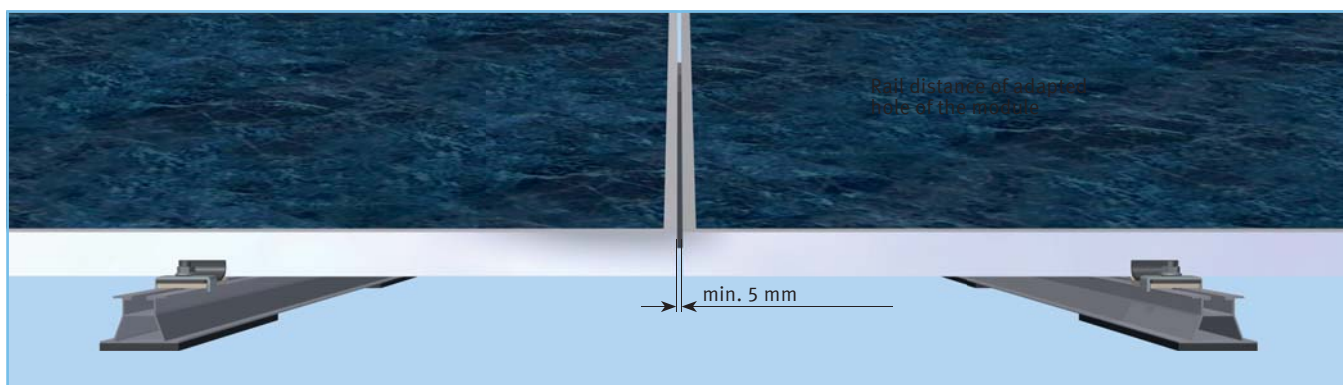
## Assembly instruction *Mounting the modules on top*

### **Fix module with support:**

Hang all modules with the inner frame into the first both supports and pull the frame into the holder.



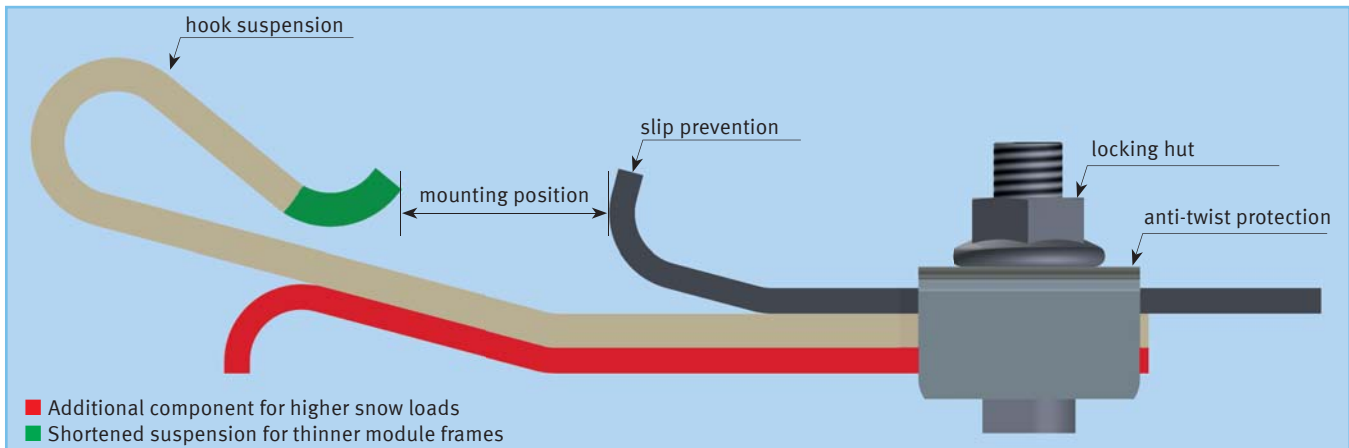
Between the modules must be an expansion gap (min. 5 mm, max. 10 mm).



## Assembly instruction *Mounting the front module holder*

### Front module holder:

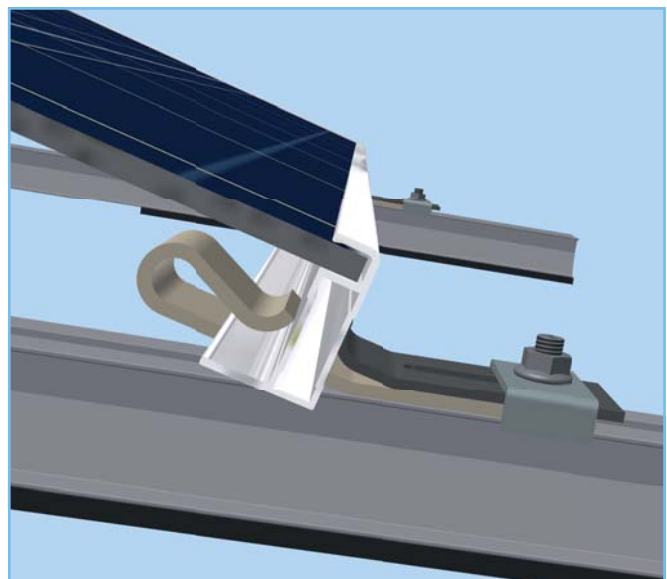
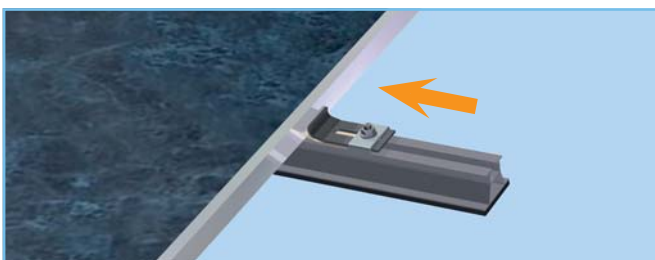
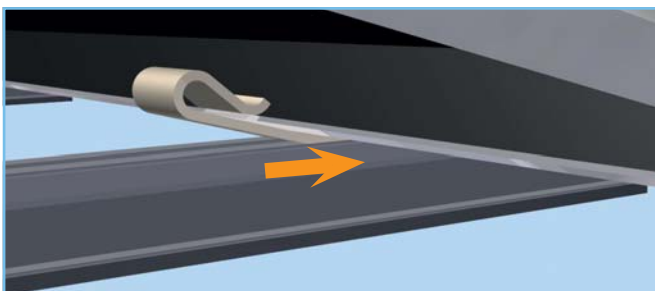
Bring the slip prevention to mounting position.



Attach the hook suspension of the front module holder with the inner module frame, then insert the hammer head screw of the front module holder into the base profile. Now the front module holder has to be pulled against the module frame. Simultaneously the slip prevention has to be pushed in direction to the module until they fit closely in the frame. Finally, the locking nut has to be tightened with 12–15 Nm to ensure the connection.

### Attention!

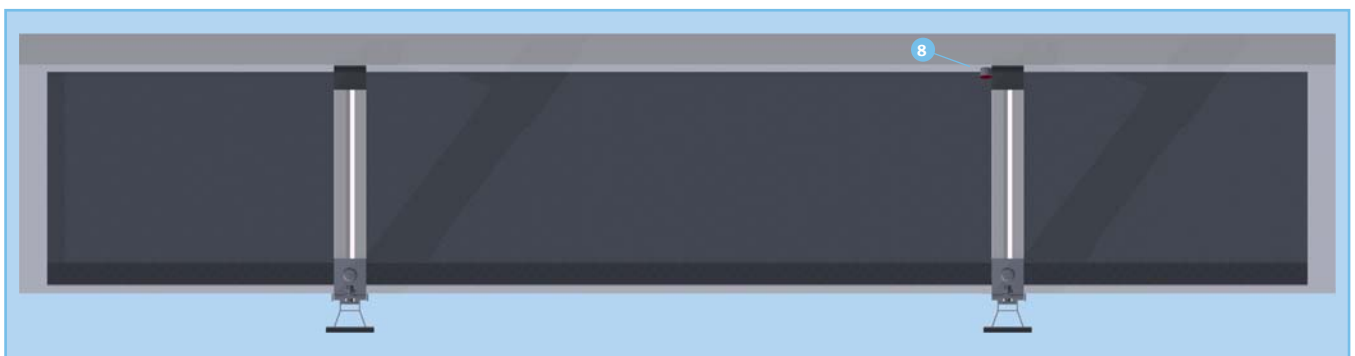
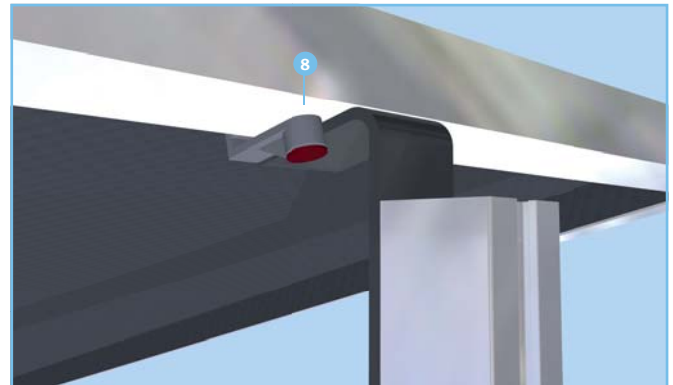
The head of the hammerhead screw must be rotated 90° to the axis of the base profile!



## Assembly instruction *Fixation of the modules*

### Define the margin:

Marginal modules will be secured against slipping by using the position lock 8. This will be connected at the bottom side of the module, near to the ultimate support.



### Note:

The lightning protection of the system must be installed by a specialized company.



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EN 1090-1

Aufständerung Ost / West, beschwerungsarm (Ost/West, ba)

Änderung Wanne

Geometrische Toleranzen: EN 1090-2

Schweißbeignung: NPD

Bruchzähigkeit: 1.4301 S235 unbedenklich bis -40°C nach Z-30.3-6  
1.0242 S250Gd 27 J bei 20 °C

Brandverhalten: Material in Klasse A1 eingestuft

Freisetzung von Cadmium: NPD

Freisetzung von radioaktiver Strahlung: NPD

Dauerhaftigkeit: 1.4301 S235 unbeschichtet, NPD  
1.0242 S250GD 275 g/m² Zink je Seite (sendzimirverzinkt)

Tragfähigkeitsmerkmale:

Tragfähigkeit: Bemessung nach EN 1993-1, siehe Entwurfsvorgaben und Berechnungen

Es gelten die für Deutschland festgelegten NDP.

Ermüdungsfestigkeit: NPD

Feuerwiderstand: NPD

Herstellung: nach der Bauteilspezifikation und EN 1090-2, EXC1 – EXC2



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EN 1090-1

Aufständerung Ost / West, beschwerungsoptimiert (BO-Ost/West 15° SR)

Änderung Modulaufnahme

Geometrische Toleranzen: EN 1090-2

Schweißbeignung: NPD

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