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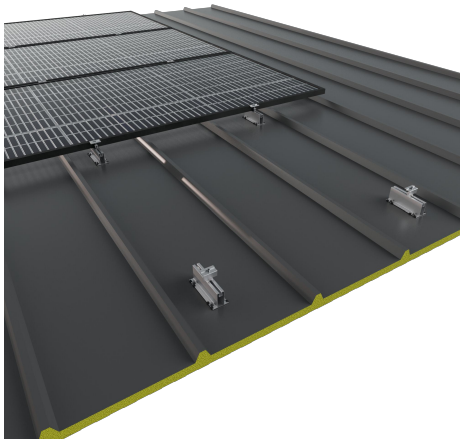
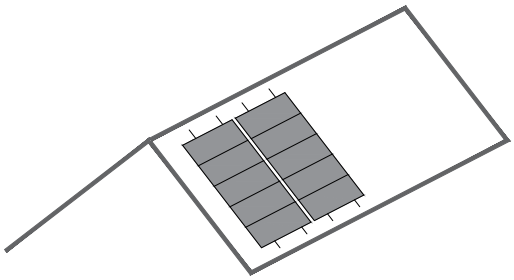
07H-BI-EN

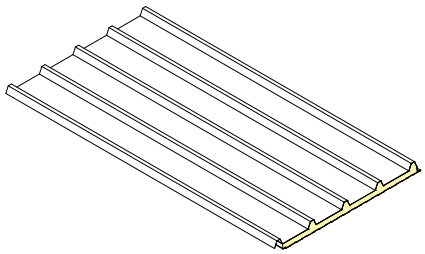


Assemblies

Select

Landscape





Sheet metal

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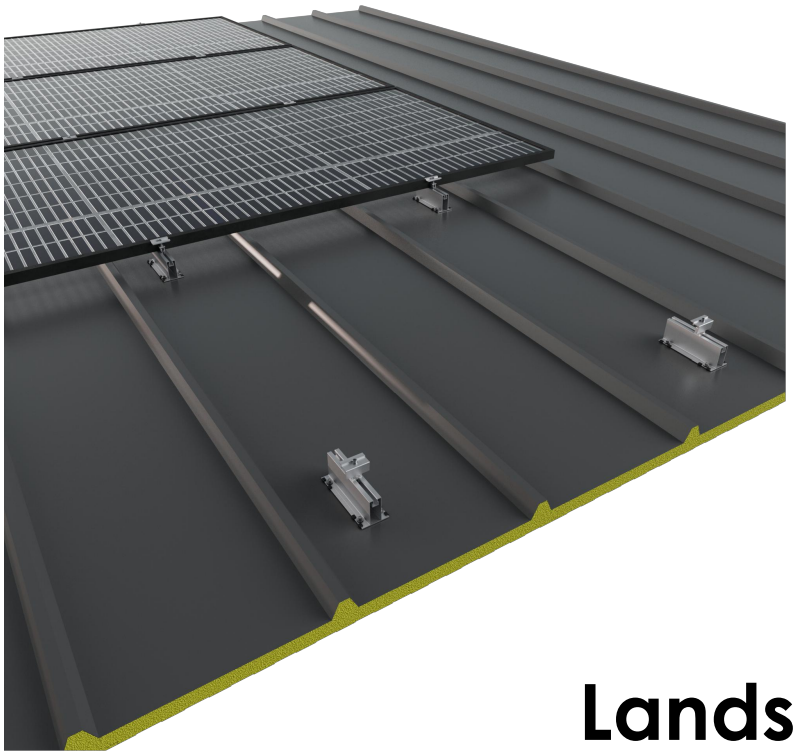

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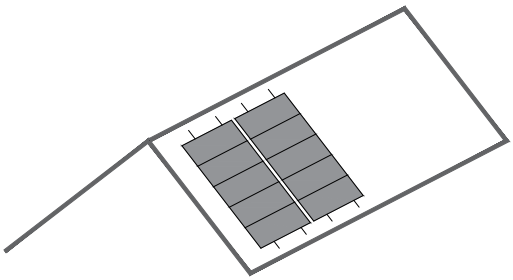
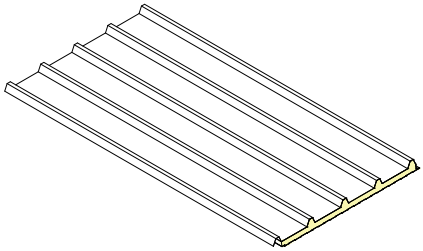
Landscape





Sheet metal

Return

Sunfer Estructuras, S.L.U.
Camino de la Dula s/n
Albalat de la Ribera - 46687 (Valencia) Spain

100% ES19/86524 CE

04/2024| **SUNFER**

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07H-BI-EN
General information

General information and recommendations EN

- All assembly instructions and product specifications provided must be observed.
- Check the condition of the roof and its load-bearing capacity. Before the installation of the photovoltaic system, the project management must ensure that the substructure of the roof and the statics of the building can withstand the additional loads that will arise.
- To avoid wind turbulence, a minimum safety distance specified in the regulations must be maintained from roof edges and other obstructions (e.g. chimneys, vents, etc.) to the panels.
- In the case of chimneys and other elements requiring maintenance, a clear distance from the photovoltaic installation shall be maintained for easy access by the fire-fighting services, the minimum dimensions of which shall be the most restrictive between those indicated in the requirements of the competent authorities and 1 m.
- The roof or deck surface shall be clean and dry. Irregularities in the ceiling must be corrected or eliminated.
- The fastening must always be anchored to the roof sheet metal.
- Check the fastening for watertightness after installation.
- Distribute the modules so that the installation is symmetrical along the support, leaving the excess at the ends.
- The clamps must not be tightened with impact machines.
- Check that the anchoring points for the modules are compatible with the manufacturer's specifications.
- Disassembly of the brackets is to be carried out in reverse order to assembly.
- During the handling of the material, extreme care must be taken to preserve the packaging. Store in a dry and well-ventilated area. Minimise temperature and humidity variations as much as possible. Avoid storing the material outdoors. Avoid the presence of water sources, leaks, splashes or any other contact with water in the storage area. If the material is wet or damp, it should be dried and cleaned immediately. Do not leave the material directly on the floor because of the moisture that can be transmitted. Use the original packaging pallet or shelves.
- We reserve the right to make changes to the product at any time without prior notice if, from our point of view, these are necessary to improve quality. Illustrations in drawings and catalogues may be examples only and therefore the picture shown may differ from the product supplied.
- Aluminum components can be delivered in different finishes without compromising the structural solution. Available finishes: raw/anodised/lacquered.

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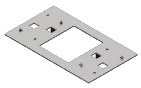
Kit Contents


S07-BI-EN


S10-EN


S11-EN


S13

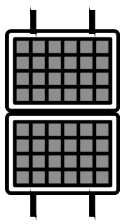
	S07-BI-EN	S10-EN	S11-EN	S13
1	4	4	-	2
2	6	4	2	3
3	8	4	4	4
4	10	4	6	5
5	12	4	8	6
6	14	4	10	7
7	16	4	12	8
8	18	4	14	9

Sheet metal thickness ≥0,55 mm

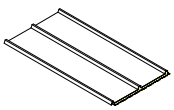
alu Aluminum profile **EN AW 6005A T6**

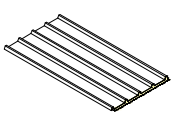
A **A2-70 stainless steel** screws

Max.
2400x1350 mm
Thickness:
28-40 mm



Anchoring surfaces:


Sandwich panel
3 ribs


Sandwich panel
5 ribs

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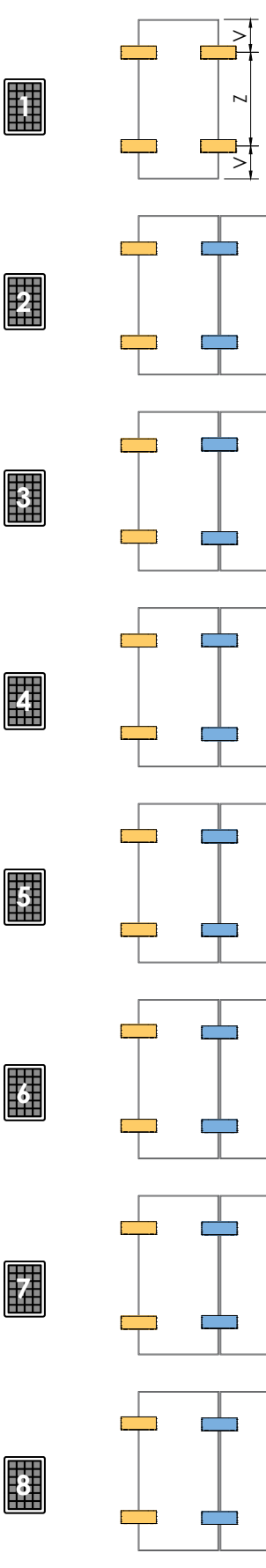
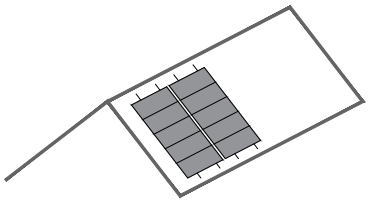
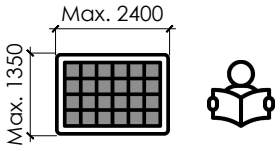
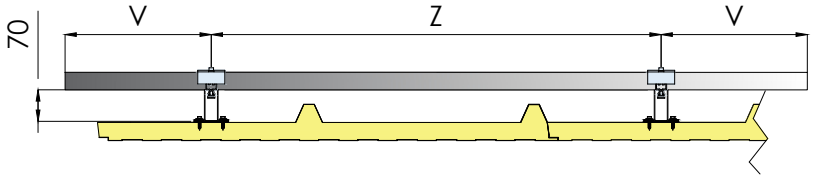
Landscape

Anchorages









The maximum distance between profiles "Z" and the module flight "V" is to be found in the module manufacturer's data sheet.

S07-BI-EN + S10-EN

S07-BI-EN + S11-EN

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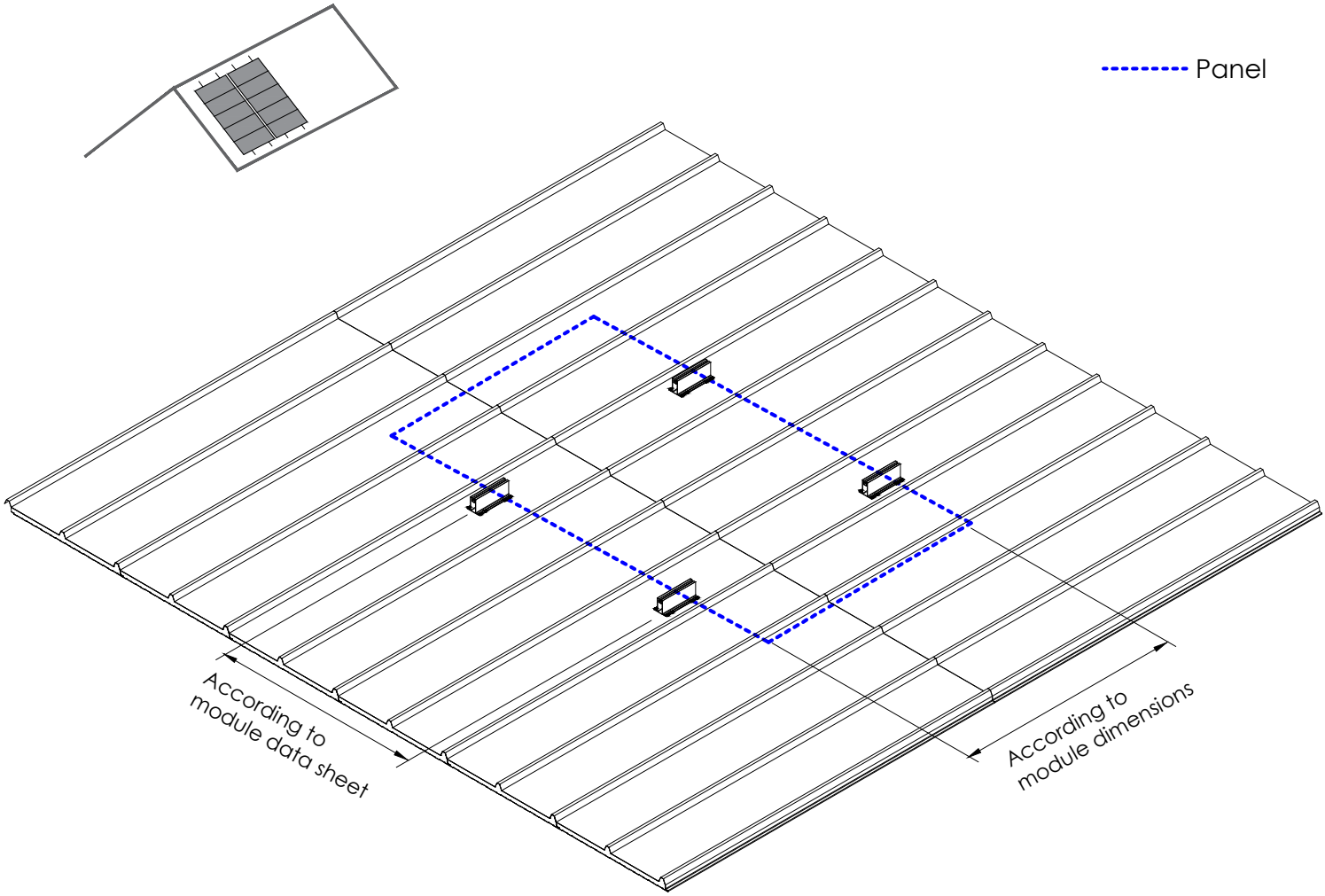
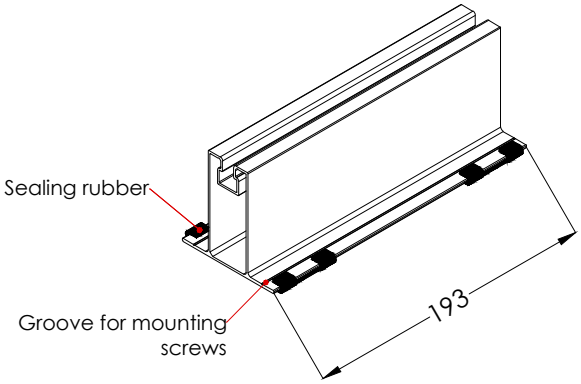
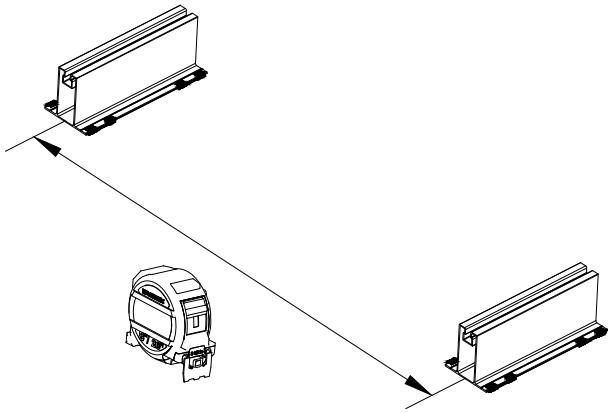
Structure assembly







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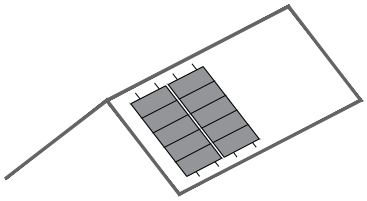

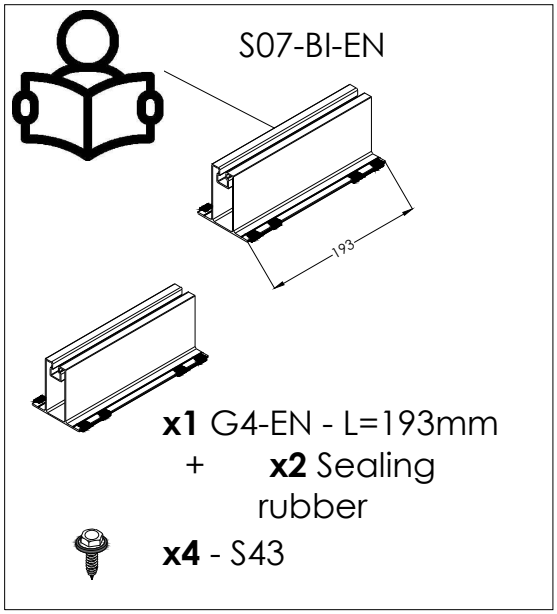

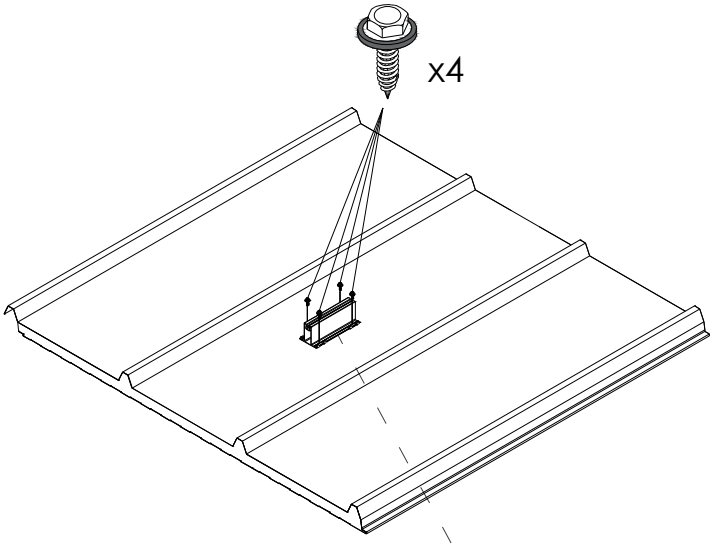

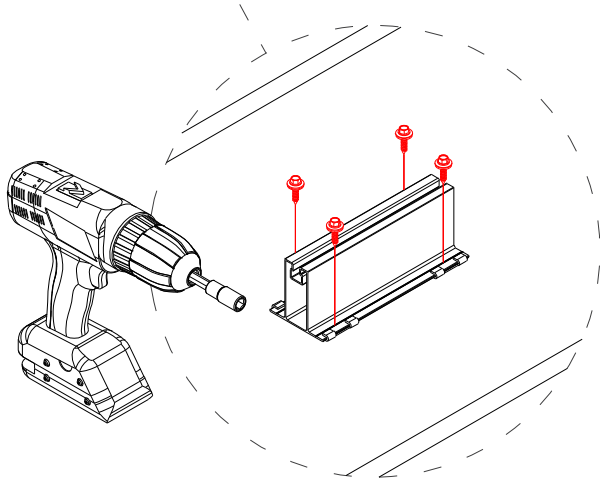

Max. 1800 rpm

*It must withstand the reactions of the anchor point.

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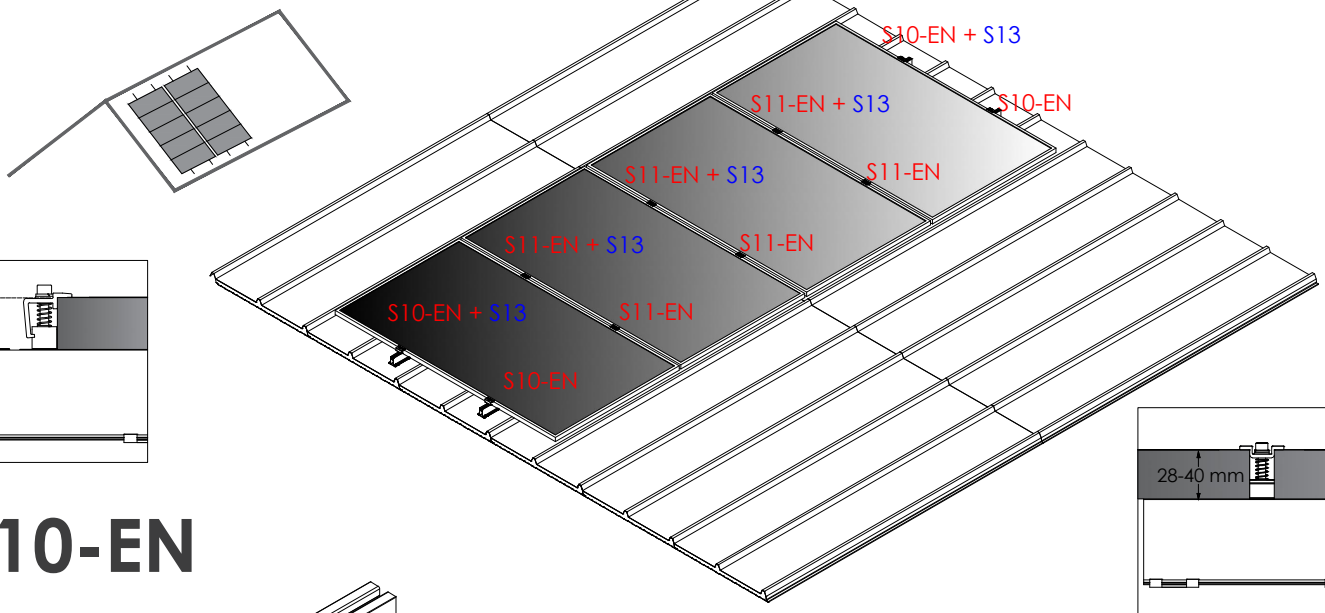
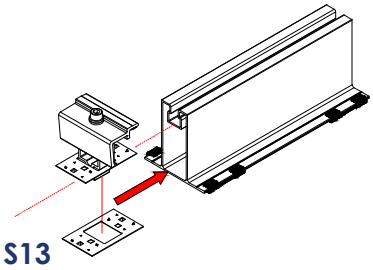
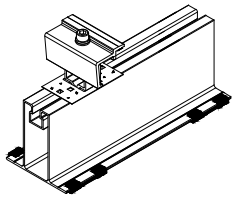
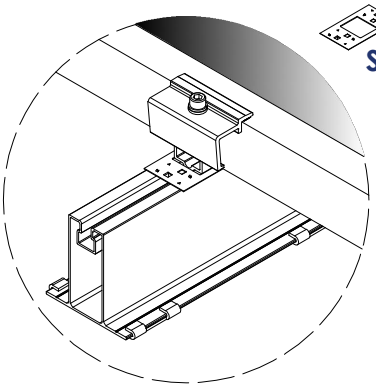
Module assembly



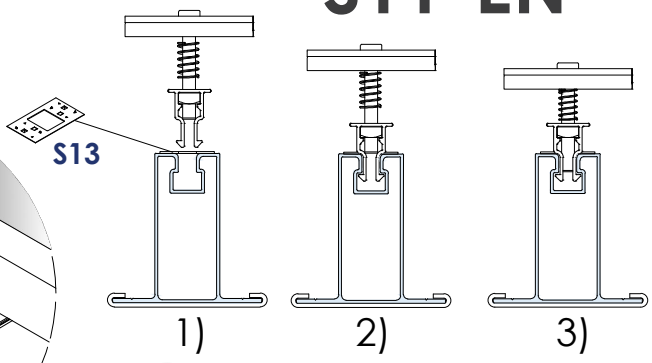
S10-EN



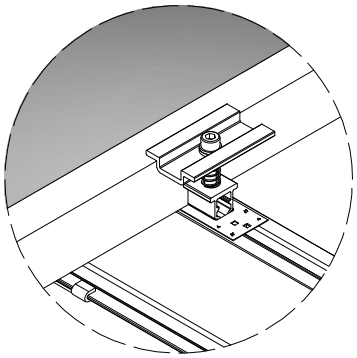


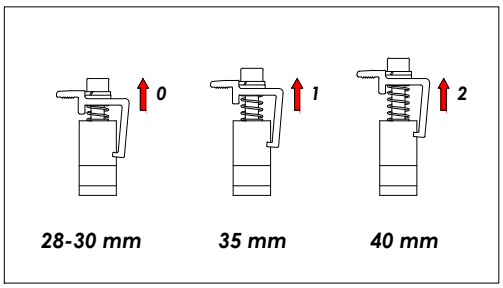


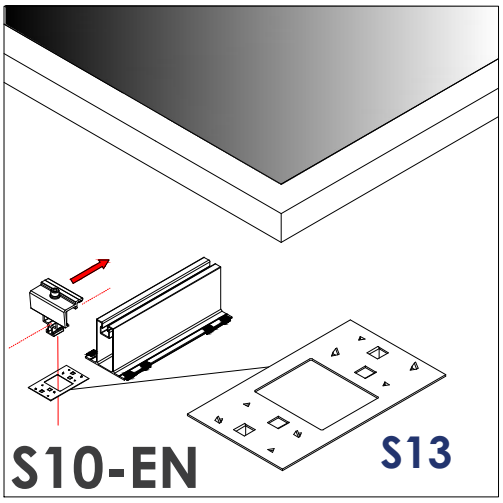
S11-EN

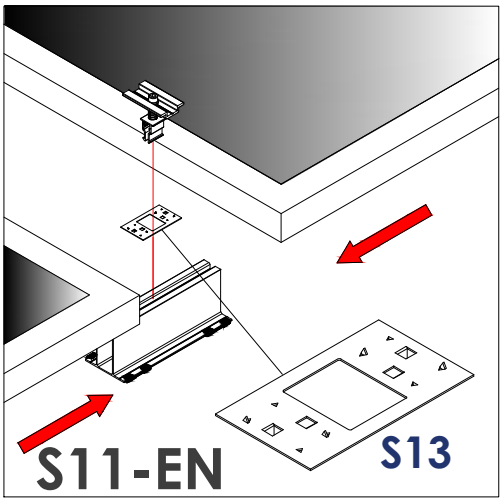


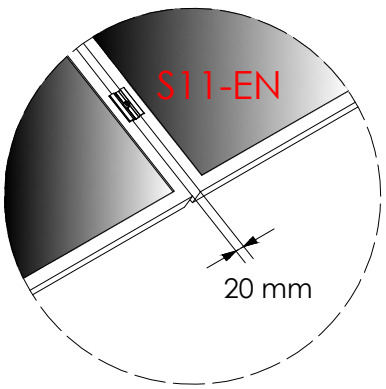
7 Nm











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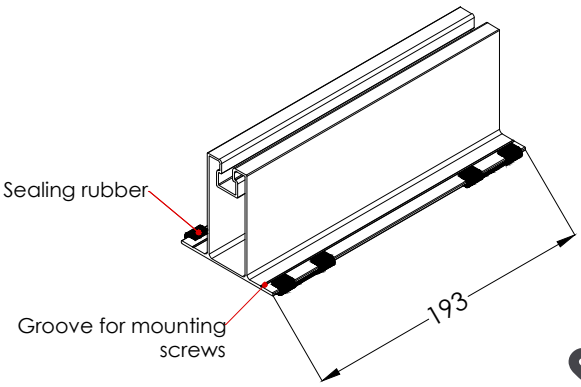
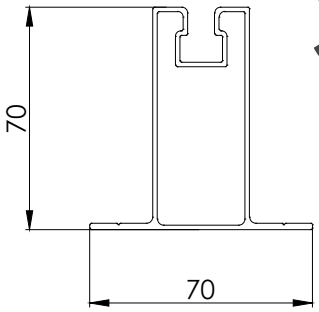
S07-BI-EN

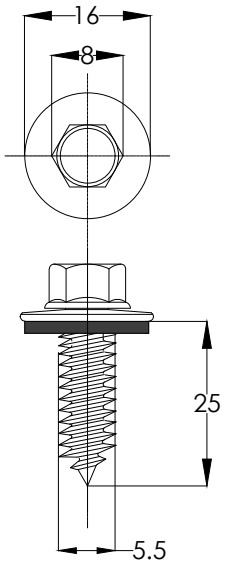
Technical information anchoring





S43

Characteristics
Hex head, bimetal screw.
A2 Stainless Steel with cemented steel tip.
Stainless/EPDM pre-mounted sealing washer.
Excellent adherence properties.



Technical Specifications:
Screw Length: 25 mm.
Screw Diameter: 5,5 mm.
SW8 Hex Head Size.
Max Rotational Install Velocity: 1800 rpm.

MAXIMUM SHEAR LOADS ($V_{R,k}$) AND PULLOUT LOADS ($N_{R,k}$) IN 1.5 mm ALUMINUM PROFILE + METALLIC SHEET OF A THICKNESS OF 'e'							
e (mm)	0.50	0.60	0.70	0.80	0.90	1.00	1.5
$V_{R,k}$ (kN)	0.79	0.91	1.03	1.15	1.35	1.54	2.44
$N_{R,k}$ (kN)	0.46	0.60	0.75	0.89	1.04	1.18	2.12

Description	Microrail coplanar support
Layout of the modules	Landscape
Format	KIT from 1 to 8 modules
Surface of application	Sheet metal
Anchoring surface	Trough
Type of fixing	Screwed (Screw S43)
Fixing	S07-BI-EN
Perfil	G4-EN
Maximum module size	2400x1350 mm
Module thickness	from 28 to 40 mm
Materiales	Screws: A2-70 stainless steel with case-hardened steel tip Rail: Raw or anodised aluminium EN AW 6005A T6 Sealing rubber
Maximum loads	Depending on configuration
Structural calculations	EUROCODE 9 "ALUMINIUM STRUCTURES PROJECT" computational model tested by EUROCode 9

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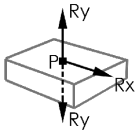
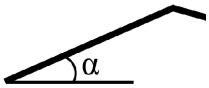
07H-BI-EN

Charges and reactions



Maximum admissible loads and reactions:



Inclinaiton 5°

Inclinaiton 10°

Inclinaiton 15°

Inclinaiton 20°

Inclinaiton 25°

Inclinaiton 30°

Inclinaiton 35°

Inclinaiton 40°

SUNFER

07H-BI-IT

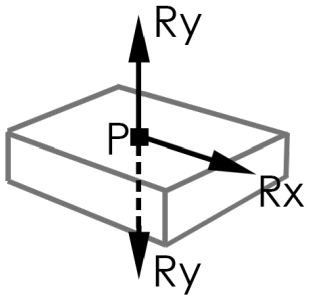
Charges and reactions

Maximum admissible loads and Reactions					5°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.08	0.01	0.94
	130	265	0.07	0.01	0.77
	150	265	0.07	0.02	0.78
	180	265	0.07	0.05	0.79

Table 1 - *Maximum admissible loads and reactions.*

Maximum admissible loads and Reactions					10°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.16	0.01	0.92
	130	265	0.13	0.01	0.75
	150	265	0.13	0.03	0.76
	180	265	0.13	0.06	0.77

Table 2 - *Maximum admissible loads and reactions.*



- P: Fixation
- Rx: Shear to be withstood by the anchorage
- Ry: Tension to be supported by the anchor and compression to be supported by the roof

Reactions obtained for the usual assembly kit distributions.
For other layouts, snow loads should be limited to 85% of the table value.

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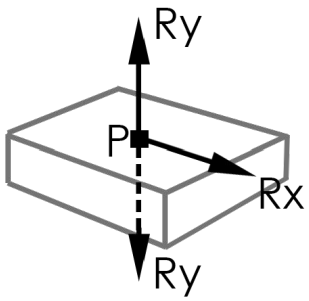
Charges and reactions

Maximum admissible loads and Reactions					15°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.23	0.01	0.90
	130	265	0.19	0.02	0.74
	150	265	0.19	0.05	0.76
	180	265	0.19	0.08	0.78

Table 3 - *Maximum admissible loads and reactions.*

Maximum admissible loads and Reactions					20°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.30	0.01	0.85
	130	265	0.24	0.03	0.71
	150	265	0.24	0.05	0.72
	180	265	0.24	0.08	0.74

Table 4 - *Maximum admissible loads and reactions.*



- P: Fixation
- Rx: Shear to be withstood by the anchorage
- Ry: Tension to be supported by the anchor and compression to be supported by the roof

Reactions obtained for the usual assembly kit distributions.
For other layouts, snow loads should be limited to 85% of the table value.

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07H-BI-IT

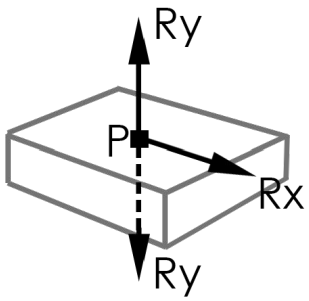
Charges and reactions

Maximum admissible loads and Reactions					25°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.36	0.01	0.79
	130	265	0.29	0.03	0.66
	150	265	0.29	0.05	0.67
	180	265	0.29	0.09	0.70

Table 5 - *Maximum admissible loads and reactions.*

Maximum admissible loads and Reactions					30°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.40	0.01	0.75
	130	265	0.33	0.00	0.63
	150	265	0.33	0.01	0.65
	180	265	0.33	0.03	0.69

Table 6 - *Maximum admissible loads and reactions.*



- P: Fixation
- Rx: Shear to be withstood by the anchorage
- Ry: Tension to be supported by the anchor and compression to be supported by the roof

Reactions obtained for the usual assembly kit distributions.
For other layouts, snow loads should be limited to 85% of the table value.

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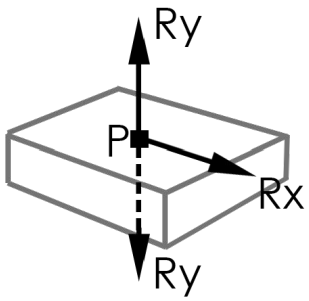
Charges and reactions

Maximum admissible loads and Reactions					35°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.37	0.01	0.58
	130	265	0.30	0.00	0.50
	150	265	0.30	0.01	0.52
	180	265	0.30	0.03	0.56

Table 7 - *Maximum admissible loads and reactions.*

Maximum admissible loads and Reactions					40°
N°	Charges (Km/h)	Charges (Kg/m2)	(kN/fixing)	(kN/fixing)	(kN/fixing)
1-8	110	265	0.32	0.01	0.42
	130	265	0.26	0.00	0.37
	150	265	0.26	0.02	0.39
	180	265	0.26	0.04	0.43

Table 8 - *Maximum admissible loads and reactions.*



- P: Fixation
- Rx: Shear to be withstood by the anchorage
- Ry: Tension to be supported by the anchor and compression to be supported by the roof

Reactions obtained for the usual assembly kit distributions.
For other layouts, snow loads should be limited to 85% of the table value.

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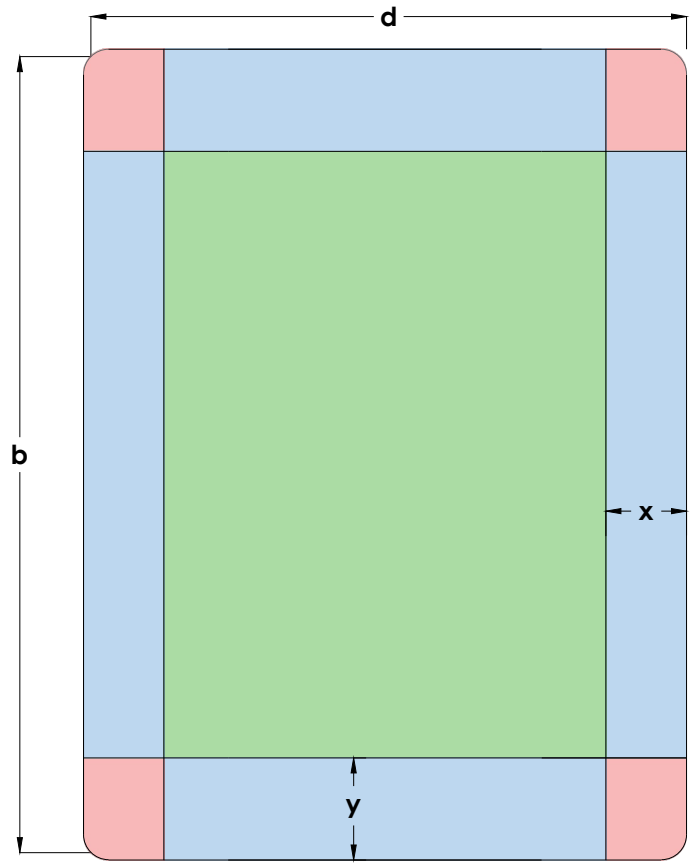
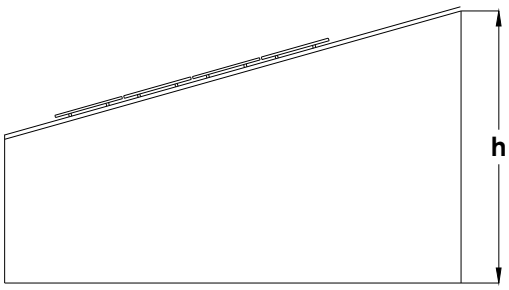
Installation area



e= Min [b,2h]

x = Max [e/10 , 0.5m]
y = Max [e/4 , 0.5m]



Safe installation area

Zone with turbulence

Zone with extreme turbulence

To avoid turbulence and other harmful effects, PV panels should be installed within the green zone. Photovoltaic panels should not be installed in turbulent areas.

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Assembly video

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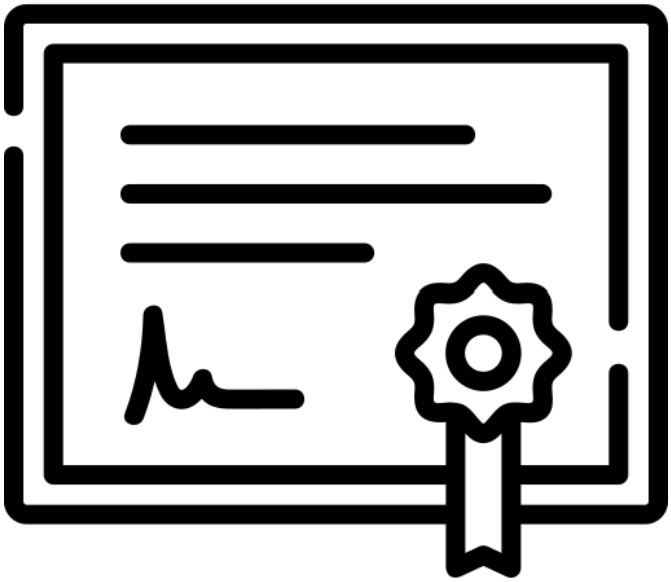
Certificates and guarantees



- ISO 9001 Certificate
- ISO 14001 Certificate
- CE Marking
- Warranties

This is a translation of the certificate ES13/13899

The management system of

SUNFER ESTRUCTURAS, S.L.U.

Camí de la Dula, s/n, 46687 Albalat de la Ribera, Valencia

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities
Design, manufacture and sale of solar energy structures.

This certificate is valid from 19 May 2023 until 8 April 2025 and remains valid subject to satisfactory surveillance audits.

Issue 6. Certified with SGS since 8 April 2013

Last certificate expiry date 8 April 2022
Recertification audit date 31 March 2022

Authorised by

SGS International Certification Services Iberica, S.A.U.
C/Trespaderne, 29. 28042 Madrid. España
t +34 91 313 8115 - www.sgs.com

This is a translation of the certificate ES22/211172

The management system of

SUNFER ESTRUCTURAS, S.L.U.

Camí de la Dula, s/n, 46687 Albalat de la Ribera, Valencia

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities
Design, manufacture and sale of solar energy structures.

This certificate is valid from 19 May 2023 until 22 April 2025 and remains valid subject to satisfactory surveillance audits.

Issue 2. Certified with SGS since 22 April 2022

Authorised by

SGS International Certification Services Iberica, S.A.U.
C/Trespaderne, 29. 28042 Madrid. España
t +34 91 313 8115 - www.sgs.com

SUNFER

CE

IDENTIFICATION NUMBER OF NOTIFIED ORGANISM:

1181

NUMBER AND REGISTERED ADDRESS OF MANUFACTURERS. INSTALLATION LOCATION:

Business name: *SUNFER ESTRUCTURAS, S.L.U.*

Address: *Camí de la Dula s/n*

Postal Code: *46687*

Location: *Albalat de la Ribera*

City: *Valencia*

Country: *España*

TWO LAST DIGITS OF THE YEAR THAT THE MARKING WAS FIXED:

19

ES19/86524

EN 1090-1

Description of product: ***07H-BI-EN***

TOLERANCES IN GEOMETRIC INFORMATION:	*EN 1090-3*
WELDABILITY:	*--*
FRACTURE RESISTANCE:	*--*
FIRE REACTION:	*Classified material A1*
CADMIUM EMISSION:	*N/A*
RADIACTIVITY EMISSION:	*N/A*
DURABILITY:	*N/A*

STRUCTURAL CHARACTERISTICS:

- **Carrying capacity:** *See product instructions and data sheet*
- **Fatigue resistance:** *N/A*
- **Fire resistance:** *N/A*
- **Manufacturing:** *According to the component specification and EN1090-3. Execution class EXC1*

DECLARATION OF PERFORMANCE NUMBER:	P-0020

1. PRODUCT DESCRIPTION.

UNIQUE IDENTIFICATION CODE OF THE PRODUCT TYPE:	07H-BI-EN

2. NAME AND ADDRESS OF MANUFACTURER.

NAME:	SUNFER ESTRUCTURAS, S.L.U.
COMERCIAL NAME (if exists):	--
ADDRESS:	CAMI DE LA DULA S/N
CITY AND PC:	46687 ALBALAT DE LA RIBERA -- COMUNIDAD VALENCIANA (SPAIN)

3. INTENDED USE(S) OF THE PRODUCT:
ALUMINUM STRUCTURE TO SUPPORT PHOTOVOLTAIC PANELS.

4. SYSTEM OF EVALUATION AND VERIFICATION OF CONSTANCY OF PERFORMANCE:
System 2+

5. HARMONIZED STANDARD:
This product complies with the provisions of Annex ZA of the European standard **UNE-EN 1090-1:2011 + A1:2012**

6. NOTIFIED ORGANISM:

NAME:	**SGS ICS IBÉRICA. S.A.**
Notified Organism Number:	**NB1181**

7. DECLARED PERFORMANCES:

Essential Characteristics	Performances	Harmonised technical specifications
Tolerances in geometric information	Conforms to limits for essential tolerances□	EN 1090-3
Weldability	Not applicable because there is no welding in the structure	----
Fracture Tenacity	Not required for aluminum components	-----
Carrying Capacity	N/A	
Fatigue Resistance	N/A	
Fire Resistance	N/A	
Fire reaction	Class A1	EN 13501-1
Emission of cadmium and its compounds	OK	
Emission of radioactivity	OK	
Durability	N/A	
Structural features - Carrying capacity - Fatigue resistance: N/A - Fire resistance: N/A - Manufacturing	See product data sheet N/A N/A According to the component specification. Execution class EXC1	UNE EN 1999-1-1 UNE EN 1090-3

- The performance of the product identified above is in accordance with all the declared performance.
- This declaration of performance is issued in accordance with Regulation (EU) No. 305/2011 under the responsibility of the manufacturer identified above.

Manufacturer's Name: Voro Gómez Nacher
Date of issue: 02/08/2023
Signature:

Guarantee Terms and Conditions

Structural and Anticorrosion Guarantee

All SUNFER mounting systems are manufactured under strict production control in our factory, as are our raw materials, which are periodically tested to ensure quality. It is for these reasons we are able to offer the following guarantee for our products:

25 year Structural Gurantee

Anticorrosion Guarantee per the below table

Materials	NON-HARSH environment (1) Distance to coastline greater than 5 Km	HARSH or MARINE environment Distance to coastline less than 5 Km
Raw Aluminum	Fifteen (15) years	Five (5) years
Anodized Aluminum	Twenty-five (25) years	Twenty-five (25) years

Table 1.

(1) Non-exhaustive list of zones considered to be harsh environments:

a. Industrial zones with emissions that include: sulphur dioxide, nitrogen oxides, sulphuric acid, sulphuric compounds, chlorine, or other volatile gases; 5 km safety distance.
b. Electric generating stations that use the following fuels: coal, natural gas, petroleum; 5 km safety distance.
c. Petrochemical plants; 5 km safety distance.
d. Cellulose factories; 5 km safety distance
e. Wastewater treatment facilities: 500 m safety distance.

In these zones it is always necessary to utilize anodized aluminum if inside of the minimum safety radius indicated above.

The warranty of the adhesive in reference 07.1H and S07.1 is ten (10) years. The warranty of the 2-sided adhesive tape of the S07.1 anchor covers the product supplied by Sunfer and can be applied provided that the breakage is caused by the tearing off of the profile with respect to the adhesive tape, in the event that the breakage is caused by the tearing off of the adhesive tape from the roofing, it will be considered a faulty assembly on site.

Mixed galvanised steel and raw aluminium supports such as, for example: Elevated, Monopoles, Car parks:
Environments C3 fifteen (15) years guarantee.
Environments C4-C5 five (5) years.

Mixed galvanised steel and anodised aluminium supports, such as: Elevated, Monopoles, Car parks:
Environments C3 guarantee twenty-five (25) years.
Environments C4-C5 fifteen (15) years.

This guarantee applies to orders supplied from 3rd January, 2023 on. Orders delivered before this date shall be governed by the guarantee that was in force at the time that the order was supplied.

The guarantee covers the final installation, and applies directly to the end user of the structure. Guarantees are managed between SUNFER and commercial distributors, so if an end user needs to invoke a guarantee, they must contact the distributor that supplied the material, and the distributor will coordinate with SUNFER Customer Service. The period of coverage of the guarantee begins upon the date that the delivery of the material is received by the end user, but will be repealed if the client does not comply with the payment terms stated in the invoice.

To invoke the guarantee, the following documentation must be produced:

- Sales invoice.
- Date system was put in service.
- Information of end user (name, address, distributor, etc).
- General photographs showing the entire system as installed.
- Installer's final work plans/drawings.
- Detailed photos of:
  - Fastening of the system to the roof, which shows the distance between mounting points.
  - The structure mounted without panels attached.
  - A rear view of the structure (from roof ridge if coplanar).

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- Plan/drawing of the affected area which shows distances between mounting points.

Coverage and Exclusions

Coverage

This guarantee covers the replacement and shipping of the defective components or of the entire system if necessary, with no charge. In the case of a replacement not being available, a suitably similar replacement will be provided.

The guarantee is limited to replacement of defective products. The following costs, indirectly associated with the return process, will not be compensated: disassembly or any consequential, supplementary, or related damages, including lost profits or other indirect costs.

The guarantee covers all metallic elements included in a SUNFER structure.

Exclusions

Any issues or defects caused by or related to the following shall be excluded from the guarantee:

- Inadequate installations which did not follow the installation instructions provided by SUNFER.
- Incorrect fastener tightening torques (overtight or undertight).
- Modifications or installations other than those recommended by SUNFER.
- Installation of additional homemade or third-party elements to the structures supplied by SUNFER.
- Inadequate handling of products during the installation.
- Damage to the product after delivery, or from improper storage of the product.
- Any defect which is purely aesthetic in nature and which does not affect the structural safety of the product.
- Installations in areas whose wind and snow loads exceed those indicated in the datasheets of the product.
- Structures installed outside of the safe zone indicated in the installation manual.
- Inadequate maintenance. See the Maintenance Manual.
- Fires or exposure to temperatures above 110 °C.
- Problems or defects caused by corrosive agents not initially considered (1).
- Natural disasters such as earthquakes, hurricanes, floods, tornados, cyclones, mudslides, avalanches, or volcanic eruptions.

For structures not provided with a method of fastening to a surface, SUNFER denies responsiblity in the event of collapse or failure due to insufficient fastening or poor installation.

Guarantor, Execution of guarantee

The guarantor is SUNFER ESTRUCTURAS S.L.U. located at Camino de la Dula s/n 46687, Albalat de la Ribera, Valencia, Spain.

The entitlements afforded by this guarantee are non-transferable to third parties.

Regarding the guarantee and any disputes related to it, the law currently in force in Spain shall apply.