

SOLAR



Mounting systems for Solar PV

Flat roof mounting guide



MOUNTING WORKSHEET

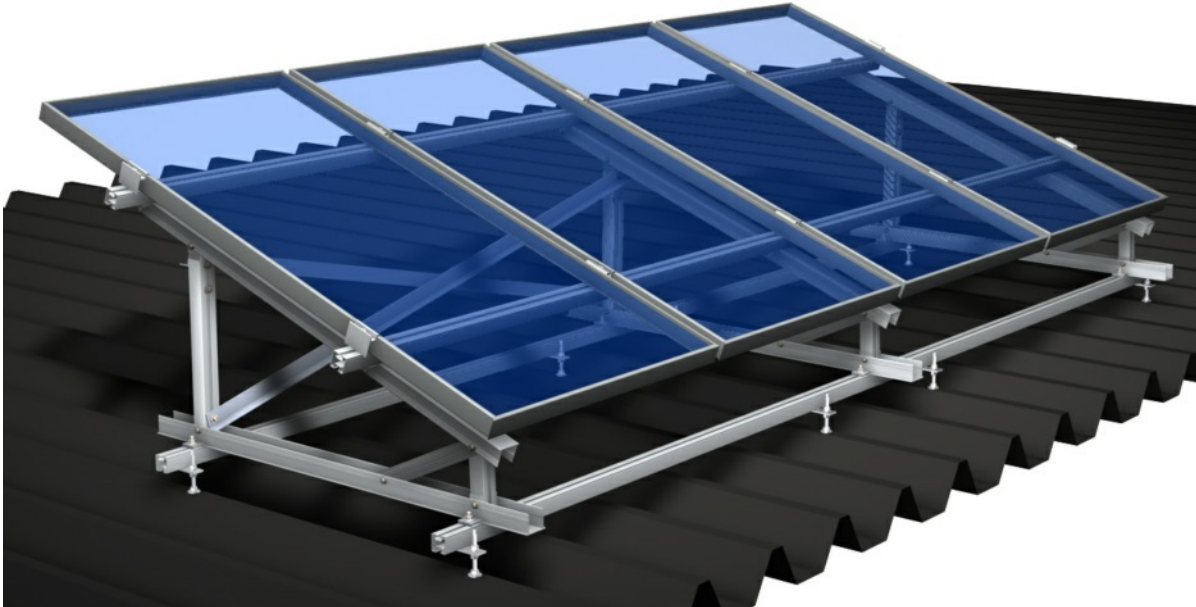
STEELGEAR.CO.UK
UNIT 9 THESIGER CLOSE
WORTHING
BN11 2RN

www.steelgear.co.uk
info@steelgear.co.uk

FLAT ROOF MOUNTING INSTRUCTIONS

GENERAL INFORMATION

Example flat roof mount on a corrugated/trapezoidal roof



Example flat roof mount using ballast (no roof penetration)



FLAT ROOF MOUNTING INSTRUCTIONS

POSSIBILITIES FOR ATTACHING SYSTEMS TO A ROOF – PLANNING NOTES

1

PICTURE 1: SOST-FR-ADJ-AL

Hinged, variably adjustable from 20° to 40°. Delivered as completely assembled ex warehouse. All you need to do is unfold it and screw it in. You will require eight (8) SOST-FR-PL-AL mounting plates per elevated mounting. (Supplied in the kit)

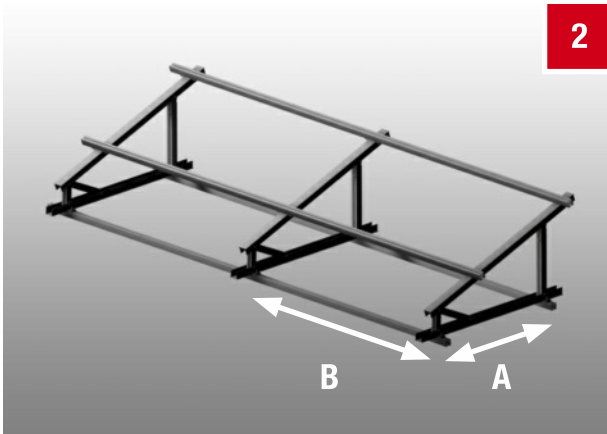


2

PICTURE 2: Spatial intervals

A: The spatial interval between the anchorage points on the sub-construction elevated mountings : optimally 900 mm

B: The spatial interval between the elevated mountings is determined via static calculations.



FLAT ROOF MOUNTING INSTRUCTIONS

POSSIBILITIES FOR ATTACHING SYSTEMS TO A ROOF – PLANNING NOTES

HANGAR BOLT OPTION



PICTURE 1: Hanger bolts

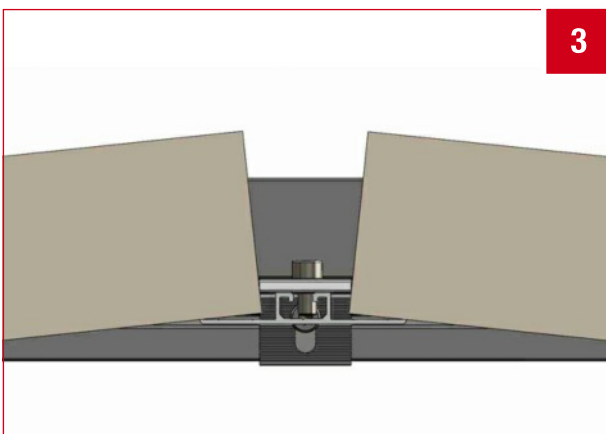
You can use hanger bolts for coverings with corrugated sheets or trapezoidal sheet metal. This is possible for roofs with a pitch up to 20°.

BALLAST OPTION



PICTURE 2:

If the anchorage points do not match each other optimally, the elevated mountings must be mounted to system units (sub-construction/railing system). This mounting step is described in the following pages.

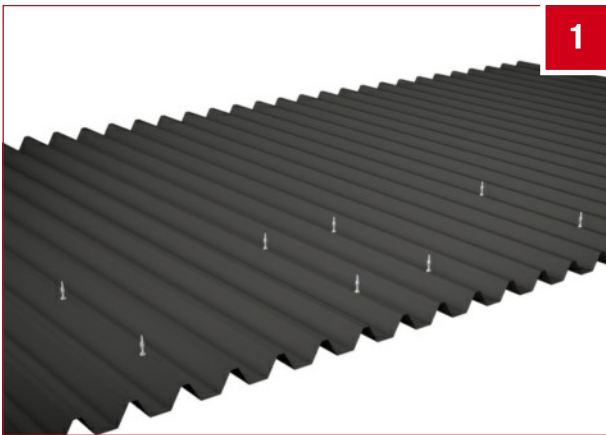


PICTURE 2, 3: Without roof penetration

If a roof penetration is not possible, the elevated mountings can be attached on or with the aid of weighting. The bearing loads for the roof construction must be inspected in advance, as are the static weight requirement values.

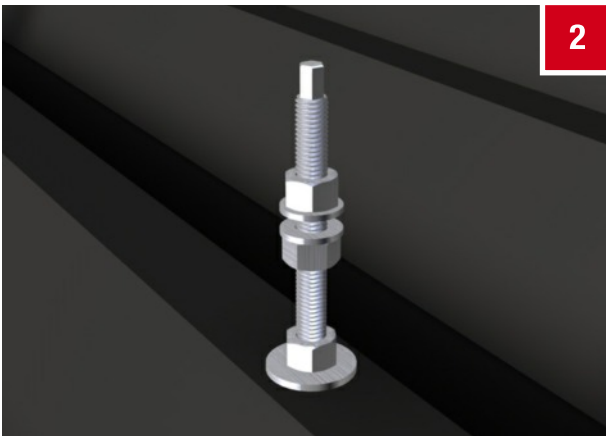
FLAT ROOF MOUNTING INSTRUCTIONS

MOUNTING STEP: FLAT ROOF FRAMEWORK FOR TRAPEZOIDAL SHEET METAL ROOF



PICTURE 1, 2: The hanger bolts are initially attached to the roof. The spatial intervals to each other are provided in the project-related mounting draft drawings.

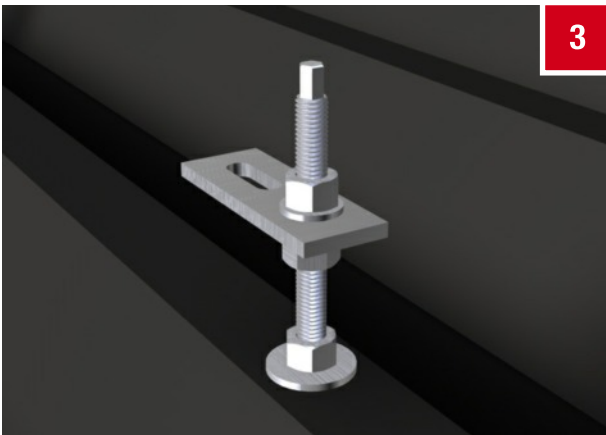
You select the corresponding hanger bolts based on the respective sub-construction (for example, wood or steel).



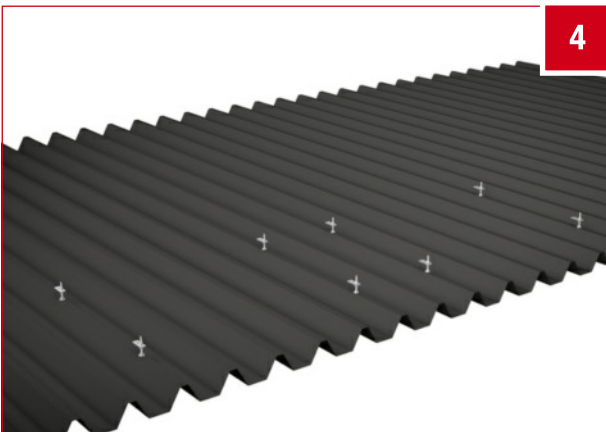
We offer the following possibilities:

For wooden sub-constructions:

- See Part SO180-10X200

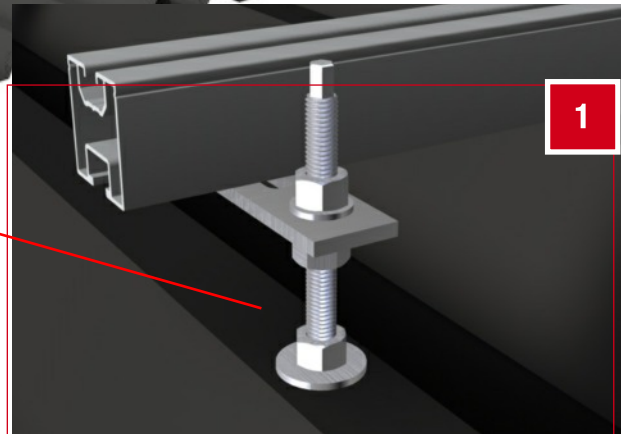
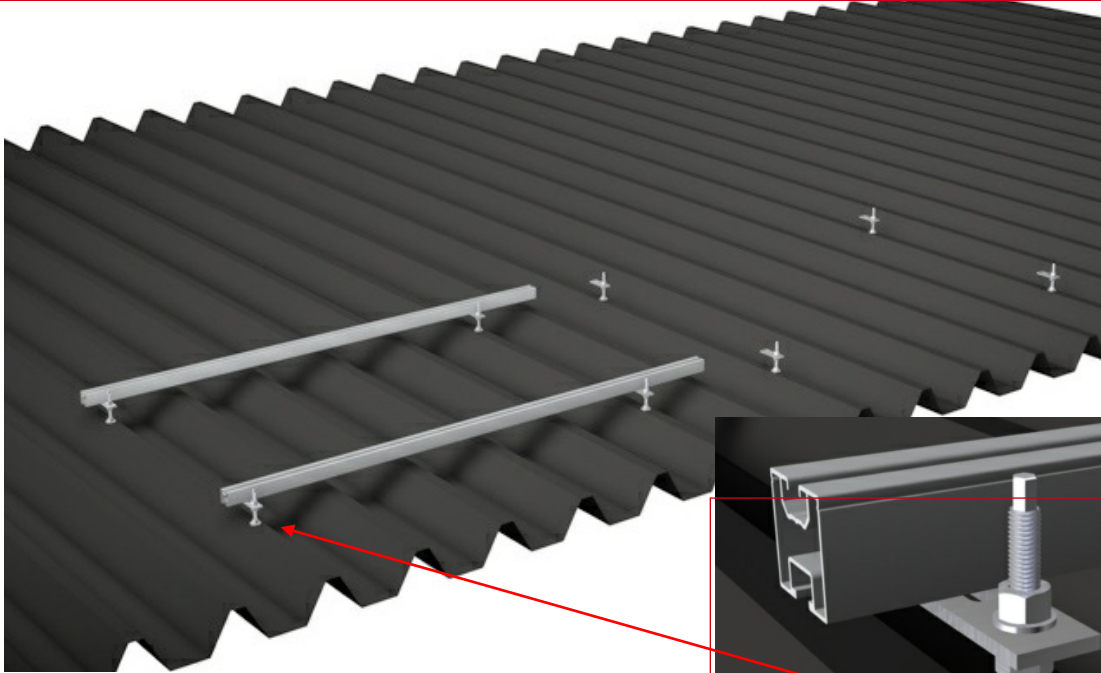


PICTURE 3, 4: Afterwards, you attach the delivered adapter plate to the hanger bolts (tightening torques: for M10 > 30-40 Nm, for M12 > 50-60 Nm).



FLAT ROOF MOUNTING INSTRUCTIONS

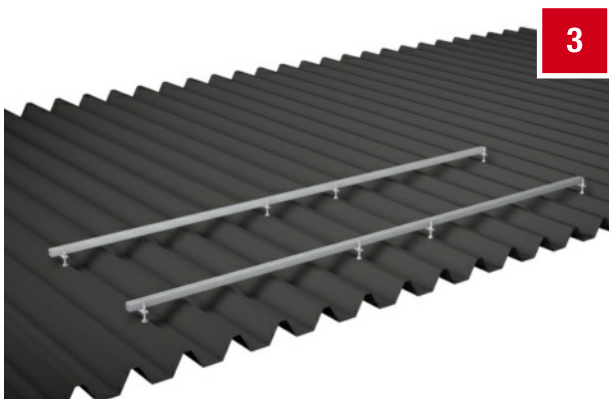
MOUNTING STEP: FLAT ROOF FRAMEWORK FOR TRAPEZOIDAL SHEET METAL ROOF



Once the hangar bolts are in place **2**
attach the rails using M10
hammerhead bolts and flange washer



Part no. SOBHH-M10-A2, SON6923-10-A2



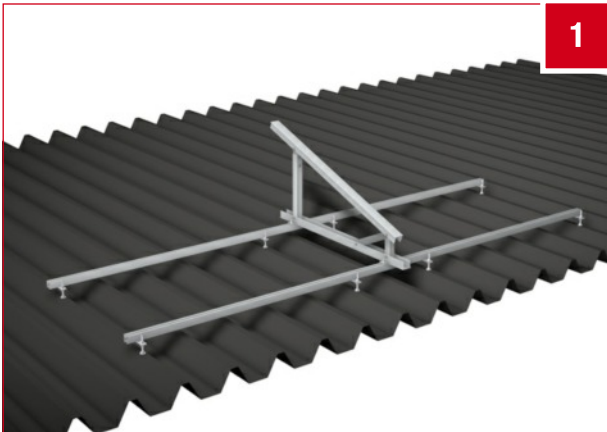
Use rail connectors to join additional rails

Part no. SOSTRC40



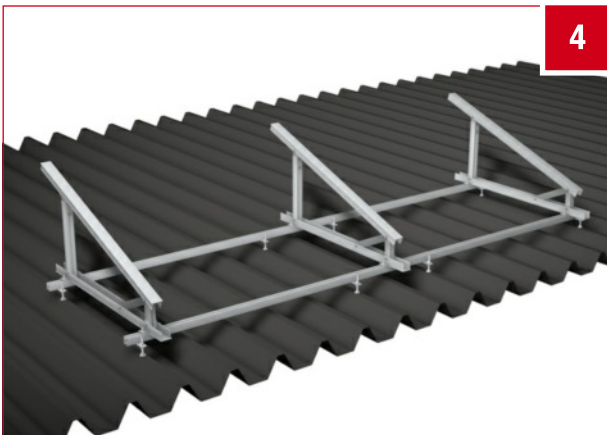
FLAT ROOF MOUNTING INSTRUCTIONS

MOUNTING STEP: FLAT ROOF FRAMEWORKS FOR TRAPEZOIDAL SHEET METAL ROOFS

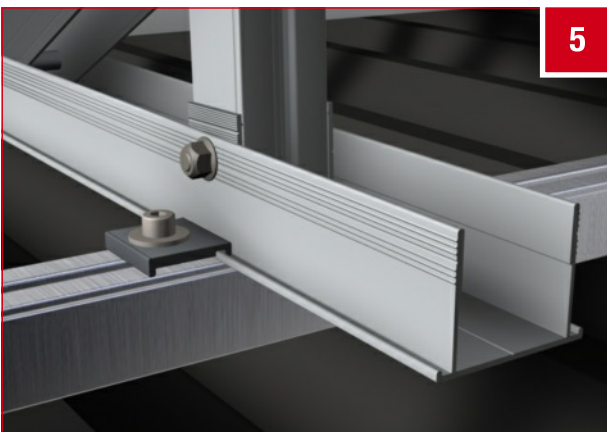


PICTURE 1 – 4: LOWER attachment

The elevated mountings must now be attached to the system units. Begin by placing a DIN 933 A2 M8*25 mm carriage bolt in the upper section of the system unit such that the thread(s) stick out.



You then loosely lay the mounting Plates - part no. SOST-FR-PL-AL on the threaded necks and pull them tight with a M8 serrated flange nut part no. SON6923-8-A2 (tightening torque 14-16 Nm).



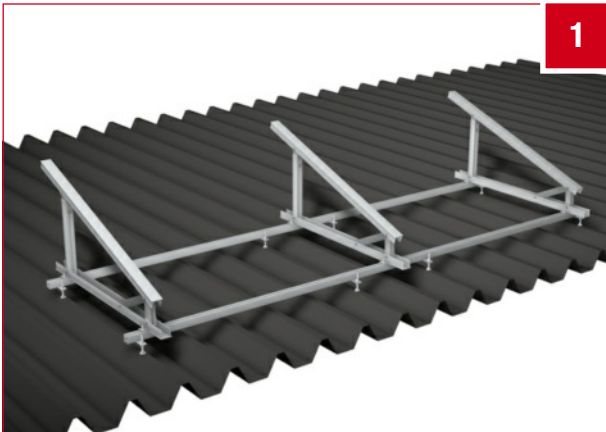
PICTURE 5: Or alternatively:

Swivel and click the t-nut into the upper rails. Then attach the SOST-FR-PL-AL mounting plates to the elevated mountings and to the rails via a DIN 912-2-8x16 cylinder head screw.



FLAT ROOF MOUNTING INSTRUCTIONS

MOUNTING STEP: FLAT ROOF FRAMEWORKS FOR TRAPEZOIDAL SHEET METAL ROOFS



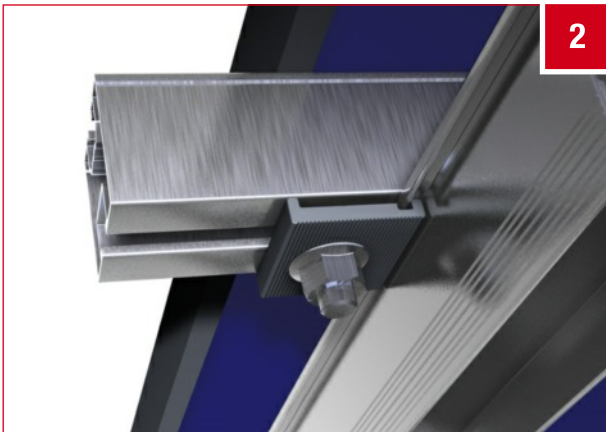
PICTURE 1 – 4: UPPER attachment

You now attach the system units for the module to the triangle.

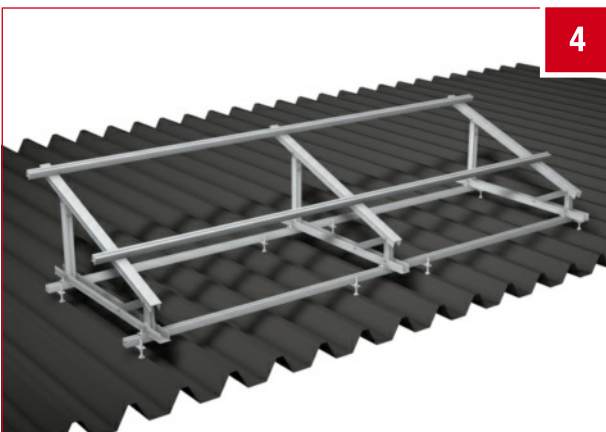
You do this by pushing DIN 933 A2 M10*25 mm

hexagon bolt - SO933-M10x25-A2 or Hammerhead bolt SOBHH-M10-A2 - into the lower section of the Rail such that the threads stick out.

Then you loosely lay the SOST-FR-PL-AL mounting Plate on the threaded bolt and pull it tight with an A2 M10 Flange nut - SON6923-10-A2 (tightening torque 14-16Nm).

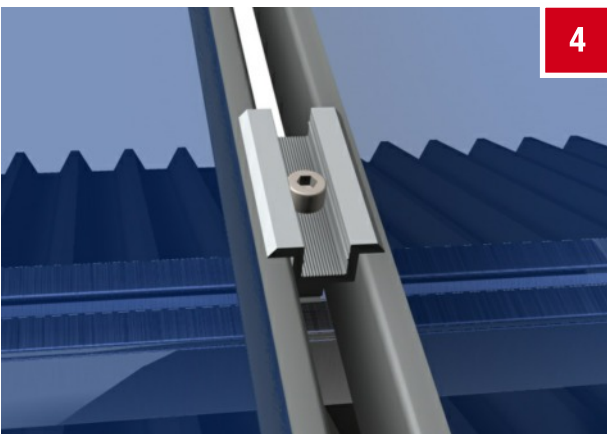
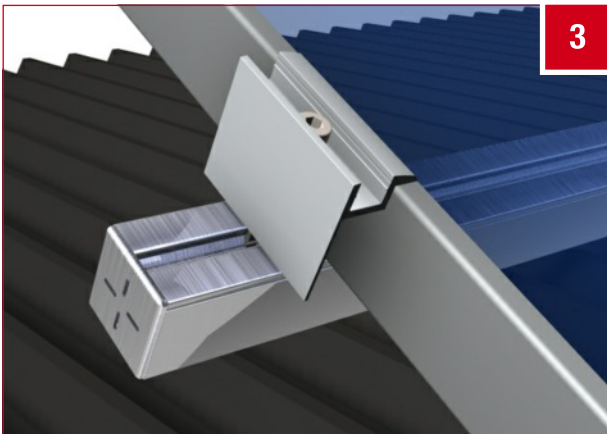
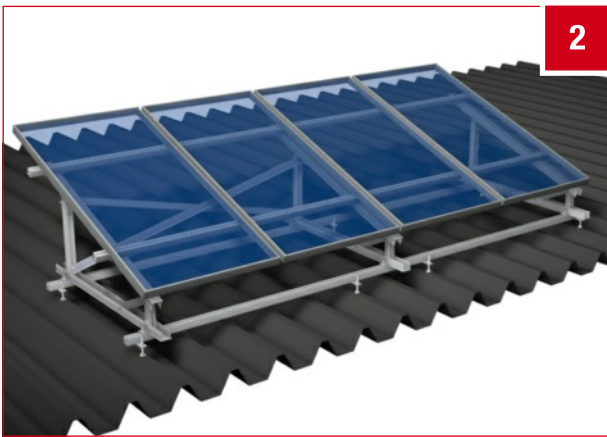
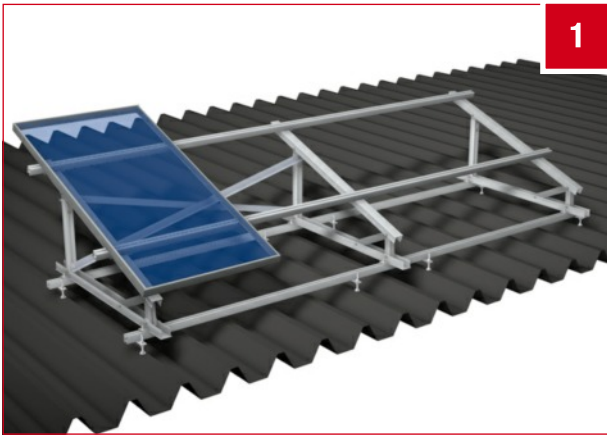


The interval between the module rails for framed modules that are to be mounted upright should be approximately 1/2 of the module height. In this case, always observe the module manufacturer instructions!



FLAT ROOF MOUNTING INSTRUCTIONS

MOUNTING STEP: FLAT ROOF FRAMEWORKS FOR TRAPEZOIDAL SHEET METAL ROOFS

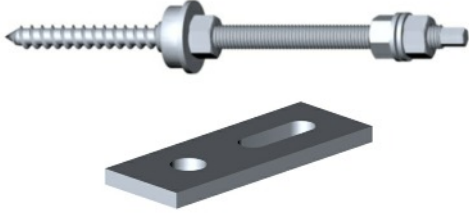


PICTURE 1, 2: Once all of the module units have been mounted to the brackets, you attach the cross-bracings. You can make use of common L-sections (40*40*3) for this. You must mount them to every closed row once and at least every 12m. You can screw these sections directly onto the rear brackets with drilling screws or attach them with normal standard screws.

PICTURE 3 & 4 : Attach the module clamps, to the rails and screw it tight (tightening torque up to a maximum of 18 Nm depending on the module manufacturer). You can add a cover to the rails for personal or appearance reasons.

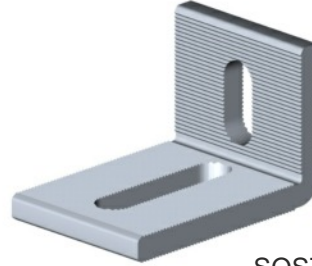
FLAT ROOF MOUNTING INSTRUCTIONS

Hanger bolt and Adapter plate



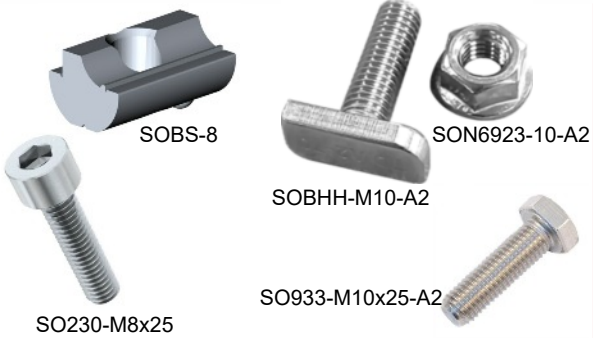
SO180-10X200-PL

Mounting bracket



SOSTAB1-AL

Fasteners



SOBS-8

SON6923-10-A2

SOBHH-M10-A2

SO933-M10x25-A2

SO230-M8x25

Rail connector



SOSTRC40

Adjustable mounting rack



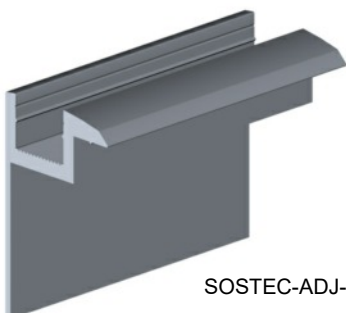
SOST-FR-ADJ-AL

Bracket to rail mounting plate



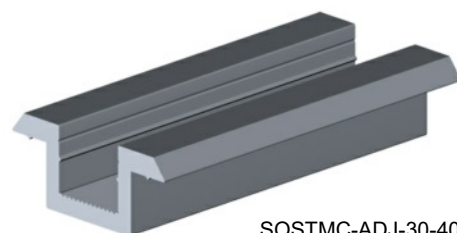
SOST-FR-PL-AL

End clamp



SOSTEC-ADJ-30-40-BL

Middle clamp



SOSTMC-ADJ-30-40-BL