

Lightning current carrying capacity

The PV flat roof systems MSP-FR-EW, MSP-FR-G and MSP-FR-S can be used as part of a lightning current carrying down conductor within a lightning protection system in accordance with the requirements of DIN EN 62305-3. Provided the following supplementary installation conditions are met, these mounting systems fulfil test class H with 100 kA in accordance with DIN EN 62561-1 (see test report no. 1863_FRM, DEHN Test Centre).

When using the MSP-FR-G system on a green roof, please note that the lightning rod and the system earthing must be mounted on the adapter support at the lower level. Otherwise, the lightning current carrying capacity is reduced to 50 kA, as the transition between the supports is less conductive in this case. Further details can be found in Table 1.

Table1 Lightning current carrying capacity of the MSP-FR systems

System	Test class	Test after artificial ageing passed	Remarks
MSP-FR-EW (east-west)	H with 100 kA according to DIN EN 62561-1	✓	
MSP-FR-S (south)	H with 100 kA in accordance with DIN EN 62561-1	✓	Additional connection channels to wind deflector required
MSP-FR-G (green roof)	H with 100 kA in accordance with DIN EN 62561-1	✓	Lightning arrester and down conductor must be attached to the adapter support
MSP-FR-G (green roof)	N with 50 kA in accordance with DIN EN 62561-12	✓	If the lightning rod of the support is mounted high instead of the adapter support

Installation conditions

To ensure the lightning current carrying capacity, all connection channels must be fastened with special screws:

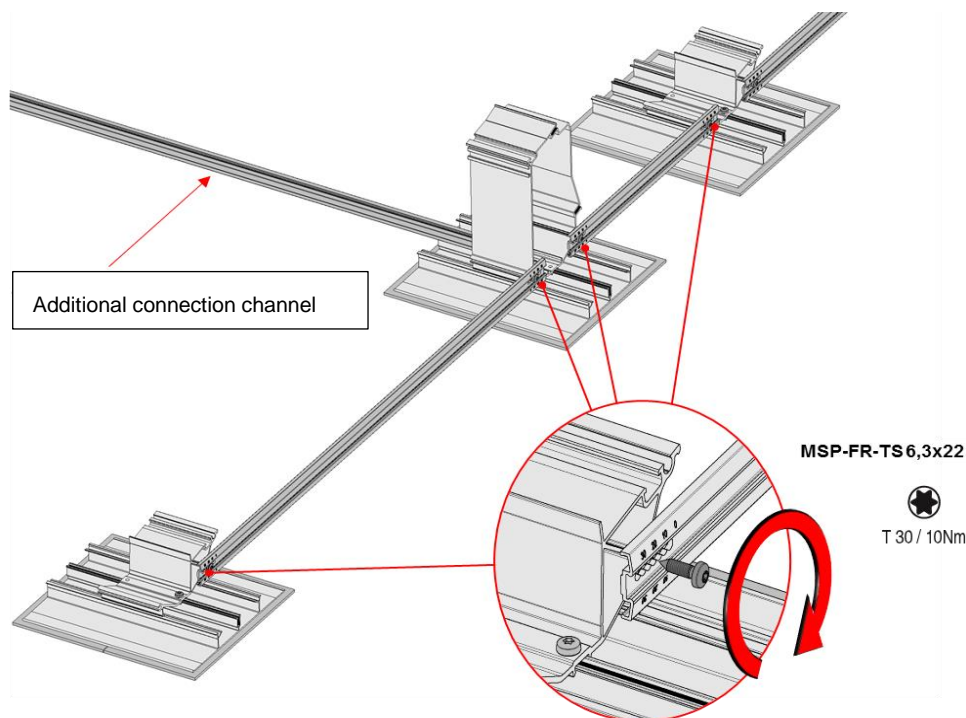
- Article number 21348, MSP-FR-TS 6.3x22 lightning current carrying capacity
- Tightening torque 10 Nm.
- Rebate clamps with enlarged connection surface (Dehn Se, item no. S07 911, torque 25 Nm, or equivalent product)
- Extension for MSP-FR-S:
With the MSP-FR-S mounting system, connection channels must also be fitted between the supports (parallel to the wind deflector).

See list of components in the appendix.

Solar systems from Schweizer

Leaflet PV mounting system MSP-FR

Lightning current carrying capacity for flat roof systems



Connection of air-termination rods and arresters

Interception tips and deflectors are not part of the Ernst Schweizer AG product range. They can be attached directly to the supports by a specialised company or according to the specifications of a lightning protection planner.

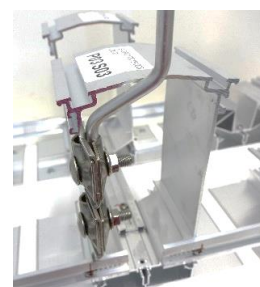
Table2 : Correct installation of arresters and down conductors



Correct installation of the down conductor on the support
MSP-FR-EW-SL8/SL10



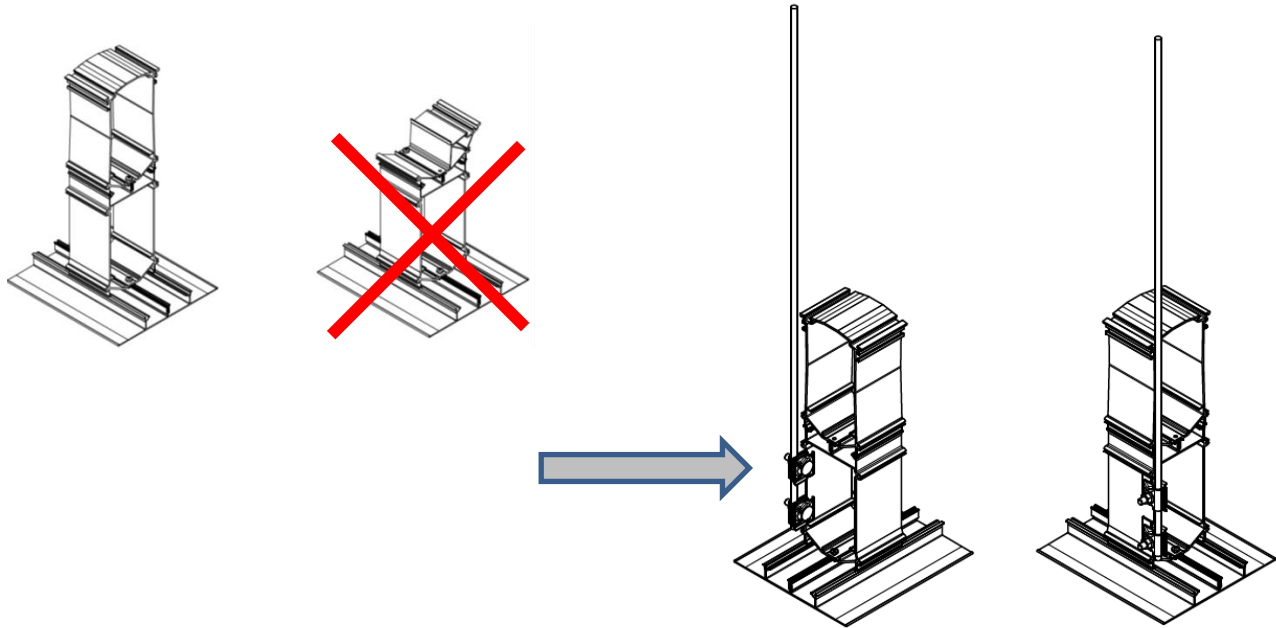
Correct installation of the arrester on the adapter support
MSP-FR-G-AS



Correct installation of the arrester tip on the support
MSP-FR-EW-SH

Note on green roof

The arrester tips on the MSP-FR-G (green roof variant) must be mounted on the adapter support of the **support** - see drawing. Arresters may be mounted on any adapter support. See table 2.



Lightning rods:

Number and spatial position on the PV system in accordance with the on-site lightning protection concept.

Our tests were carried out on the basis of an air-termination rod with a diameter of 10 mm.

These rods have a nominal length of 1 m, resulting in a distance from the support to the tip of approx. 500 to 600 mm.

The height ultimately depends on the design of the lightning protection system.

If a longer rod is used, it should be ensured that the installation is mechanically stable enough for the loads prevailing on site.

The selected diameter, length and wind load play a role here.

These details must be clarified individually with the lightning protection expert/officer.

Solar systems from Schweizer



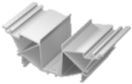
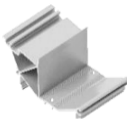




Leaflet PV mounting system MSP-FR

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Appendix

List of components to be used

1		MSP-FR-EW-SH	Support
2		MSP-FR-G-AS	Adapter support
3		MSP-FR-EW-SL8/SL10	Support
		MSP-FR-S-SL8/SL10	Support
4		MSP-FR-TS	Screw 6.3x22 (lightning current carrying capacity)
5		MSP-FR-EW-C	Connection channel
6		On-site	Rebate clamp for connection to the MSP-FR system
7		On-site	Lightning rod