

PV mounting system for pitched roofs MSP-PR



The **MSP-PR PV mounting system** is designed for attaching to pitched roofs. A range of aluminium roof hooks with a sophisticated click-in fastening, supplemented by classic stainless steel roof hooks and also hanger bolts are available for attaching to roof structures. Supporting rails are fastened either in single-layers or cross-connected grid-systems using preassembled clamps. Connectors can be used to extend rails in large arrays. There are 2 types of module clamps for all common PV modules with frame heights between 28 mm and 45 mm.

Benefits

- Fast mounting thanks to clever click-in system.
- User-friendly: Parts pre-assembled means no screws or other small parts.
- Components don't rotate out of place.
- Rails can be trod on which helps speed up installation.
- Saves costs: Only as many roof hooks as actually required per site.
- High quality and components balanced and all matched to the system for maximum safety.

PV mounting system for pitched roofs MSP-PR Inlay



In addition to the MSP-PR product range an **insertion rail system** is available for mounting PV modules without clamping. Modules are inserted into the inlay rails which are the top layer of a grid system and with MSP-PR-CC cross connecting to a lower level of vertically mounted MSP-PR-CH rails. Insertion rails can be extended with rail connectors and the PV modules are secured against shifting with a stopper.

Benefits

- Insertion system for mounting with only minimal loading of the PV modules.
- Compatible with the MSP-PR mounting system.
- Flexible attachment options include aluminium and stainless steel roof hooks and also hanger bolts.
- Module orientation can even be mixed (though not within each row).
- Available in black powder-coated (RAL 9005)

PV mounting system for trapezoidal metal roofs MSP-TT



MSP-TT is for mounting on trapezoidal metal roofs and consists new of no more than 2 components apart from the clamps. Tracks come in 3 pre-cut lengths and it is a simple system suitable for all common types of trapezoidal metal roofs. Tracks are screwed directly to the roof with special sont fixés directement sur le toit à l'aide de vis spéciales pour tôles minces sans perforage. Une bande d'étanchéité EPDM de haute qualité entre le profilé et la tôle trapézoïdale est responsable de l'imperméabilité à l'eau de pluie. Les modules PV sont fixés avec les pinces MSP éprouvés.

Benefits

- Minimal number of components
- Universal clamps – same as in all MSP mounting systems
- Flexibility: Array length unlimited, thermal expansion automatically absorbed
- No special trapezoidal sheet metal fasteners or bridges: Attachment is straight onto the metal beads without the need for custom parts

PV mounting system for flat roofs MSP-FR-EW



MSP-FR-EW is for mounting PV modules on flat roofs facing East-West, though azimuth deviation hardly matters. The amount of ballasting required is uniquely low. Base plates (supports) do not interfere with roof drainage (avoiding water build-up) and are available in various sizes to suit all types of thermal insulation. A special wind-deflector is available (MSP-FR-EW-WD) and can be used in parts of an array where there is not enough space for a full East-West module gable.

Benefits

- No roof penetrations required
- Fast installation: less than 20 minutes per kW and installer
- Highly efficient installation work flow
- No interference with water drainage
- Optimal spread of loading to minimize impact on roofing membrane
- Minimal ballasting required
- Very low area loads, starting at 7 kg/m²
- Excellent mechanical and chemical protection of roofing membrane

PV mounting system for flat roofs MSP-FR-S



MSP-FR-S is for mounting PV modules on **flat roofs facing South**. The amount of ballasting required is very low. Base plates (supports) do not interfere with roof drainage (avoiding water build-up) and are available in various sizes to suit all types of thermal insulation and not to damage roofing membranes. MSP-FR-S for flat roofs South is compatible with MSP-FR-EW for flat roofs East-West and most components are common with both mounting systems.

Benefits

- No roof penetrations required
- Fast installation: less than 20 minutes per kW and installer
- Highly efficient installation work flow
- No interference with water drainage
- Optimal spread of loading to minimize impact on roofing membrane
- Minimal ballasting required
- Very low area loads, starting at 7 kg/m²
- Excellent mechanical and chemical protection of roofing membrane

PV mounting system for flat roofs MSP-FR-G

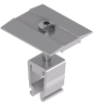
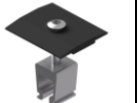
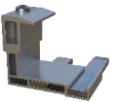


MSP-FR-G was specially designed for green roofs and is characterised by its low intrinsic weight as well as by the highest standard of material quality and durability. The system can be flexibly used on green roofs that have 'grown'. It is installed without roof pénétration dans le toit et permet un maximum de flexibilité dans l'orientation et la disposition.

Benefits

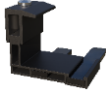
- Easy assembly due to modular design
- System mounting possible without modules
- No penetration of the roof cladding
- Simple and fast handling due to small number of components
- Easy retrofitting on existing green roofs
- Installed directly on rooted green roof substrates without any preparatory work
- Efficient solution based on the proven PV mounting system MSP

Clamps

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
End clamp MSP-PR-EC 28-45mm		22331	✓	12	1'800		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
End clamp MSP-PR-ECG 28-45mm grounding 1)	N	23107	✓	12	1'800		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
End clamp MSP-PR-ECB 28-45mm black RAL 9005		22623	✓	12	2'160		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
End clamp MSP-PR-ECBG 28-45mm black RAL 9005 grounding 1)	N	23108	✓	12	2'160		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MC 28-45mm		22624	✓	24	3'600		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MCG 28-45mm grounding 1)	E	22626	✓	24	3'600		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MCG 28-45mm grounding 1)	N	23109	✓	24	3'600		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MCB 28-45mm black RAL 9005		22625	✓	24	2'880		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MCBG 28-45mm black RAL 9005 grounding 1)	E	22627	✓	24	2'880		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Middle clamp MSP-PR-MCBG 28-45mm black RAL 9005 grounding 1)	N	23110	✓	24	2'880		Aluminium EN AW-6063 T66	✓		✓	✓	✓	✓
Complementary clamp low MSP-FR-LC 28-40mm		22700	✓	12	2'112		Aluminium EN AW-6063 T66				✓	✓	✓
Complementary clamp high MSP-FR-HC 28-40mm		22629	✓	12	3'000		Aluminium EN AW-6063 T66				✓	✓	✓

E/N: Items marked with "E" are expiring and are only available for a limited time. Items marked with "N" are new and available during the month shown. ¹⁾ equipotential tested by VDE. ²⁾ available on request

Clamps

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Complementary clamp low MSP-FR-LCB 28-40mm black RAL 9005		22717	✓	12	2'112		Aluminium EN AW-6063 T66				✓	✓	✓
Complementary clamp high MSP-FR-HCB 28-40mm black RAL9005		22719	✓	12	3'000		Aluminium EN AW-6063 T66				✓	✓	✓
Grounding clamps set MSP-PR-GCA		21965		10	-		Stainless steel V2A	✓	✓				
Grounding clamps set MSP-PR-GCC		22963		10	-		Stainless steel V2A	✓	✓				
Sheet-metal seam clamp MSP BFK CC-HB		3470376		20	1'280		Various	✓	✓				
Wing clamp MSP-CC-HB		424754		100	4'800		Various	✓	✓				
Sheet-metal seam clamp MSP-PR-SC 70		23062	✓	24	6'048		Various	✓	✓				
Stainless steel saddle MSP-PR-SCC 40		23064	✓	24	1'280		Stainless steel V2A	✓	✓				

Roof hooks

Roof hook MSP-PR-RHM incl. base plate 39mm / 45mm	N	23065	✓	18	360		Aluminium EN AW-6063 T66	✓	✓				
Roof hook MSP-PR-RHF		2048538	✓	12	756		Aluminium EN AW-6063 T66	✓	✓				
Roof hook MSP-PR-RHA		2048539	✓	12	504		Aluminium EN AW-6063 T66	✓	✓				
Roof hook MSP-PR-RHC		2048610	✓	12	360		Aluminium EN AW-6063 T66	✓	✓				

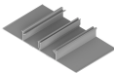
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Roof hooks, Base plates, Spacer plate

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Roof hook MSP-RHL		2065899	✓	12	756		Aluminium EN AW-6063 T66	✓	✓				
Roof hook MSP-RHC 45/5		435495	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC 55/5		435496	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC 41/8		435499	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC 55/8		435500	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC-AA 35-45/8		435502	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC-B 30/5		435504		10	400		Stainless steel V2A	✓	✓				
Base plate MSP-PR-BP 39mm		2048535	✓	24	2'592		Aluminium EN AW-6063 T66	✓	✓				
Base plate MSP-PR-BP 45mm		2048536	✓	24	2'304		Aluminium EN AW-6063 T66	✓	✓				
Spacer plate MSP-PR-SP 10mm		2048537	✓	25	2'400		PA6.6 GF30	✓	✓				

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Base profiles

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Base profile MSP-FR-EW-BP 150		2072555	✓	10	720		Aluminium EN AW-6063 T66				✓	✓	
Base profile MSP-FR-EW-BP 300		2072556	✓	10	360		Aluminium EN AW-6063 T66				✓	✓	✓
Base profile MSP-FR-EW-BP 450		2072557	✓	10	240		Aluminium EN AW-6063 T66				✓	✓	✓
Base profile MSP-FR-EW-BP 600		2072558	✓	10	300		Aluminium EN AW-6063 T66				✓	✓	✓
Base profile MSP-FR-EW-BP 900		2072559	✓	10	150		Aluminium EN AW-6063 T66				✓	✓	✓
Base profil MSP-FR-EW-BP 1200		2072560	✓	10	150		Aluminium EN AW-6063 T66				✓	✓	✓

Protective layers

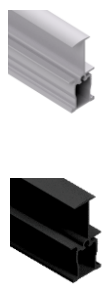
Protective layer MSP-FR-PSF 150		21034	✓	60	3'600		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF 300		21035	✓	30	1'800		Fleece				✓	✓	✓

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Protective layers

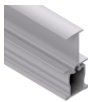
Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Protective layer MSP-FR-PSF 450		21979	✓	60	2'400		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF 600		21980	✓	60	1'200		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF 900		21981	✓	30	1'200		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF 1200		21982	✓	30	600		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF		2072561	✓	1	36		Fleece				✓	✓	✓

Insertion channels

Insertion channel MSP-PR-IC 30 3.55m		23025	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 30 3.55m black RAL 9005		23026	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 30 6.3m black RAL 9005		22903	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			

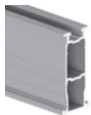
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Insertion channels

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Insertion channel MSP-PR-IC 35 3.55m		23029	✓	1	100	 	Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 35 3.55m black RAL 9005		23034	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 35 6.3m black RAL 9005		21024	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-IC 40 3.55m		23035	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 40 3.55m black RAL 9005		23039	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 40 6.3m black RAL 9005		21021	✓	1	100		Aluminium EN AW-6063 T66		✓	✓			
Insertion channel MSP-PR-ICB 43 6.3m black RAL 9005		21559		1	100		Aluminium EN AW-6063 T66		✓	✓			

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Support profiles

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Support profile MSP-PR-CH 38 3.55m		23024	✓	1	168		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 38 4.8m		21997	✓	1	168		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 38 6.3m		2050015	✓	1	168		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 38 6.3m black Ral 9005		2050015A		1	168		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 50 3.55m		23084	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 50 4.8m		23085	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 50 6.3m		23086	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 70 3.55m		23088	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 70 4.8m		23090	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			
Support profile MSP-PR-CH 70 6.3m		23102	✓	1	100		Aluminium EN AW-6063 T66	✓	✓	✓			

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Sleeve

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Sleeve MSP-PR-SL		2048619	✓	8	2'520		Aluminium EN AW-6063 T66	✓	✓				

End cap

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
End cap MSP-PR-CAP		2065895	✓	20	10'000		Polypropylen	✓	✓				

Connection channels

Connection channel MSP-FR-EW-C 300-360		2072368	✓	12	6'480		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 470-530		20679	✓	12	3'024		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 500 (TL566)		23589	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 600 (TL666)		23590	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 950-1010		2072369	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1011-1075		21464	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1076-1140		21872	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1141-1205		21873	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1230-1290	E	19945	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓

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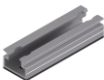
Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Connection channel MSP-FR-EW-C 1206-1270		22250	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1271-1335		22277	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1495-1559	E	19616	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1555-1619		21999	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1620-1684		2072551	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1685-1749		21465	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1750-1814		21794	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1815-1879		21856	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1880-1944		21857	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 1945-2009		2072552	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓

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Connection channels

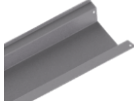
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								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Connection channel MSP-FR-EW-C 2010-2074		21810	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 2075-2139		21793	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 2140-2204		22083	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 2205-2269		22084	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 2270-2334		22085	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C 2335-2399		22086	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓

Trapezoidal rails

Trapezoidal rail MSP-TT-CHV 100 assembled		21874	✓	216	8'640		Aluminium EN AW-6063 T66			✓			
Trapezoidal rail MSP-TT-CHVH 100 assembled	N	23506	✓	40	720		Aluminium EN AW-6063 T66			✓			
Trapezoidal rail MSP-TT-CHA 270 assembled		21859	✓	60	2'160		Aluminium EN AW-6063 T66			✓			
Trapezoidal rail MSP-TT-CHA 370 assembled		21560	✓	60	2'160		Aluminium EN AW-6063 T66			✓			
Trapezoidal rail MSP-TT-CHAH 370 assembled	N	23504	✓	156	2'808		Aluminium EN AW-6063 T66			✓			

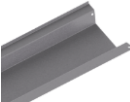
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Wind deflectors / Ballast tray

Wind deflector MSP-FR-EW-WD 1620-1684 for EW support		20771	ü	5	60		Aluminium EN-AW-5005 H14				✓		
Wind deflector MSP-FR-EW-WD 1685-1749 for EW support		21836		5	60		Aluminium EN-AW-5005 H14				✓		
Wind deflector MSP-FR-EW-WD 1750-1814 for EW support		21854		5	60		Aluminium EN-AW-5005 H14				✓		
Wind deflector adapter MSP-FR-EW-WDA	N	23157	✓	12	2'016		Aluminium EN AW-6063 T66				✓	✓	✓
Wind deflector / Ballast tray MSP-FR-S-WD 1620-1684		20680	✓	6	540		Galvanized sheet steel ZM				✓	✓	✓
Wind deflector / Ballast tray MSP-FR-S-WD 1685-1749		21562	✓	6	540		Galvanized sheet steel ZM				✓	✓	✓
Wind deflector / Ballast tray MSP-FR-S-WD 1750-1814		21811	✓	6	540		Galvanized sheet steel ZM				✓	✓	✓

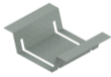
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Wind deflectors

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Wind deflector MSP-FR-S-WD 1815-1879		22987	✓	6	540		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 1880-1944		22988	✓	6	540		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 1945-2009		22989	✓	6	540		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2010-2074		22990	✓	6	450		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2075-2139		22991	✓	6	450		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2140-2204		22992	✓	6	450		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2205-2269		22993	✓	6	450		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2270-2334		22994	✓	6	450		Galvanized sheet steel ZM					✓	
Wind deflector MSP-FR-S-WD 2335-2399		22995	✓	6	450		Galvanized sheet steel ZM					✓	

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Ballast tray holders

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Ballast tray holder MSP-FR-S-SB	E	20682	✓	24	1'152		Galvanized sheet steel SVZ				✓	✓	✓
Ballast tray holder MSP-FR-BT 1620-1749		22969	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓
Ballast tray holder MSP-FR-BT 1750-1879		22968	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓
Ballast tray holder MSP-FR-BT 1880-2009		22967	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓
Ballast tray holder MSP-FR-BT 2010-2139		22966	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓
Ballast tray holder MSP-FR-BT 2140-2269		22965	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓
Ballast tray holder MSP-FR-BT 2270-2399		22964	✓	8	600		Galvanized sheet steel ZM				✓	✓	✓

Ballast tray clamp

Ballast tray clamp MSP-FR-BC		22970	✓	60	9'000		Spring stainless steel V4A				✓	✓	✓
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Ballast carrier start plate

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Ballast carrier start plate MSP-FR-EW-BS		22972	✓	10	1'600		Galvanized sheet steel ZM				✓	✓	✓

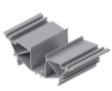
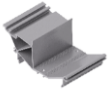
Ballast securing plate

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Ballast securing plate 750	N	23397		20	1'000		Aluminium EN-AW-5005 H14				✓	✓	✓

Gravel trays

Gravel tray MSP-FR-EW-S 1620-1749		21744		25	180		Aluminium EN-AW-5005 H14				✓	✓	✓
Gravel tray MSP-FR-EW-S 1750-1879		21876		25	180		Aluminium EN-AW-5005 H14				✓	✓	✓

Supports

Support MSP-FR-EW-SL8		19927	✓	18	432		Aluminium EN AW-6063 T66				✓		✓
Support MSP-FR-EW-SL10		2072553	✓	18	432		Aluminium EN AW-6063				✓		✓
Support MSP-FR-S-SL8		21877	✓	30	720		Aluminium EN AW-6063					✓	✓
Support MSP-FR-S-SL10		20678	✓	30	720		Aluminium EN AW-6063					✓	✓
Support MSP-FR-EW-SH		2072554	✓	12	216		Aluminium EN AW-6063				✓		✓
Support MSP-FR-S-SH		20677	✓	12	216		Aluminium EN AW-6063					✓	
Adapter support MSP-FR-G-AS Green roof		22891	✓	12	216		Aluminium EN AW-6063						✓

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Wood screws

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Wood screw MSP-PR-HS 8x100	E	424777	✓	100	13'700		Stainless steel V2A	✓	✓				
Wood screw MSP-PR-HS 8x120		424778	✓	100	13'700		Stainless steel V2A	✓	✓				

Hanger bolts

Hanger bolt MSP-PR-HB 10x200		2045294	✓	20	2'880		Stainless steel V2A	✓					
Hanger bolt MSP-PR-HB 12x200		2096330	✓	50	2'400		Stainless steel V2A	✓					
Hanger bolt MSP-PR-HB 12x300		424751	✓	20	1'920		Stainless steel V2A	✓					

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Screws

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Screw MSP-FR-S 6x16		2013705	✓	200	72'000		Coated steel ZnNi		✓		✓	✓	✓
Screw MSP-FR-TS 6.3x22 lightning current capable connection	E	21348	✓	200	90'000		Stainless steel V2A				✓	✓	✓
Screw MSP-FR-TS 6.3x20 R lightning current capable connection		22890		200	90'000		Stainless steel V2A				✓	✓	✓
Screw MSP-FR-GS 6x60	E	2013706	✓	100	25'600		Coated steel ZnNi				✓	✓	✓

Thin sheet metal screw

Thin sheet metal screw MSP-TT-TS 6x25		19944	✓	200	78'000		Coated steel ZnNi			✓			
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Hanger bolt plate

Hanger bolt plate MSP-PR-HBP		2065896	✓	20	3'500		Aluminium EN AW-6063 T66	✓	✓				
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Cross connector

Cross connector MSP-PR-CC		2048622	✓	24	3'600		Aluminium EN-AW 6063 T66 Stainless steel 1.4404	✓	✓	✓			
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Edge stop

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Edge stop MSP-PR-ESB black RAL 9005		21025	✓	20	21'000		Stainless steel V2A		✓				

Insertion stopper

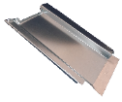
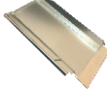
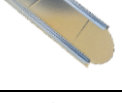
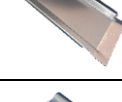
Insertion stopper MSP-PR-IS		21156	✓	12	1'080		Aluminium EN-AW 6060 T66		✓				
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Cable holder

Cable holder with edge-clip MSP-FR-CHE		22628	✓	100	48'000		PA6.6 UV resistant	✓	✓	✓	✓	✓	✓
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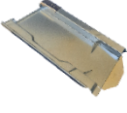
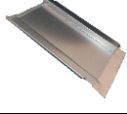
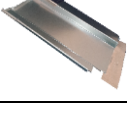
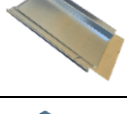
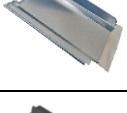
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Project solutions - Special accessories

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Test set coefficient of friction MSP-FR		21998		1	-		Divers				✓	✓	✓
Metal roof panel Grande 323 ²⁾		595619		10	200		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Ton 269 ²⁾		595620		15	300		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Ton 260 ²⁾		595621		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Beton ²⁾		595622		20	300		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Biberschwanz vario ²⁾		595636		30	600		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Typ Ton 250 ²⁾		595639		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Grande 290 ²⁾		595640		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Beton big		595641		16	320		Sheet steel hot-dip galvanized	✓	✓				

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Projektlösungen - Sonderzubehör

Part description	E/N	Article number	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR	PR-Inlay	TT	FR-EW	FR-S	FR-G
Metal roof panel Typ Ton 265		595642		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Typ Ton 240 ²⁾		595643		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Grande 300 ²⁾		595646		15	300		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Typ Ton 240 ²⁾		595660		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Grande 280		595661		15	300		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Typ Ton 251 ²⁾		595670		20	400		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Grande L 360 ²⁾		595671		14	280		Sheet steel hot-dip galvanized	✓	✓				
Metal roof panel Typ Ton 251 anthrazit ²⁾		595672		20	400		Sheet steel hot-dip galvanized	✓	✓				

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Glossary Abbreviations	Glossar Abkürzungen	Glossaire Abréviations
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Example - Beispiel - Exemple : **MSP-PR-EC** ⇒ Mounting **S**ystem **P**hotovoltaic, **P**itched **R**oof, **E**nd **C**lamp

	English	Deutsch	Français	
MSP	Mounting S ystem P hotovoltaic	Montagesystem Photovoltaik	Système de Montage Photovoltaïque	MSP

	Roof types	Dachtypen	Types de toits	
FR-EW	Flat R oof E ast- W est	Flachdach Ost-West	Toit plat est-ouest	FR-EW
FR-S	Flat R oof S outh	Flachdach Süd	Toit plat sud	FR-S
FR-G	Flat R oof G reen	Gründach	Toit végétalisé	FR-G
PR	P itched R oof	Schrägdach	Toit incliné	PR
PR-Inlay	P itched R oof I nlay	Schrägdach Einlegesystem	Toit incliné système d'insertion	PR-Inlay
PR-RA	P itched R oof R apid A ssembly	Schrägdach Schnellmontage	Toit incliné assemblage rapide	PR-RA
TT	T rapezoidal T rack metal roof	Trapezblechdach	Toit en tôle trapézoïdale	TT

	Clamps	Klemmen	Pinces	
EC	E nd C lamp	Endklemme	Pince terminale	EC
ECB	E nd C lamp B lack	Endklemme Schwarz	Pince terminale noire	ECB
MC	M iddle C lamp	Mittelklemme	Pince centrale	MC
MCG	M iddle C lamp C onductive	Mittelklemme leitend	Pince centrale conductive	MCG
MCB	M iddle C lamp B lack	Mittelklemme schwarz	Pince centrale noire	MCB
MCGB	M iddle C lamp C onductive B lack	Mittelklemme leitend schwarz	Pince centrale conductive noire	MCGB
LC	Complementary L ow C lamp	Zusatzklemme tief	Pince complémentaire basse	LC
HC	Complementary H igh C lamp	Zusatzklemme hoch	Pince complémentaire haute	HC
LCB	Complementary L ow C lamp B lack	Zusatzklemme tief schwarz	Pince complémentaire basse noire	LCB
HCB	Complementary H igh C lamp B lack	Zusatzklemme hoch schwarz	Pince complémentaire haute noire	HCB
GCA	G rounding C lamps set	Erdungsklemmen-Set	Jeu de bornes de mise à la terre	GCA
GCC	G rounding C lamps set	Erdungsklemmen-Set	Jeu de bornes de mise à la terre	GCC
SC	Sheet-metal S eam C lamp	Blechfalzklemme	Pince de sertissage de tôle	SC
SCC	S eam C lamp C opper	Edelstahlsattel	Selle en acier inoxydable	SC

	Roof hooks, Base plates, Spacer plate	Dachhaken, Grundplatten, Distanzplatte	Crochets de toit, Plaques de base, Plaque d'écartement	
RHA	R oof H ook A adjustable	Dachhaken einstellbar	Crochets de toit réglables	RHA
RHC	R oof H ook C ross	Dachhaken kreuz	Crochets de toit croix	RHC
RHF	R oof H ook F ix	Dachhaken fix	Crochets de toit fixe	RHF
RHL	R oof H ook L ight	Dachhaken leicht	Crochets de toit léger	RHL
RHM	R oof H ook M ultifunctional	Dachhaken multifunktional	Crochets de toit multifonctionnels	RHM
BP	B ase P lates	Grundplatten	Plaques de base	BP
SP	S pacer P late	Distanzplatte	Plaque d'écartement	SP

	Base profiles	Basisprofile	Profilés de base	
BP	Base P rofile	Basisprofil	Profilé de base	BP
	Protective layers	Schutzlagen	Nappes de protection	
PSF	Protective P layer	Schutzlage	Nappe de protection	PSF
	Insertion channels	Einlegeprofile	Profilés d'insertion	
IC	Insertion C hannel	Einlegeprofil	Profilé d'insertion	IC
ICB	Insertion C hannel B lack	Einlegeprofil schwarz	Profilé d'insertion noir	ICB
	Support channels	Trägerprofile	Profilés support	
CH	Support CH annel	Trägerprofil	Profilé support	CH
	End cap	Abdeckkappe	Capuchon terminal	
CAP	End CAP	Abdeckkappe	Capuchon terminal	CAP
	Connection channels	Verbindungsschienen	Barres de connexion	
C	Connection C hannel	Verbindungsschiene	Barre de connexion	C
	Trapezoidal rails	Trapezschienen	Profilés pour tôle trapézoïdale	
CHA	Trapezoidal rail	Trapezschiene	Rail trapèze	CHA
CHV	Trapezoidal rail (C hannel V ertical)	Trapezschiene	Rail trapèze	CHV
	Sleeves	Schienenverbinder	Raccords de profilés	
SL	SL eeve	Schienenverbinder	Raccords de profilés	SL
	Ballast tray holders	Ballastträger	Supports de lestage	
SB	Ballast tray holder	Ballastträger	Support de lestage	SB
BT	Ballast T ray holder	Ballastträger	Support de lestage	BT
	Wind deflectors / Ballast tray	Windabweiser / Ballastwanne	Défecteurs de vent / Bacs à lestage	
WD	Wind D eflector / Ballast tray	Windabweiser / Ballastwanne	Défecteur de vent / Bacs à lestage	WD
	Ballast tray clamp	Ballastträgerklammer	Crampon bac à lestage	
BC	Ballast tray C lamp	Ballastträgerklammer	Crampon bac à lestage	SL
	Ballast carrier start plate	Ballastträgerstartblech	Tôle initiale de support de lestage	
BS	Ballast carrier S tart plate	Ballastträgerstartblech	Tôle initiale de support de lestage	BS
	Supports	Abstützungen	Supports	
SL	Support L ow	Abstützung tief	Support bas	SL
SH	Support H igh	Abstützung hoch	Support haut	SH

	Adapter support	Adapterstütze	Support adaptateur	
AS	Adapter S upport	Adapterstütze	Support adaptateur	AS
	Wood screws	Holzschrauben	Vis à bois	
HS	Wood screw	Holz schraube	Vis à bois	HS
	Hanger bolts	Stockschrauben	Vis à double filetage	
HB	Hanger B olt	Stockschraube	Vis à double filetage	HB
	Self-tapping screw	Dünnblechschraube	Vis autotaraudeuse	
TS	Thin S heet metal screw	Dünnblechschraube	Vis pour tôle mince	TS
	Hanger bolt plate	Adapterplatte	Plaque d'adaptation	
HBP	Hanger B olt P late	Adapterplatte	Plaque d'adaptation	HBP
	Cross connector	Kreuzverbinder	Raccord en croix	
CC	C ross C onnector	Kreuzverbinder	Raccord en croix	CC
	Edge stop	Endabschluss	Embout	
ESB	Edge S top B lack	Endabschluss	Embout	ESB
	Insertion Stopper	Einlegekeil	Cale d'insertion	
IS	Insertion S topper	Einlegekeil	Cale d'insertion	IS
	Cable holder with edge-clip	Einlegekeil	Attaches de câble avec raccord	
CHE	Cable H older with E dge-clip	Befestigungsbinder	Attaches de câble avec raccord	IS