

The advantages of MSP-FR

- Maximum flexibility thanks to the **flexMount-System** – **compensates uneven roof surfaces and makes it easier to work around obstacles**
- Everything is made to measure and can be assembled with a single tool
- Guaranteed lightning current carrying capacity for all lightning protection classes
- Less ballast thanks to optimised aerodynamics
- Can be combined with fall protection (AluTrax)

MSP-FR green - practical and durable



Green roof photovoltaics can be realised easily and **without roof penetration** using MSP-FR green. The system offers a **broad selection** of installation and **maintenance route options**. This combines high performance with **easy roof maintenance**.

The design is characterised by **minimal ballasting**. As it is built directly onto the substrate, the **trades are clearly separated** and the processes can be planned individually. In addition, MSP-FR green features an **integrated cable management system**. Optimizers can easily be clamped onto the system without the need for drilling or screws.

specific advantages

- Various options for maintenance routes
- With just one adapter, MSP-FR east-west becomes MSP-FR green

MSP-FR east-west - flexible and economical



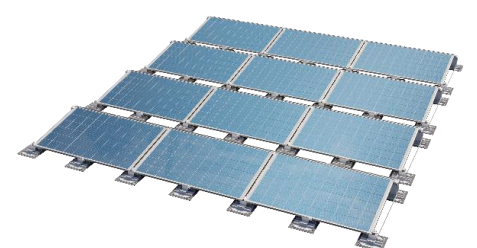
MSP-FR east-west allows for **maximum use of the roof area**. Thanks to its east-west orientation, it delivers high energy yields from the early morning hours until late in the evening. The system is installed **without penetrating the roof** and is suitable for all bitumen, membrane, concrete and gravel roofs.

This design allows for maximum flexibility: **obstacles and uneven surfaces can be easily worked around** and the construction of half-gables is made significantly easier. In addition, the system features **integrated cable management**. Optimizers can be clamped directly onto the system without the need for tools, i.e. without drilling or screws.

specific advantages

- Matched to the long-term compressive strength using various base plates
- Quick and easy planning of half-gables

MSP-FR south - efficient and versatile



Thanks to its south-facing orientation, MSP-FR south ensures an **optimal yield at midday**. The system is the perfect solution for all types of bitumen, membrane, concrete and gravel roofs.

The installation does not require **any roof penetration**, offering maximum flexibility. Even **uneven roofs can easily be levelled out thanks to the flexMount-System**. In addition, the module layout can be **freely configured using the variable row spacing**.

specific advantages

- Matched to the long-term compressive strength using various base plates

MSP-MR metal roof - simple and durable



With MSP-MR metal roof, installing PV modules on trapezoidal sheet metal and other metal roofs is **ingeniously simple**. The system consists of **just a few components** and enables the **flexible use** of various module sizes. MSP-MR metal roof is designed so that so that **no cutting or drilling is required** on site. With three prefabricated profile lengths, it is suitable for all conventional trapezoidal sheet dimensions and can be installed directly on the metal roof.

The prefabricated rails are **available with a sealing strip and a flexible hole pattern**. The range is complemented by a modular clamp with certified equipotential bonding and a 10-cm-high trapezoidal rail for improved rear ventilation.

The advantages of MSP-MR metal roof

- Easy installation with a flexible clamping system
- Suitable for all standard trapezoidal sheet dimensions
- Available in three prefabricated profile lengths
- No moisture ingress thanks to the built-in seals on the trapezoidal rails

MSP-PR on-roof - practical and affordable



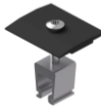
MSP-PR on-roof is a cost-effective installation system for all standard PV modules on pitched roofs. The system is characterised by its **small number of components, which are statically perfectly matched** and largely pre-assembled. Thanks to a **click system**, the individual elements can be quickly positioned and the PV modules securely mounted. All parts consist of high-quality stainless steel or aluminium.

With the MSP-PR **on-roof inlay** variant, the framed PV modules are inserted into a mounting profile and secured in place. This installation method protects the **modules even better against temperature-related stress**. They can be mounted in landscape or portrait orientation.

The advantages of MSP-PR on-roof

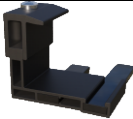
- Easy installation with a click system
- Pre-assembled connectors
- Anti-rotation components prevent incorrect assembly
- Statically matched components
- Also available as a pitched roof inlay system MSP-PR on-roof inlay

Clamps

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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)		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)		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)		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)		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.

Clamps

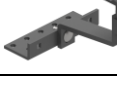
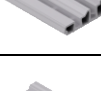
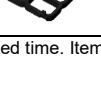
Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Complementary clamp low MSP-FR-LCB 28-40mm black RAL 9005		22717	✓	12	2'112		Aluminium EN AW-6063 T66				✓	✓	✓
Complementary clamp high MSP-FR-HCB 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	E	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		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	✓	✓				

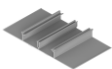
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Roof hooks, Base plates, Spacer plate

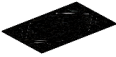
Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Roof hook MSP-RHL		2065899	✓	12	756		Aluminium EN AW-6063 T66	✓	✓				
Roof hook MSP-RHC 45/5		435495	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC 55/5		435496	✓	10	400		Stainless steel V2A	✓	✓				
Roof hook MSP-RHC 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

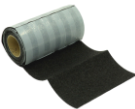
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								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Base profile MSP-FR-EW-BP 150		2072555	✓	10	720		Aluminium EN AW-6063 T66				✓	✓	
Base profile MSP-FR-EW-BP 300		2072556	✓	10	360		Aluminium EN AW-6063 T66				✓	✓	✓
Base 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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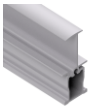
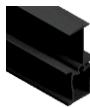
Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Protective layer MSP-FR-PSF 450		21979	✓	60	2'400		Fleece				✓	✓	✓
Protective layer MSP-FR-PSF 600		21980	✓	60	1'200		Fleece				✓	✓	✓
Protective 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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Support profile MSP-PR-CH 38 2.4m		23949	✓	1	168		Aluminium EN AW-6063 T66	✓	✓	✓			
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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Sleeve MSP-PR-SL		2048619	✓	8	2'520		Aluminium EN AW-6063 T66	✓	✓				

Connection channels

Connection channel MSP-FR-EW-C0230 TL 230		2072368	✓	12	6'480		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C0400 TL 400		20679	✓	12	3'024		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C0566 TL 566		23589	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-C0625 TL 625		23892	✓	10	2'280		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C0666 TL 666		23590	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-C0725 TL 725		23893	✓	10	2'100		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-C0935 TL 935		2072369	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1000 TL 1000		21464	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1065 TL 1065		21872	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1131 TL 1131		21873	✓	24	1'440		Aluminium EN AW-6063 T66				✓	✓	✓

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Connection channels

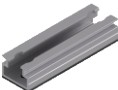
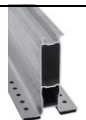
Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Connection channel MSP-FR-EW-C1197 TL 1197		22250	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1262 TL 1262		22277	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1574 TL 1574		21999	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1639 TL 1639		2072551	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1704 TL 1704		21465	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1769 TL 1769		21794	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1834 TL 1834		21856	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1899 TL 1899		21857	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C1964 TL 1964		2072552	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓

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Connection channels

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Connection channel MSP-FR-EW-C2029 TL 2029		21810	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C2094 TL 2094		21793	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C2159 TL 2159		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-C2289 TL 2289		22085	✓	10	900		Aluminium EN AW-6063 T66				✓	✓	✓
Connection channel MSP-FR-EW-C2354 TL 2354		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		23506	✓	156	2'808		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		23504	✓	40	720		Aluminium EN AW-6063 T66			✓			

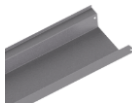
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Wind deflectors / Ballast tray

Wind deflector adapter MSP-FR-EW-WDA- SH90		23820	✓	10	640		Aluminium EN AW-6063				✓		✓
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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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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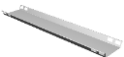
Ballast carrier start plate

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Ballast carrier start plate MSP-FR-EW-BS		22972	✓	10	1'600		Galvanized sheet steel ZM				✓	✓	✓

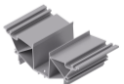
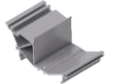
Ballast securing

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east-west	FR south	FR green
Ballast fixation MSP-FR-BF		23849		12	540		Galvanized sheet steel ZM				✓	✓	✓

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 high MSP-FR-EW-SH90		23818	✓	20	240		Aluminium EN AW-6063				✓		✓
Support middle high MSP-FR-EW-SMH90		23819	✓	20	240		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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Screw MSP-FR-S 6x16		2013705	✓	200	72'000		Coated steel ZnNi		✓		✓	✓	✓
Screw MSP-FR-TS 6.3x20 R lightning current capable connection		22890		200	90'000		Stainless steel V2A				✓	✓	✓
Screw MSP-FR-GS 6x60		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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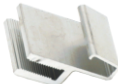
Edge stop

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Edge stop MSP-PR-ESB black RAL 9005		21025	✓	20	21'000		Stainless steel V2A		✓				

Insertion stopper

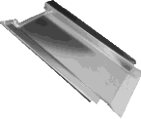
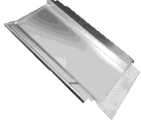
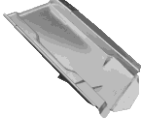
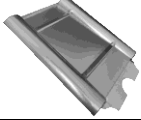
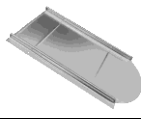
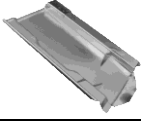
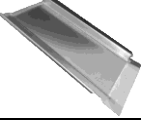
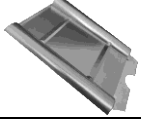
Insertion stopper MSP-PR-IS		21156	✓	12	1'080		Aluminium EN-AW 6060 T66		✓				
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Fastenings

Cable holder with edge-clip MSP-FR-CHE		22628	✓	100	48'000		PA6.6 UV resistant	✓	✓	✓	✓	✓	✓
Connection channel clip MSP-FR-C-CL		23822	✓	50	21'000		Aluminium EN-AW 6060 T66				✓	✓	✓
Cable holder clip MSP-FR-CH		23821	✓	50	40'000		Aluminium EN-AW 6060 T66				✓		✓
Optimizer clamp 33mm MSP-FR-OC33		23832	✓	20	1'920		Spring stainless steel V4A				✓		✓
Optimizer clamp 63mm MSP-FR-OC63	N	23883	✓	20	1'920		Spring stainless steel V4A				✓		✓

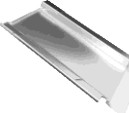
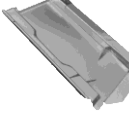
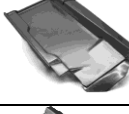
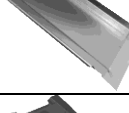
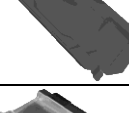
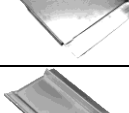
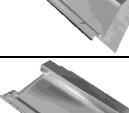
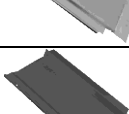
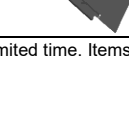
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Project solutions - Special accessories

Part description	E/N	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
Test set coefficient of friction MSP-FR		21998		1	-		Divers				✓	✓	✓
On site instruction		22861		per h	-		Divers	✓	✓	✓	✓	✓	✓
Service de planification MSP		22790		per h	-		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	Item nb.	S.P.T.	PU	PQ		Material	MSP PV mounting systems					
								PR on-roof	PR on-roof inlay	MR metal roof	FR east- west	FR south	FR green
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 Typ Extra AT 260		595644		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 Extra AT 330		595668		20	400		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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