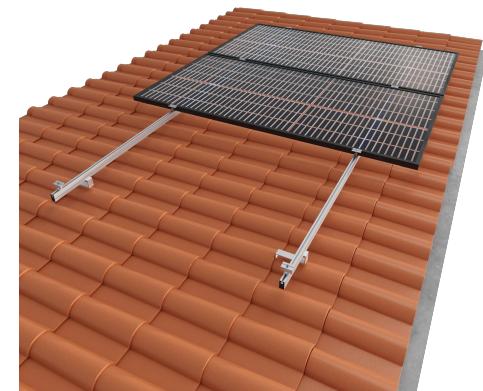
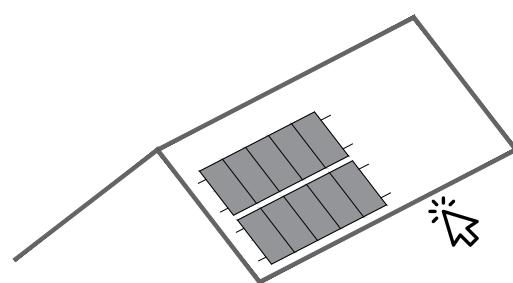


Installations

Select

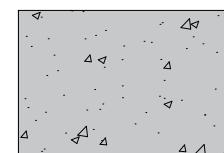
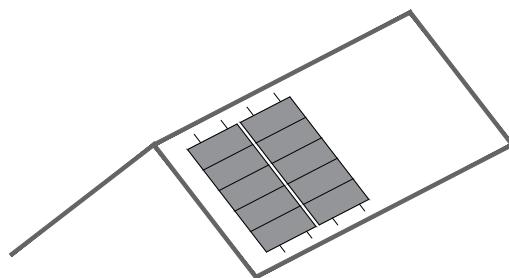


Portrait



Concrete Slab

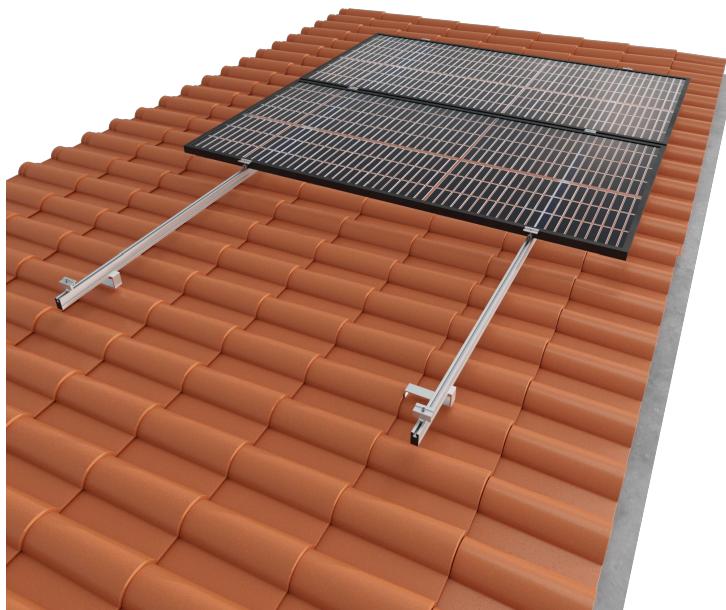
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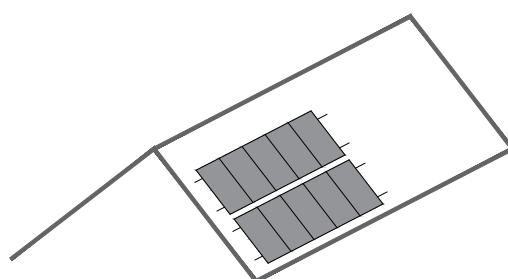
Concrete Slab



02.3V-EN



Portrait



Concrete Slab



Return



CONTENTS



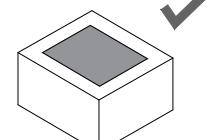
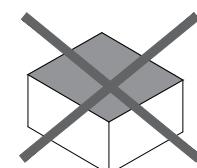
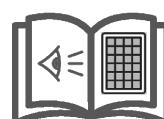
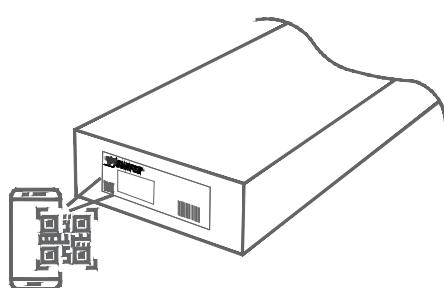
- 1. General Information**
- 2. Kit Contents**
- 3. Portrait Installation**
- 4. Fastening Technical Information**
- 5. Maximum Loads and Reactions**
- 6. Installation Zone**
- 7. Installation Video**
- 8. Certificates and Guarantee**





General Information and Recommendations EN

- All installation instructions and product specifications provided must be adhered to.
- Check the condition of the roof covering and its carrying capacity. The management overseeing installation is responsible for verifying that the substructure of the roof as well as the static structure of the building itself is capable of supporting additional loads before any installation is carried out.
- To avoid turbulence from wind a minimum security distance (defined by regulations) must be maintained between the photovoltaic installations and roof edges, as well as other obstacles such as chimneys or vents.
- In the case of chimneys or other features which may need future maintenance, a minimum distance must be maintained in order to facilitate said maintenance or to extinguish fires. This distance shall be either 1m or that suggested by the relevant authority, whichever is greater.
- The surface of the roof covering must be clean and dry. Any major irregularities of the roof must be corrected or eliminated.
- The mounting must always be anchored to the structure of the roof.
- Check the weathertightness of the mount once fastened.
- Place solar panels such that they are distributed symmetrically along the support, leaving equal overhangs at each end.
- Clamps must not be tightened using impact drivers.
- Check that the support attachment points are compatible with the solar panel manufacturer's specifications.
- Uninstallation must be carried out in the reverse order from the installation.
- During the shipping of products take extreme care to maintain the integrity of the packaging. Store in a dry, well-ventilated area. Minimize exposure to large temperature differences and humidity. Avoid outdoor storage. Avoid sources of dripping water, puddles, splashing, or any other contact with water in the storage area. If the product becomes wet, immediately dry and clean as well as possible. Do not leave the product directly on the floor or ground where it may attract moisture. Store on the shipment's original pallet or on shelves.
- We reserve the right to make changes to our products at any moment without prior warning if, from our point of view, the changes are necessary for the improvement of the product. All illustrations in plans and catalogues are for example only and therefore may differ from the actual product provided.
- Aluminum components can be delivered in different finishes without compromising the structural solution. Available finishes: raw/anodised/lacquered.





02.3V-EN

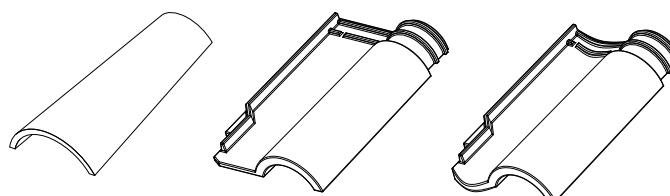
Kit Contents

S02.3-EN	4	4	-	-	2	-	4	4
1	4	4	2	2	4	-	4	6
2	4	4	2	2	4	-	4	6
2 1R	6	4	2	2	4	-	4	6
3	6	4	4	2	-	4	4	8
3 1R	8	4	4	2	-	4	4	8
4	6	4	6	4	2	4	4	10
4 1R	8	4	6	4	2	4	4	10
4 2R	10	4	6	4	2	4	4	10

Anchoring Surface:



Concrete Slab



alu

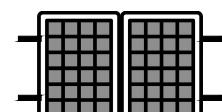
Profiles of EN AW 6005A T6 Aluminium

A

Fasteners of A2-70 Stainless Steel



Max.
2400x1150 mm
Thickness:
28-40 mm



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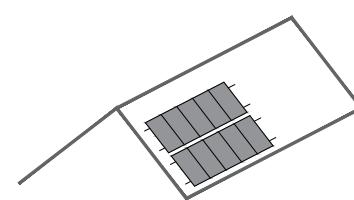
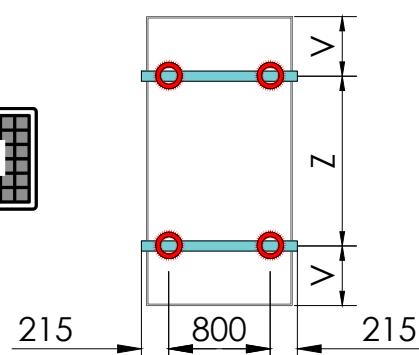
Portrait

02.3V-EN

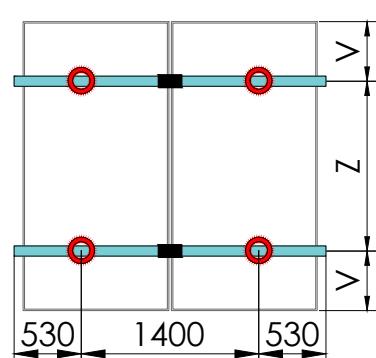
Anchoring Distances

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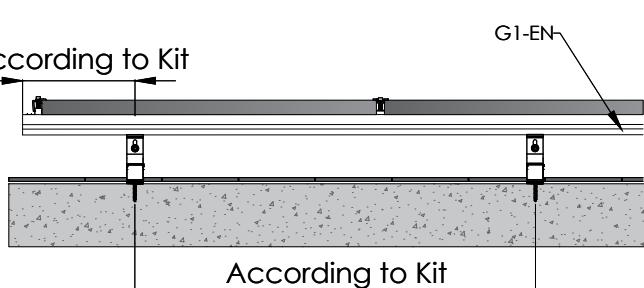
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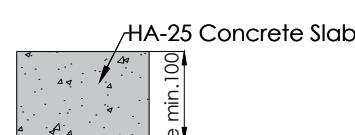
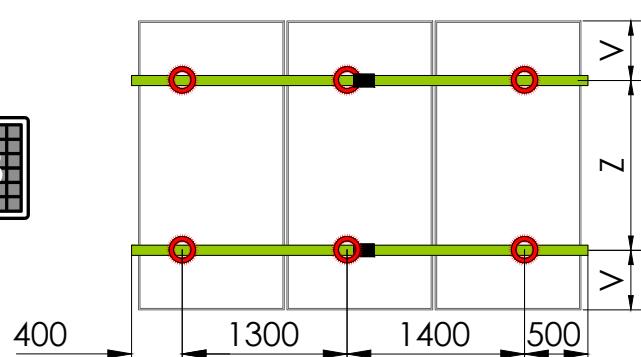
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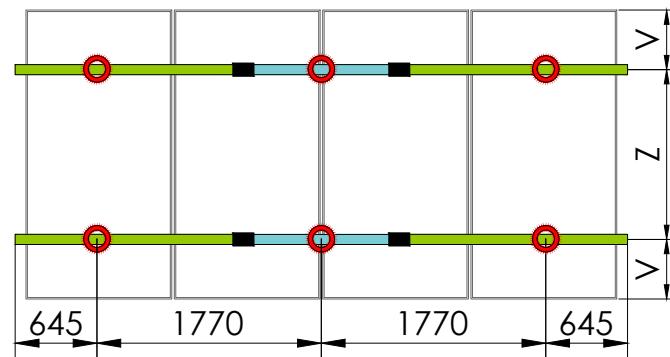
According to Kit



3



4



S02.3-EN	
G1-1230-EN	
G1-1800-EN	
UG1-EN	



The maximum distance "Z" between profiles and the overhang distance "V" should be determined by consulting the technical datasheets of the solar panel manufacturer.



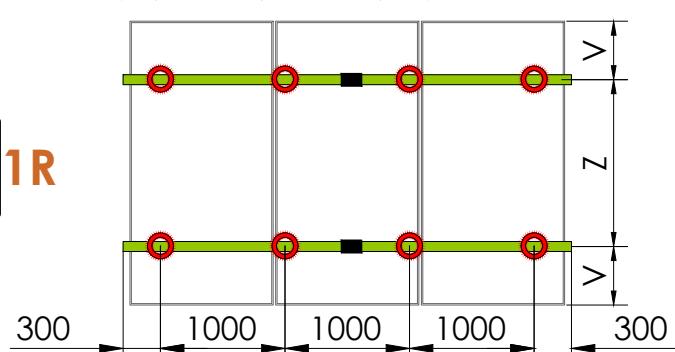
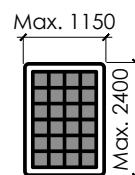
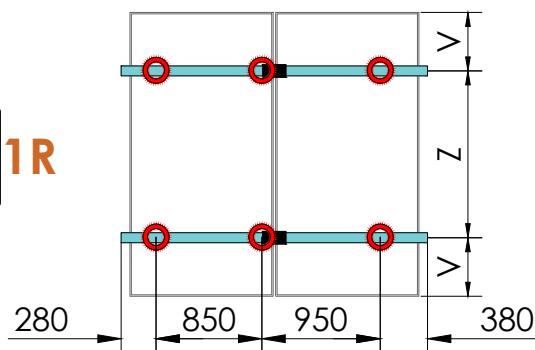


Portrait

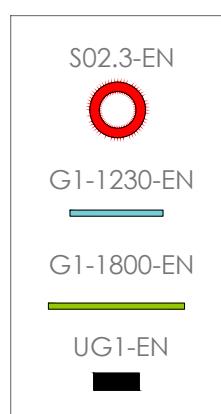
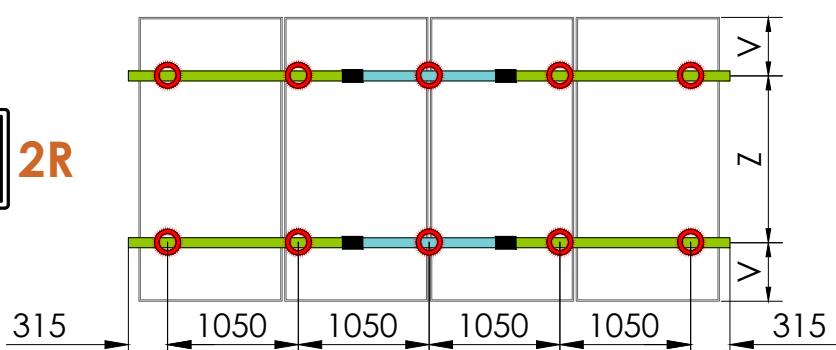
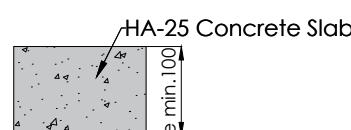
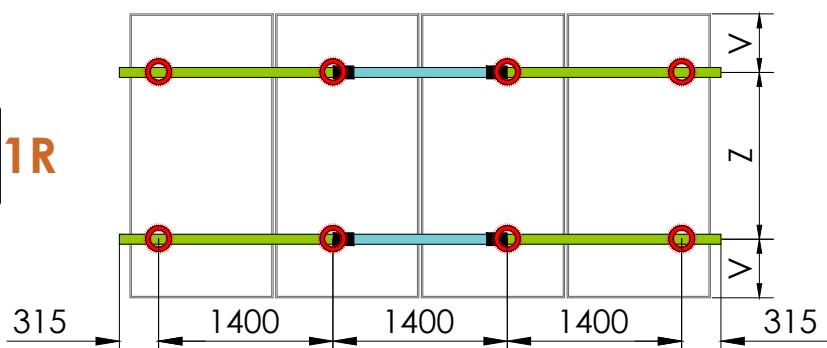
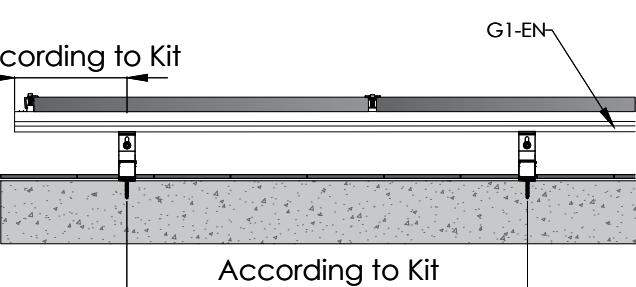
02.3V-EN

Anchoring Distances

Sunfer reserves the right to make changes to the product and its associated documents at any time. The images in this document are for illustration only and may differ from the products provided.

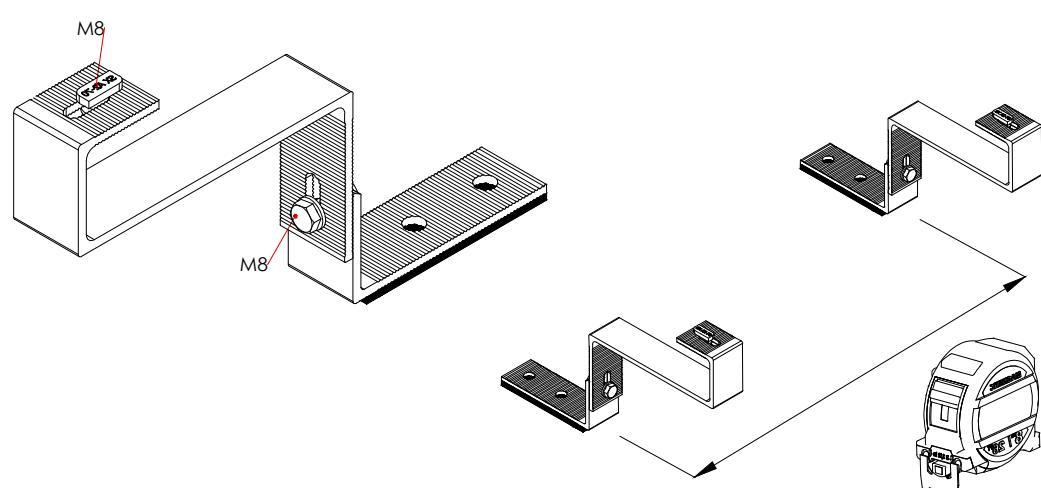
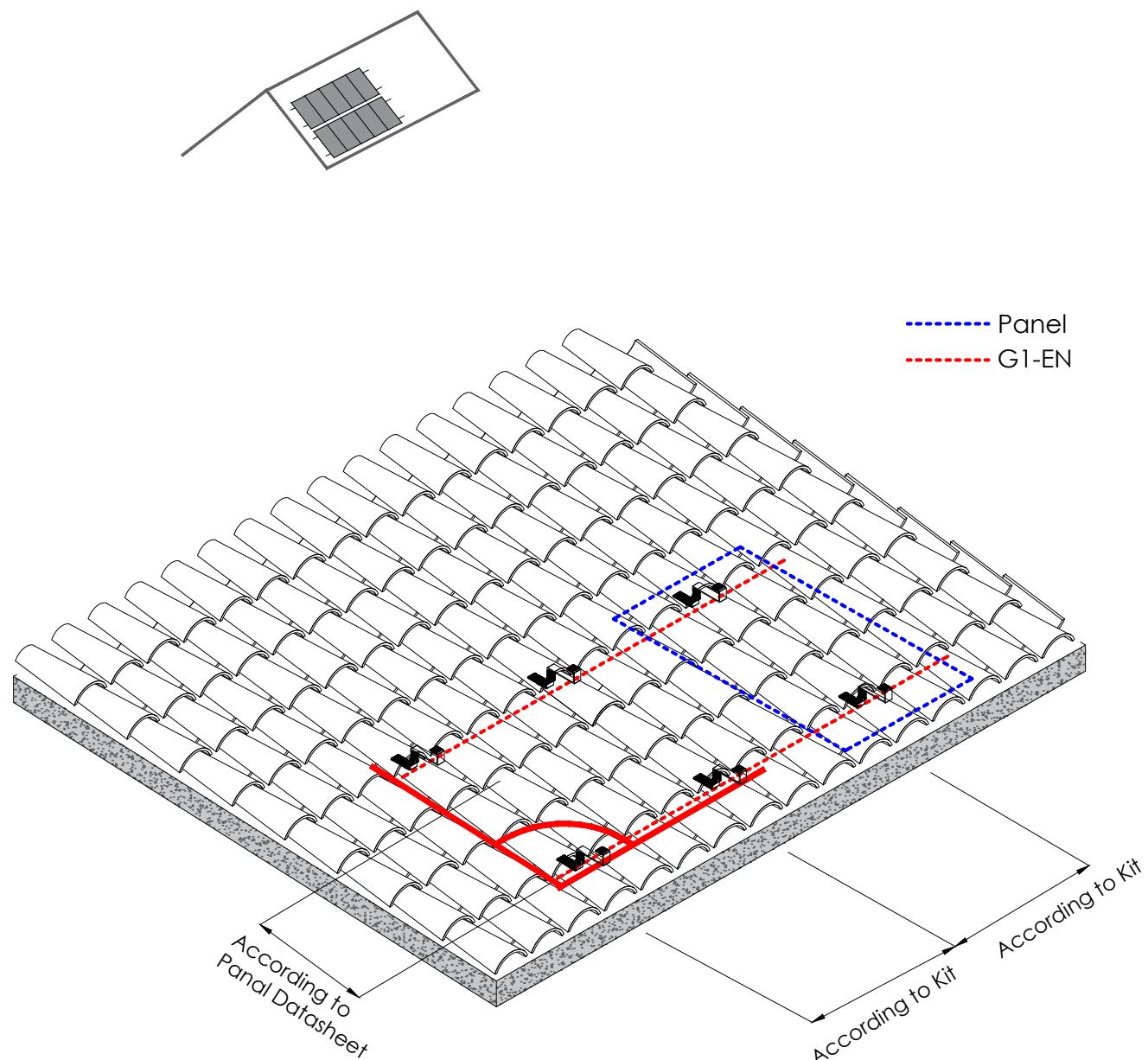


According to Kit

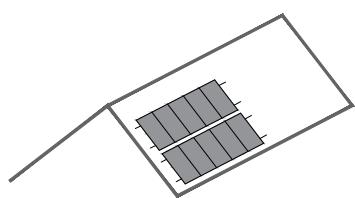
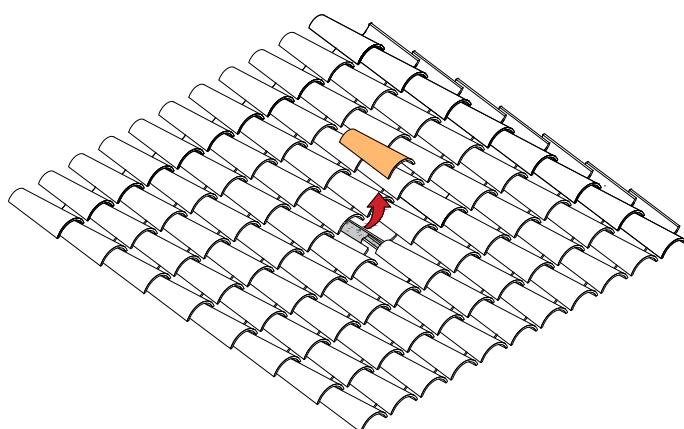


The maximum distance "Z" between profiles and the overhang distance "V" should be determined by consulting the technical datasheets of the solar panel manufacturer.

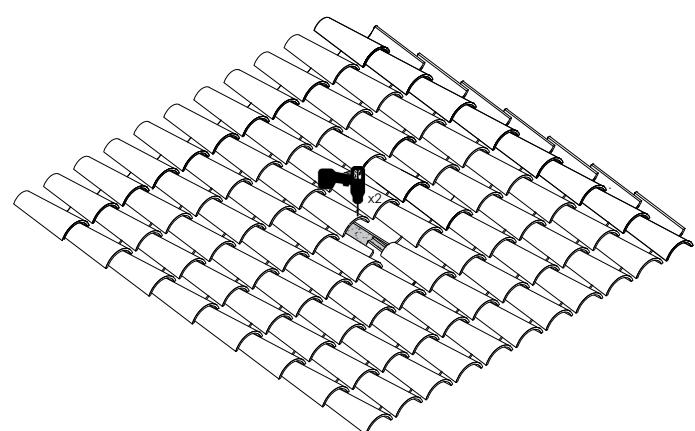




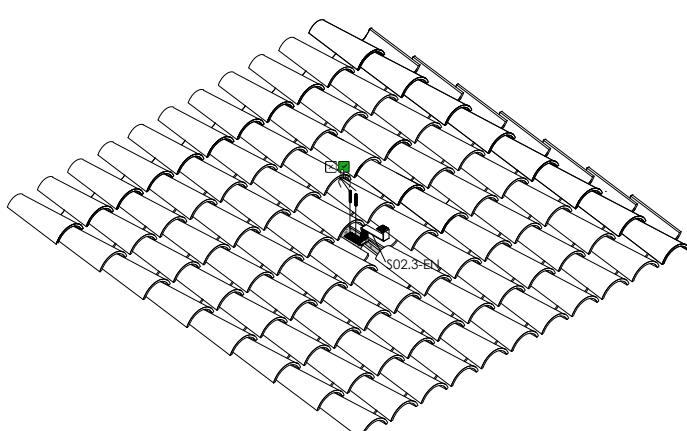
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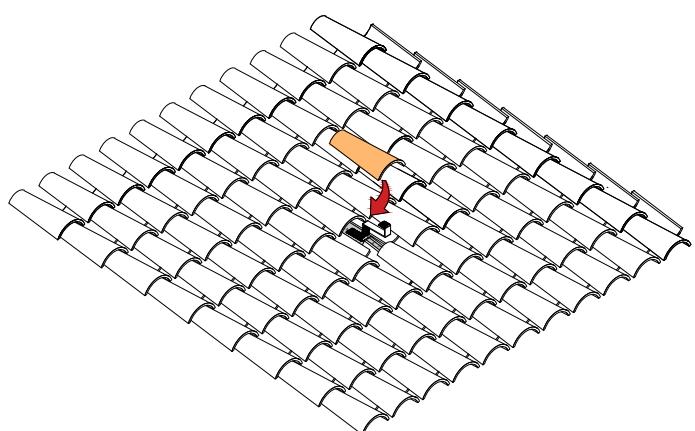
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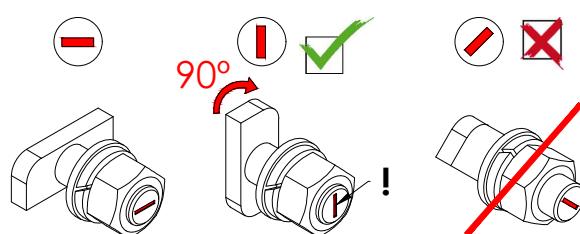


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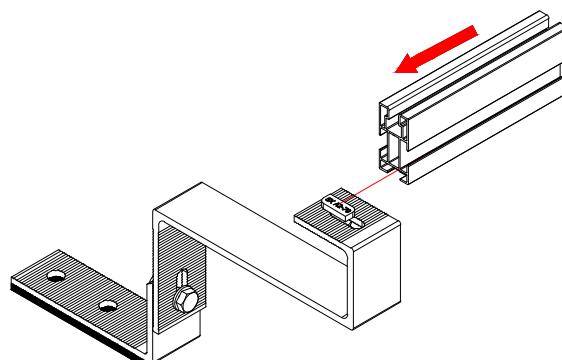
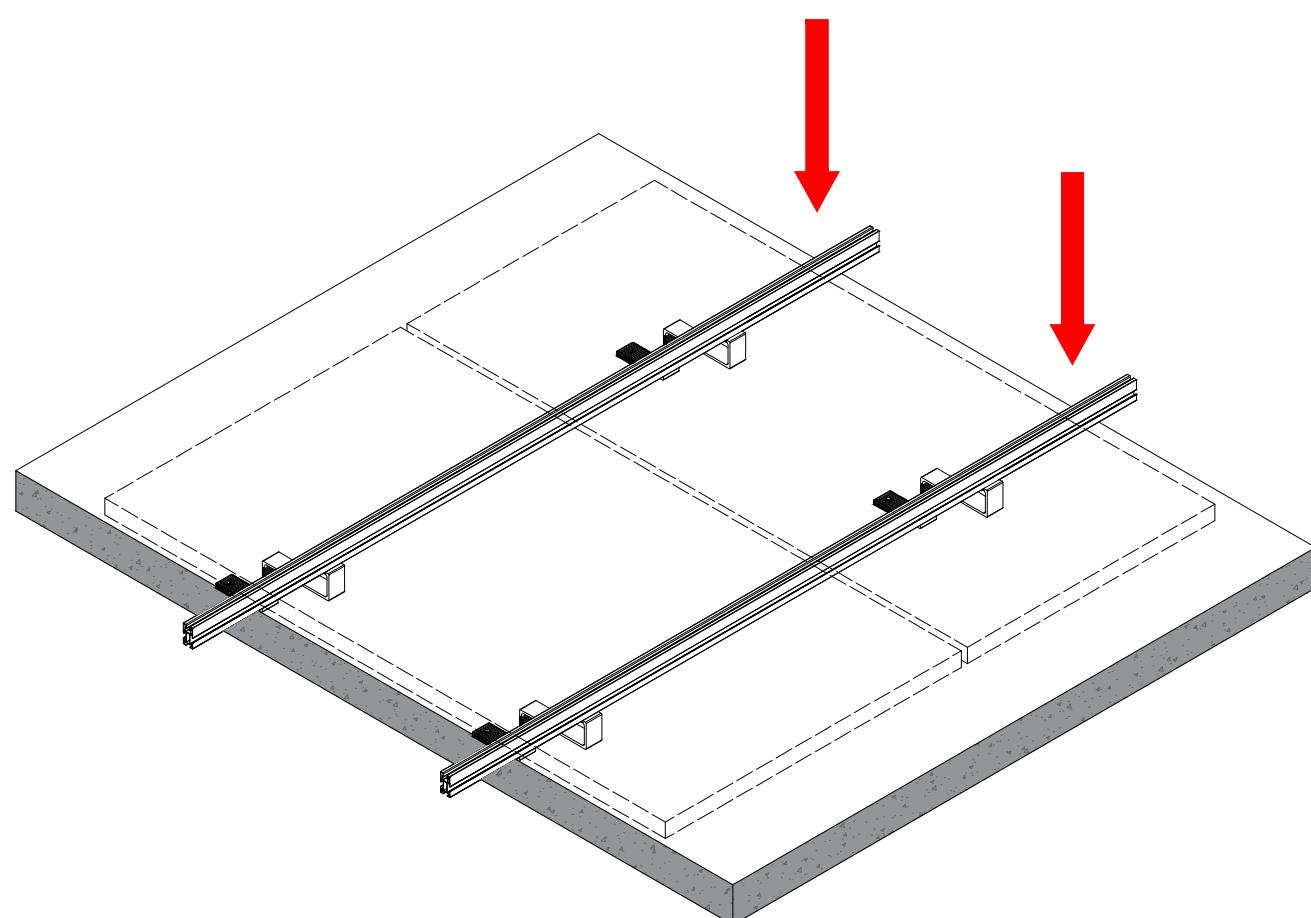
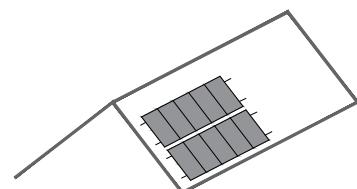


*Must support the reaction forces at the anchor point



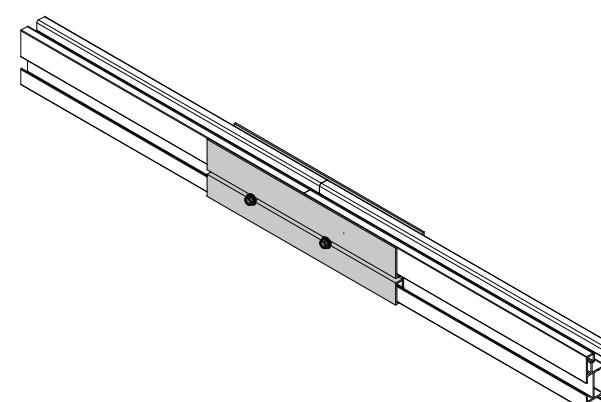
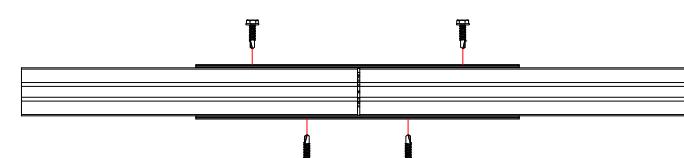
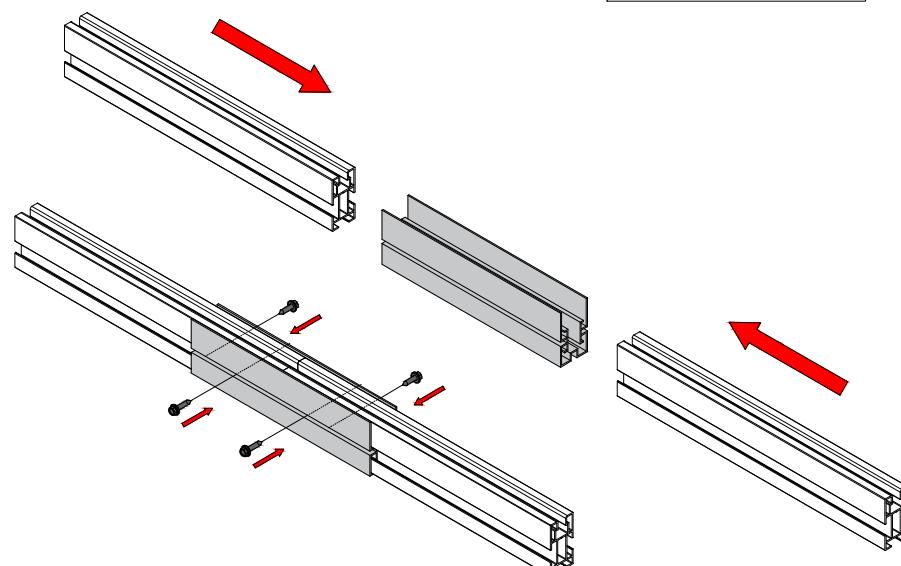
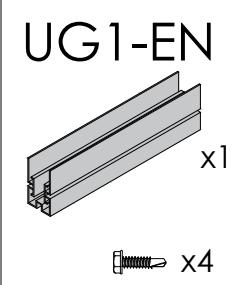


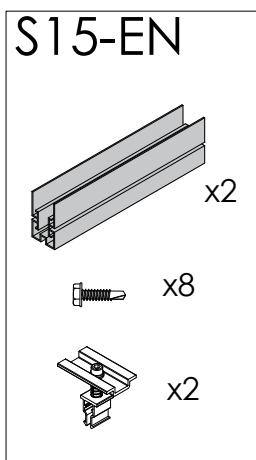
20 Nm



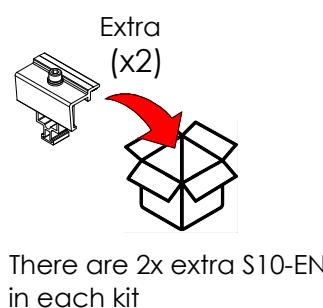
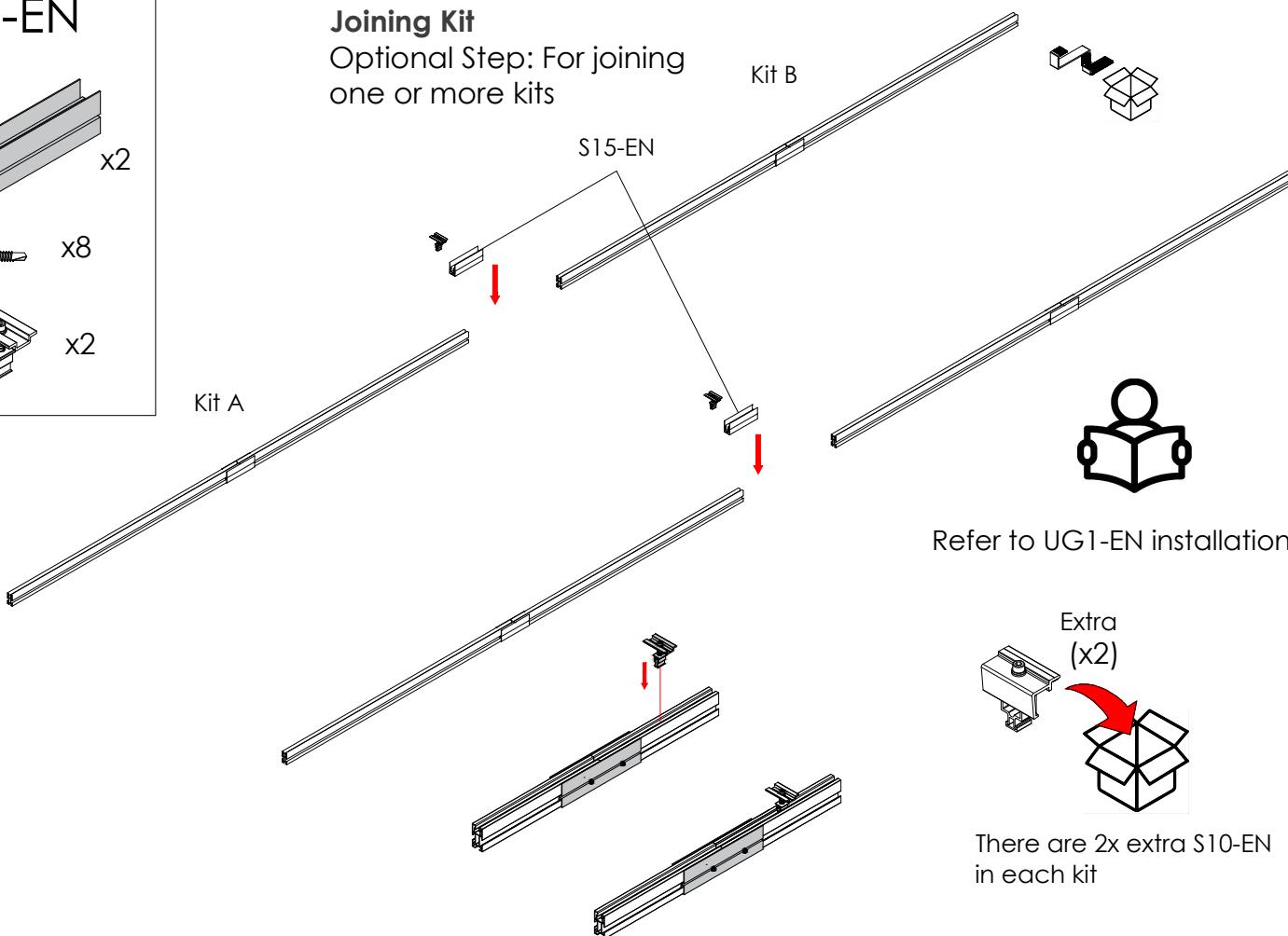


6 Nm

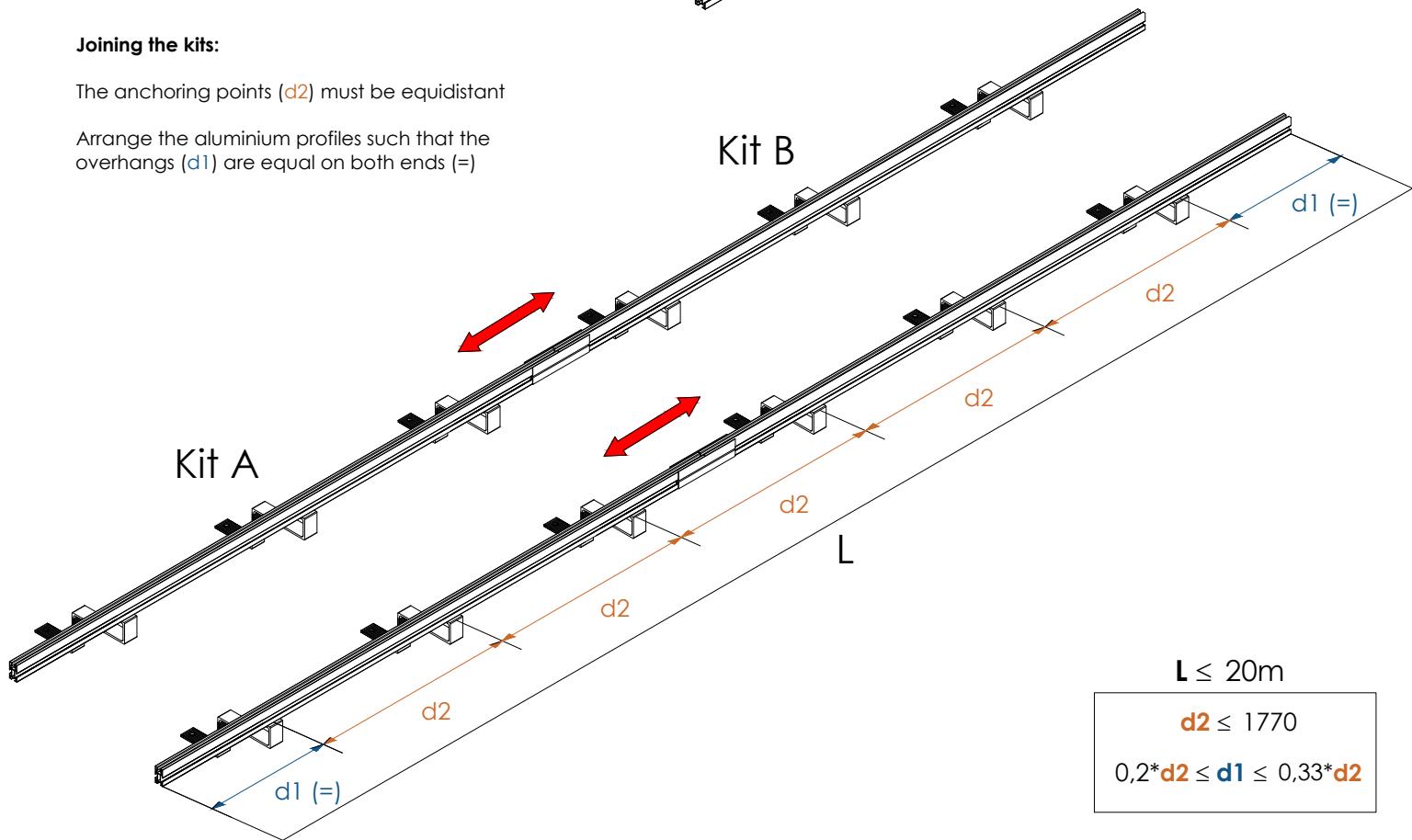


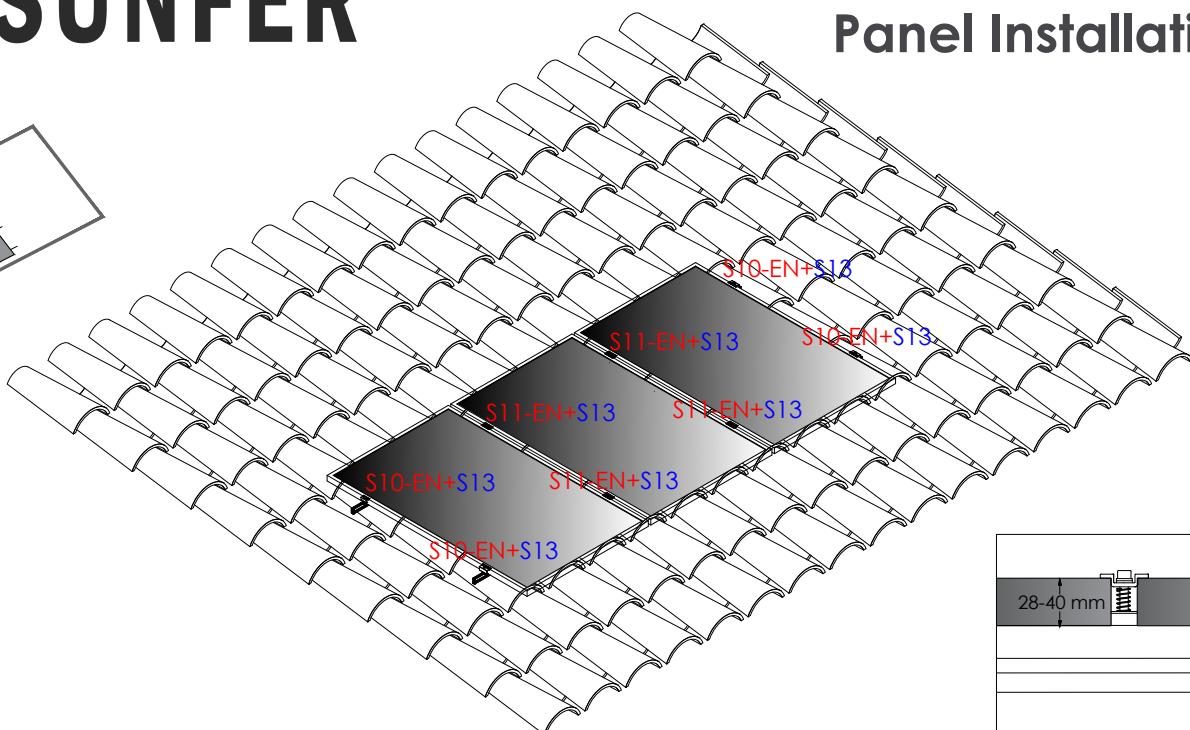
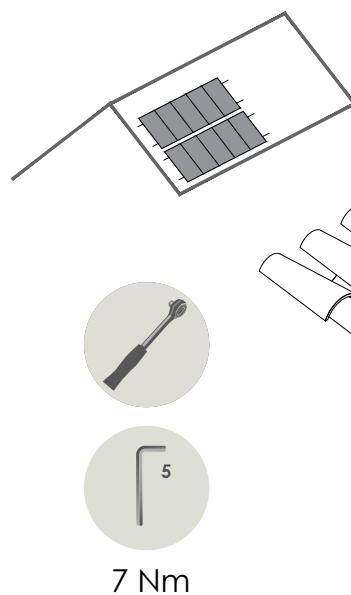

Joining Kit

Optional Step: For joining one or more kits

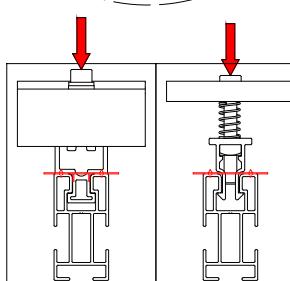
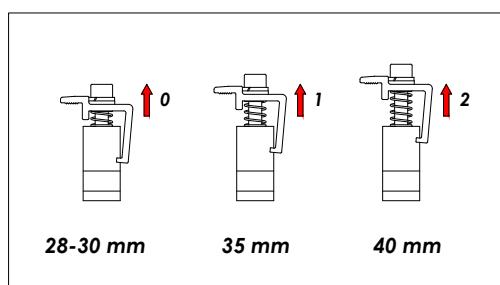
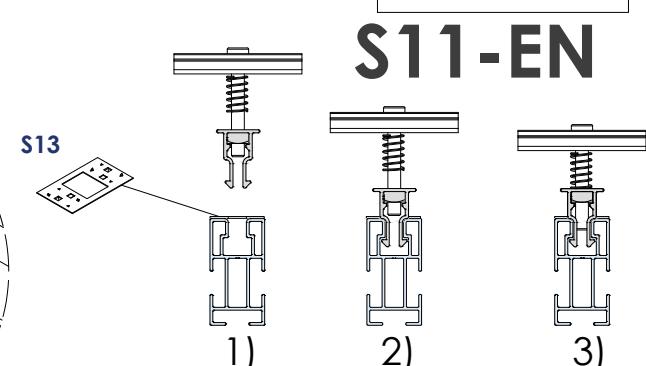
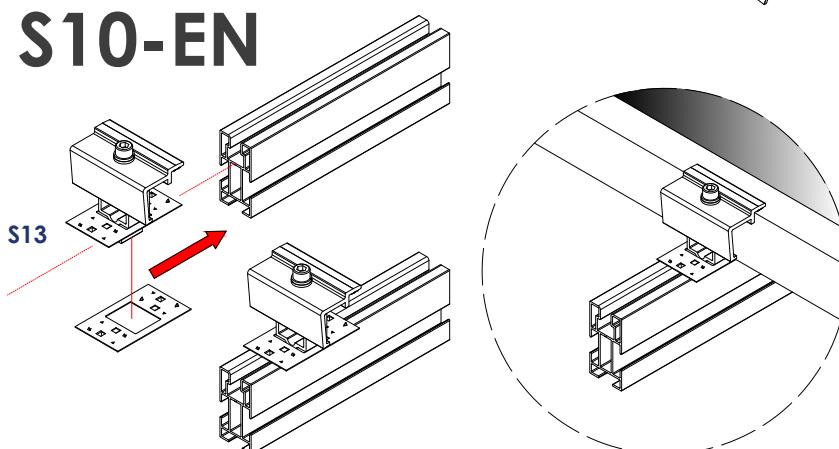

Joining the kits:

 The anchoring points (d_2) must be equidistant

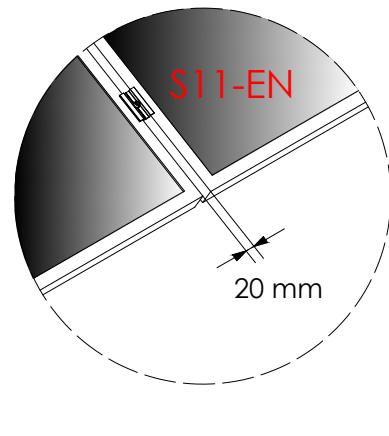
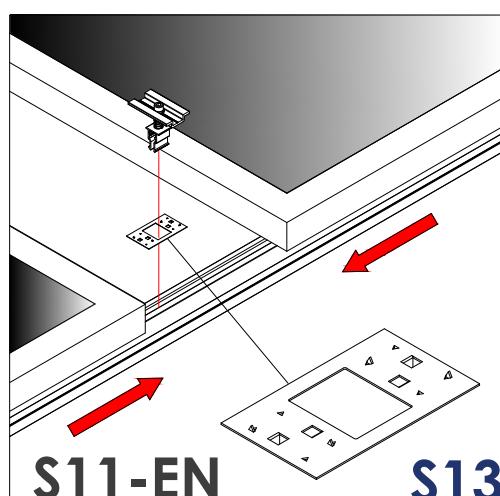
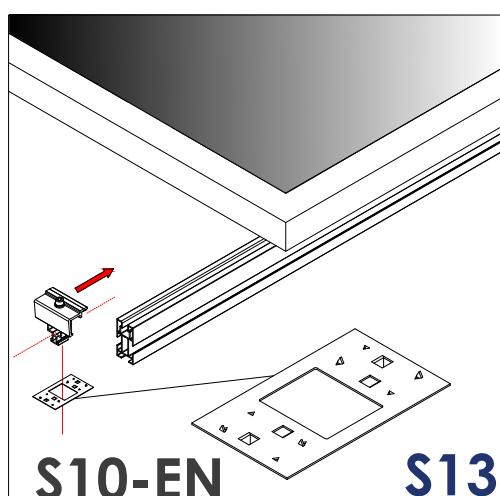
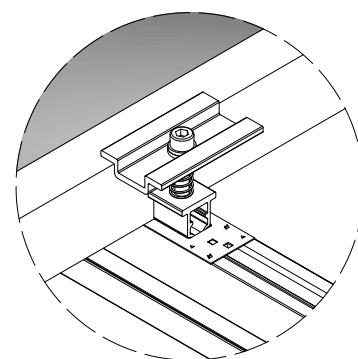
 Arrange the aluminium profiles such that the overhangs (d_1) are equal on both ends (=)




S10-EN



!
Double check the recommended torque with a torque wrench to ensure a good connection.
The pins must be pinned to the rail.



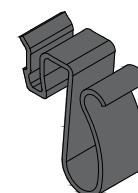
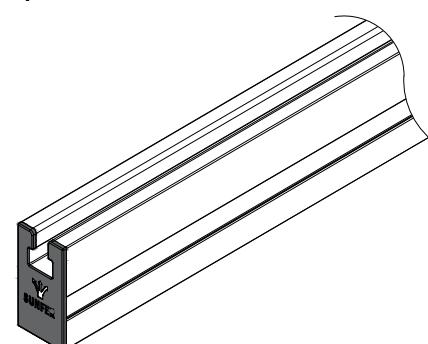
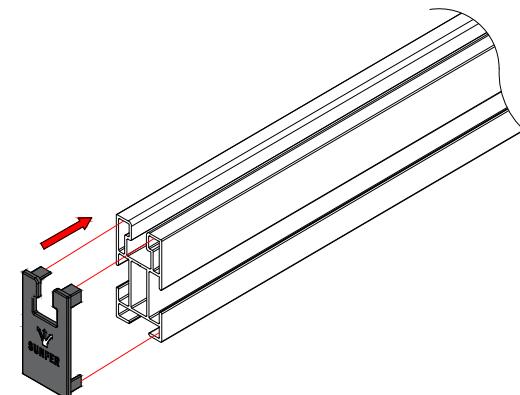
S10-EN

S13

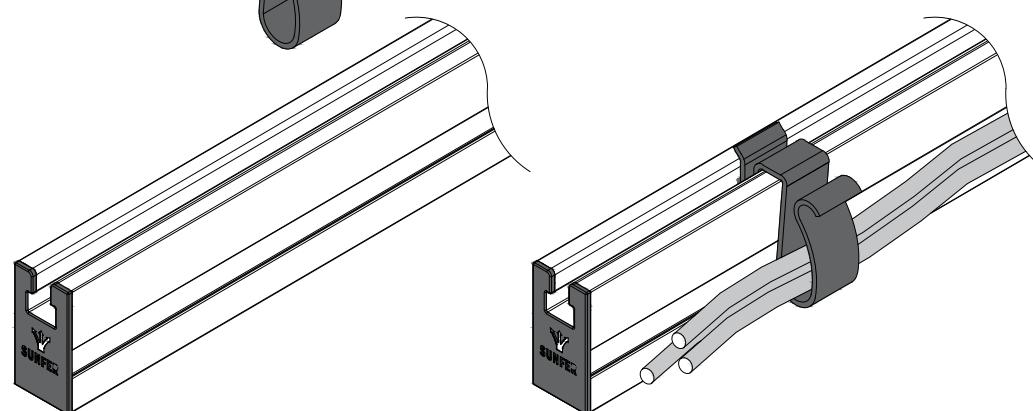
S11-EN

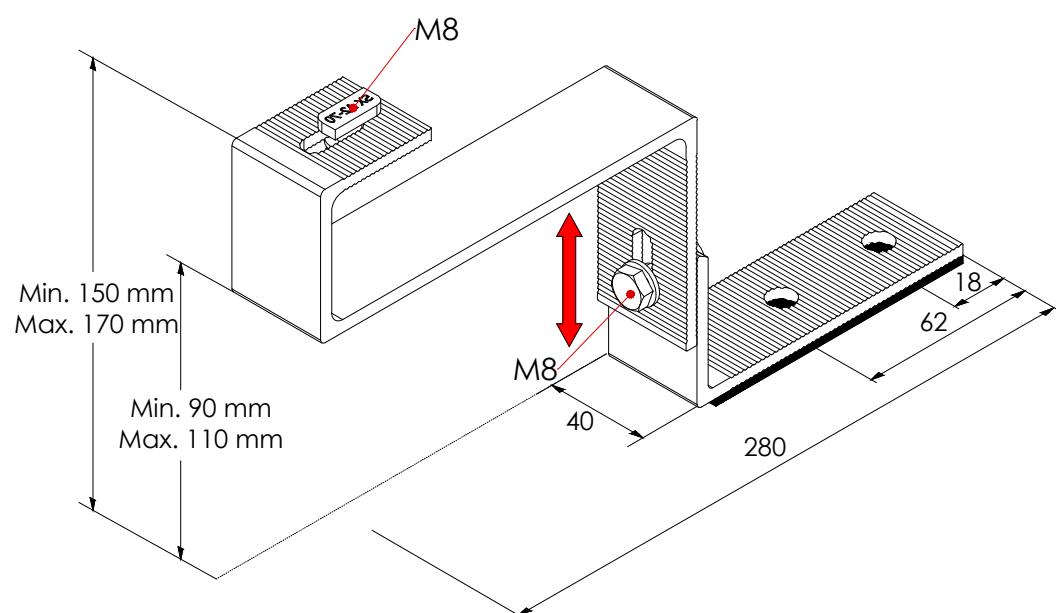
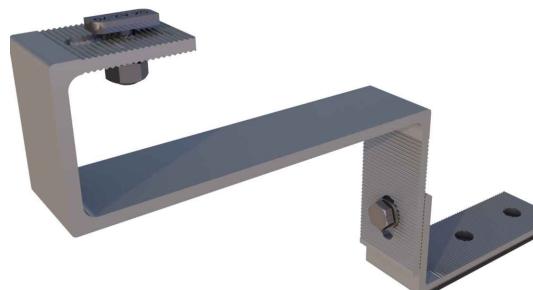
S13





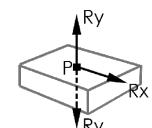
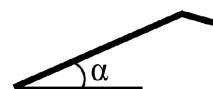
Optional Cable Clip
(Not included)



**Technical
Information:
Anchor**


Description	Coplanar Mount
Panel Orientation	Portrait/Landscape
Format	KIT of 1 to 4 panels
Joining Kit	S15-EN not included (optional)
Application Surface	Tile
Anchoring Surface	Concrete Slab
Type of fastening	Screwed (Not included)
Mount	S02.3-EN
Profile	G1-EN
Grounding Plate	S13
Maximum panel dimensions	2400x1150 mm
Panel thickness	from 28 to 40 mm
Materials	Fasteners: A2 AISI 304 Stainless Steel Profiles: EN AW 6005A T6 Aluminium, raw or anodized EPDM Weatherseal
Maximum Loads	According to Configuration
Structural calculation	Computational model checked against ESROCODE 9 "PROJECT ALUMINIUM STRUCTURES"

Maximum admissible loads and their reactions



5° Pitch

10° Pitch

15° Pitch

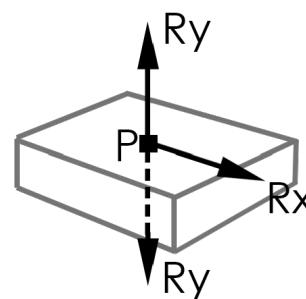
20° Pitch

25° Pitch

30° Pitch

35° Pitch

40° Pitch



- P: Mount Point
- Rx: Shear generated at anchor
- Ry: Tension generated at anchor, compression applied to roof

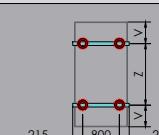
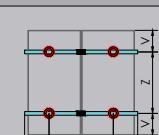
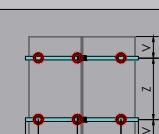
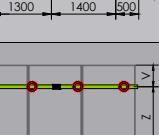
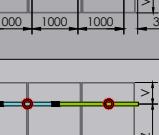
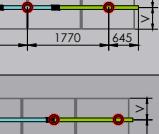
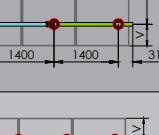
Maximum Admissible Loads and Reactions					5°		
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)		
	 (Km/h)	 (Kg/m²)	(kN/Mount)	(kN/Mount)	(kN/Mount)		
1			110 130 150 180 210 250	232 265 265 265 265 264	0.158 0.146 0.146 0.146 0.146 0.145	0.016 0.016 0.053 0.118 0.195 0.316	1.8429 1.7166 1.7340 1.7648 1.8012 1.8466
2			110 130 150 180 210 250	107 131 128 123 117 107	0.155 0.152 0.149 0.144 0.138 0.127	0.032 0.032 0.105 0.236 0.390 0.633	1.8468 1.8443 1.8438 1.8465 1.8486 1.8452
2 1R			110 130 150 180 210 250	145 179 176 171 165 155	0.156 0.154 0.152 0.148 0.143 0.136	0.017 0.017 0.057 0.127 0.211 0.342	1.8437 1.8463 1.8459 1.8479 1.8495 1.8470
3			110 130 150 180 210 250	87 106 103 98 92 82	0.154 0.150 0.147 0.140 0.133 0.121	0.025 0.025 0.084 0.187 0.309 0.502	1.8453 1.8423 1.8417 1.8449 1.8474 1.8434
3 1R			110 130 150 180 210 250	129 159 156 150 144 135	0.156 0.154 0.151 0.146 0.141 0.133	0.019 0.019 0.065 0.145 0.239 0.388	1.8458 1.8487 1.8482 1.8405 1.8423 1.8495
4			110 130 150 180 210 250	64 78 75 70 63 54	0.151 0.148 0.143 0.135 0.124 0.110	0.038 0.038 0.127 0.285 0.471 0.764	1.8361 1.8456 1.8448 1.8489 1.8342 1.8470
4 1R			110 130 150 180 210 250	84 103 100 95 89 79	0.153 0.150 0.146 0.140 0.133 0.120	0.024 0.024 0.079 0.176 0.291 0.472	1.8365 1.8441 1.8435 1.8468 1.8494 1.8453
4 2R			110 130 150 180 210 250	119 147 144 138 132 122	0.155 0.153 0.151 0.145 0.139 0.130	0.020 0.020 0.068 0.151 0.250 0.406	1.8408 1.8492 1.8487 1.8405 1.8424 1.8393

Table 1 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Maximum Admissible Loads and Reactions					10°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)	(kN/Mount)	(kN/Mount)	(kN/Mount)
1					
	110	238	0.319	0.015	1.8462
	130	265	0.287	0.017	1.6799
	150	265	0.287	0.054	1.6973
	180	265	0.287	0.119	1.7281
	210	265	0.287	0.196	1.7644
	250	265	0.287	0.318	1.8216
2					
	110	109	0.311	0.029	1.8376
	130	134	0.306	0.034	1.8415
	150	131	0.300	0.108	1.8418
	180	126	0.290	0.238	1.8458
	210	120	0.278	0.392	1.8495
	250	110	0.258	0.635	1.8489
2 1R					
	110	149	0.316	0.016	1.8489
	130	183	0.311	0.018	1.8431
	150	180	0.306	0.058	1.8433
	180	175	0.298	0.129	1.8464
	210	169	0.289	0.212	1.8492
	250	159	0.273	0.343	1.8487
3					
	110	89	0.309	0.023	1.8422
	130	109	0.304	0.027	1.8469
	150	106	0.296	0.085	1.8473
	180	100	0.282	0.189	1.8384
	210	94	0.267	0.311	1.8428
	250	84	0.243	0.504	1.8420
3 1R					
	110	132	0.314	0.018	1.8439
	130	163	0.310	0.021	1.8497
	150	160	0.305	0.066	1.8500
	180	154	0.295	0.146	1.8436
	210	148	0.285	0.241	1.8467
	250	138	0.267	0.389	1.8462
4					
	110	66	0.305	0.036	1.8438
	130	80	0.297	0.041	1.8454
	150	77	0.288	0.130	1.8458
	180	71	0.270	0.288	1.8345
	210	65	0.251	0.474	1.8401
	250	55	0.221	0.767	1.8391
4 1R					
	110	86	0.307	0.022	1.8345
	130	106	0.304	0.025	1.8499
	150	102	0.294	0.080	1.8362
	180	97	0.281	0.178	1.8411
	210	91	0.267	0.293	1.8456
	250	81	0.242	0.474	1.8448
4 2R					
	110	122	0.313	0.019	1.8418
	130	150	0.308	0.022	1.8428
	150	147	0.303	0.069	1.8430
	180	142	0.293	0.153	1.8467
	210	135	0.280	0.252	1.8396
	250	126	0.264	0.407	1.8495

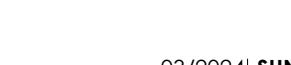
Table 2 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Loads and reactions calculated for the kit lengths and distances in the table.

For other distributions consult SUNFER.



Maximum Admissible Loads and Reactions					15°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)			
1			110	244	0.478
1			130	265	0.420
1			150	265	0.420
1			180	265	0.420
1			210	265	0.420
1			250	256	0.405
2			110	110	0.459
2			130	133	0.446
2			150	128	0.431
2			180	118	0.401
2			210	107	0.369
2			250	89	0.315
2 1R			110	151	0.468
2 1R			130	184	0.457
2 1R			150	179	0.446
2 1R			180	169	0.423
2 1R			210	158	0.398
2 1R			250	140	0.357
3			110	89	0.453
3			130	106	0.435
3			150	101	0.417
3			180	91	0.382
3			210	80	0.343
3			250	62	0.170
3 1R			110	134	0.466
3 1R			130	162	0.452
3 1R			150	157	0.439
3 1R			180	147	0.414
3 1R			210	136	0.387
3 1R			250	118	0.341
4			110	65	0.442
4			130	76	0.418
4			150	71	0.396
4			180	61	0.351
4			210	50	0.190
4			250	32	0.149
4 1R			110	86	0.450
4 1R			130	103	0.434
4 1R			150	98	0.416
4 1R			180	88	0.380
4 1R			210	77	0.340
4 1R			250	59	0.169
4 2R			110	123	0.461
4 2R			130	150	0.451
4 2R			150	144	0.435
4 2R			180	135	0.411
4 2R			210	123	0.378
4 2R			250	105	0.330

Table 3 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



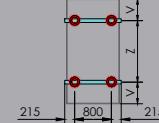
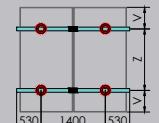
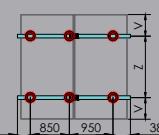
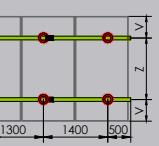
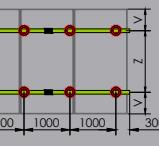
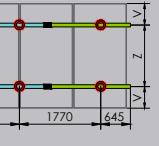
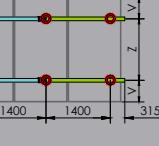
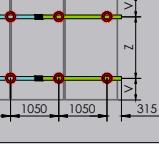
Maximum Admissible Loads and Reactions					 20°		
Kit	Loads						
	 (Km/h)	 (Kg/m²)	(kN/Mount)	(kN/Mount)	(kN/Mount)		
1			110 130 150 180 210 250	258 265 265 265 265 265	0.649 0.541 0.541 0.541 0.541 0.541	0.012 0.053 0.101 0.184 0.284 0.440	1.8468 1.5767 1.6067 1.6599 1.7227 1.8215
2			110 130 150 180 210 250	117 141 135 125 113 94	0.625 0.605 0.582 0.544 0.499 0.426	0.025 0.106 0.201 0.369 0.567 0.879	1.8477 1.8443 1.8416 1.8431 1.8431 1.8416
2 1R			110 130 150 180 210 250	160 195 189 179 167 148	0.636 0.622 0.604 0.575 0.540 0.484	0.013 0.057 0.109 0.199 0.306 0.475	1.8473 1.8467 1.8446 1.8458 1.8457 1.8446
3			110 130 150 180 210 250	94 113 107 97 85 66	0.613 0.592 0.565 0.520 0.466 0.230	0.020 0.084 0.159 0.293 0.450 0.697	1.8382 1.8435 1.8402 1.8421 1.8420 1.8403
3 1R			110 130 150 180 210 250	142 172 166 156 144 125	0.633 0.615 0.596 0.563 0.524 0.463	0.015 0.065 0.123 0.226 0.348 0.539	1.8496 1.8445 1.8422 1.8435 1.8434 1.8422
4			110 130 150 180 210 250	69 81 75 65 53 34	0.600 0.569 0.535 0.477 0.255 0.200	0.030 0.128 0.243 0.445 0.685 1.061	1.8439 1.8387 1.8346 1.8369 1.8368 1.8346
4 1R			110 130 150 180 210 250	91 109 104 94 82 63	0.610 0.588 0.565 0.519 0.463 0.229	0.019 0.079 0.150 0.275 0.423 0.656	1.8352 1.8373 1.8468 1.8487 1.8486 1.8468
4 2R			110 130 150 180 210 250	131 159 153 143 131 112	0.630 0.613 0.592 0.558 0.516 0.450	0.016 0.068 0.129 0.236 0.364 0.563	1.8477 1.8493 1.8469 1.8483 1.8482 1.8469

Table 4 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Maximum Admissible Loads and Reactions					25°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)			
1					
	110	228	0.689	0.016	1.5429
	130	265	0.646	0.056	1.4762
	150	148	0.688	0.104	1.5062
	180	148	0.688	0.188	0.9895
	210	148	0.688	0.287	1.0523
	250	148	0.688	0.443	1.1510
2					
	110	106	0.686	0.031	1.6003
	130	133	0.688	0.113	1.6567
	150	148	0.688	0.207	1.7168
	180	148	0.688	0.375	1.8231
	210	148	0.688	0.574	1.8415
	250	148	0.688	0.886	1.8442
2 1R					
	110	143	0.686	0.017	1.5716
	130	179	0.687	0.061	1.6129
	150	148	0.688	0.112	1.4351
	180	148	0.688	0.203	1.5165
	210	148	0.688	0.310	1.6128
	250	148	0.688	0.478	1.7641
3					
	110	87	0.687	0.025	1.6270
	130	109	0.688	0.089	1.6911
	150	148	0.688	0.165	1.7626
	180	148	0.688	0.298	1.8426
	210	148	0.688	0.455	1.8413
	250	148	0.688	0.702	1.8446
3 1R					
	110	128	0.689	0.019	1.5887
	130	160	0.689	0.069	1.6325
	150	148	0.688	0.127	1.5925
	180	148	0.688	0.230	1.6829
	210	148	0.688	0.352	1.7897
	250	148	0.688	0.543	1.8417
4					
	110	65	0.685	0.038	1.6649
	130	82	0.690	0.136	1.7539
	150	148	0.688	0.251	1.8448
	180	148	0.688	0.453	1.8434
	210	148	0.688	0.693	1.8419
	250	148	0.688	1.069	1.8460
4 1R					
	110	85	0.690	0.023	1.6369
	130	106	0.688	0.084	1.6967
	150	148	0.688	0.155	1.7699
	180	148	0.688	0.280	1.8400
	210	148	0.688	0.428	1.8387
	250	148	0.688	0.661	1.8420
4 2R					
	110	118	0.686	0.020	1.5888
	130	148	0.688	0.072	1.6401
	150	148	0.688	0.133	1.6948
	180	148	0.688	0.241	1.7915
	210	148	0.688	0.368	1.8437
	250	148	0.688	0.568	1.8462

Table 5 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3. The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ₁) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/m and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



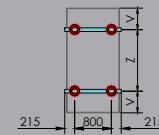
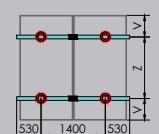
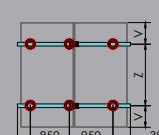
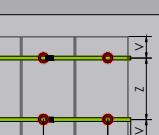
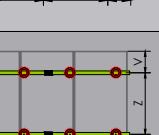
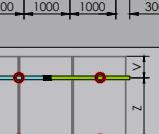
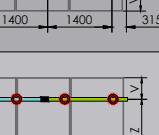
Maximum Admissible Loads and Reactions					 30°
Kit	Loads		 (kN/Mount)	 (kN/Mount)	 (kN/Mount)
	 (Km/h)	 (Kg/m ²)	(kN/Mount)	(kN/Mount)	
1			110	199	0.688
			130	249	0.689
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
2			110	92	0.690
			130	115	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
2 1R			110	124	0.686
			130	156	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
3			110	75	0.690
			130	93	0.685
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
3 1R			110	110	0.685
			130	138	0.687
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4			110	55	0.684
			130	69	0.686
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4 1R			110	72	0.683
			130	91	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4 2R			110	102	0.686
			130	128	0.688
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688

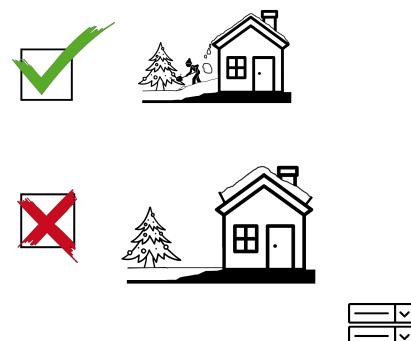
Table 6 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



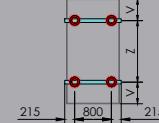
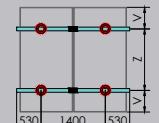
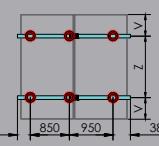
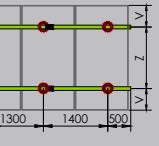
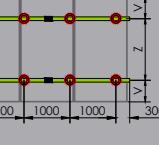
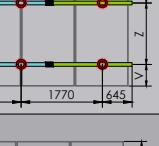
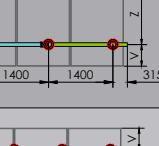
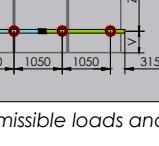
Maximum Admissible Loads and Reactions					 35°	
Kit	Loads		 (kN/Mount)	 (kN/Mount)	 (kN/Mount)	
	 (Km/h)	 (Kg/m ²)	(kN/Mount)	(kN/Mount)		
1		110 130 150 180 210 250	218 265 138 138 138 138	0.690 0.674 0.686 0.686 0.686 0.686	0.022 0.001 0.027 0.074 0.129 0.216	1.0873 1.1064 1.1539 0.8167 0.9158 1.0718
2		110 130 150 180 210 250	99 124 138 138 138 138	0.688 0.689 0.686 0.686 0.686 0.686	0.043 0.002 0.055 0.148 0.258 0.431	1.1881 1.2711 1.3661 1.5339 1.8317 1.8452
2 1R		110 130 150 180 210 250	135 169 138 138 138 138	0.688 0.688 0.686 0.686 0.686 0.686	0.023 0.001 0.030 0.080 0.139 0.233	1.1392 1.2028 1.1231 1.2517 1.4036 1.6427
3		110 130 150 180 210 250	80 100 138 138 138 138	0.687 0.687 0.686 0.686 0.686 0.686	0.034 0.002 0.043 0.117 0.205 0.342	1.2249 1.3216 1.4344 1.7127 1.8460 1.8462
3 1R		110 130 150 180 210 250	120 150 138 138 138 138	0.689 0.689 0.686 0.686 0.686 0.686	0.027 0.001 0.034 0.091 0.158 0.264	1.1584 1.2276 1.2463 1.3890 1.5577 1.8229
4		110 130 150 180 210	59 73 138 138 138	0.690 0.684 0.686 0.686 0.686	0.052 0.002 0.066 0.179 0.312	1.2952 1.4107 1.5843 1.8481 1.8472
4 1R		110 130 150 180 210 250	78 97 138 138 138 138	0.690 0.687 0.686 0.686 0.686 0.686	0.032 0.001 0.041 0.110 0.193 0.322	1.2345 1.3296 1.4451 1.7544 1.8425 1.8427
4 2R		110 130 150 180 210 250	111 138 138 138 138 138	0.690 0.686 0.686 0.686 0.686 0.686	0.028 0.001 0.035 0.095 0.165 0.276	1.1714 1.2409 1.3273 1.4799 1.6664 1.8476

Table 7 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN 1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 Km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



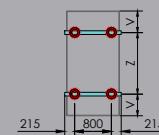
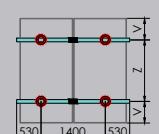
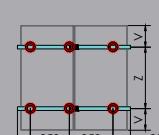
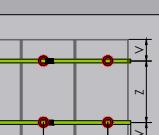
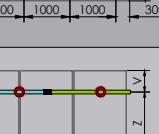
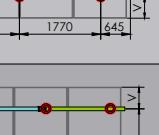
Maximum Admissible Loads and Reactions					
Kit	Loads				
		(Km/h)	(Kg/m ²)	(kN/Mount)	(kN/Mount)
1					
1	110	257	0.689	0.017	0.9169
1	130	265	0.581	0.006	0.8267
1	150	162	0.690	0.032	0.8710
1	180	162	0.690	0.079	0.7103
1	210	162	0.690	0.134	0.8029
1	250	162	0.690	0.221	0.9485
2					
2	110	115	0.687	0.033	1.0102
2	130	144	0.688	0.012	1.0873
2	150	162	0.690	0.065	1.1759
2	180	162	0.690	0.158	1.3465
2	210	162	0.690	0.268	1.6058
2	250	162	0.690	0.442	1.8459
2 1R					
2 1R	110	158	0.687	0.018	0.9653
2 1R	130	198	0.688	0.007	1.0252
2 1R	150	162	0.690	0.035	0.9687
2 1R	180	162	0.690	0.085	1.0887
2 1R	210	162	0.690	0.145	1.2305
2 1R	250	162	0.690	0.238	1.4536
3					
3	110	93	0.689	0.026	1.0490
3	130	116	0.688	0.010	1.1379
3	150	162	0.690	0.051	1.2432
3	180	162	0.690	0.125	1.6003
3	210	162	0.690	0.213	1.8479
3	250	162	0.690	0.350	1.8464
3 1R					
3 1R	110	140	0.688	0.020	0.9824
3 1R	130	175	0.688	0.007	1.0470
3 1R	150	162	0.690	0.040	1.0750
3 1R	180	162	0.690	0.097	1.2082
3 1R	210	162	0.690	0.164	1.3656
3 1R	250	162	0.690	0.271	1.6131
4					
4	110	67	0.686	0.040	1.1066
4	130	84	0.687	0.015	1.2232
4	150	162	0.690	0.078	1.4835
4	180	162	0.690	0.191	1.8466
4	210	162	0.690	0.324	1.8459
4	250	162	0.690	0.533	1.8440
4 1R					
4 1R	110	90	0.688	0.025	1.0534
4 1R	130	112	0.686	0.009	1.1430
4 1R	150	162	0.690	0.048	1.2509
4 1R	180	162	0.690	0.118	1.6393
4 1R	210	162	0.690	0.200	1.8477
4 1R	250	162	0.690	0.329	1.8462
4 2R					
4 2R	110	129	0.687	0.021	0.9929
4 2R	130	162	0.690	0.008	1.0652
4 2R	150	162	0.690	0.042	1.1458
4 2R	180	162	0.690	0.101	1.2883
4 2R	210	162	0.690	0.172	1.4609
4 2R	250	162	0.690	0.283	1.7257

Table 8 - Maximum admissible loads and reactions.

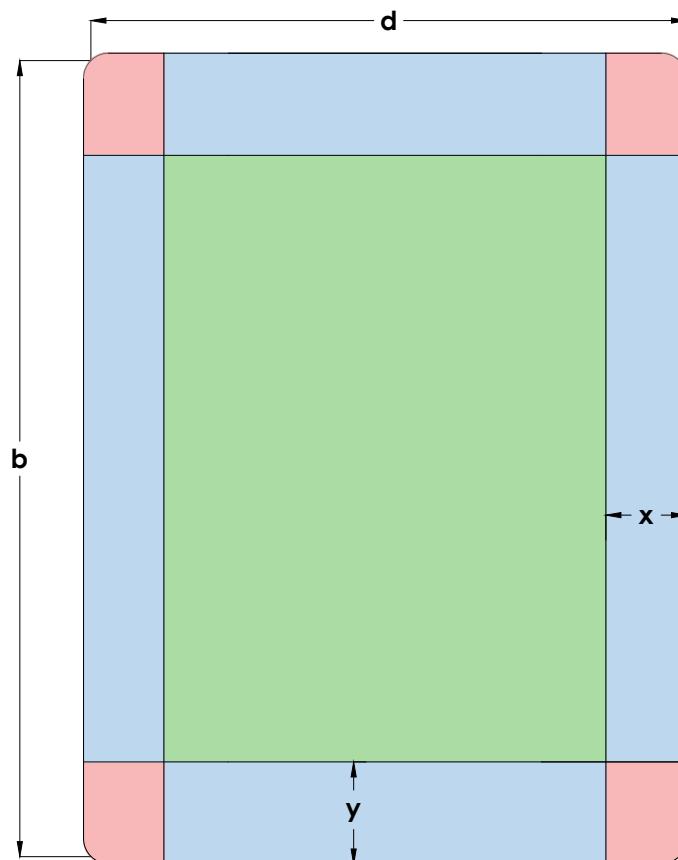
Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

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The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 Km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>

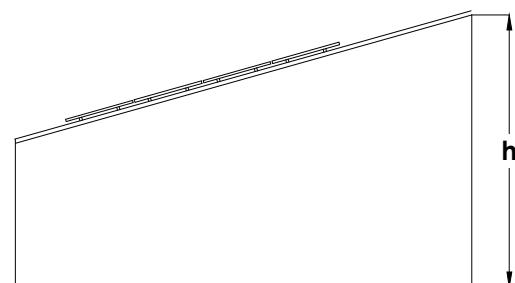




$$e = \min [b, 2h]$$

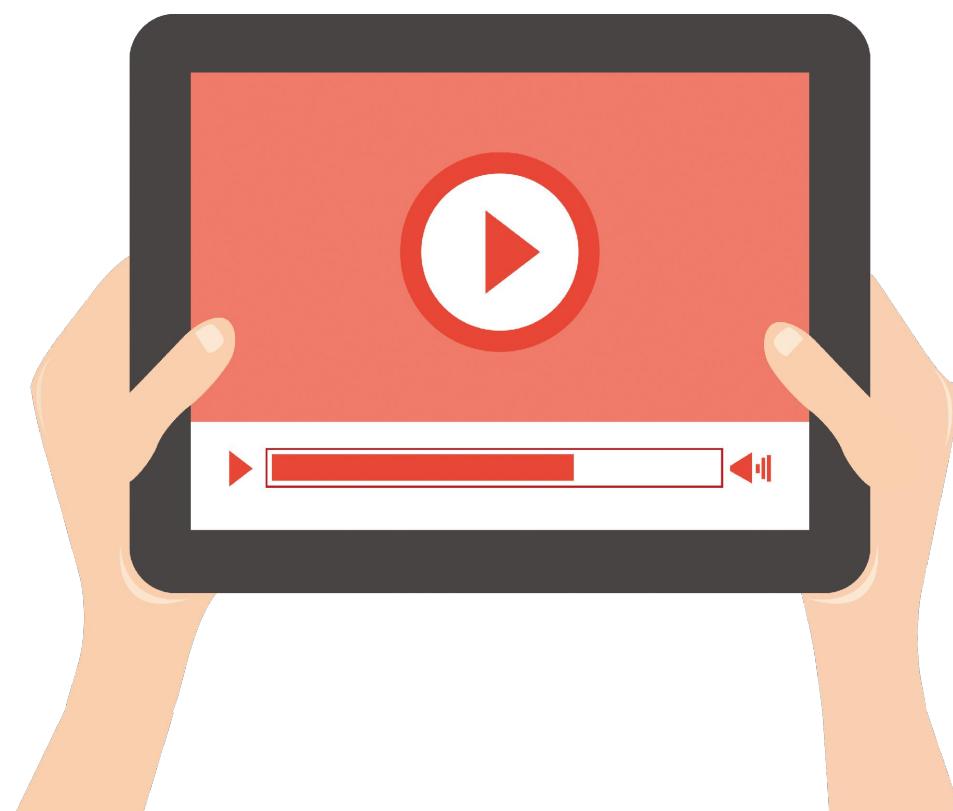
$$x = \text{Max } [e/10, 0.5m]$$

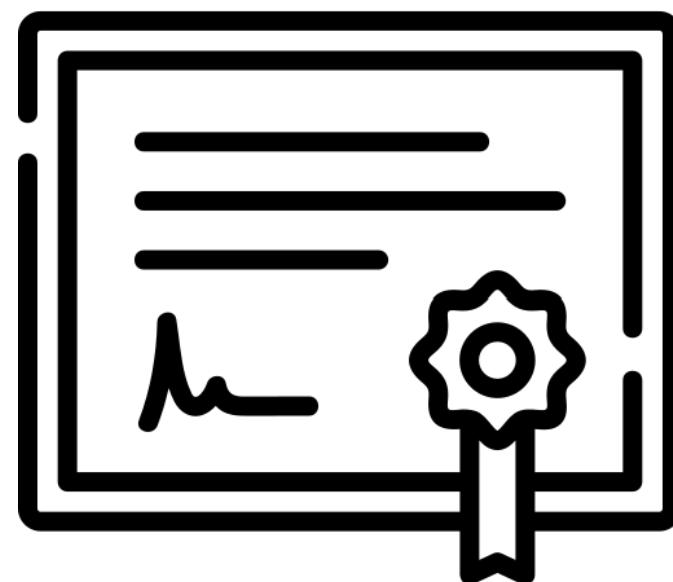
$$y = \text{Max } [e/4, 0.5m]$$



-  Installation Safe Zone
-  Turbulent Zone
-  Extremely Turbulent Zone

To avoid turbulence and other unwanted natural effects, it is strongly recommended to install photovoltaic panels inside of the green zone.





- **ISO 9001 Certificate**
- **ISO 14001 Certificate**
- **UNE-EN 1090 Certificate**
- **CE Marking**
- **Guarantee**

**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:

02.3V-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****DdP****REVISION 01**

DECLARATION OF PERFORMANCE NUMBER: P-0119

1. PRODUCT DESCRIPTION.

UNIQUE IDENTIFICATION CODE OF THE PRODUCT TYPE: 02.3V-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 <input checked="" type="checkbox"/>	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: - Fire resistance: - 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

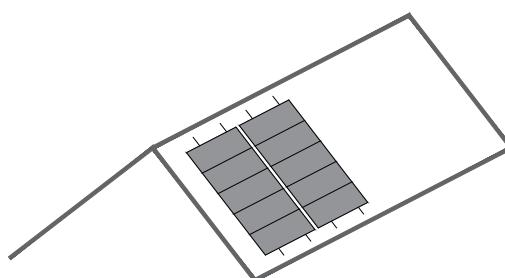
Signature:



02.3V-EN



Landscape



Concrete Slab



Return



CONTENTS



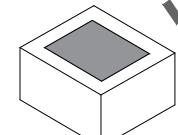
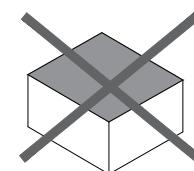
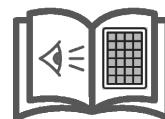
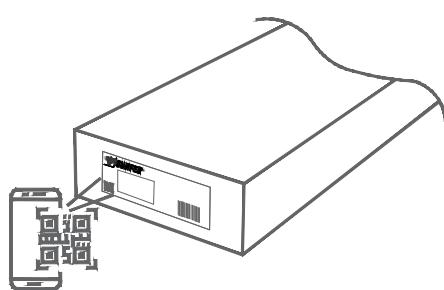
- 1. General Information**
- 2. Kit Contents**
- 3. Landscape Installation**
- 4. Fastening Technical Information**
- 5. Maximum Loads and Reactions**
- 6. Installation Zone**
- 7. Installation Video**
- 8. Certificates and Guarantee**

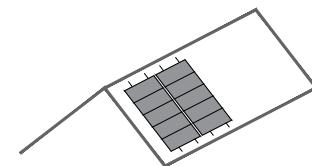




General Information and Recommendations EN

- All installation instructions and product specifications provided must be adhered to.
- Check the condition of the roof covering and its carrying capacity. The management overseeing installation is responsible for verifying that the substructure of the roof as well as the static structure of the building itself is capable of supporting additional loads before any installation is carried out.
- To avoid turbulence from wind a minimum security distance (defined by regulations) must be maintained between the photovoltaic installations and roof edges, as well as other obstacles such as chimneys or vents.
- In the case of chimneys or other features which may need future maintenance, a minimum distance must be maintained in order to facilitate said maintenance or to extinguish fires. This distance shall be either 1m or that suggested by the relevant authority, whichever is greater.
- The surface of the roof covering must be clean and dry. Any major irregularities of the roof must be corrected or eliminated.
- The mounting must always be anchored to the structure of the roof.
- Check the weathertightness of the mount once fastened.
- Place solar panels such that they are distributed symmetrically along the support, leaving equal overhangs at each end.
- Clamps must not be tightened using impact drivers.
- Check that the support attachment points are compatible with the solar panel manufacturer's specifications.
- Uninstallation must be carried out in the reverse order from the installation.
- During the shipping of products take extreme care to maintain the integrity of the packaging. Store in a dry, well-ventilated area. Minimize exposure to large temperature differences and humidity. Avoid outdoor storage. Avoid sources of dripping water, puddles, splashing, or any other contact with water in the storage area. If the product becomes wet, immediately dry and clean as well as possible. Do not leave the product directly on the floor or ground where it may attract moisture. Store on the shipment's original pallet or on shelves.
- We reserve the right to make changes to our products at any moment without prior warning if, from our point of view, the changes are necessary for the improvement of the product. All illustrations in plans and catalogues are for example only and therefore may differ from the actual product provided.
- Aluminum components can be delivered in different finishes without compromising the structural solution. Available finishes: raw/anodised/lacquered.





02.3V-EN

Kit Contents



S02.3-EN



S10-EN



S11-EN



UG1-EN



G1-1230-EN



G1-1800-EN



TG1



S13



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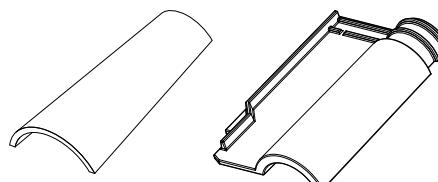
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Anchoring Surface:



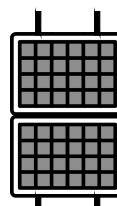
Concrete Slab



Profiles of EN AW 6005A T6 Aluminium



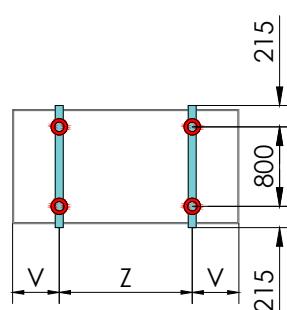
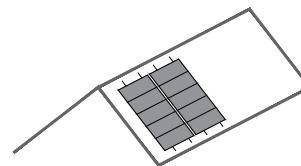
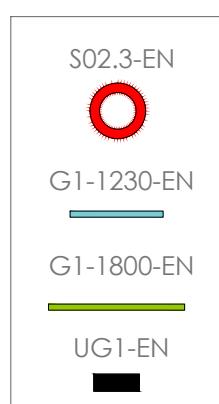
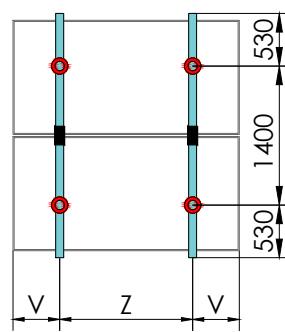
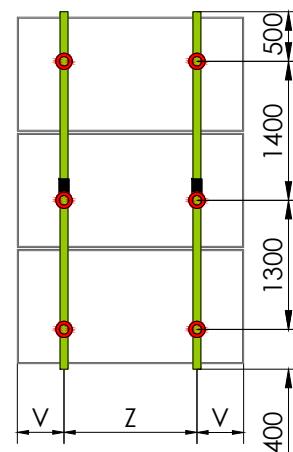
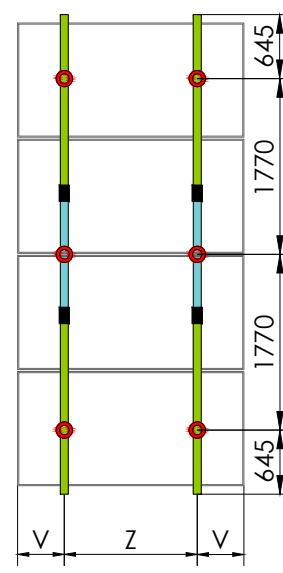
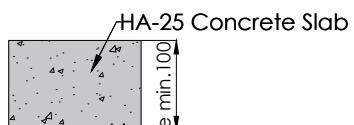
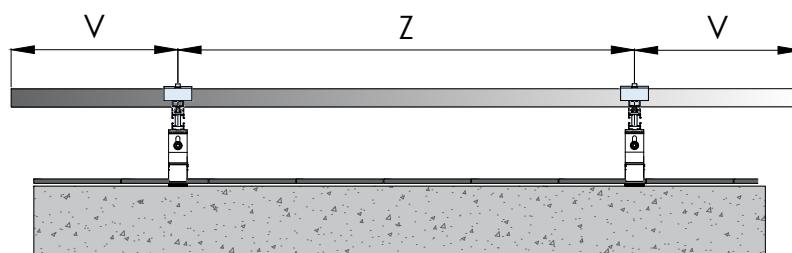
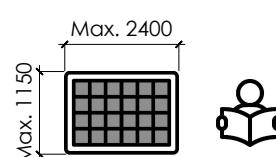
Fasteners of A2-70 Stainless Steel



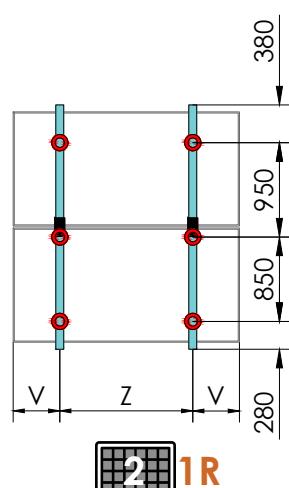
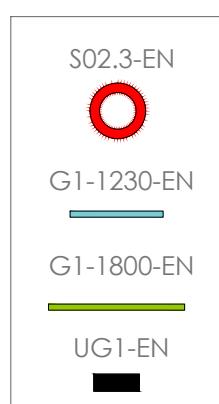
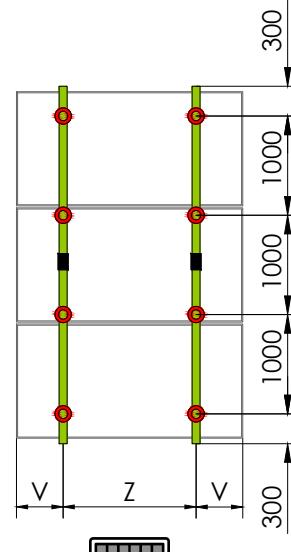
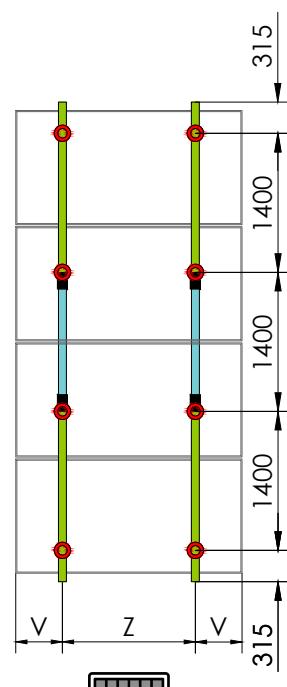
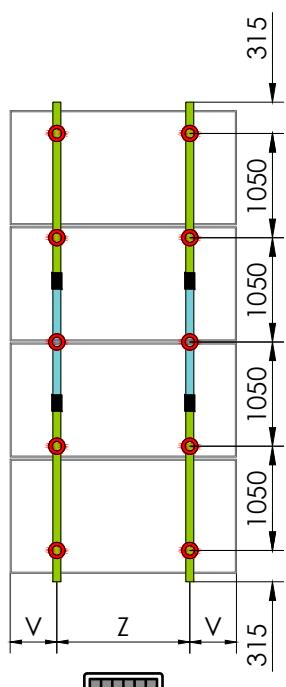
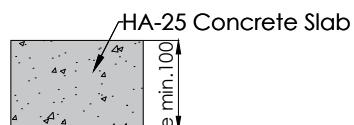
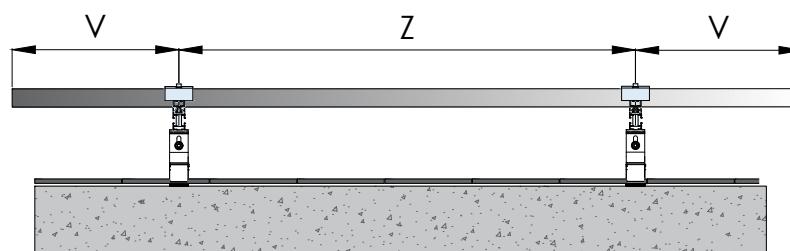
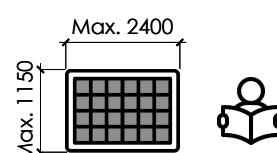
Landscape

02.3V-EN

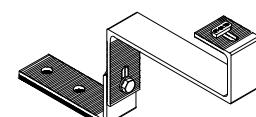
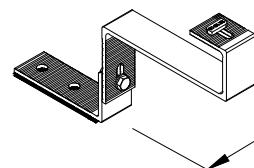
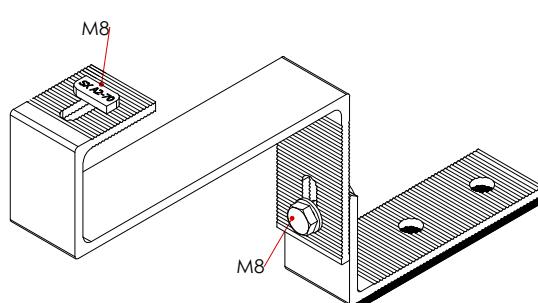
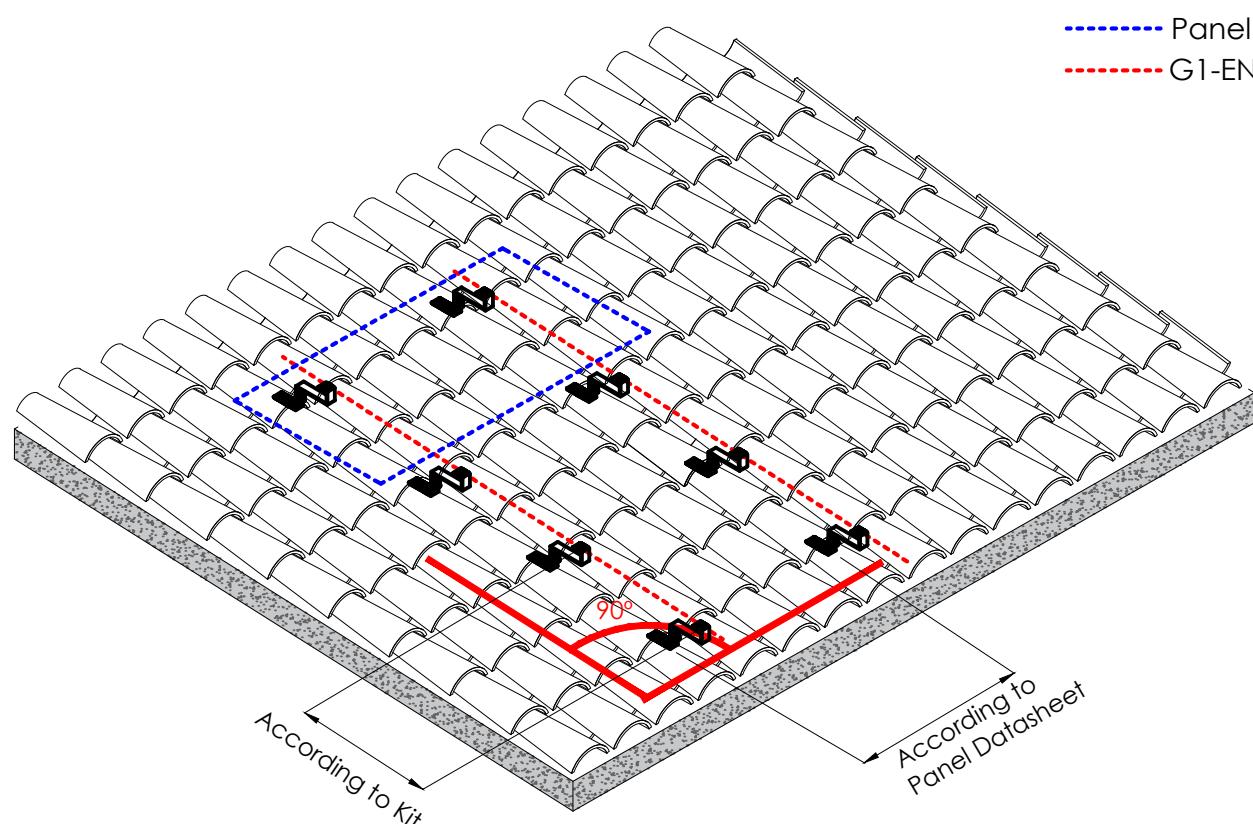
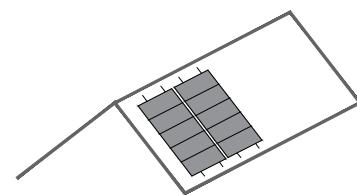
Anchoring Distances


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3

4


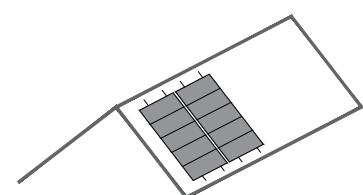
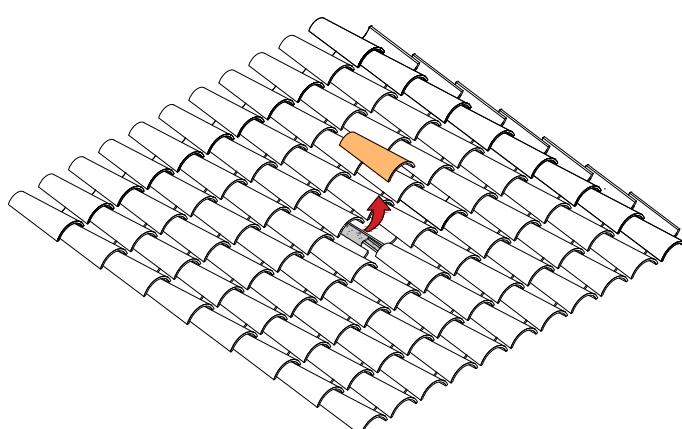
The maximum distance "Z" between profiles and the overhang distance "V" should be determined by consulting the technical datasheets of the solar panel manufacturer.

Landscape
02.3V-EN
Anchoring Distances

2 1R

3 1R

4 1R

4 2R


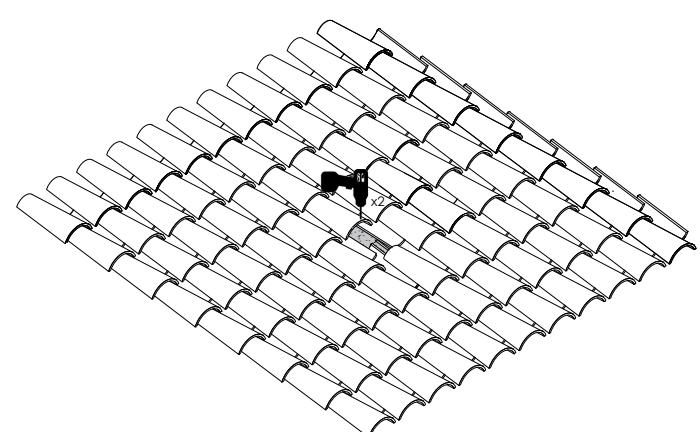
The maximum distance "Z" between profiles and the overhang distance "V" should be determined by consulting the technical datasheets of the solar panel manufacturer.



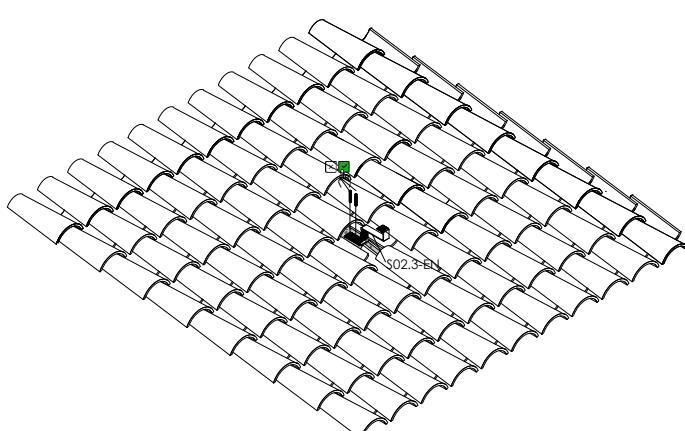
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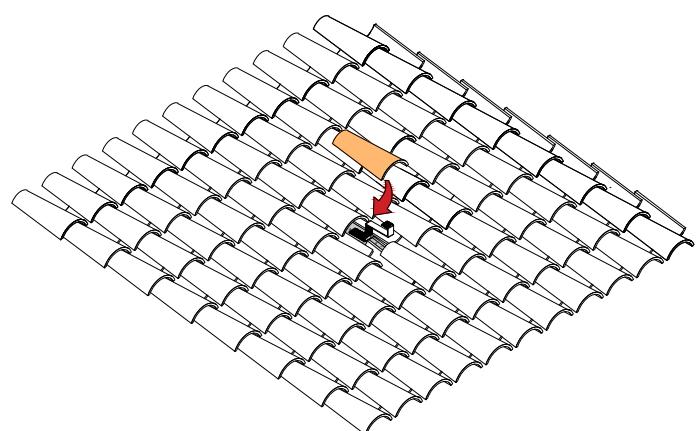
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3.

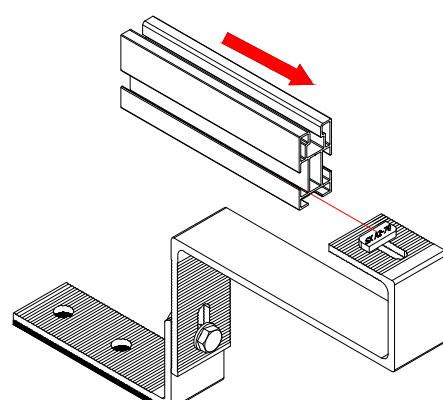
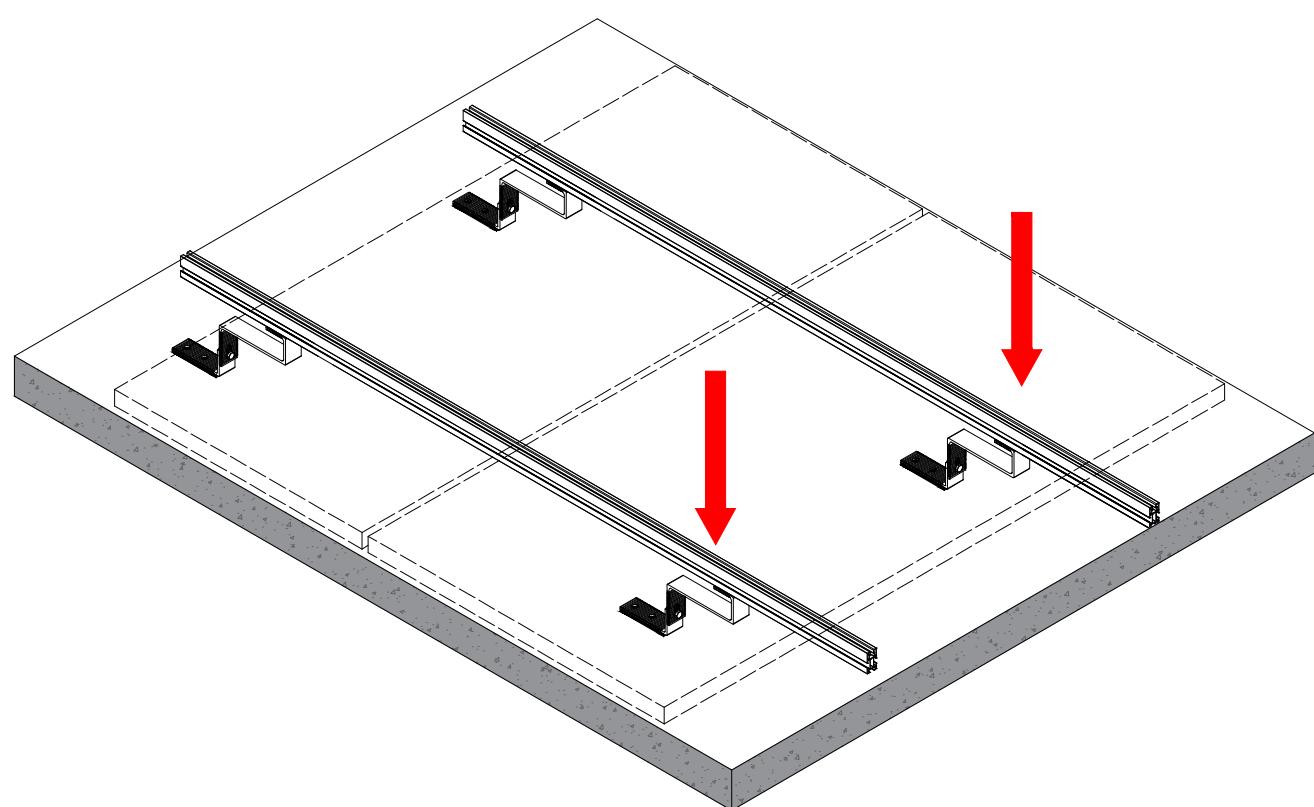
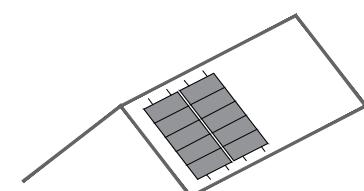
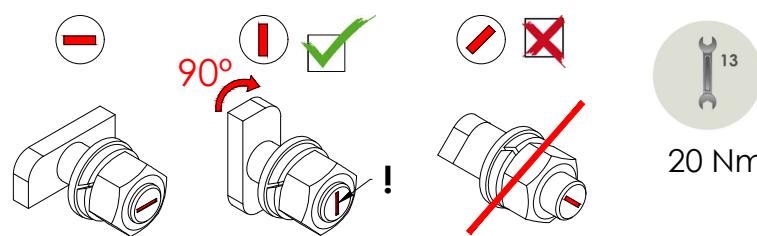


4.



*Must support the reaction forces at the anchor point







6 Nm

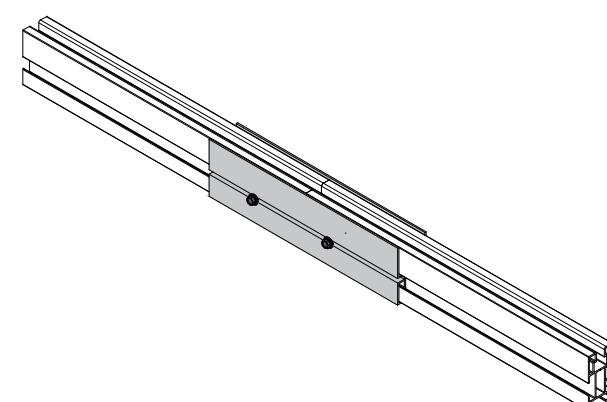
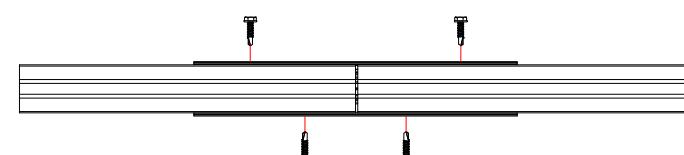
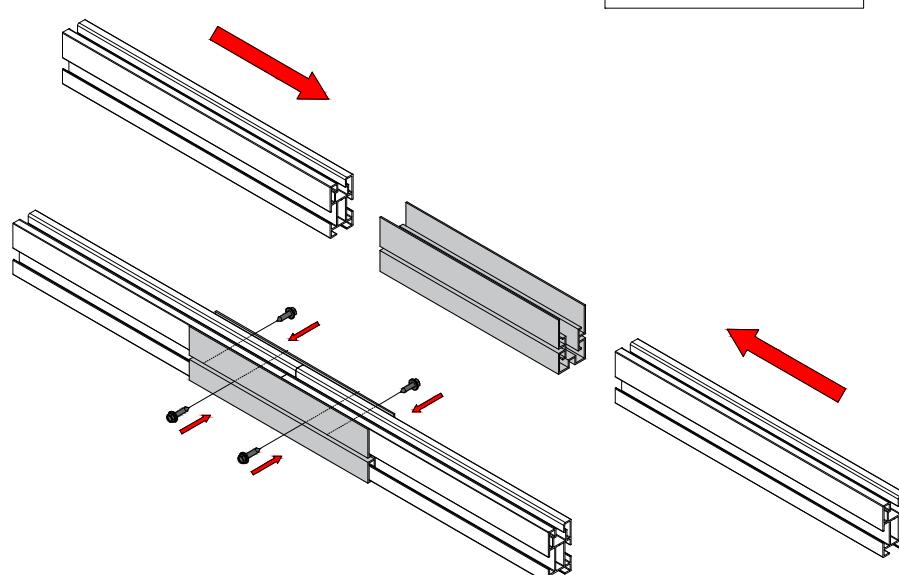


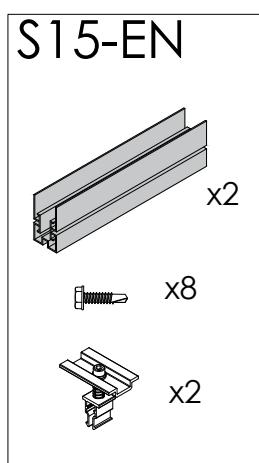
(x4)

UG1-EN

x1

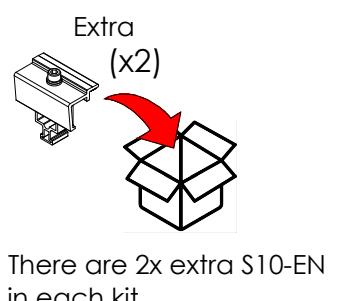
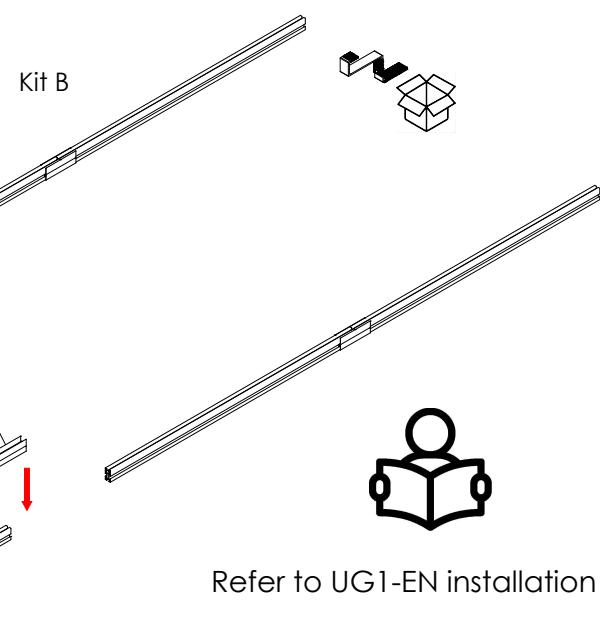
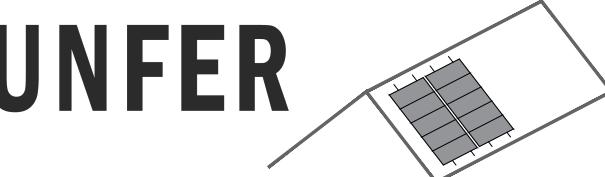
x4





Joining Kit

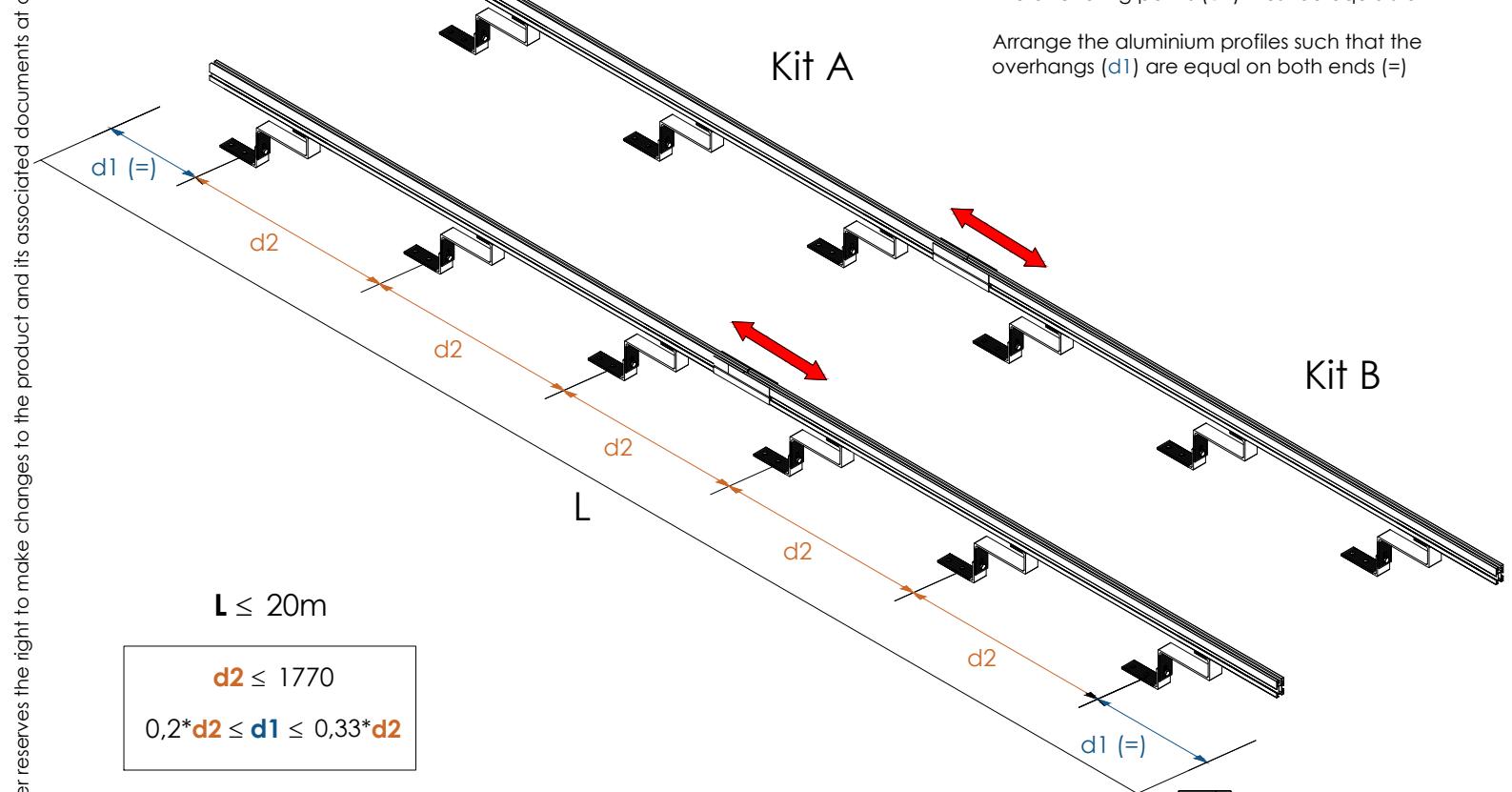
Optional Step: For joining one or more kits

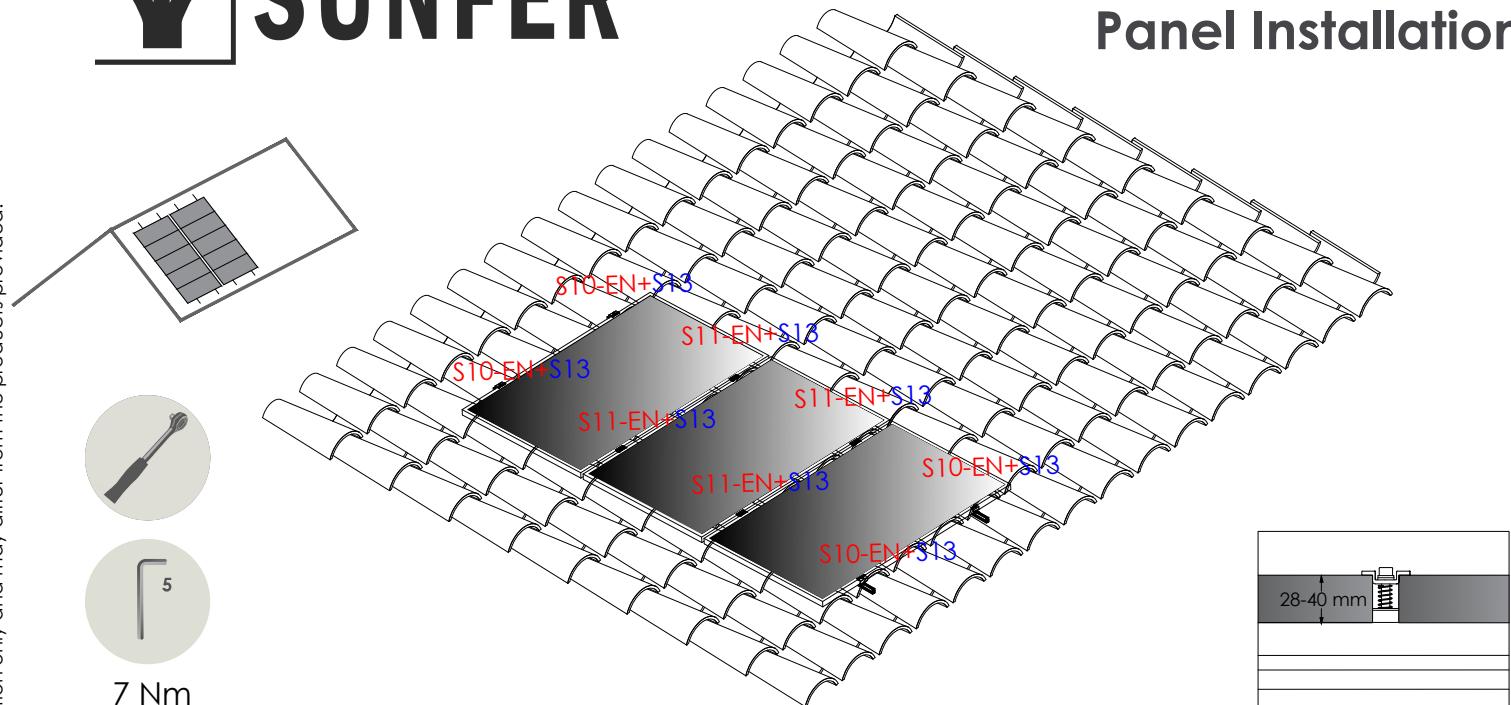


Joining the kits:

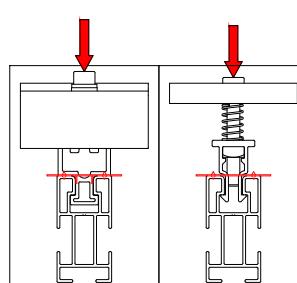
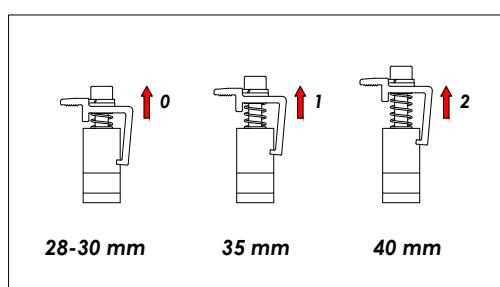
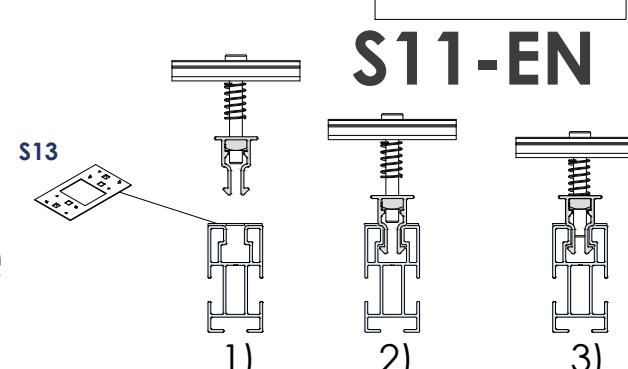
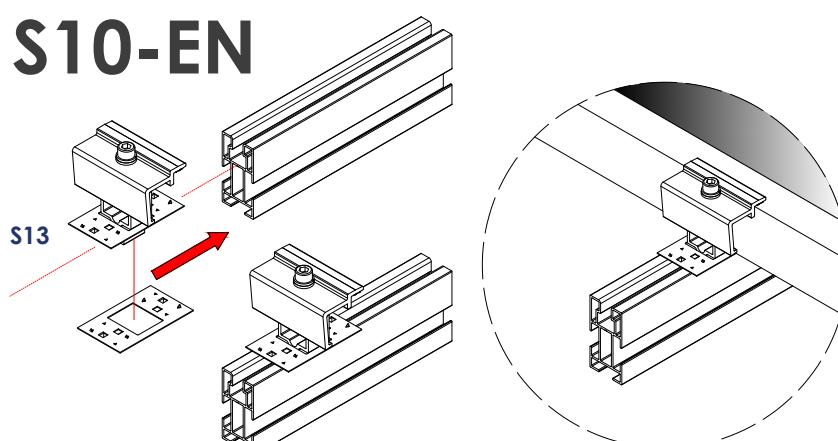
The anchoring points (d2) must be equidistant

Arrange the aluminium profiles such that the overhangs (d1) are equal on both ends (=)

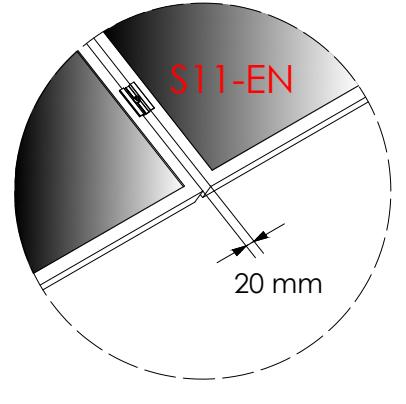
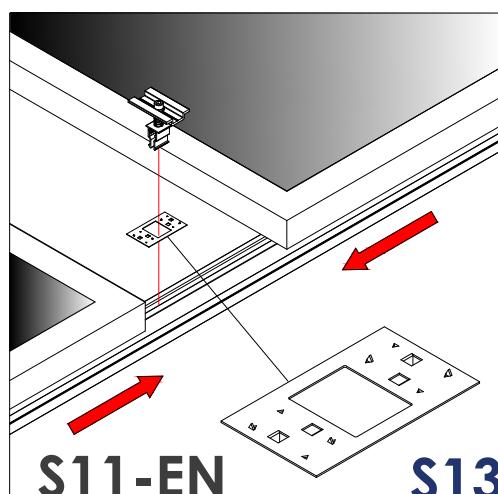
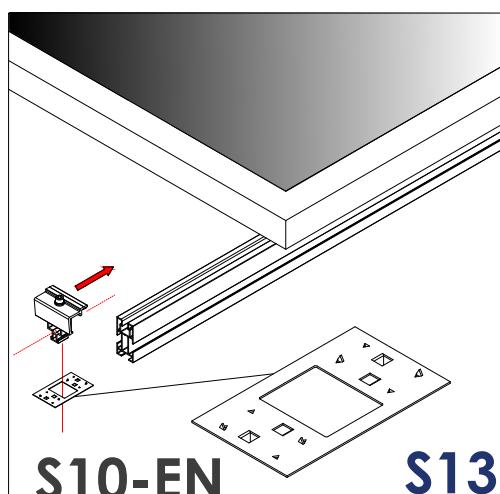
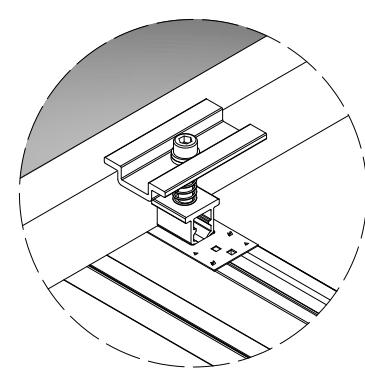


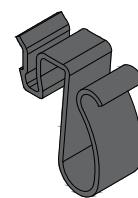
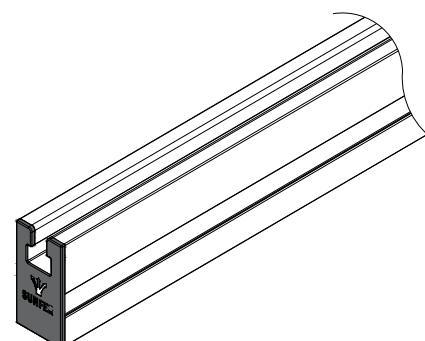
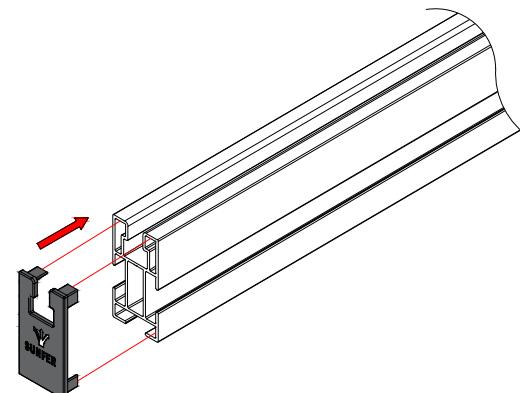


S10-EN

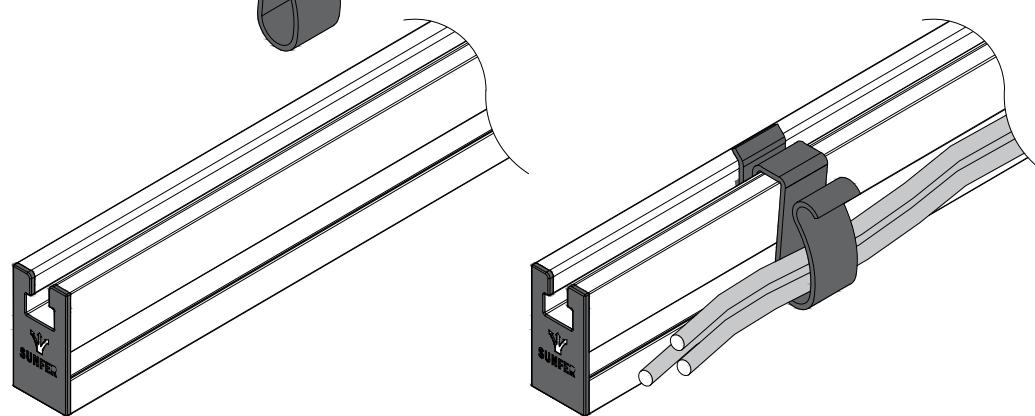


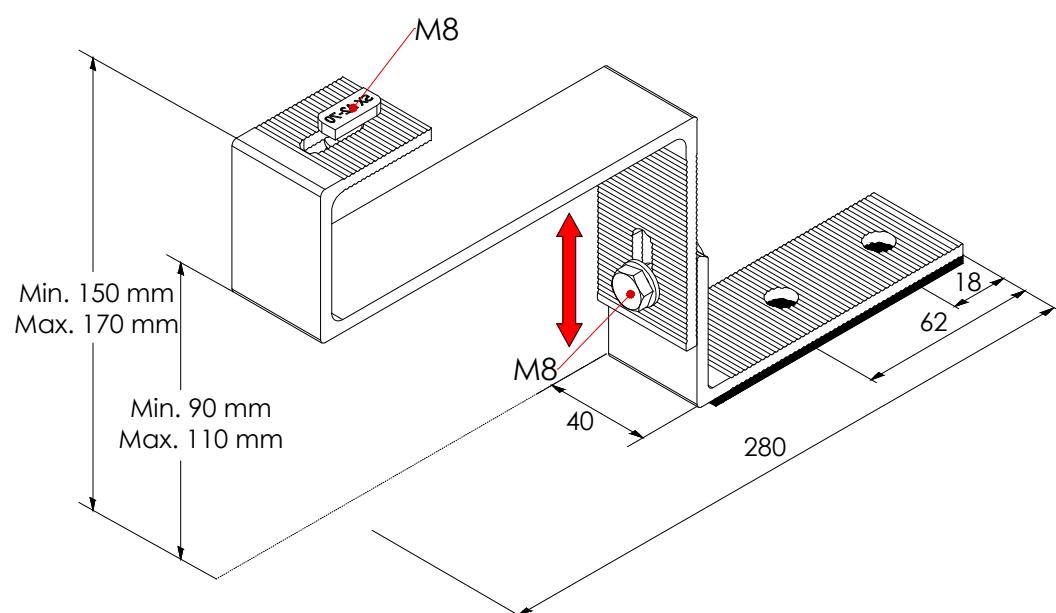
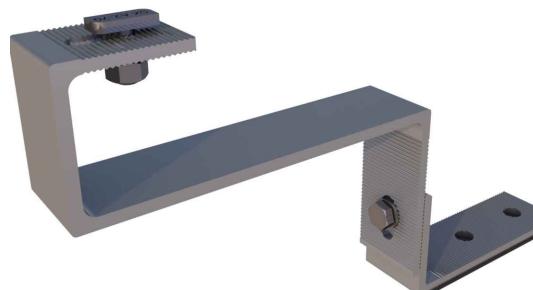
⚠ Double check the recommended torque with a torque wrench to ensure a good connection. The pins must be pinned to the rail.



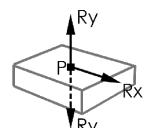


Optional Cable Clip
(Not included)



**Technical
Information:
Anchor**


Description	Coplanar Mount
Panel Orientation	Portrait/Landscape
Format	KIT of 1 to 4 panels
Joining Kit	S15-EN not included (optional)
Application Surface	Tile
Anchoring Surface	Concrete Slab
Type of fastening	Screwed (Not included)
Mount	S02.3-EN
Profile	G1-EN
Grounding Plate	S13
Maximum panel dimensions	2400x1150 mm
Panel thickness	from 28 to 40 mm
Materials	Fasteners: A2 AISI 304 Stainless Steel Profiles: EN AW 6005A T6 Aluminium, raw or anodized EPDM Weatherseal
Maximum Loads	According to Configuration
Structural calculation	Computational model checked against ESROCODE 9 "PROJECT ALUMINIUM STRUCTURES"



Maximum admissible loads and their reactions

5° Pitch

10° Pitch

15° Pitch

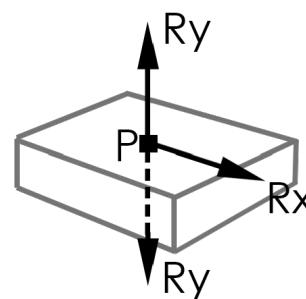
20° Pitch

25° Pitch

30° Pitch

35° Pitch

40° Pitch



- P: Mount Point
- Rx: Shear generated at anchor
- Ry: Tension generated at anchor, compression applied to roof

Maximum Admissible Loads and Reactions					5°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)	(Km/h)	(Kg/m ²)	(Km/h)
1					
	110	232	0.158	0.016	1.8429
	130	265	0.146	0.016	1.7166
	150	265	0.146	0.053	1.7340
	180	265	0.146	0.118	1.7648
	210	265	0.146	0.195	1.8012
	250	264	0.145	0.316	1.8466
2					
	110	107	0.155	0.032	1.8468
	130	131	0.152	0.032	1.8443
	150	128	0.149	0.105	1.8438
	180	123	0.144	0.236	1.8465
	210	117	0.138	0.390	1.8486
	250	107	0.127	0.633	1.8452
2 1R					
	110	145	0.156	0.017	1.8437
	130	179	0.154	0.017	1.8463
	150	176	0.152	0.057	1.8459
	180	171	0.148	0.127	1.8479
	210	165	0.143	0.211	1.8495
	250	155	0.136	0.342	1.8470
3					
	110	87	0.154	0.025	1.8453
	130	106	0.150	0.025	1.8423
	150	103	0.147	0.084	1.8417
	180	98	0.140	0.187	1.8449
	210	92	0.133	0.309	1.8474
	250	82	0.121	0.502	1.8434
3 1R					
	110	129	0.156	0.019	1.8458
	130	159	0.154	0.019	1.8487
	150	156	0.151	0.065	1.8482
	180	150	0.146	0.145	1.8405
	210	144	0.141	0.239	1.8423
	250	135	0.133	0.388	1.8495
4					
	110	64	0.151	0.038	1.8361
	130	78	0.148	0.038	1.8456
	150	75	0.143	0.127	1.8448
	180	70	0.135	0.285	1.8489
	210	63	0.124	0.471	1.8342
	250	54	0.110	0.764	1.8470
4 1R					
	110	84	0.153	0.024	1.8365
	130	103	0.150	0.024	1.8441
	150	100	0.146	0.079	1.8435
	180	95	0.140	0.176	1.8468
	210	89	0.133	0.291	1.8494
	250	79	0.120	0.472	1.8453
4 2R					
	110	119	0.155	0.020	1.8408
	130	147	0.153	0.020	1.8492
	150	144	0.151	0.068	1.8487
	180	138	0.145	0.151	1.8405
	210	132	0.139	0.250	1.8424
	250	122	0.130	0.406	1.8393

Table 1 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Maximum Admissible Loads and Reactions					10°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)	(kN/Mount)	(kN/Mount)	(kN/Mount)
1					
	110	238	0.319	0.015	1.8462
	130	265	0.287	0.017	1.6799
	150	265	0.287	0.054	1.6973
	180	265	0.287	0.119	1.7281
	210	265	0.287	0.196	1.7644
	250	265	0.287	0.318	1.8216
2					
	110	109	0.311	0.029	1.8376
	130	134	0.306	0.034	1.8415
	150	131	0.300	0.108	1.8418
	180	126	0.290	0.238	1.8458
	210	120	0.278	0.392	1.8495
	250	110	0.258	0.635	1.8489
2 1R					
	110	149	0.316	0.016	1.8489
	130	183	0.311	0.018	1.8431
	150	180	0.306	0.058	1.8433
	180	175	0.298	0.129	1.8464
	210	169	0.289	0.212	1.8492
	250	159	0.273	0.343	1.8487
3					
	110	89	0.309	0.023	1.8422
	130	109	0.304	0.027	1.8469
	150	106	0.296	0.085	1.8473
	180	100	0.282	0.189	1.8384
	210	94	0.267	0.311	1.8428
	250	84	0.243	0.504	1.8420
3 1R					
	110	132	0.314	0.018	1.8439
	130	163	0.310	0.021	1.8497
	150	160	0.305	0.066	1.8500
	180	154	0.295	0.146	1.8436
	210	148	0.285	0.241	1.8467
	250	138	0.267	0.389	1.8462
4					
	110	66	0.305	0.036	1.8438
	130	80	0.297	0.041	1.8454
	150	77	0.288	0.130	1.8458
	180	71	0.270	0.288	1.8345
	210	65	0.251	0.474	1.8401
	250	55	0.221	0.767	1.8391
4 1R					
	110	86	0.307	0.022	1.8345
	130	106	0.304	0.025	1.8499
	150	102	0.294	0.080	1.8362
	180	97	0.281	0.178	1.8411
	210	91	0.267	0.293	1.8456
	250	81	0.242	0.474	1.8448
4 2R					
	110	122	0.313	0.019	1.8418
	130	150	0.308	0.022	1.8428
	150	147	0.303	0.069	1.8430
	180	142	0.293	0.153	1.8467
	210	135	0.280	0.252	1.8396
	250	126	0.264	0.407	1.8495

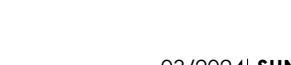
Table 2 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Loads and reactions calculated for the kit lengths and distances in the table.

For other distributions consult SUNFER.



Maximum Admissible Loads and Reactions					15°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)			
1			110	244	0.478
1			130	265	0.420
1			150	265	0.420
1			180	265	0.420
1			210	265	0.420
1			250	256	0.405
2			110	110	0.459
2			130	133	0.446
2			150	128	0.431
2			180	118	0.401
2			210	107	0.369
2			250	89	0.315
2 1R			110	151	0.468
2 1R			130	184	0.457
2 1R			150	179	0.446
2 1R			180	169	0.423
2 1R			210	158	0.398
2 1R			250	140	0.357
3			110	89	0.453
3			130	106	0.435
3			150	101	0.417
3			180	91	0.382
3			210	80	0.343
3			250	62	0.170
3 1R			110	134	0.466
3 1R			130	162	0.452
3 1R			150	157	0.439
3 1R			180	147	0.414
3 1R			210	136	0.387
3 1R			250	118	0.341
4			110	65	0.442
4			130	76	0.418
4			150	71	0.396
4			180	61	0.351
4			210	50	0.190
4			250	32	0.149
4 1R			110	86	0.450
4 1R			130	103	0.434
4 1R			150	98	0.416
4 1R			180	88	0.380
4 1R			210	77	0.340
4 1R			250	59	0.169
4 2R			110	123	0.461
4 2R			130	150	0.451
4 2R			150	144	0.435
4 2R			180	135	0.411
4 2R			210	123	0.378
4 2R			250	105	0.330

Table 3 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 Km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



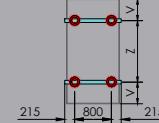
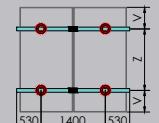
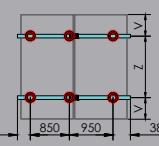
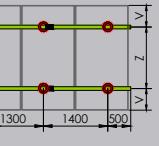
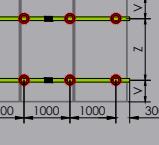
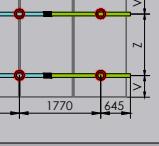
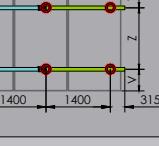
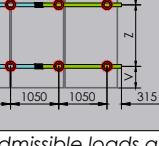
Maximum Admissible Loads and Reactions					 20°		
Kit	Loads						
	 (Km/h)	 (Kg/m²)	(kN/Mount)	(kN/Mount)	(kN/Mount)		
1			110 130 150 180 210 250	258 265 265 265 265 265	0.649 0.541 0.541 0.541 0.541 0.541	0.012 0.053 0.101 0.184 0.284 0.440	1.8468 1.5767 1.6067 1.6599 1.7227 1.8215
2			110 130 150 180 210 250	117 141 135 125 113 94	0.625 0.605 0.582 0.544 0.499 0.426	0.025 0.106 0.201 0.369 0.567 0.879	1.8477 1.8443 1.8416 1.8431 1.8431 1.8416
2 1R			110 130 150 180 210 250	160 195 189 179 167 148	0.636 0.622 0.604 0.575 0.540 0.484	0.013 0.057 0.109 0.199 0.306 0.475	1.8473 1.8467 1.8446 1.8458 1.8457 1.8446
3			110 130 150 180 210 250	94 113 107 97 85 66	0.613 0.592 0.565 0.520 0.466 0.230	0.020 0.084 0.159 0.293 0.450 0.697	1.8382 1.8435 1.8402 1.8421 1.8420 1.8403
3 1R			110 130 150 180 210 250	142 172 166 156 144 125	0.633 0.615 0.596 0.563 0.524 0.463	0.015 0.065 0.123 0.226 0.348 0.539	1.8496 1.8445 1.8422 1.8435 1.8434 1.8422
4			110 130 150 180 210 250	69 81 75 65 53 34	0.600 0.569 0.535 0.477 0.255 0.200	0.030 0.128 0.243 0.445 0.685 1.061	1.8439 1.8387 1.8346 1.8369 1.8368 1.8346
4 1R			110 130 150 180 210 250	91 109 104 94 82 63	0.610 0.588 0.565 0.519 0.463 0.229	0.019 0.079 0.150 0.275 0.423 0.656	1.8352 1.8373 1.8468 1.8487 1.8486 1.8468
4 2R			110 130 150 180 210 250	131 159 153 143 131 112	0.630 0.613 0.592 0.558 0.516 0.450	0.016 0.068 0.129 0.236 0.364 0.563	1.8477 1.8493 1.8469 1.8483 1.8482 1.8469

Table 4 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Maximum Admissible Loads and Reactions					25°
Kit	Loads		(kN/Mount)	(kN/Mount)	(kN/Mount)
	(Km/h)	(Kg/m ²)			
1					
	110	228	0.689	0.016	1.5429
	130	265	0.646	0.056	1.4762
	150	148	0.688	0.104	1.5062
	180	148	0.688	0.188	0.9895
	210	148	0.688	0.287	1.0523
	250	148	0.688	0.443	1.1510
2					
	110	106	0.686	0.031	1.6003
	130	133	0.688	0.113	1.6567
	150	148	0.688	0.207	1.7168
	180	148	0.688	0.375	1.8231
	210	148	0.688	0.574	1.8415
	250	148	0.688	0.886	1.8442
2 1R					
	110	143	0.686	0.017	1.5716
	130	179	0.687	0.061	1.6129
	150	148	0.688	0.112	1.4351
	180	148	0.688	0.203	1.5165
	210	148	0.688	0.310	1.6128
	250	148	0.688	0.478	1.7641
3					
	110	87	0.687	0.025	1.6270
	130	109	0.688	0.089	1.6911
	150	148	0.688	0.165	1.7626
	180	148	0.688	0.298	1.8426
	210	148	0.688	0.455	1.8413
	250	148	0.688	0.702	1.8446
3 1R					
	110	128	0.689	0.019	1.5887
	130	160	0.689	0.069	1.6325
	150	148	0.688	0.127	1.5925
	180	148	0.688	0.230	1.6829
	210	148	0.688	0.352	1.7897
	250	148	0.688	0.543	1.8417
4					
	110	65	0.685	0.038	1.6649
	130	82	0.690	0.136	1.7539
	150	148	0.688	0.251	1.8448
	180	148	0.688	0.453	1.8434
	210	148	0.688	0.693	1.8419
	250	148	0.688	1.069	1.8460
4 1R					
	110	85	0.690	0.023	1.6369
	130	106	0.688	0.084	1.6967
	150	148	0.688	0.155	1.7699
	180	148	0.688	0.280	1.8400
	210	148	0.688	0.428	1.8387
	250	148	0.688	0.661	1.8420
4 2R					
	110	118	0.686	0.020	1.5888
	130	148	0.688	0.072	1.6401
	150	148	0.688	0.133	1.6948
	180	148	0.688	0.241	1.7915
	210	148	0.688	0.368	1.8437
	250	148	0.688	0.568	1.8462

Table 5 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3. The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ₁) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/m and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



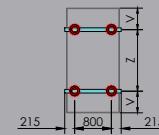
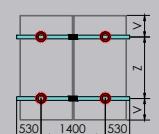
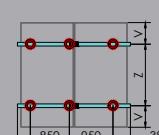
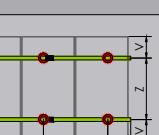
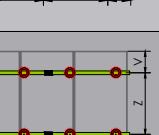
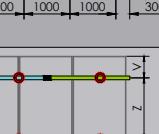
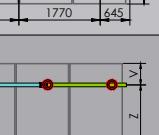
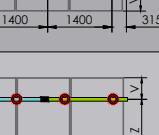
Maximum Admissible Loads and Reactions					 30°
Kit	Loads		 (kN/Mount)	 (kN/Mount)	 (kN/Mount)
	 (Km/h)	 (Kg/m ²)	(kN/Mount)	(kN/Mount)	
1			110	199	0.688
			130	249	0.689
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
2			110	92	0.690
			130	115	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
2 1R			110	124	0.686
			130	156	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
3			110	75	0.690
			130	93	0.685
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
3 1R			110	110	0.685
			130	138	0.687
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4			110	55	0.684
			130	69	0.686
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4 1R			110	72	0.683
			130	91	0.690
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688
4 2R			110	102	0.686
			130	128	0.688
			150	128	0.688
			180	128	0.688
			210	128	0.688
			250	128	0.688

Table 6 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



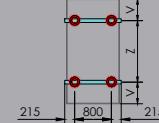
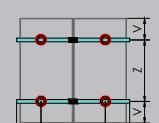
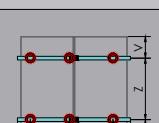
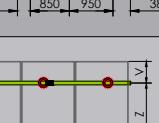
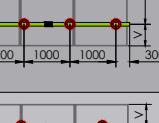
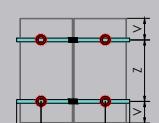
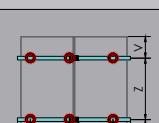
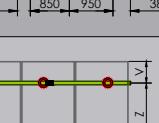
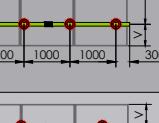
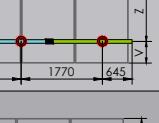
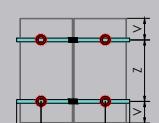
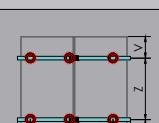
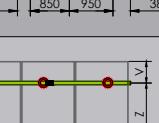
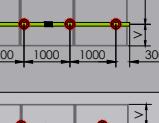
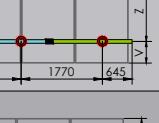
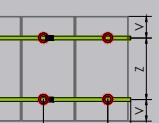
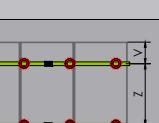
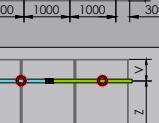
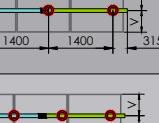
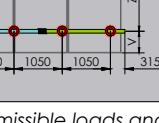
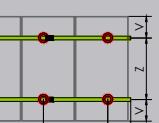
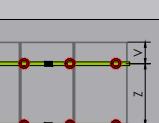
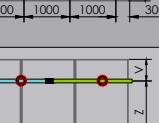
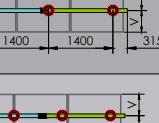
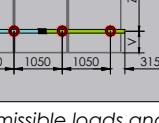
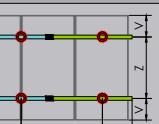
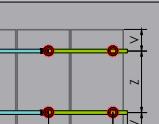
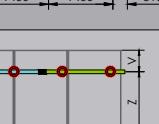
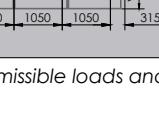
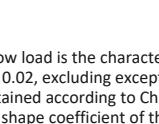
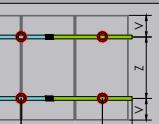
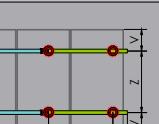
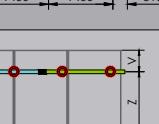
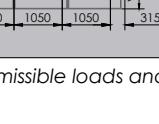
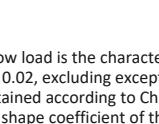
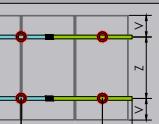
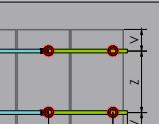
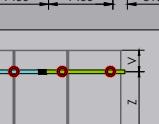
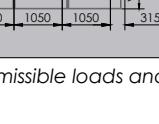
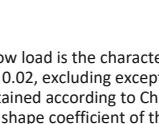
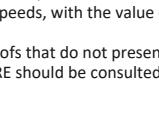
Maximum Admissible Loads and Reactions					 35°
Kit	Loads		 (kN/Mount)	 (kN/Mount)	 (kN/Mount)
	 (Km/h)	 (Kg/m ²)	(kN/Mount)	(kN/Mount)	
1			110	218	0.690
1			130	265	0.674
1			150	138	0.686
1			180	138	0.686
1			210	138	0.686
1			250	138	0.686
2			110	99	0.688
2			130	124	0.689
2			150	138	0.686
2			180	138	0.686
2			210	138	0.686
2			250	138	0.686
2 1R			110	135	0.688
2 1R			130	169	0.688
2 1R			150	138	0.686
2 1R			180	138	0.686
2 1R			210	138	0.686
2 1R			250	138	0.686
3			110	80	0.687
3			130	100	0.687
3			150	138	0.686
3			180	138	0.686
3			210	138	0.686
3			250	138	0.686
3 1R			110	120	0.689
3 1R			130	150	0.689
3 1R			150	138	0.686
3 1R			180	138	0.686
3 1R			210	138	0.686
3 1R			250	138	0.686
4			110	59	0.690
4			130	73	0.684
4			150	138	0.686
4			180	138	0.686
4			210	138	0.686
4 1R			110	78	0.690
4 1R			130	97	0.687
4 1R			150	138	0.686
4 1R			180	138	0.686
4 1R			210	138	0.686
4 2R			110	111	0.690
4 2R			130	138	0.686
4 2R			150	138	0.686
4 2R			180	138	0.686
4 2R			210	138	0.686
4 2R			250	138	0.686

Table 7 - Maximum admissible loads and reactions.

Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN 1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 Km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>



Maximum Admissible Loads and Reactions					 40°
Kit	Loads				
	 (Km/h)	 (Kg/m²)			
1					
	110	257	0.689	0.017	0.9169
	130	265	0.581	0.006	0.8267
	150	162	0.690	0.032	0.8710
	180	162	0.690	0.079	0.7103
	210	162	0.690	0.134	0.8029
	250	162	0.690	0.221	0.9485
2					
	110	115	0.687	0.033	1.0102
	130	144	0.688	0.012	1.0873
	150	162	0.690	0.065	1.1759
	180	162	0.690	0.158	1.3465
	210	162	0.690	0.268	1.6058
	250	162	0.690	0.442	1.8459
2 1R					
	110	158	0.687	0.018	0.9653
	130	198	0.688	0.007	1.0252
	150	162	0.690	0.035	0.9687
	180	162	0.690	0.085	1.0887
	210	162	0.690	0.145	1.2305
	250	162	0.690	0.238	1.4536
3					
	110	93	0.689	0.026	1.0490
	130	116	0.688	0.010	1.1379
	150	162	0.690	0.051	1.2432
	180	162	0.690	0.125	1.6003
	210	162	0.690	0.213	1.8479
	250	162	0.690	0.350	1.8464
3 1R					
	110	140	0.688	0.020	0.9824
	130	175	0.688	0.007	1.0470
	150	162	0.690	0.040	1.0750
	180	162	0.690	0.097	1.2082
	210	162	0.690	0.164	1.3656
	250	162	0.690	0.271	1.6131
4					
	110	67	0.686	0.040	1.1066
	130	84	0.687	0.015	1.2232
	150	162	0.690	0.078	1.4835
	180	162	0.690	0.191	1.8466
	210	162	0.690	0.324	1.8459
	250	162	0.690	0.533	1.8440
4 1R					
	110	90	0.688	0.025	1.0534
	130	112	0.686	0.009	1.1430
	150	162	0.690	0.048	1.2509
	180	162	0.690	0.118	1.6393
	210	162	0.690	0.200	1.8477
	250	162	0.690	0.329	1.8462
4 2R					
	110	129	0.687	0.021	0.9929
	130	162	0.690	0.008	1.0652
	150	162	0.690	0.042	1.1458
	180	162	0.690	0.101	1.2883
	210	162	0.690	0.172	1.4609
	250	162	0.690	0.283	1.7257

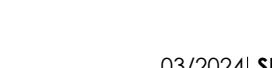
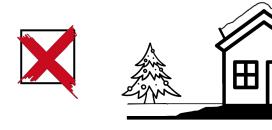
Table 8 - Maximum admissible loads and reactions.

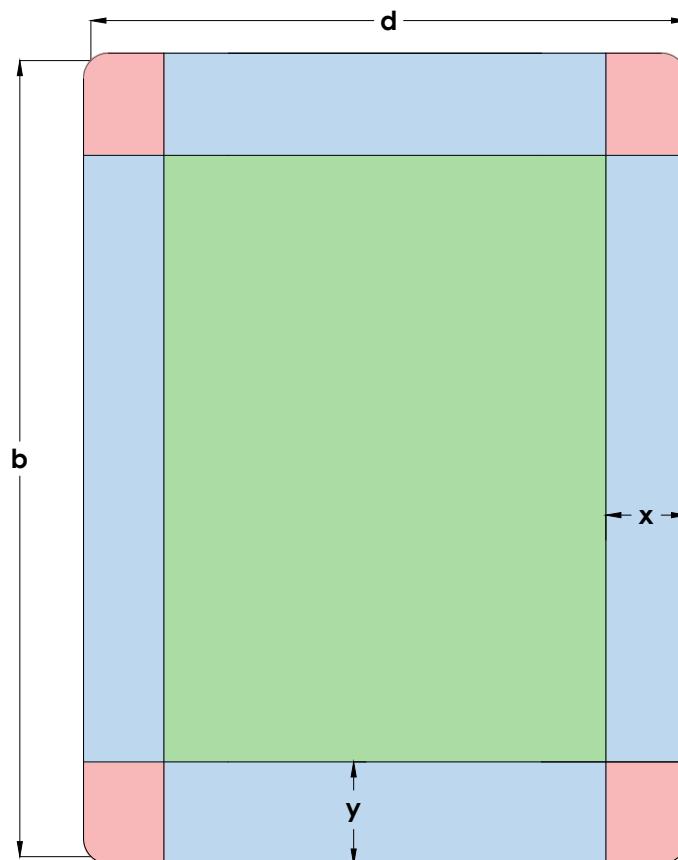
Characteristic snow load at ground level: The tabulated snow load is the characteristic snow load at ground level, which corresponds to a load value with an annual probability of being exceeded of 0.02, excluding exceptional snow actions, according to 1.6.1 EN1991-1-3.

The characteristic value of the snow load on the roof is obtained according to Chapter 5 Section 5.2 Point 3a) of EN 1991-1-3.

The thermal coefficient is considered to be equal to 1. The shape coefficient of the snow load is obtained from Chapter 5 Section 5.3.2 Point 2) Table 5.2 (μ_1) of EN 1991-1-3. For the consideration of the exposure coefficient, "Normal Topography" is established for winds below 125 Km/h and "Topography Exposed to wind" for higher wind speeds, with the value of the exposure coefficient being calculated according to Chapter 5 Section 5.2 Table 5.1 of EN 1991-1-3.

The tabulated values are admissible for single and gable roofs that do not present any obstruction to snow sliding on the roof. If the roof has any obstruction to snow sliding, the SUNFER KEY SOFTWARE should be consulted: <https://sunferkey.sunferenergy.com/>

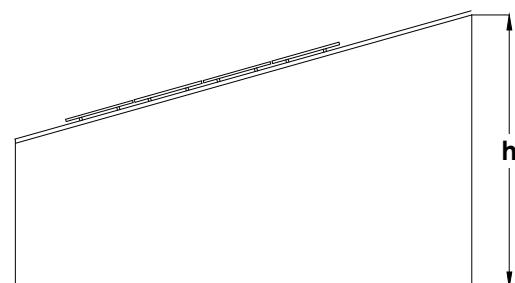




$$e = \min [b, 2h]$$

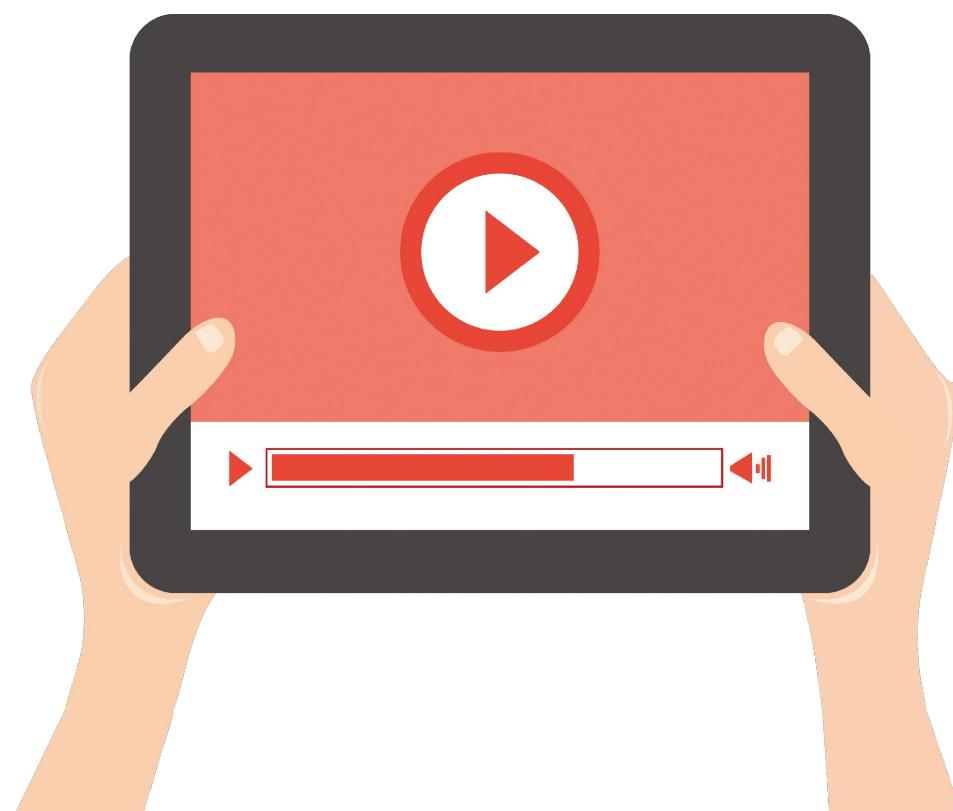
$$x = \max [e/10, 0.5m]$$

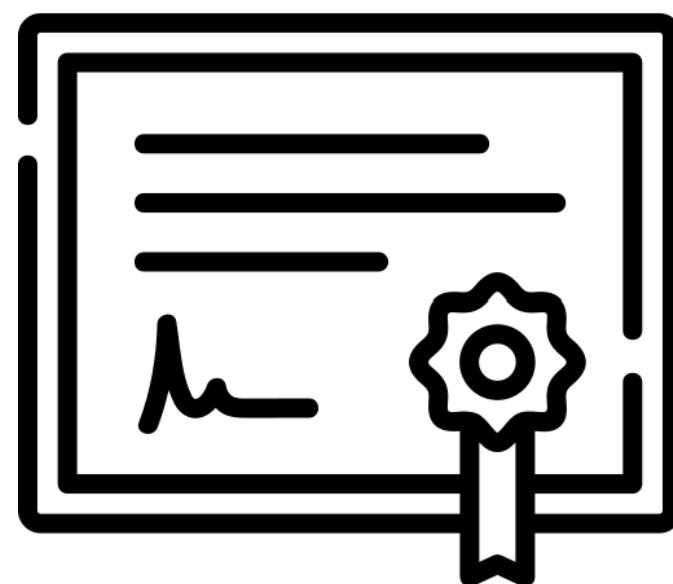
$$y = \max [e/4, 0.5m]$$



- Installation Safe Zone
- Turbulent Zone
- Extremely Turbulent Zone

To avoid turbulence and other unwanted natural effects, it is strongly recommended to install photovoltaic panels inside of the green zone.





- **ISO 9001 Certificate**
- **ISO 14001 Certificate**
- **UNE-EN 1090 Certificate**
- **CE Marking**
- **Guarantee**

**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:

02.3V-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****DdP****REVISION 01**

DECLARATION OF PERFORMANCE NUMBER: P-0119

1. PRODUCT DESCRIPTION.

UNIQUE IDENTIFICATION CODE OF THE PRODUCT TYPE: 02.3V-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 <input checked="" type="checkbox"/>	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: - Fire resistance: - 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: