



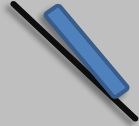
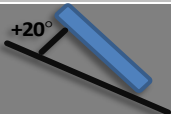

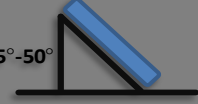

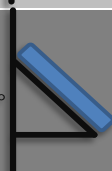
MOUNTING SYSTEMS SUN 401

Technical datasheet Nr 85

A wide range of roof mounting systems exists for evacuated tube collectors SUN 401. These mounting systems allow an installation on sloping roof, on flat roof or on facade, with an tilt angle from 0° to 90°. The tubes can be oriented in vertical (parallel to the roof slope – portrait format) or horizontal (perpendicular to the roof slope – landscape format) modes.

• DESCRIPTION:

- Pre-assembled roof fixings in factory for a fast and reliable assembly.
- Aluminium 6005 beams.
- Accessories of roof fixings in stainless steel 340.
- Screws in stainless steel A2.

Type of installation			Type of fixing or roofing	Type of bracket (anchor)	 PORTRAIT Vertical tubes	 LANDSCAPE Horizontal tubes
					Reference	Reference
Sloping roof	Parallel		Tiles	Shapable bracket	50070202120	50070202121
			Varied supports (asbestos-cement, steel roof...)	Screw	50070202122	50070202122
			Standing seam metal roof	Bulb clamps	50070202133	X
	Double folded clamps	50070202134		X		
	Elevated frame		Tiles	Double bracket + U	50070202123	X
			Steel beams	Cylinder bracket	50070202124	X
Flat roof	Parallel*		Ground (concrete...)	U bracket	50070202130	50070202130
	Tilted frame		Ground (concrete...)	U bracket	50070202125	X
			Corrugated roof (asbestos-cement, steel roof...)	Trapezoid bracket	50070202140	X
				Corrugated bracket	50070202141	X
Facade**	Parallel***		Wall (concrete block, concrete, brick, wood...)	U bracket	50070202127	50070202128
	Tilted frame		Wall (concrete block, concrete, brick, wood...)	U bracket	50070202129	X

* Minimum installation angle of collector to the horizontal is 2° to ensure a sufficient airventing

** Seismicity zone 0 or on class A buildings (decree n°91-461 of May, 14th 1991)

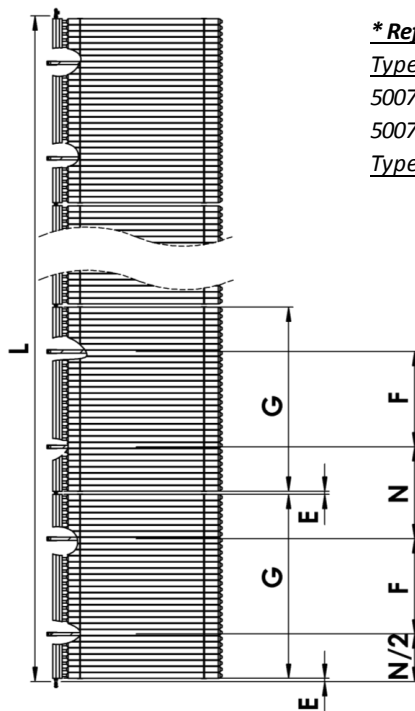
*** In case of horizontal tubes, minimum installation angle of collector to the horizontal is 2° to ensure a sufficient airventing

For all proposed mounting systems, it is imperative to check that the supporting structure must be capable of withstanding the loads (own weight, snow load, wind load...). The anchors must be fitted into a support capable of bearing the required static load.

• LONGITUDINAL LAYOUT PLAN:

Type of layout *		1		2	
Model of collector	SUN	401.20	401.30	400.20	400.30
Maximum number	n_{max}	7	5	7	5
Simplified dimensions					
Distance between fixings	N	601	1 060	451	860
Distance between fixings	F	850	1 100	1 000	1 300
Distance between collectors	E	35	35	35	35
Width of collector	G	1 416	2 125	1 416	2 125
Length of 1 collector	L_1	1 486	2 195	1 486	2 195
Length of 2 collectors	L_2	2 937	4 355	2 937	4 355
Length of 3 collectors	L_3	4 388	6 515	4 388	6 515
Length of 4 collectors	L_4	5 839	8 675	5 839	8 675
Length of 5 collectors	L_5	7 290	10 835	7 290	10 835
Length of 6 collectors	L_6	8 741	-	8 741	-
Length of 7 collectors	$L_7=L$	10 192	-	10 192	-

Dimensions in mm - Detailed quotation with range of tolerance available in our installation manual or on request

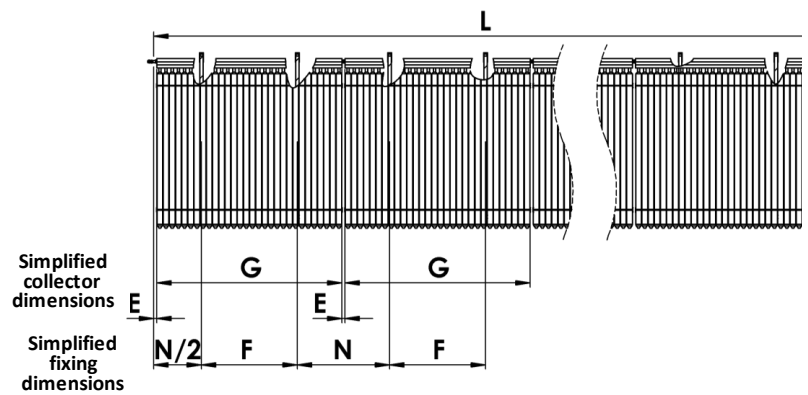


Simplified collector dimensions
Simplified fixing dimensions

*** References by type of layout:**

Type 1: 50070202120, 50070202122, 50070202123, 50070202124, **50070202125 (on tilted frame)**, 50070202127, 50070202128, 50070202129, **50070202130 (on flat roof)**, 50070202133, 50070202134, 50070202140, 50070202141

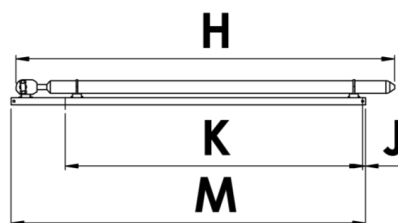
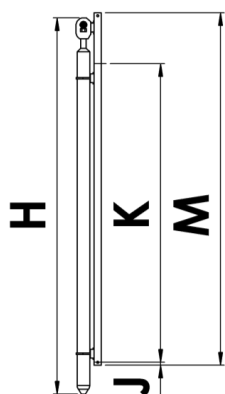
Type 2: 50070202121



Simplified collector dimensions
Simplified fixing dimensions

• TRANSVERSAL LAYOUT PLAN:

Types a, b, c and d:



Type of layout*		a	b	c	d
Height of collector	H	1 954			
Length of rail	M	1 830			
Distance bracket	J	15	Free	Free	15
Distance between bracket	K	1 400-1 700	700-1 400	1 800	

Dimensions in mm

* References per type of layout:

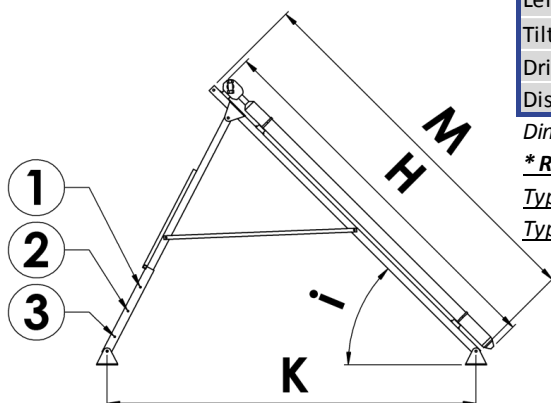
Type a: 50070202120,

Type b: 50070202122, 50070202133, 50070202134

Type c: 50070202121

Type d: 50070202127, 50070202128, **50070202130 (on flat roof)**

Types e and f:



Type of layout		e	f			
Height of collector	H	1 954	1 954			
Length of rail	M	1 950	1 950			
Tilt	i	20	35	40	45	50
Drilling	-	-	3	2	1	1
Distance between bracket	K	1 800	1 930	1 930	1 910	1 520

Dimensions in mm

* References per type of layout:

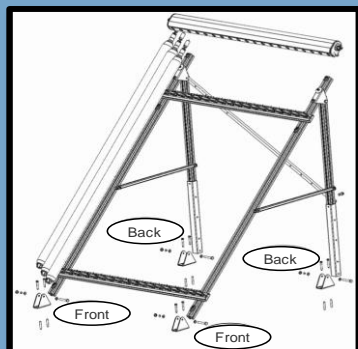
Type e: 50070202123, 50070202124, 50070202129

Type f: **50070202125 (on tilted frame)**, 50070202140, 50070202141

• MECHANICAL LOADS:

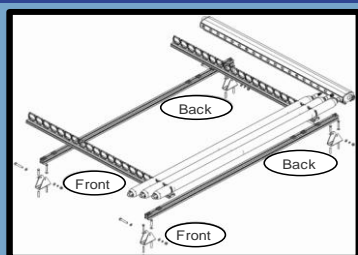
Stress and maximum load on the substance on flat roofs to DIN 1055

Tilted frame (50070202125)



Tilt (°)	Height above ground (m)	Wind speed (km/h)	Prevention of collector slippage				Prevention of collector lifting			
			Weight per bracket (kg/bracket)				Weight per bracket (kg/bracket)			
			SUN 401.20		SUN 401.30		SUN 401.20		SUN 401.30	
			Front	Back	Front	Back	Front	Back	Front	Back
25	8	100	76	102	116	155	26	65	41	100
	8 to 20	130	129	178	195	269	51	125	80	191
35	8	100	91	136	139	205	45	72	70	108
	8 to 20	130	155	232	234	349	86	131	132	209
	20 to 100	150	248	372	375	560	138	215	229	318
	> 100	165	263	394	397	593	146	234	353	353
40	8	100	97	153	148	230	58	73	89	110
	8 to 20	130	167	260	251	390	110	134	166	210
	20 to 100	150	267	416	402	624	176	212	280	324
	> 100	165	283	440	426	661	186	236	354	354
45	8	100	102	171	156	256	73	73	111	111
	8 to 20	130	177	287	266	430	137	137	206	206
	20 to 100	150	283	459	426	688	219	218	330	330
	> 100	165	301	488	453	731	233	233	345	345
50	8	100	106	189	162	282	90	98	114	113
	8 to 20	130	186	315	279	470	168	143	251	235
	20 to 100	150	297	503	446	752	269	229	381	336
	> 100	165	318	536	478	801	287	224	355	355

Flat roof (50070202130)



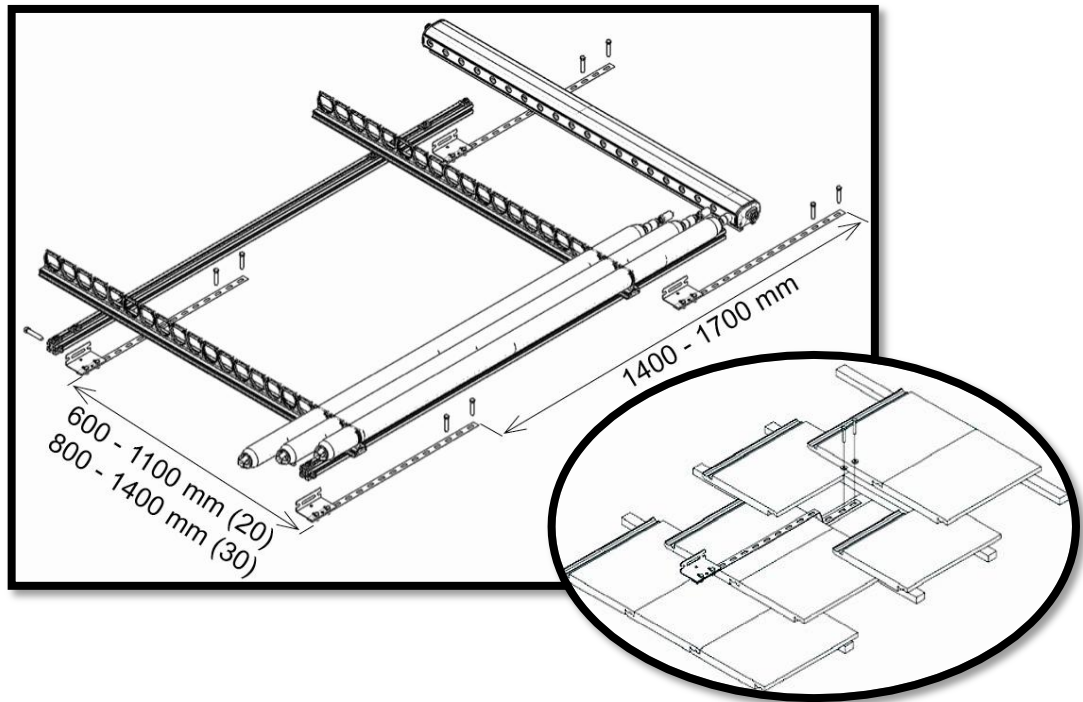
Tilt (°)	Height above ground (m)	Wind speed (km/h)	Prevention of collector slippage				Prevention of collector lifting			
			Weight per bracket (kg/bracket)				Weight per bracket (kg/bracket)			
			SUN 401.20		SUN 401.30		SUN 401.20		SUN 401.30	
			Front	Back	Front	Back	Front	Back	Front	Back
0	8	100	22	26	33	39	15	18	22	27
	8 to 20	130	44	46	65	69	31	32	46	49
	20 to 100	150	66	67	98	101	48	48	72	73
	> 100	165	90	90	135	135	63	63	96	96



SLOPING ROOF - PARALLEL - ROOFING TILE - VERTICAL TUBES

Reference: 50070202120 - Layout 1-a

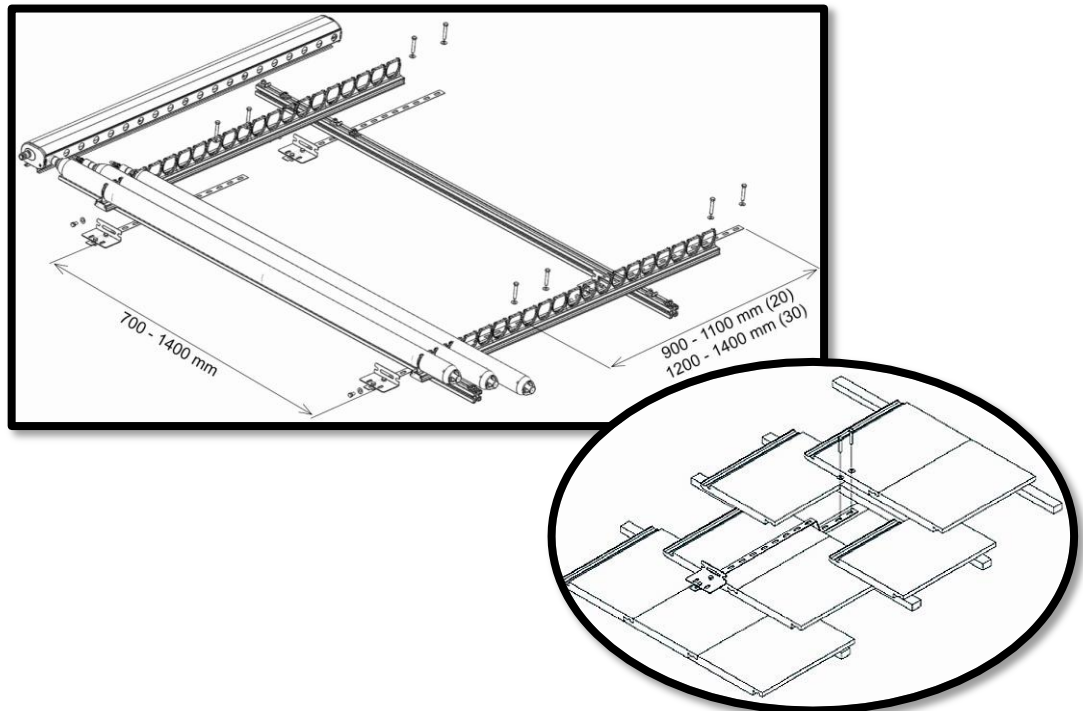
- In the zones with high wind (high heights or very exposed areas, when the pressure exerted on solar collector is superior to 2,5 kN/m², an additional vertical support rail must be added (Reference : 50070202132).
- Shapable bracket.
- Lower anchors to be attached in drillings in lower extremity of the rails.
- Upper anchors free to slide to be fixed in upper part of the rails in specified space.



SLOPING ROOF - PARALLEL - ROOFING TILE - HORIZONTAL TUBES

Reference: 50070202121 - Layout 2-c

- 4 drillings per collector must be provided necessarily in the two rails supporting tubes.
- Formable anchors and free to slide along the horizontal rails, in specified space.

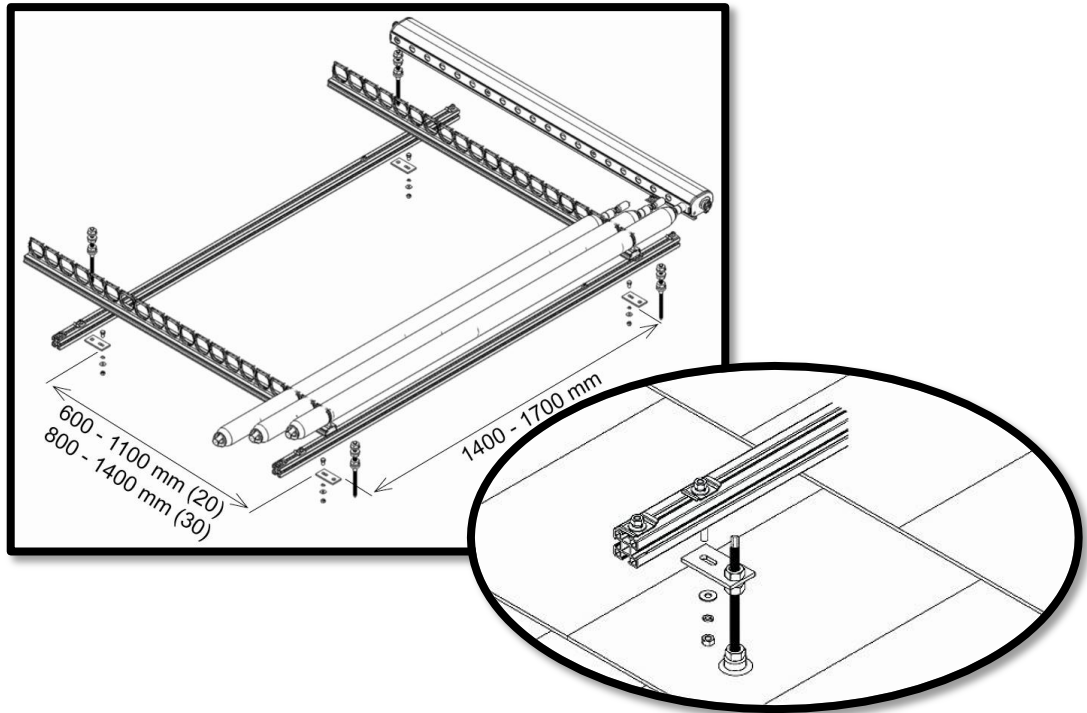




SLOPING ROOF - PARALLEL - VARIED ROOF - SLEEPER SCREW - VERTICAL / HORIZONTAL TUBES

Reference: 50070202122 - Layout 1-b

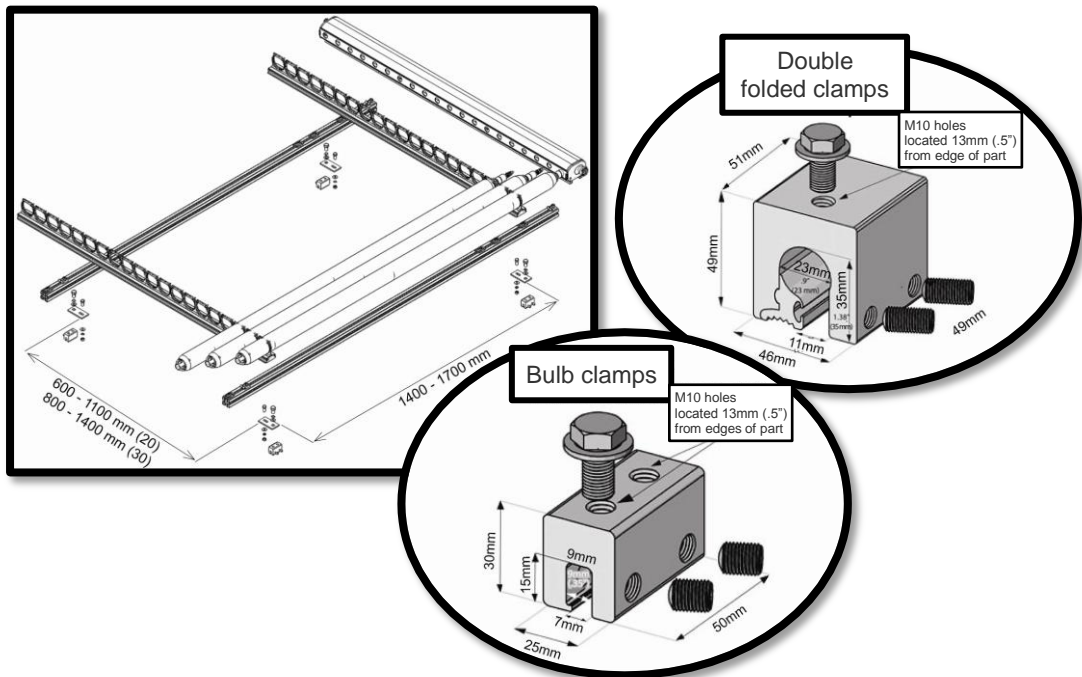
- The sleeper screws M12x300 must be fixed in the supporting frame. They are free to slide along the rails, in specified spaces. It's necessary to ensure that longitudinal dilatation from the roof is not blocked by setting up of sleeper screws which represent fix points.
- For horizontal assembly, necessary blocking brackets are provided.



SLOPING ROOF - PARALLÈL - STANDING SEAM METAL ROOF (BULB OR DOUBLE FOLDED CLAMPS) - VERTICAL TUBES

Reference: 50070202133 (bulb clamps) or 50070202134 (double folded clamps) - Layout 1-b

- Clamps must be chosen according to type of roof.
- Installation is not recommended with titanium-zinc sheet metal because of risk of creation of cracks caused by variations in temperatures.

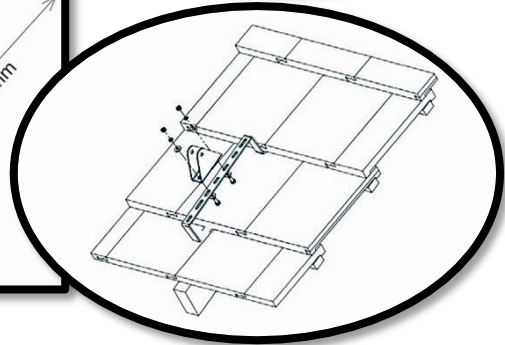
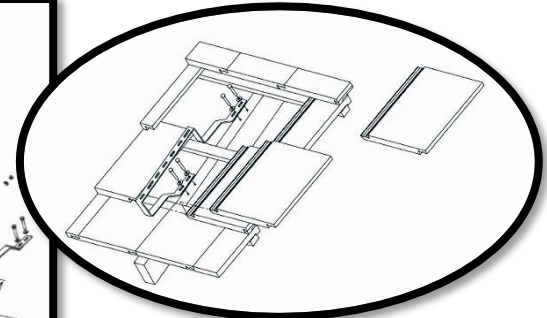
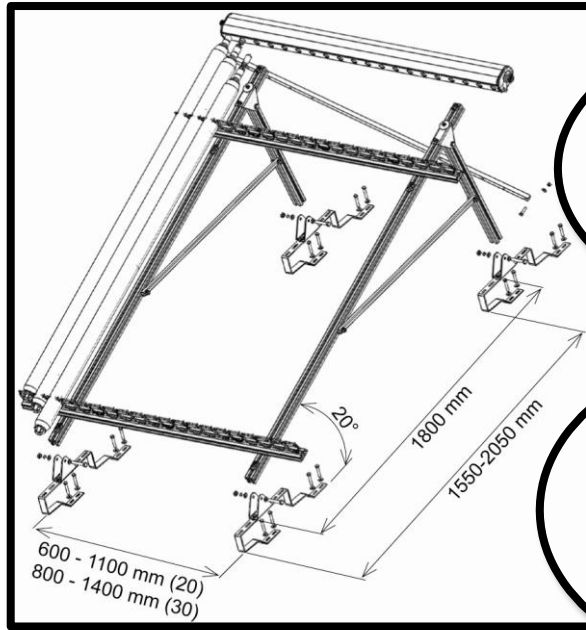




SLOPING ROOF - ELEVATED FRAME - ROOFING TILE - VERTICAL TUBES

Reference: 50070202123 - Layout 1-e

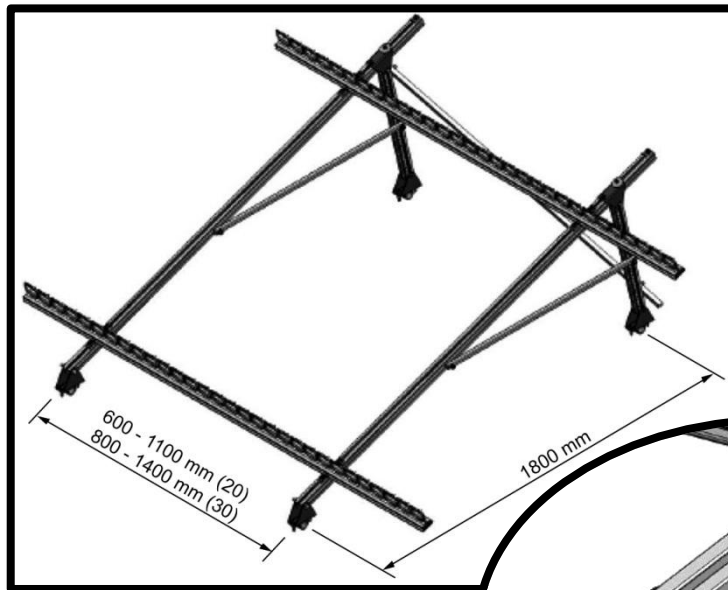
- The elevation is 20°.

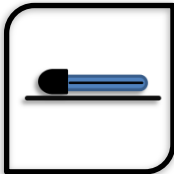


SLOPING ROOF - ELEVATED FRAME - CYLINDRICAL PROFILE - VERTICAL TUBES

Reference: 50070202124 - Layout 1-e

- Support fixing by clamping in tubular steel profiles in diameter 35mm.

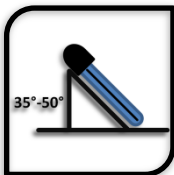
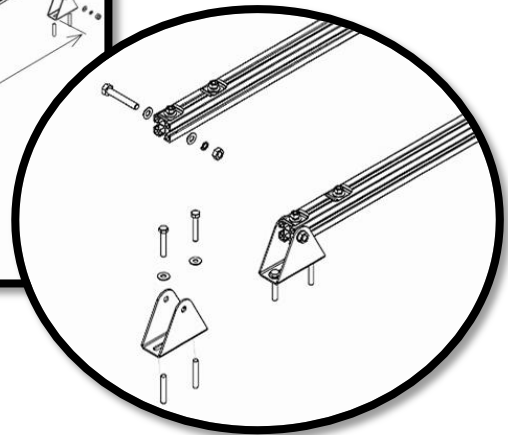
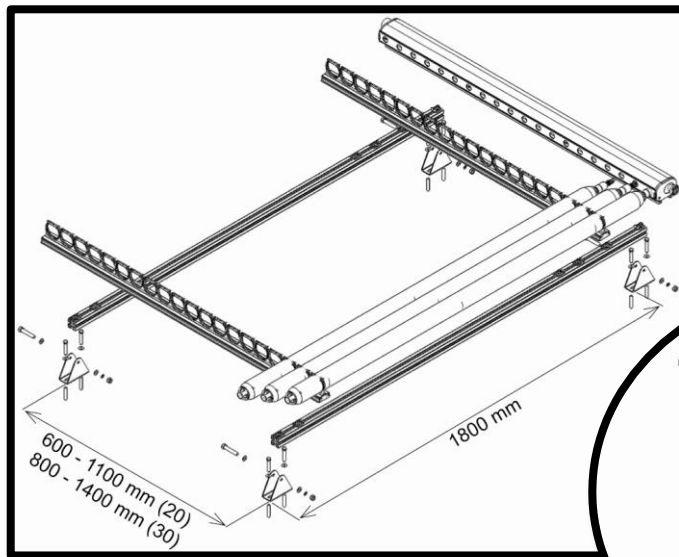
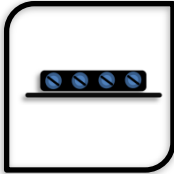




FLAT ROOF OR GROUND - PARALLEL - VARIED SUPPORTS: CONCRETE... - VERTICAL / HORIZONTAL TUBES

Reference: 50070202130 - Layout 1-d

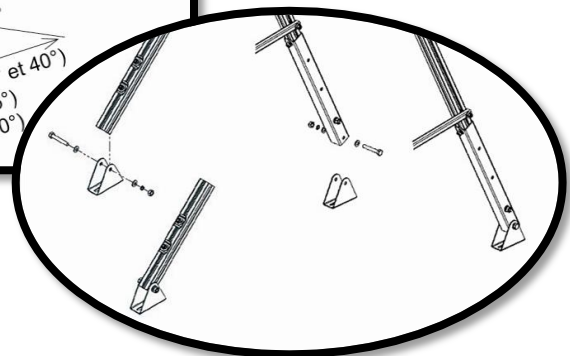
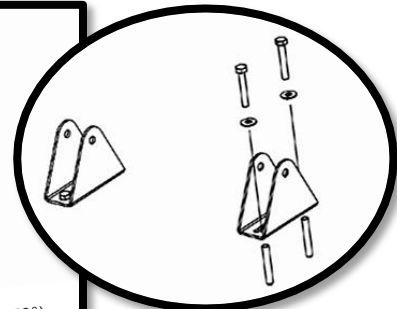
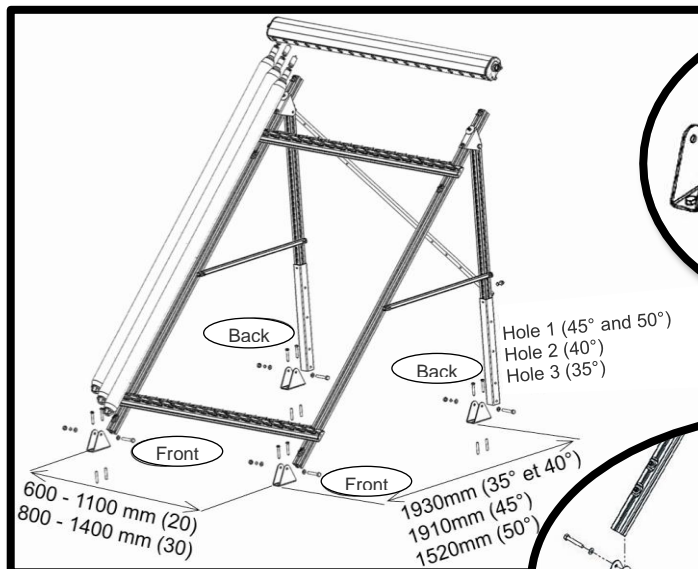
- Minimum installation angle of collector to the horizontal is 2° to ensure a sufficient airventing. The collector manifold must be located higher than extremity of tubes.



FLAT ROOF OR GROUND - TILTED FRAME - VARIED SUPPORTS: CONCRETE... - VERTICAL TUBES

Reference: 50070202125 - Layout 1-f

- Factory pre-assembled frames, to mount on site with adjustable tilt: 35°, 40°, 45° and 50°.
- In the zones with high wind (high heights or very exposed areas, when the pressure exerted on solar collector is superior to 2,5 kN/m², an additional supporting frame must be added (Reference 50070202126).

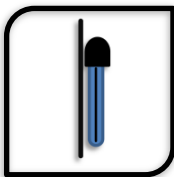
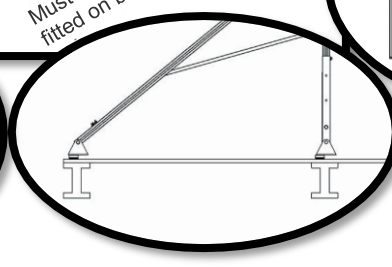
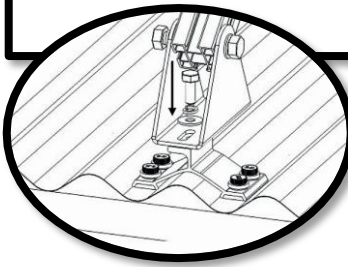
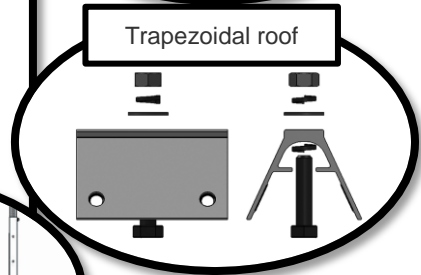
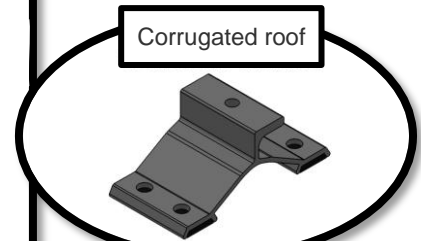
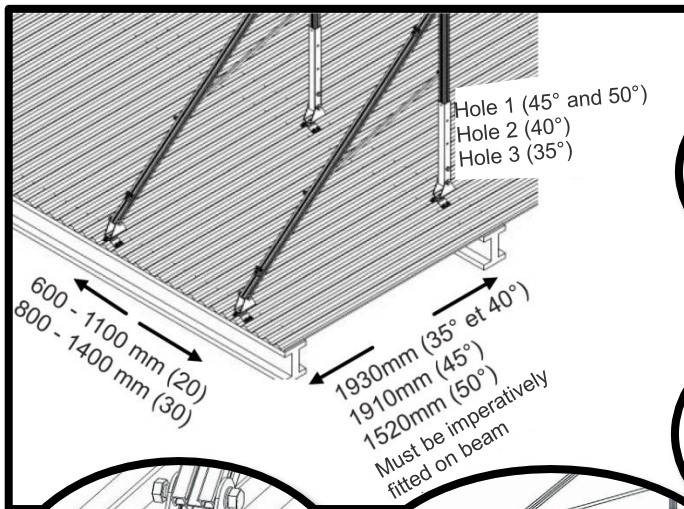




FLAT ROOF - TILTED FRAME - TRAPEZOIDAL OR CORRUGATED ROOF - VERTICAL TUBES

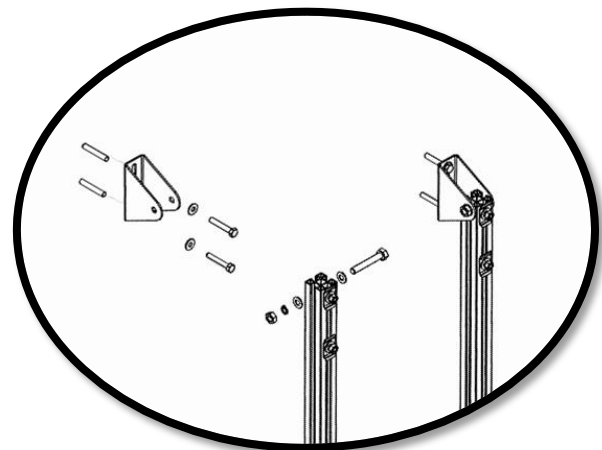
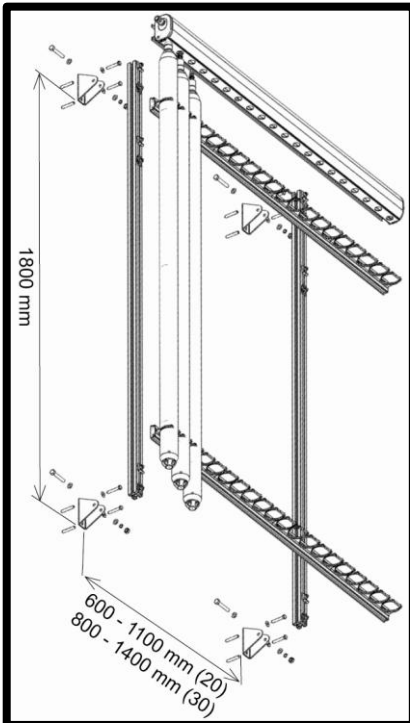
Reference: 50070202140 (trapezoidal) or 50070202141 (corrugated) - Layout 1-f

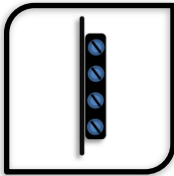
- It is necessary that trapezoidal or corrugated anchors are fixed above the support beams of the roof.
- See Reference: 50070202125.



FACADE - PARALLEL - VARIED SUPPORTS: CONCRETE... - VERTICAL TUBES

Reference: 50070202127 - Layout 1-d

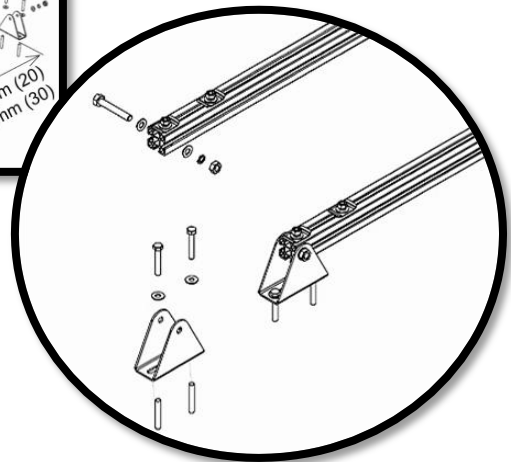
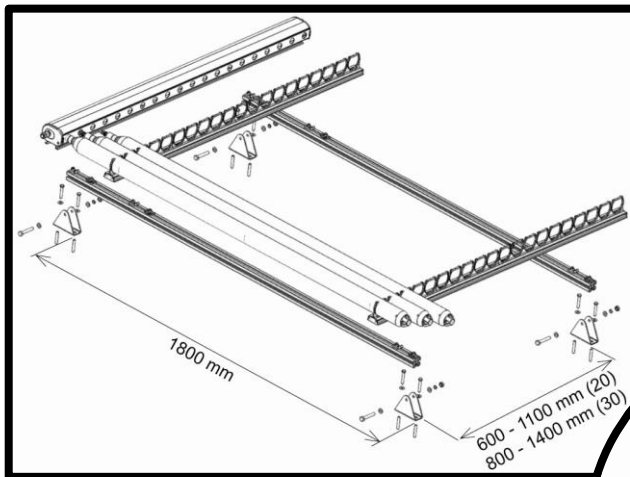




FACADE - PARALLEL - VARIED SUPPORTS: CONCRETE... - HORIZONTAL TUBES

Reference : 50070202128 - Layout 1-d

- Minimum installation angle of collector to the horizontal is 2° to ensure a sufficient airventing.
The collector manifold must be located higher than extremity of tubes.



FACADE - TILTED FRAME - VARIED SUPPORT: CONCRETE... - VERTICAL TUBES

Reference : 50070202129 - Layout 1-f

- See Reference: 50070202125

