

fischer Solar-fix

Mounting system for photovoltaic
and solar thermal panels

fischer
Solar-fix

fischer [®]
FIXING SYSTEMS

Mounting system

For photovoltaic and solar thermal panels

A new way
the sun's



Mounting system

- Suitable for pitched roofs
- Suitable for flat grounds and roofs
- Ideal for customized solutions
- Compatible with fischer SaMontec System



to “fix”
energy

fischer
Solar-fix



Quick and easy installation

- Preassembled mounting system
- Perfect mounting solution
- Quick mounting by using only two tools

Reliable mounting system

- Fast installation and reliable
- Aluminium and A2 stainless-steel elements
- High security also for heavy loads



Pitched roofs

Quick and safe installation



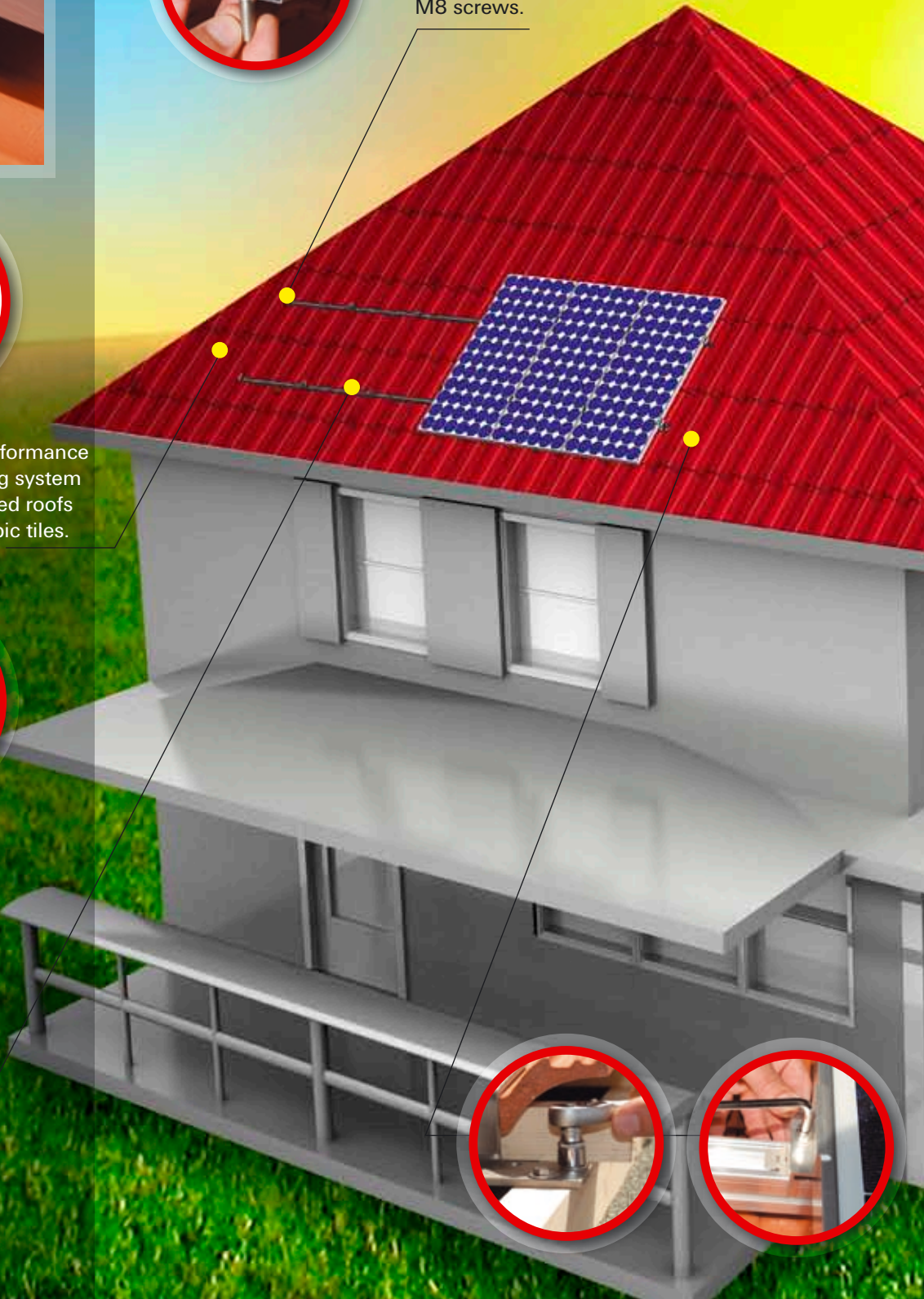
■ Safe Solar-plus profile suitable for flat and pitched roofs. Fits to standard M8 screws.



■ High performance mounting system for pitched roofs and Arabic tiles.



■ The special clamps fit to most pitched roofs and Arabic tiles.



Flat ground and roofs

Preassembled mounting system



- Preassembled clamp for a quick panel installation on flat ground and roofs.



- Preassembled supports adjustable for different pitch angles (25° 30° 35°).



- Support suitable for fixing of Kent ledge and roofs.

- Perfect clamping by using only two tools (Allen key 6 and hexagonal key 13)

fischer
Solar-fix

The best solutions for flat grounds and roofs

Pre-assembled Mounting System

The preassembled frame STF with aluminium profiles fits to different pitched roofs (25° - 30° - 35°), allows a quick and easy installation and offers optimal solutions in mounting applications thanks to its resistance to wind and snow load.

For a correct installation

- 1 - check the pitch
- 2 - choose the STF frame according the pitch
- 3 - check the panel thickness



Installation sequence



1 - Open the STF frame



2 - Place the STF frame properly



3 - Insert the screws into the Solar-plus profile



4 - Clamp the Solar-Plus profile to the frame



5 - Insert the PMF and PMC clamp



6 - Fasten the panel

Flat grounds and roofs

COMPONENTS

STF FRAME		
Art. N.	Type	
71163	STF 25-30° Adjustable preassembled triangular frame	
71164	STF 30-35° Adjustable preassembled triangular frame	
71184	BP AL 4m Bracing for triangular profile	

Note: The STF frame is supplied with no. 4 A2 screws (M8x20) and no. 4 A2 self-locking nuts for fixing of Solar-Plus profile.



Art. 71163



Art. 71184



Art. 71174

SOLAR-PLUS PROFILE		
Art. N.	Type	Length (m)
71173	Solar-Plus 6m Aluminium Profile	6
71174	Solar-Plus 4m Aluminium Profile	4

JOINTS BETWEEN SOLAR-PLUS PROFILES		
Art. N.	Type	N. of joints each profile
71200	CP AL Joint for Solar-Plus profile	2 pz *

Note: CP AL joint is supplied with screws.

* see "Technical data"



Art. 71200

PANEL FIXING – PMC AND PMF PREASSEMBLED CLAMPS		
Art. N.	Type	Panel thickness (mm)
71214	PMC 33-39 Preassembled middle clamp	33-39
71215	PMC 38-44 Preassembled middle clamp	38-44
71216	PMC 43-49 Preassembled middle clamp	43-49
71217	PMC 48-54 Preassembled middle clamp	48-54
71218	PMF 34 Preassembled final clamp	34
71219	PMF 35 Preassembled final clamp	35
71220	PMF 36 Preassembled final clamp	36
71221	PMF 38 Preassembled final clamp	38
71222	PMF 40 Preassembled final clamp	40
71223	PMF 42 Preassembled final clamp	42
71224	PMF 46 Preassembled final clamp	46
71225	PMF 50 Preassembled final clamp	50

Note: PMF/PMC are supplied with MF/MC clamps, TCEI screw and FCN AL hammer head nut.



Art. 71214



Art. 71218

ACCESSORIES		
Art. N.	Type	
71207	RHS 8x20 A2 Hammer head screw for SolarPlus profile	
71285	Hexagonal head self-tapping screw 4,8x32 A2	
71183	AK SP Cap for Solar Plus profile	



Art. 71207



Art. 71285



Art. 71183

Solutions for pitched roofs

Easy and safe installation

Flexible system suitable for the most common roof coverings. Its GT, GC, GTP stainless-steel hooks allow an easy and perfect installation.

For a correct installation

- 1** - check the roof (tiles or Arabic tiles)
- 2** - Choose a suitable hook (GT, GC, GTP)
- 3** - check the panel thickness



Installation sequence



1 - Place the hooks (GT - GC - GTP)



2 - Insert the screws into the Solar-Plus profile



3 - Place the Solar-Plus into the hook



4 - Clamp the Solar-Plus profile to the hook



5 - Insert the PMF and PMC clamps



6 - Fasten the panel

Pitched roofs

COMPONENTS

GT, GC, GTP HOOKS

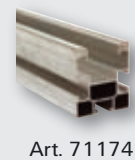
Art. N.	Type	
71136	GT 150 A2 Tile hook	
71198	GT 130 A2 Tile hook	
71199	GTP A2 Stain-less steel hook for flat tiles	
71137	GC A2 Adjustable hook for double Arabic tile	

Note: The hook is supplied with no. 1 A2 screw (M8x20), no. 1 A2 washer and no. 1 A2 self-locking nut for fixing of Solar-Plus profile.



SOLAR-PLUS PROFILE

Art. N.	Type	Length (m)
71173	Solar-Plus 6m Aluminium profile	6
71174	Solar-Plus 4m Aluminium profile	4



JOINTS BETWEEN SOLAR-PLUS PROFILES

Art. N.	Type	N. of joints each profile
71200	CP AL joint for Solar-Plus profile	2 pz*

Note: CP AL joint is supplied with screws. * See Technical data



PANEL FIXING - PMC E PMF PREASSEMBLED CLAMPS

Art. N.	Type	Panel thickness (mm)
71214	PMC 33-39 preassembled middle clamp	33-39
71215	PMC 38-44 preassembled middle clamp	38-44
71216	PMC 43-49 preassembled middle clamp	43-49
71217	PMC 48-54 preassembled middle clamp	48-54
71218	PMF 34 preassembled final clamp	34
71219	PMF 35 preassembled final clamp	35
71220	PMF 36 preassembled final clamp	36
71221	PMF 38 preassembled final clamp	38
71222	PMF 40 preassembled final clamp	40
71223	PMF 42 preassembled final clamp	42
71224	PMF 46 preassembled final clamp	46
71225	PMF 50 preassembled final clamp	50

Note: PMF/PMC are supplied with MF/MC clamps, TCEI screw and FCN AL hammer head nut.



ACCESSORIES

Art. N.	Type	
71207	RHS 8x20 A2 hammer head screw for SolarPlus profile	
71211	8x100 A2 wood hexagonal head screw	
71212	8x120 A2 wood hexagonal head screw	
71271	SPL AL 5mm spacer plate for hook	
71183	AK SP cap for Solar Plus profile (flat grounds and roofs)	



Flat grounds and roofs

Special application for photovoltaic and solar-thermal

- Customised planning available on request
- Dimensioning for special loads, wind load and snow load

TRIANGULAR FRAME

Art. N.	Type	Length (m)
71185	TP AL 60x60x5 6m Aluminium "T" profile	6
71186	REP AL 40x25x3 6m Aluminium rectangular profile	6
71187	BP 20x6 AL bracing for triangular profile	6
71142	P 42/30 Aluminium "C" profile	6
557086	SKS M10x30 A2 hexagonal head screw	
557085	A2 self-locking nut M10	

SOLAR-PLUS PROFILE

Art. N.	Type	Length (m)
71173	Solar-Plus 6m Aluminium profile	6
71174	Solar-Plus 4m Aluminium profile	4

JOINTS BETWEEN SOLAR-PLUS PROFILES

Art. N.	Type	N. of joints each profile
71200	CP AL SolarPlus joint profile	2 pz*

Note: CP AL joint is supplied with screws. * See "Technical data".

PHOTOVOLTAIC PANEL FIXING - PMC E PMF PREASSEMBLED CLAMPS

Art. N.	Type	Panel thickness (mm)
71214	PMC 33-39 preassembled middle clamp	33-39
71215	PMC 38-44 preassembled middle clamp	38-44
71216	PMC 43-49 preassembled middle clamp	43-49
71217	PMC 48-54 preassembled middle clamp	48-54
71218	PMF 34 preassembled final clamp	34
71219	PMF 35 preassembled final clamp	35
71220	PMF 36 preassembled final clamp	36
71221	PMF 38 preassembled final clamp	38
71222	PMF 40 preassembled final clamp	40
71223	PMF 42 preassembled final clamp	42
71224	PMF 46 preassembled final clamp	46
71225	PMF 50 preassembled final clamp	50

Note: PMF/PMC are supplied with MF/MC clamps, TCEI screws, FCN AL hammer head nut.

FIXING OF SOLAR THERMAL PANEL

Art. N.	Type	
77625	MW 27-90° A2 angular joint frame	(see SaMontec catalogue)
77627	MW 38-90° A2 angular joint frame	(see SaMontec catalogue)
71133	MF 56 final clamp	

ACCESSORIES

Art. N.	Type	
71181	SKS 10x50 A2 hexagonal head screw	
71182	SKS 10x70 A2 hexagonal head screw	
71285	A2 self tapping hexagonal head screw (4,8X32)	
71209	A2 self tapping screw (3,5x9,5)	
71183	AK SP cap for Solar Plus profile	



Art. 71185



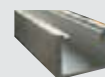
Art. 71186



Art. 71174



Art. 71200



Art. 71142



Art. 71187



Art. 71214



Art. 557085



Art. 71218



Art. 557086



Art. 71181



Art. 71209



Art. 71285



Art. 71183

Accessories

MF ALUMINIUM FINAL CLAMP

Art. N.	Type	Panel thickness (mm)	to connect to TCEI A2 screw	Art. N.
71120	MF 30 final clamp	30	M 8x30 mm	71138
71121	MF 32 final clamp	32	M 8x30 mm	71138
71122	MF 34 final clamp	34	M 8x30 mm	71138
71123	MF 35 final clamp	35	M 8x35 mm	71277
71124	MF 36 final clamp	36	M 8x35 mm	71277
71125	MF 38 final clamp	38	M 8x35 mm	71277
71126	MF 40 final clamp	40	M 8x40 mm	71139
71127	MF 42 final clamp	42	M 8x40 mm	71139
71128	MF 44 final clamp	44	M 8x40 mm	71139
71129	MF 45 final clamp	45	M 8x45 mm	71278
71130	MF 46 final clamp	46	M 8x45 mm	71278
71131	MF 48 final clamp	48	M 8x45 mm	71278
71132	MF 50 final clamp	50	M 8x50 mm	71140
71133	MF 56 final clamp	56	M 8x55 mm	71286

MC ALUMINIUM MIDDLE CLAMP

Art. N.	Type	Panel thickness (mm)	to connect to TCEI A2 screw	Art. N.
71134	MC 28-56 middle clamp	28-34	M 8x35 mm	71277
		33-39	M 8x40 mm	71139
		38-44	M 8x45 mm	71278
		43-49	M 8x50 mm	71140
		50	M 8x55 mm	71286
		56	M 8x55 mm	71286

HUMMER NUT

Art. N.	Type	
71165	FCN AL M8 hammer nut 6 mm thickness	

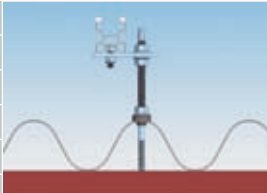
HEXAGON SOCKET HEAD CAP SCREW A2

Art. N.	Type	
71138	TCEI M8x30 mm A2 stainless steel screw	
71277	TCEI M8x35 mm A2 stainless steel screw	
71139	TCEI M8x40 mm A2 stainless steel screw	
71278	TCEI M8x45 mm A2 stainless steel screw	
71140	TCEI M8x50 mm A2 stainless steel screw	
71286	TCEI M8x55 mm A2 stainless steel screw	

ACCESSORIES

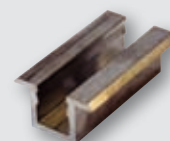
Art. N.	Type	
65179	SKS 8x20 A2 hexagonal head screw	
71208	SKS 8x50 A2 hexagonal head screw	
71192	M8 A2 self-locking nut	
71210	MU F M8 A2 hexagonal flanged nut	

FIXING ON CORRUGATED ROOFING

Art. N.	Type	
71202	STSR 10x200 A2 double threaded screw with washer	
71203	STSR 10x250 A2 double threaded screw with washer	
71204	STSR 12x300 A2 double threaded screw with washer	
71205	SSP 10 A2 joint plate for STSR screw	
71206	SSP 12 A2 joint plate for STSR screw	



Art. 71120



Art. 71134



Art. 71165



Art. 71138



Art. 71208



Art. 71192



Art. 71210



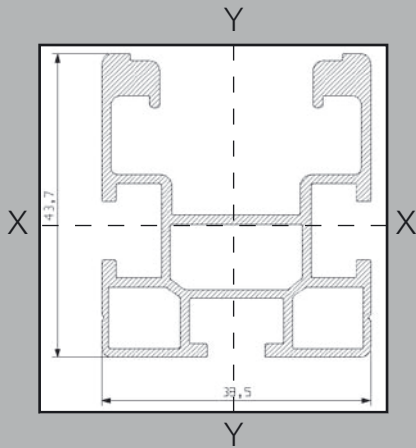
Art. 71202



Art. 71205

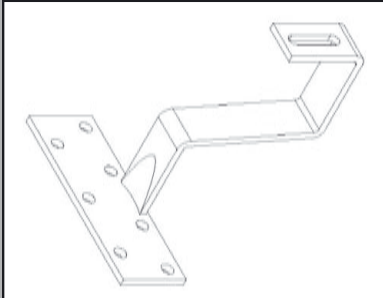
Technical data

SOLAR-PLUS PROFILE



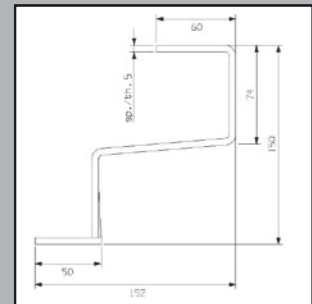
- Section $S = 362,3 \text{ mm}^2$
- Moment of inertia $I_x = 73693 \text{ mm}^4$
- Minimum resistance module $W_x = 3285 \text{ mm}^3$
- Moment of inertia $I_y = 68868 \text{ mm}^4$
- Resistance module $W_y = 3578 \text{ mm}^3$
- Material = AW6060 T5 aluminium according to EN 755-2:1997
- Tensile strength $R_m: 160 \text{ MPa}$
- 0,2% - proof strength $R_{p0,2}: 120 \text{ MPa}$

GT - GC HOOKS

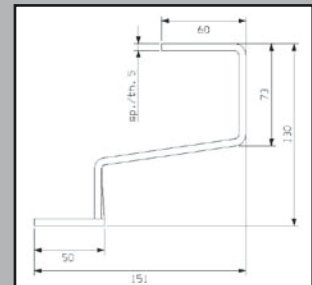


- GT hook section = $30 \times 5 \text{ mm}$
- GT plate section = $50 \times 5 \text{ mm}$
- Hole diameter = 9 mm
- Material = X5CrNi 18-10 stainless steel according to EN 10088-2:2005

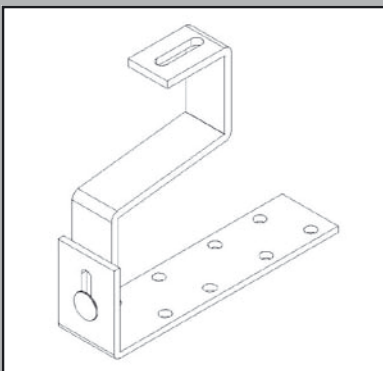
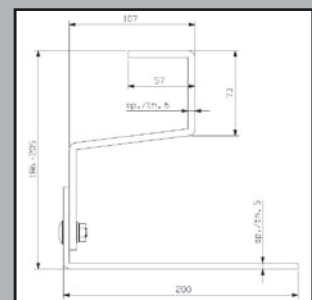
GT 150



GT 130



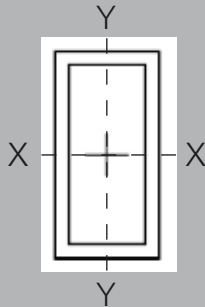
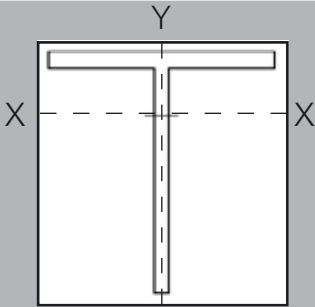
GC



- GC hook section = $35 \times 6 \text{ mm}$
- GC plate section = $50 \times 5 \text{ mm}$
- Hole diameter = 9 mm
- Material = X5CrNi 18-10 stainless steel according to EN 10088-2:2005

Technical data

STF FRAME



■ Upper profile section = lower profile section = $S = 304 \text{ mm}^2$

■ Moment of inertia $I_x = 72483 \text{ mm}^4$

■ Minimum resistance module $W_x = 1971 \text{ mm}^3$

■ Moment of inertia $I_y = 30386 \text{ mm}^4$

■ Resistance module $W_y = 1293 \text{ mm}^3$

■ Vertical profile section $S_p = 164 \text{ mm}^2$

■ Moment of inertia $I_x = 17639 \text{ mm}^4$

■ Resistance module $W_x = 1176 \text{ mm}^3$

■ Moment of inertia $I_y = 5554 \text{ mm}^4$

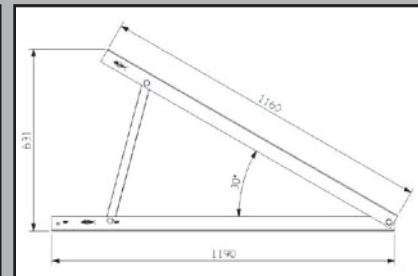
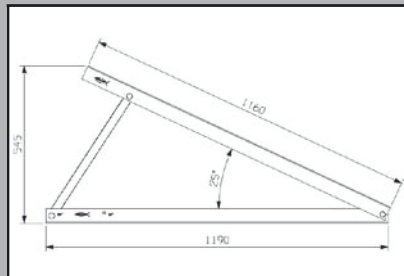
■ Resistance module $W_y = 740 \text{ mm}^3$

■ Material = AW6060 T66 aluminium according EN 755-2:1997

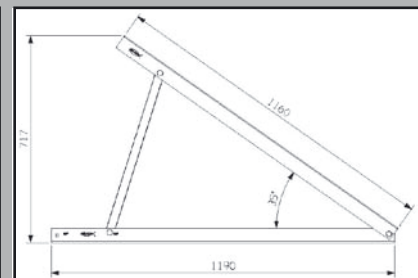
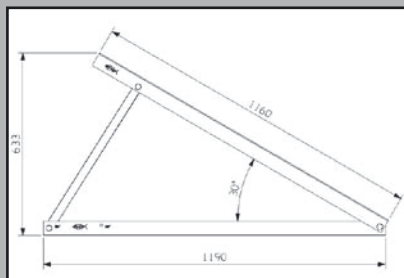
■ Tensile strength R_m 195 MPa

■ 0,2% - proof strength $R_{p0,2}$: 150 MPa

STF 25°-30°

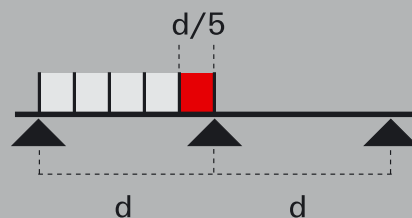


STF 30°-35°



CP AL (art. 71200)







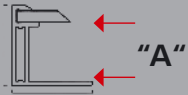
Use the joint profile when the joints are placed at a distance from a support equal or lower than 1/5 of the distance between 2 clamping systems (STF frame or hooks).









Solutions

- The distance between the supports is defined according to EC0 and EC9 (EN 1990 and EN 1999-1-1). The values are calculated in order to fulfil either maximum admissible tension or maximum strain (1/150 of the distance between the supports for Solar-Plus, and 10 mm for GT and GC hooks).
- We recommend to interrupt the Solar-Plus profile each 12 m.



Suggestion for pitched roofs

TILES		FLAT TILES		ARABIC TILE		PANEL THICKNESS	
	 GT 150 art. 71136 GT 130 art. 71198		 GTP 71199		 GC 71137	 "A"	







COMPOSITION for standard panels (160 cm x 80 cm) with snow load = 65 Kg/m² and wind load = 50 Kg/m²

	Hook according the roof	Solar Plus profile 6 m art. 71173 	PMF "A" clamp according "A" thickness 	PMC "A" clamp according "A" thickness 
6 panels 	14 pz	2 pz	4 pz	10 pz
12 panels 	28 pz	4 pz	8 pz	20 pz
18 panels 	42 pz	6 pz	12 pz	30 pz

Suggestion for flat grounds and roofs

PITCH EVALUATION	STF 25°-30°	STF 30°-35°	PANEL THICKNESS
	art. 71163	art. 71164	 "A"

COMPOSITION for standard panels (160 cm x 80 cm) with snow load = 65 Kg/m² and wind load = 50 Kg/m²

	STF frame according the pitch	Solar Plus profile 6 m art. 71173 	PMF "A" clamp according "A" thickness 	PMC "A" clamp according "A" thickness 
6 panels 	5 pz	2 pz	4 pz	10 pz
12 panels 	10 pz	4 pz	8 pz	20 pz
18 panels 	15 pz	6 pz	12 pz	30 pz

fischer: Service / Contact

International Technical Service (Support)

Our engineers will be pleased to help you to solve your special application problems. If you need support just contact our local fischer representation. In case of a special application problem please contact the International Technical Service in Germany.

We also offer training seminars which, suited to your individual needs and requirements, are designed to back your confidence in fischer products.

Contact us:

fischerwerke

Artur Fischer
GmbH & Co.KG

Phone +49 74 43 12-41 99

Fax +49 74 43 12-89 89

e-mail: intsupport@fischer.de



www.fischer.de
Fixing Systems - Products heading

Contacts

fischerwerke

Artur Fischer GmbH & Co. KG
Weinhalde 14-18
D-72178 Waldachtal
Phone +49 7443 12-0
Fax +49 7443 12-4222
www.fischer.de

fischer fixing (UK) Ltd

Whitely Road
Wallingford, Oxfordshire
OX10 9AT - United Kingdom
Phone +44 1491 827900
Fax +44 1491 827953
www.fischer.co.uk
info@fischer.co.uk

fischer Systems Asia Pte. Ltd

Tampines Street 92
Level 3
Singapore 528872
Phone +65 (67 88) 69 55
Fax +65 (67 88) 6355
dt@fischerasia.com.sg

Your dealer: