



SOLAR MOUNTING COMPONENTS

PRODUCT

CATALOGUE 2020/21

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YOUR MANUFACTURER OF SOLAR MOUNTING SYSTEMS

Range

Large range,
suitable for all types
of roofs and
requirements

Reliability

Long-lasting and
reliable: 10 year
guarantee on ALTEC
mounting systems

Good value

Attractive prices for
custom aluminium
and stainless steel
solutions

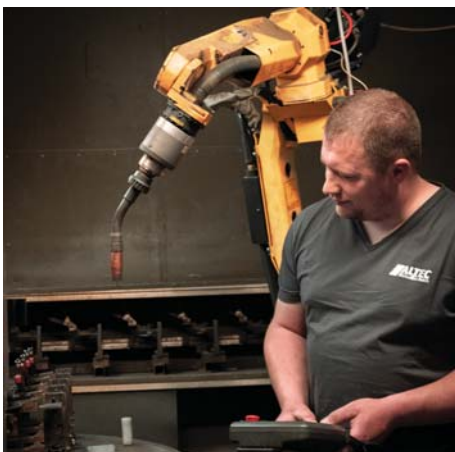
ALTEC Metalltechnik GmbH is a globally successful provider of photovoltaic substructures and metal processing supplier.

With more than 20 years of experience in the metal industry and our passion for solar energy, we are an expert, specialist partner for solar mounting systems, customer-oriented concepts and solutions. Our products are unique. Unique in terms of quality. Unique in terms of functionality. Unique above all when it comes to finding solutions.

ALTEC does not just supply a system. It delivers complete solutions – from planning and design to structural analysis and customer service. And everything from a single source, so you are guaranteed to get effective work and professional solutions.



THIS IS HOW WE WORK



On office and production surfaces of 8,000 square meters we manufacture our products in-house.



We have production lines in the areas of punching and bending technology, cutting and shearing technology, welding technology, surface treatment, long product processing and tool construction.



Numerous certifications prove the standards of the company and give you the security you need for our products.



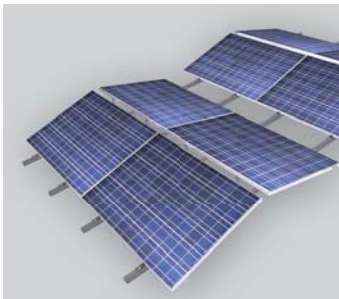
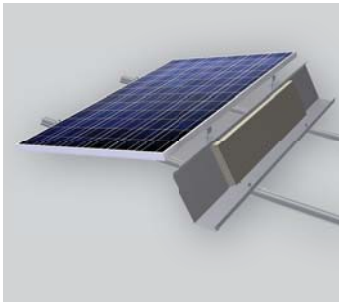
All products are produced and tested in according to national and international standards. A constant further development and improvement of the products as well as processes is also part of our corporate philosophy.

MOUNTING SYSTEMS AT A GLANCE

FOR FLAT ROOFS

ALTEC *FD_COMPACT*

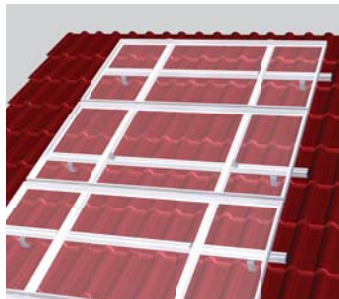
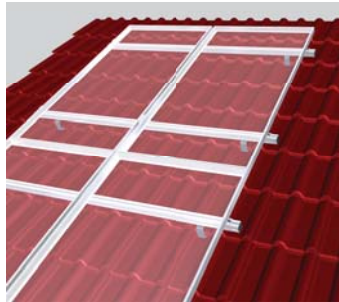
Optimised flat roof ballast system with 15° angle



FOR PITCHED ROOFS

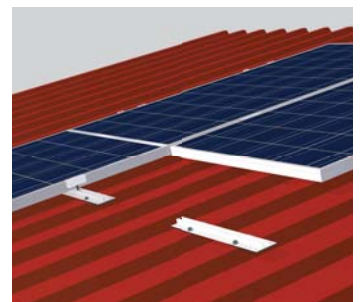
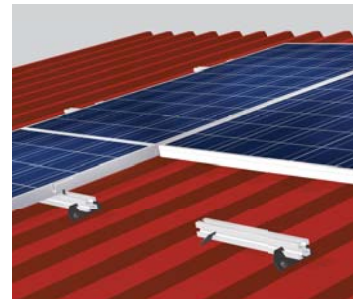
ALTEC *SD_ON-ROOF*

Pitched roof systems as on-roof mounting with single profiles or as cross-connection



ALTEC *SD_TRAFIX*

Short rail systems specifically for trapezoidal roofs



ELEVATIONS FOR FLAT AND PITCHED ROOFS

ALTEC *FD|SD_VARIO*

Various angles,
combinable with many
roof mounting parts



A DETAILED DESCRIPTION CAN BE FOUND FROM PAGE 49

YOUR ENQUIRY

OR ORDER

BY E-MAIL

info@altec-metalltechnik.de
or get in touch with one of
our contact employees
(see page 1)

BY FAX

+49 3663 4210-211

BY PHONE

+49 3663 4210-200

WHAT DETAILS DO WE NEED FROM YOU?

MOUNTING SYSTEMS

We design your pv system:

Please send us the full filled **check list** by e-mail
or fax. Our check lists you can find here:
www.altec-metalltechnik.de/downloads
or

You design your pv system by yourself with our software ALTEC Solar.Pro.Tool:

If you still do not have access data for the
software, simply send us an e-mail:
info@altec-metalltechnik.de

SINGLE COMPONENTS

Required quantity with Item No. and/or
description per e-mail or fax

ROOF MOUNTING PARTS

- Shingle roof hooks
- Slate roof hooks
- Plain tile roof hooks
- Pantile roof hooks
- Accessories for roof hooks
- Mounting parts for trapezoidal roofing
- Mounting parts for corrugated roofing
- Clamps for folding roofs





YOU NEED ROOF HOOKS

WITH YOUR SPECIFICATIONS?

WE CREATE YOU AN OFFER!

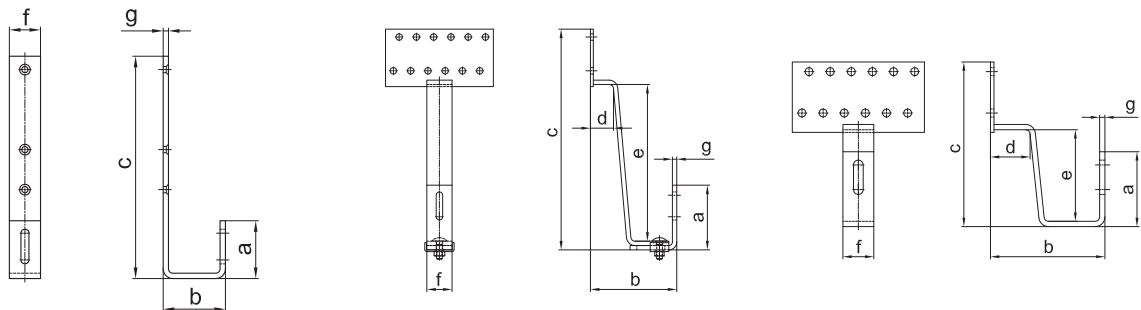
Send your enquiry per e-mail: info@altec-metalltechnik.de
or fax an: +49 3663 4210-211

HOOK

Shingle/Slate roof hook

Plain tile roof hook

Pantile roof hook



Please state the custom measurement:

a = _____ **b =** _____ **c =** _____ **d =** _____ Slot 9
e = _____ **f × g =** 30 × 6 35 × 6 40 × 6 40 × 8 Slot 11

Height-adjustable: yes no

Base plate

	Holes Ø	Length (l)	Width (b)	Thickness
<input type="checkbox"/> without base plate				
<input type="checkbox"/> with base plate	9	150	80	4
<input type="checkbox"/> with base plate	7	150	80	4
<input type="checkbox"/> with base plate	9	150	60	4
<input type="checkbox"/> with base plate	9	180	80	4

Name: _____

Address: _____

Post code/town: _____

Phone: _____

E-mail: _____

Number of units*: _____

* In the case of custom made roof hooks a quantity deviation of approx. + 5 % or 5 units) of the total quantity is possible.

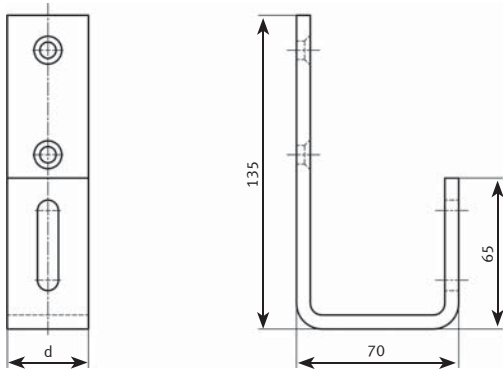
ROOF MOUNTING PARTS

SHINGLE ROOF HOOK

Shingle- and slate roof hooks are screwed through the formwork upon the rafter. Two 6 × 80 mm sunk woodscrews are required to attach the **short shingle roof hooks**, for **long slate roof hooks** you need three. After mounting a careful sealing of the roof hook is necessary. For slate covering you need a cover plate in addition. This plate replaces the slate at the location of the roof hook.

SHINGLE ROOF HOOK

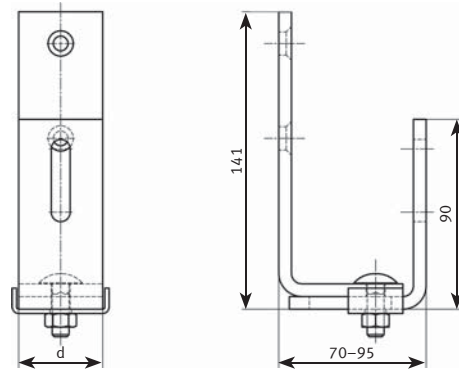
Material: 6 mm stainless steel 1.4301; hole \varnothing 7 sunk
For use with full-thread woodscrew for wood connection as of Z-9.1-729



Item No.	d	Slot
15S0 0356 8000	35	9
15S0 0406 8000	40	

SHINGLE ROOF HOOK HEIGHT ADJUSTABLE

Material: 6 mm stainless steel 1.4301; hole \varnothing 7 sunk
For use with full-thread woodscrew for wood connection as of Z-9.1-729



Item No.	d	Slot
15S0 0356 8H00	35	9
15S0 0406 8H00	40	

ON REQUEST WE PRODUCE ROOF HOOKS WITH SLOT 11.

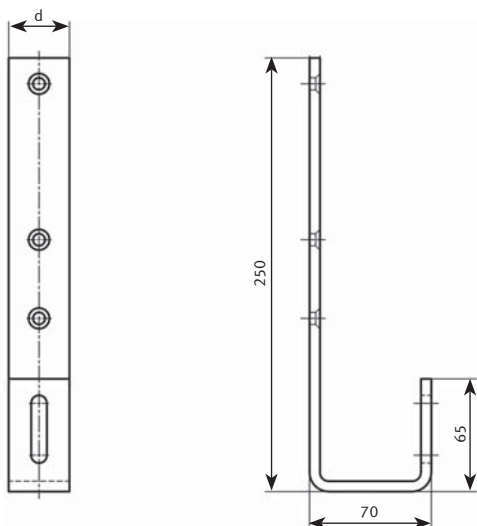
ROOF MOUNTING PARTS

SLATE ROOF HOOK

Shingle- and slate roof hooks are screwed through the formwork upon the rafter. Two 6 × 80 mm sunk woodscrews are required to attach the **short shingle roof hooks**, for **long slate roof hooks** you need three. After mounting a careful sealing of the roof hook is necessary. For slate covering you need a cover plate in addition. This plate replaces the slate at the location of the roof hook.

SLATE ROOF HOOK

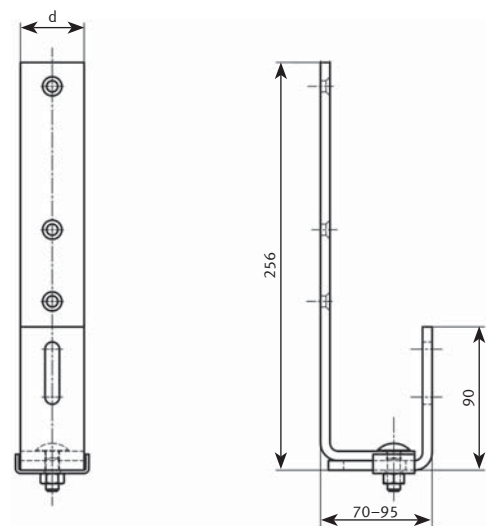
Material: 6 mm stainless steel 1.4301; hole Ø 7 sunk
For use with full-thread woodscrew for wood connection as of Z-9.1-729



Item No.	d	Slot
15S1 0356 8000	35	9
15S1 0406 8000	40	

SLATE ROOF HOOK HEIGHT ADJUSTABLE

Material: 6 mm stainless steel 1.4301; hole Ø 7 sunk
For use with full-thread woodscrew for wood connection as of Z-9.1-729



Item No.	d	Slot
15S1 0356 8H00	35	9
15S1 0406 8H00	40	

ON REQUEST WE PRODUCE ROOF HOOKS WITH SLOT 11.

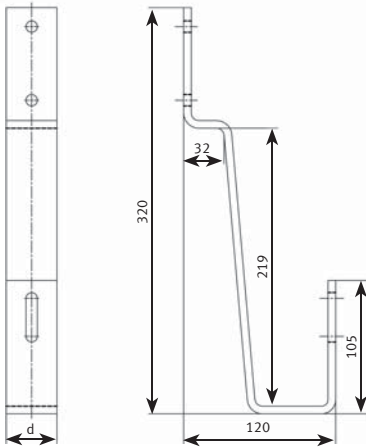
ROOF MOUNTING PARTS

PLAIN TILE ROOF HOOK

Plain tile roof hooks for roofs with plain tile covering are screwed directly upon the rafter with two flat head screws. Since the lengthwise protruding bracket of the plain tile roof hooks rests on the tiles beneath, we recommend replacing the clay tile with a metal tile. Please contact us with regard to crown tiles so that we can match the material to the roofing. To avoid edge pressure it is recommended to use EPDM-strips 40 × 3 (Item No. 5EPDM0403010) where the roof hooks hit.

PLAIN TILE ROOF HOOK WITHOUT BASE PLATE

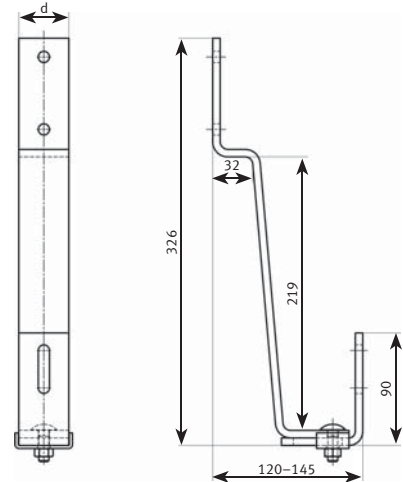
Material: 6 mm stainless steel 1.4301; hole \varnothing 9, for use with flat head screw with countersunk slit (approx. no. Z-9.1-453)



Item No.	d	Slot
15B0 0356 8000	35	9
15B0 0406 8000	40	

PLAIN TILE ROOF HOOK WITHOUT BASE PLATE, HEIGHT ADJUSTABLE

Material: 6 mm stainless steel 1.4301; hole \varnothing 9, for use with flat head screw with countersunk slit (approx. no. Z-9.1-453)



Item No.	d	Slot
15B0 0356 8H00	35	9
15B0 0406 8H00	40	

ON REQUEST WE PRODUCE ROOF HOOKS WITH SLOT 11.

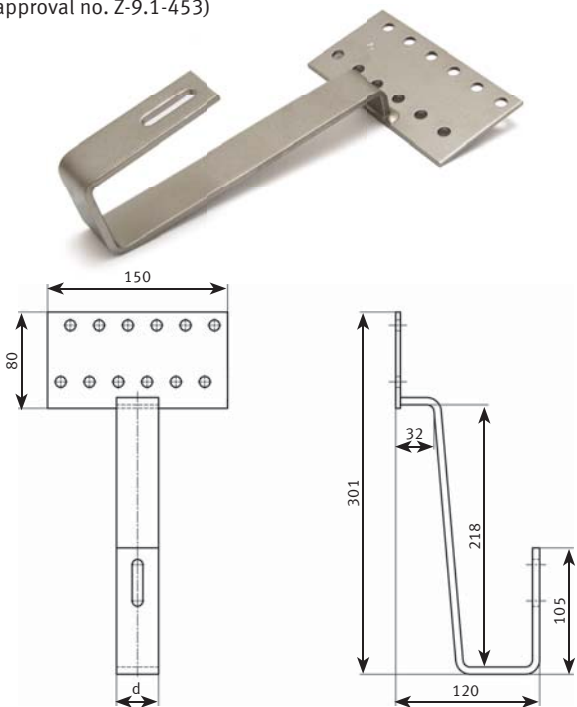
ROOF MOUNTING PARTS

PLAIN TILE ROOF HOOK

Plain tile roof hooks for roofs with plain tile covering are screwed directly upon the rafter with two flat head screws. Since the lengthwise protruding bracket of the plain tile roof hooks rests on the tiles beneath, we recommend replacing the clay tile with a metal tile. Please contact us with regard to crown tiles so that we can match the material to the roofing. To avoid edge pressure it is recommended to use EPDM-strips 40 × 3 (Item No. 5EPDM0403010) where the roof hooks hit.

PLAIN TILE ROOF HOOK WITH BASE PLATE

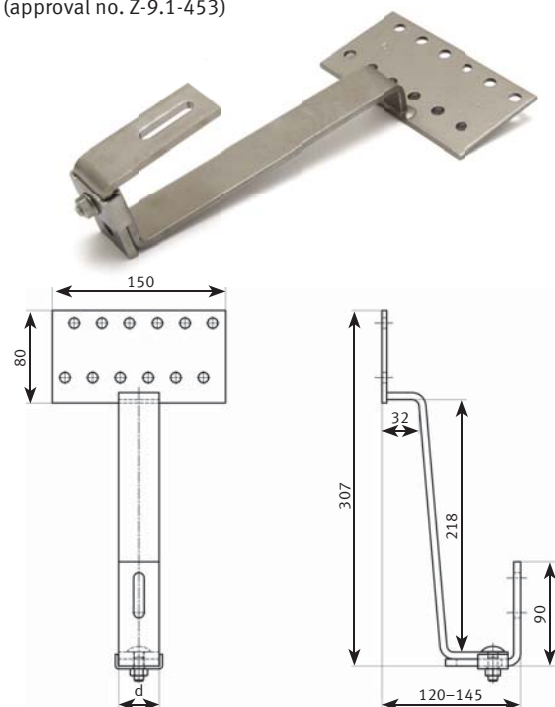
Material bracket: 6 mm stainless steel 1.4301
Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
For use with flat head screw with countersunk slit (approval no. Z-9.1-453)



Item No.	d	Slot
12B0 1356 8000	35	9
12B0 1406 8000	40	

PLAIN TILE ROOF HOOK WITH BASE PLATE, HEIGHT ADJUSTABLE

Material bracket: 6 mm stainless steel 1.4301
Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
For use with flat head screw with countersunk slit (approval no. Z-9.1-453)



Item No.	d	Slot
12B0 1356 8H00	35	9
12B0 1406 8H00	40	

ON REQUEST WE PRODUCE ROOF HOOKS WITH SLOT 11.

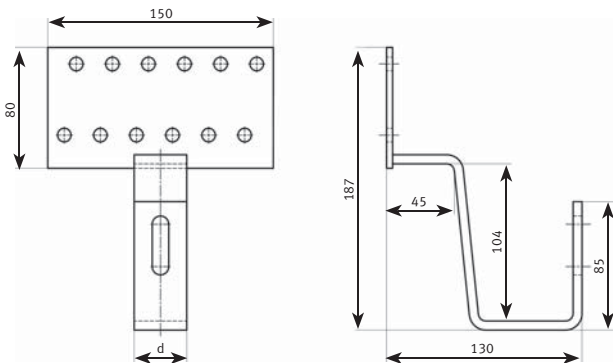
ROOF MOUNTING PARTS

PANTILE ROOF HOOK

Pantile roof hooks have been especially designed for use on pantile roofs and are screwed directly onto the rafters. If the batten is higher than 30 mm we recommended using a rafter shim and longer flat head screw.

PANTILE ROOF HOOK

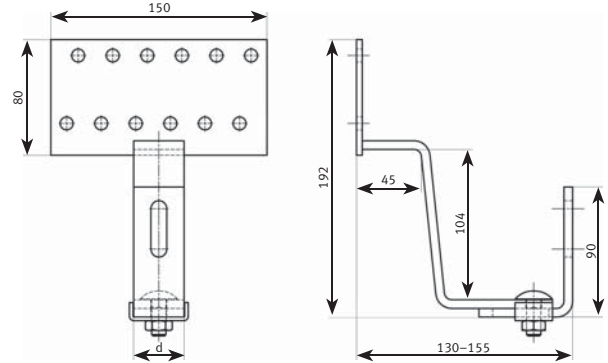
Material bracket: 6 mm stainless steel 1.4301
 Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
 For use with flat head screw with countersunk slit
 (approval no. Z-9.1-453)



Item No.	d	Slot
12P1 1356 8000	35	9
12P1 1356 1000		11
12P1 1406 8000	40	9
12P1 1406 1000		11

PANTILE ROOF HOOK HEIGHT ADJUSTABLE

Material bracket: 6 mm stainless steel 1.4301
 Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
 For use with flat head screw with countersunk slit
 (approval no. Z-9.1-453)



Item No.	d	Slot
12P1 1356 8H00	35	9
12P1 1356 1H00		11
12P1 1406 8H00	40	9
12P1 1406 1H00		11

ON REQUEST WE PRODUCE ROOF HOOKS WITH SLOT 11.

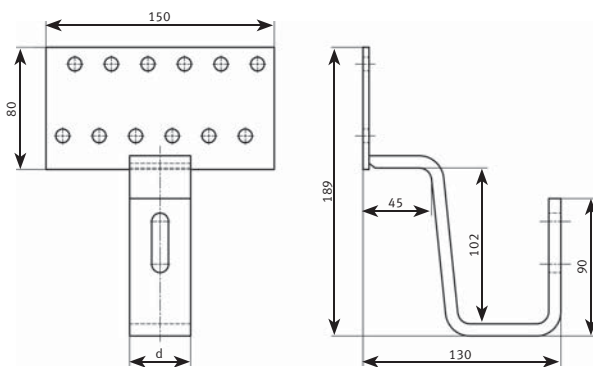
ROOF MOUNTING PARTS

PANTILE ROOF HOOK FOR SPECIAL REQUIREMENTS

Pantile roof hooks have been especially designed for use on pantile roofs and are screwed directly onto the rafters. If the batten is higher than 30 mm we recommended using a rafter shim and longer flat head screw.

PANTILE ROOF HOOK FOR HIGHER STATIC LOAD

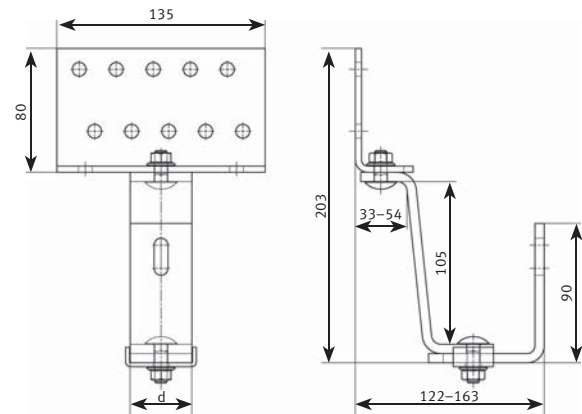
Material bracket: 8 mm stainless steel 1.4301
 Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
 For use with flat head screw with countersunk slit (approval no. Z-9.1-453)



Item No.	d	Slot
12P1 1408 1000	40	11

PANTILE ROOF HOOK DOUBLE HEIGHT ADJUSTABLE

Material bracket: 6 mm stainless steel 1.4301
 Material base plate: 4 mm stainless steel 1.4016, 2 × 6 holes Ø 9
 For use with flat head screw with countersunk slit (approval no. Z-9.1-453)



Item No.	d	Slot
2223 6580 H000	35	9
2223 6280 H000	40	9

ROOF MOUNTING PARTS

ACCESSORIES FOR ROOF HOOKS

COVER PLATE FOR SLATE ROOF HOOKS

Material: aluminium 0.8 mm

Other dimensions on request!

For use with two screws (Item No. 4ASIV0204025) We recommend to apply an expansion strip between the plate and the slate.



Item No.	Measures
1123 1990 0230	1,000 × 230

METAL TILE FOR PLAIN TILE

Material: aluminium 0.8 mm

Other dimensions on request!

The metal tile for plain tile covering prevents the lower tile being crushed by the load. Because the clay tile does not need to be cut out, installation is greatly simplified. The metal tile is cut to standard size and is fixed to the rafter with two screws (item no: 4ASIV0204025). Alternatively, with crow tiles, it is hung to the tile beneath. We recommend to apply an expansion strip between the plate and the slate.



Item No.	Measures
1123 2990 0181	360 × 180

EXPANDING WATER STOP REEL

Expanding water stop is used as a water proofing seal, for example with metal tiles on roof or with plain tile roofing as a seal on the transition to the roofing.



Item No.	Measures
5QB0 4091 5080	Thickness 4–9; reel = 8 m

ROOF MOUNTING PARTS

ACCESSORIES FOR ROOF HOOKS

RAFTER SLIM

80 × 80 mm; Material: wood
Differences in height created by uneven battens or roof warping can be resolved by using rafter shims.



Item No.	Thickness
1208 0800 5000	5
1208 0801 0000	10
1208 0801 5000	15

COMPENSATING SHEAVE

40 × 50 mm; Material: aluminium
If height differences are present, these allow for better and even rail positioning.



Item No.	Thickness	Slot
1130 4050 1800	1	9
1130 4050 2800	2	
1130 4050 3800	3	
1130 4050 5800	5	
1130 4050 1100	1	
1130 4050 2100	2	11
1130 4050 3100	3	
1130 4050 5100	5	

CHECK LIST FOR TRAPEZOIDAL METAL SHOE

Send your enquiry per e-mail:
info@altec-metalltechnik.de
or fax an: +49 3663 4210-211

- Enquiry
 Order (mark with a cross where applicable)

Name: _____

No./address: _____

Post code/town: _____

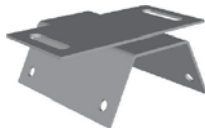
Phone: _____

E-mail: _____

Number of units*: _____

* IN the case of trapezoidal metal shoes a quantity deviation of approx. +1 % (or 1 unit) of the total quantity is possible.

with plate



Slot:
 M8 M10

with angled bar



Slot:
 M8 M10

with bar



Slot:
 M8 M10

with welded bolt



Threaded bolt:
 M8 M10

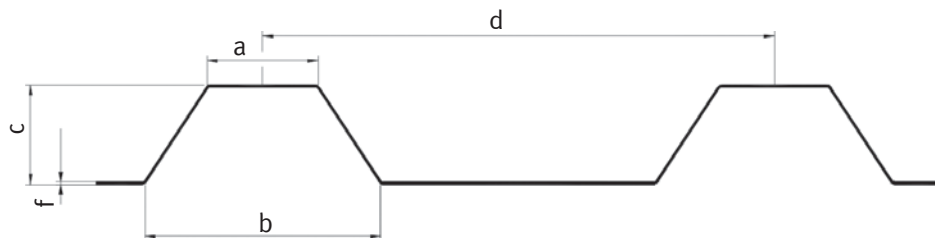
Accessories

With drilling screws: yes no

with EPDM tape: cutted linear meters

Sizes

Please measure the seams of the corrugation so that we can calculate an individual offer for you. We can supply you with 2 mm thick EPDM strip for the trapezoidal shoe at an additional cost.



a: _____ mm

b: _____ mm

c: _____ mm

d: _____ mm

f: _____ mm

Material (corrugated sheet): _____

Company stamp/signature: _____

ROOF MOUNTING PARTS

TRAPEZOIDAL SHOES – CUSTOM MADE PRODUCT

Trapezoidal shoes with different attachments will be especially produced for the needed crown widths. This helps to ensure optimal fit and leak on the roof. The choices are three different attachments: Bridge, angle or threaded bolts. Due to the bearing surfaces of the trapezoidal shoe can ensure optimal power transfer to the roof. It is among other things very well suited as a basis for an elevated trapezoidal roof mounting. It is supplied with EPDM-sealing tape. Please use our checklist for trapezoidal shoes!

TRAPEZOIDAL SHOES



Top width	with bolt M8 × 60 or M10 × 60	with angled bar 30 × 6, slot 9	with angled bar 35 × 6, slot 11	with bar 30 × 6, slot 9	with bar 35 × 6 slot 11
25–30 mm	The Item No. will be determined on the basis of the desired measurements.				
31–45 mm					
45–60 mm					

TRAPEZOIDAL SHOE WITH PLATE



On request

EPDM TAPE CLOSE CELL, GLUE ON ONE SIDE ONLY, REEL



Item No.	Measures	Thickness
5EPDM 030 3010	Reel 30 × 10.000	3
5EPDM 040 3010	Reel 40 × 10.000	
5EPDM 120 3020	Reel 120 × 20.000	
5EPDM 100 2020	Reel 100 × 20.000	2
5EPDM 120 2020	Reel 120 × 20.000	
1EPDM 100 1002	Strip 100 × 100	2
1EPDM 100 1202	Strip 100 × 120	
1EPDM 090 1202	Strip 90 × 120	

ROOF MOUNTING PARTS

TRAPEZROOF MOUNTING PARTS

ALTEC *SD_TRAFIX-V-SELECT*

Material: aluminium, EN AW-6063 T66; pierced; with EPDM tape laminated; delivery includes 4 thin metal screws



Item No.	for ledge spacing	Length
1TVE 1773 7500	177, 183, 190, 207, 214, 250, 275, 280, 305, 310, 315, 333, 350, 375	396

ALTEC *SD_TRAFIX-H*

Material: aluminium, EN AW-6063 T66; pierced; with EPDM tape laminated; delivery includes 2 thin metal screws



Item No.	Length
1TCB 2822 0164	164

ALTEC *SD_TRAFIX-V*

Material: stainless steel 1.4301 (trapezoidal sheet fastener); A2-70 (thin metal screws); aluminium (profile); black plastic (end caps)



Item No.	Description
1TF5 0001 02	single sheet fastener
1TF5 0002 04	Two sheet fasteners with 450 mm profile 40 x 40 standard and 4 thin metal screws 6.0 x 25
1TF5 0002 05	as TF5000204, with end caps

ALTEC *SD_TRAFIX 5°*

Simple elevation by 5° for horizontal/vertical module mounting
Material: stainless steel 1.4301; A2-70 (thin metal screw)



Item No.	Description
1TF SET 05000	Set with 4 brackets (pre-assembled with hammer-head bolts M8 x 20, self-locking nuts M8 and EPDM-tape), 8 thin metal screws and 2 profiles 450 mm

NEW

ROOF MOUNTING PARTS

TRAPEZOIDAL AND CORRUGATED ROOF MOUNTING PARTS

HANGER BOLTS WITH LOCKING NUTS AND EPDM-SEALING WASHER

Material: stainless steel 1.4301
Hanger bolts or dowel screws with wood thread (lower) and machine thread (upper). They are delivered pre-assembled with an EPDM sealing washer, securing nuts and two locking nuts.



Item No.	Measures	Hexagon bolt
4112 M011 0200	M10 × 200	SW7
4112 M011 0250	M10 × 250	SW7
4112 M212 2500	M12 × 250	SW9

ADAPTER PLATE FOR HANGER BOLTS OR THREADED ROD FASTENINGS

Material: stainless steel 1.4301
Adapter plates are used as connecting elements between hanger bolts or threaded rods and profile rails. Rails are fastened with hammer head screws via the slot and can be positioned this way. The round hole is used to fasten the adapter to the hanger bolt.



Item No.	Measures	Hanger bolt	Mounting screw
15AB 0356 8100	35 × 6 × 80	M10	M8
15AB 0406 8200	40 × 6 × 85	M12	M8
15AB 0406 1200	40 × 6 × 85	M12	M10
15AB 0408 1200	40 × 8 × 85	M12	M10

Sealing plate FixPlan for M10/M12

Roof seal for mounting with hanger bolts



Item No.
4500 2760

Bituplan additional seal for FixPlan

Additional seal for mounting on roofs with bitumen membrane



Item No.
4500 2131

SOLAR FASTENER FOR WAVE PROFILE OR TRAPEZOIDAL SHEET WITH SELF-TAPPING THREAD

Material: stainless steel 1.4301
The solar fastener can be used in steel girders with a thickness of 1.5 to 10 mm. Depending on the material, pre-drilling before assembly may be required.



On request

NEW

NEW

ROOF MOUNTING PARTS

CLAMPS FOR FOLDING ROOFS

For all clamps you must ensure that the first profile rail runs transverse to the felt. If required, install a cross connector. For a save mounting it is recommended checking of the connection between roofing surface and roof construction through experts.

STANDING SEAM CLAMP

Material: stainless steel 1.4301



Item No.	Hole	Clamping range
1154 5110 8110	9	3.5
1154 5111 0110	11	

STANDING SEAM CLAMP

Material: stainless steel 1.4301



Item No.	Hole	Clamping range
1154 5100 8020	9	3.5
1154 5101 0020	11	
2154 5100 8510	9	5
2154 5101 0510	11	

ROLLED TOP STANDING SEAM CLAMP

Material: stainless steel 1.4301



Item No.	Hole
1154 5200 8020	9
1154 5201 0020	11

PROFILES AND CONNECTORS

- Mounting profiles
- Special profiles and connectors
- Connecting elements
- Accessories for profiles
- Elevation angles



PROFILES AND CONNECTORS

MOUNTING PROFILES

Material: aluminium, EN AW-6063 T66
 Channel width 11; slot width 22.4 to accept hammer-head screws
 Length over 6,000 mm on request.

PROFILE 68 × 15



Item No.	Length	Weight
630P 06815 060	6,000	0.477 kg/m
130P 06815 000	cut to required length (up to 6,000)	

PROFILE 28 × 22



Item No.	Length	Weight
630P 02822 061	6,000	0.602 kg/m
130P 02822 001	cut to required length (up to 6,000)	

PROFILE 28 × 28



Item No.	Length	Weight
630P 02828 061	6,000	0.759 kg/m
630P 02828 052	5,200	
130P 02828 001	cut to required length (up to 6,000)	

PROFILE 38 × 33



Item No.	Length	Weight
630P 03833 060	6,000	0.745 kg/m
630P 03833 052	5,200	
130P 03833 000	cut to required length (up to 6,000)	

PROFILES AND CONNECTORS

MOUNTING PROFILES

Material: aluminium, EN AW-6063 T66
 Channel width 11; slot width 22.4 to accept hammer-head screws
 Length over 6,000 mm on request.

PROFILE 40 × 40 LIGHT



Item No.	Length	Weight
630P 04040 L61	6,000	0.966 kg/m
630P 04040 L52	5,200	
630P 04040 L41	4,500	
130P 04040 L01	cut to required length (up to 6,000)	

PROFILE 40 × 40 STANDARD



Item No.	Length	Weight
630P 04040 S60	6,000	1.074 kg/m
630P 04040 S52	5,200	
630P 04040 S40	4,500	
130P 04040 S00	cut to required length (up to 6,000)	

PROFILE 40 × 40 STANDARD, BLACK ANODISED



Item No.	Length	Weight
63EP 04040 S60	6,000	1.074 kg/m
13EP 04040 S00	cut to required length (up to 6,000)	

PROFILE 40 × 60



Item No.	Length	Weight
630P 04060 060	6,000	1.454 kg/m
130P 04060 000	cut to required length (up to 6,000)	

PROFILES AND CONNECTORS

MOUNTING PROFILES

L-PROFILE

Material: aluminium



Item No.	Measures	Length	Weight
630W 3030 3C	30 × 30 × 3	6,000	0.462 kg/m
130W 3030 3C00		cut to required length (up to 6,000)	
630W 4040 4C	40 × 40 × 4	6,000	0.821 kg/m
130W 4040 4B00		cut to required length (up to 6,000)	
630W 5050 4C	50 × 50 × 4	6,000	1.037 kg/m
130W 5050 4C00		cut to required length (up to 6,000)	
630W 5050 5C	50 × 50 × 5	6,000	1.283 kg/m
130W 5050 5C00		cut to required length (up to 6,000)	

SPECIAL PROFILES ON REQUEST

PROFILE 45 × 75

PROFILE 65 × 100

PROFILE 75 × 120

Material: aluminium, EN AW-6063 T66



On request



Minimum order 1 t = 360 m



Minimum order 1 t = 280 m

PROFILES AND CONNECTORS

CONNECTING ELEMENTS

CROSS CONNECTOR

Material: aluminium, EN AW-6063 T66
Attachment of 38 × 33, 40 × 40 Standard, 40 × 60, 65 × 100 and 75 × 120 profile rails to other profiles (cross connection)



Item No.	pre-assembled with
1190 1003 K000	Cylinder head screw M6 × 16, threaded plate
1190 1001 K000	Hammer head screw M8 × 20, hex nut, washer
1190 1004 K000	Hexagon head screw M6 × 16, threaded plate, washer

PROFILE CONNECTOR

Material: stainless steel 1.4301
for profiles 28 × 28, 38 × 33, 40 × 40 light and standard
The profile connectors are delivered completely pre-assembled with hammer head bolts and locking nuts.



Item No.	Measures/Description
1150 1441 K020	30 × 6 × 200 for rail connection outside of the centre of moments
1150 1441 K120	30 × 4 × 200 for rail connection at the centre of moments

L- AND Z-ANGLE

Material: stainless steel 1.4301
pre-assembled with 2 hammer head screws and locking nuts



Item No.	Description
1150 7040 4K30	L-angle
1150 6028 4K10	Z-angle

EXPANSION CONNECTOR

Material: aluminium, EN AW-6063 T66
pre-assembled with 2 hexagon bolts M6 × 16



Item No.	for profiles
1130 111K 0010	28 × 28, 38 × 33, 40 × 40 light und standard, 40 × 60

PROFILES AND CONNECTORS

ACCESSORIES FOR PROFILES

EDGE CLIP

Material: polyamid 6.6, UV stabilised



Item No.	Used for
5KAN SW48 2003	parallel to edge
5KAN SW48 2005	transverse to edge

CABLE TIE

Material: polyamid 6.6, UV stabilised



Item No.	Measures
5UNI SW48 3000	4.8 × 290–300

END CAP FOR PROFILE RAILS

Material: black plastic



Item No.	Measures
1180 0028 2800	28 × 28
1180 0038 3300	38 × 33
1180 0040 4000	40 × 40
1180 0060 4000	40 × 60

ELEVATION ANGLES

- complete kits
- component parts



NEW

ELEVATION ANGLES

We can now offer you a modular programme of mounting brackets. To ensure you select the right product, you will need to know the tilt angle and the module alignment (vertical/horizontal). Brackets can be combined with any rooftop fixing system.

You can also choose from complete bracket sets including screws and cross-connectors or just the individual parts.

When should I pick a complete bracket set?

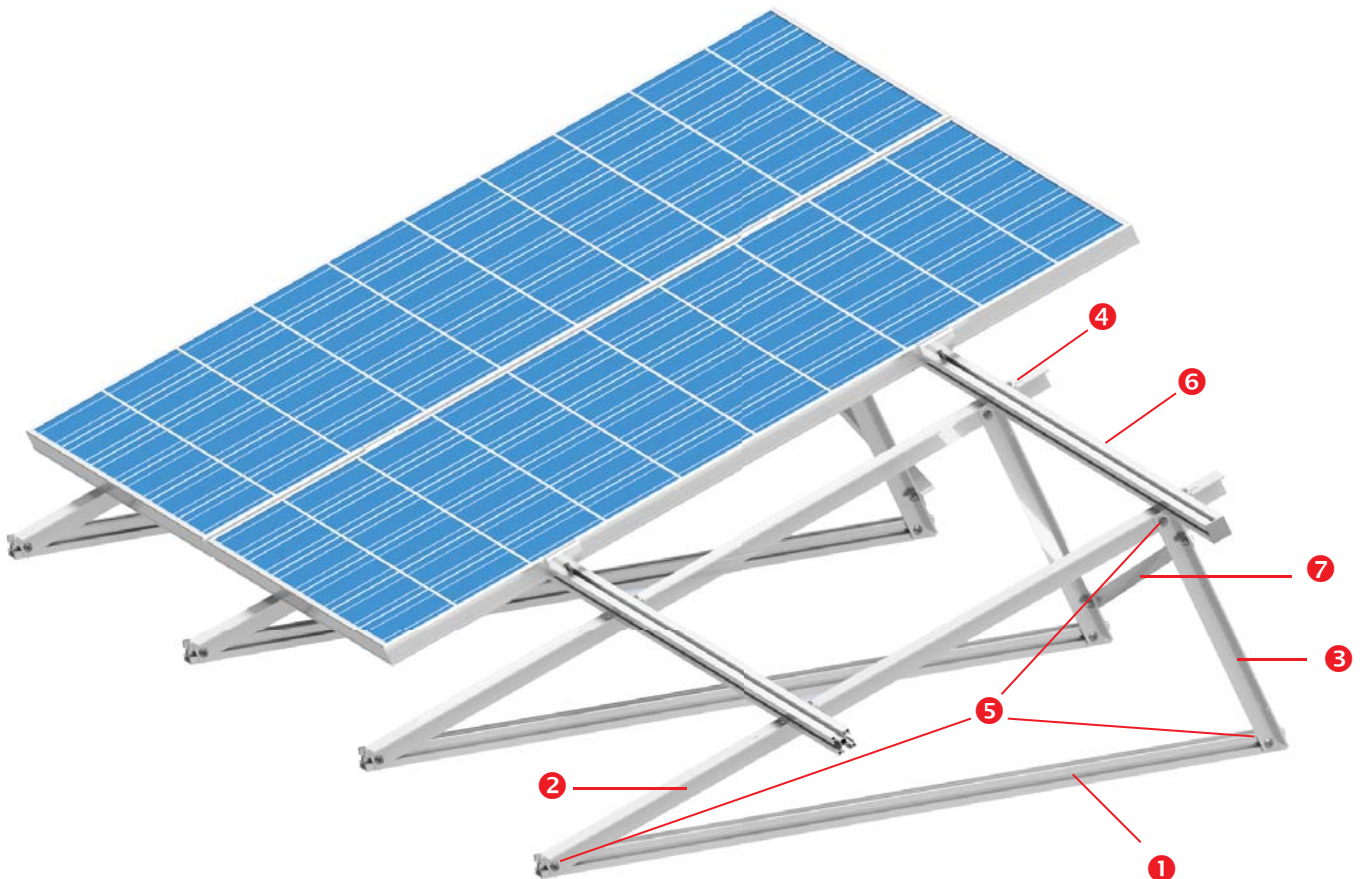
Choose this if you don't need a continuous base rail.

When should I pick individual parts?

If you want to fit a continuous base rail **1**. You can order our 40 × 40 standard rail (length up to 6 m) as a base rail and then order the bearing brackets **2**, support brackets **3**, cross-connectors **4** and screw sets **5** to match.

For the **mounting rail 6** (not included in the set), use the 40 × 40 standard rail. The length is based on the module size + terminal spacing + space for fitting the end terminals.

Diagonal struts 7 are sold separately, and are fitted to the end or start of a row of modules and after 10 modules in the opposite direction.



NEW

**ELEVATION ANGLE
VERTICAL MODULE MOUNTING**

Material: aluminium, EN AW-6063 T66
1 base rail, 1 support bracket, 1 bearing bracket, 2 cross-connector sets, 1screw set

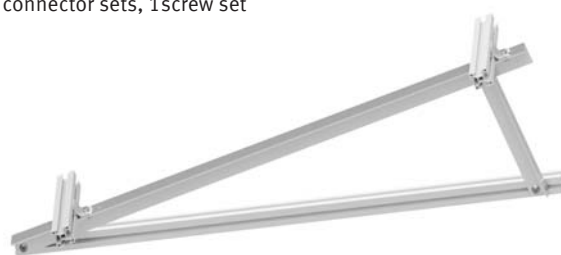


Item No.	Description
13AW SK100	10° vertical
13AW SK150	15° vertical
13AW SK200	20° vertical
13AW SK250	25° vertical
13AW SK300	30° vertical

NEW

**ELEVATION ANGLE
HORIZONTAL MODULE MOUNTING**

Material: aluminium, EN AW-6063 T66
1 base rail, 1 support bracket, 1 bearing bracket, 2 cross-connector sets, 1screw set

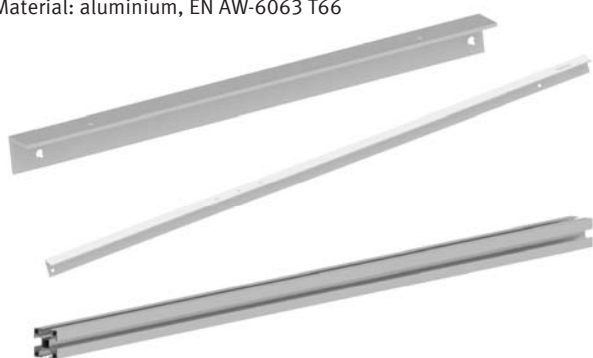


Item No.	Description
13AW WK100	10° horizontal
13AW WK150	15° horizontal
13AW WK200	20° horizontal
13AW WK250	25° horizontal
13AW WK300	30° horizontal

NEW

**COMPONENT PARTS
VERTICAL MODULE MOUNTING**

Material: aluminium, EN AW-6063 T66



Item No.	Description
13AW SA14 500	bearing bracket vertical
13AW SS100	support bracket vertical 10°
13AW SS150	support bracket vertical 15°
13AW SS200	support bracket vertical 20°
13AW SS250	support bracket vertical 25°
13AW SS300	support bracket vertical 30°
13AW SP100	base rail vertical for angles 10–20°, length 1490 mm
13AW SP250	base rail vertical for angles 25–30°, length 1620 mm

NEW

**COMPONENT PARTS
HORIZONTAL MODULE MOUNTING**

Material: aluminium, EN AW-6063 T66



Item No.	Description
13AW WA11 900	bearing bracket horizontal
13AW WS100	support bracket horizontal 10°
13AW WS150	support bracket horizontal 15°
13AW WS200	support bracket horizontal 20°
13AW WS250	support bracket horizontal 25°
13AW WS300	support bracket horizontal 30°
13AW WP100	base rail horizontal for angles 10–20°, length 1190 mm
13AW WP250	base rail horizontal for angles 25–30°, length 1295 mm

NEW**CROSS CONNECTOR (SET, UNMOUNTED)**

Material: aluminium, EN AW-6063 T66



Item No.	Description
1KV SET 01	You need 2 cross connectors per elevation angle

NEW**SCREW CONNECTION FOR ELEVATION ANGLES**

Material: aluminium, EN AW-6063 T66



Item No.	Description
13AW SET 01	2 hammer head screws M8 × 20, 1 hexagon bolt M8 × 20, 3 hexagon nuts M8

NEW**DIAGONAL STRUT**incl. screw connection, unmounted
Material: aluminium, EN AW-6063 T66

Item No.	Length
13DS 3030 1000	1000 mm
13DS 3030 1250	1250 mm
13DS 3030 1500	1500 mm
13DS 3030 1750	1750 mm
13DS 3030 2000	2000 mm
13DS 3030 2250	2250 mm

MODULE MOUNTING PARTS

- Clamping plates as Mid-clamps
- Mid-clamps
- End-clamps
- Slip-protections
- Universal clamps



MODULE MOUNTING PARTS

CLAMPING PLATES

Clamping plates for use in smallest possible module spacing (7 mm),
hole 9 for screw M8 on request
Plate size 50 × 26 × 4, Material: aluminium, EN AW-6063 T66

CLAMPING PLATES UNMOUNTED



Item No.	for screw
3130 3026 4600	M6

CLAMPING PLATES UNMOUNTED; BLACK ANODISED



Item No.	for screw
313E 3026 4600	M6

CLAMPING PLATES WITH HEXAGON BOLT

Delivery includes threaded plate M6, hexagon bolt and washer
Other module heights available on request.



Item No.	Module height	Screw
1130 3028 4600	28–32	M6 × 45
1130 3033 4600	33–37	M6 × 50
1130 3038 4600	38–42	M6 × 55
1130 3043 4600	43–47	M6 × 60
1130 3048 4600	48–50	M6 × 65

CLAMPING PLATES WITH HEXAGON BOLT, BLACK ANODISED

Delivery includes threaded plate M6, hexagon bolt and washer
Other module heights available on request.



Item No.	Module height	Screw
113E 3028 4600	28–32	M6 × 45
113E 3033 4600	33–37	M6 × 50
113E 3038 4600	38–42	M6 × 55
113E 3043 4600	43–47	M6 × 60
113E 3048 4600	48–50	M6 × 65

MODULE MOUNTING PARTS

MID-CLAMPS

Module space 19 mm, Clamp length 70 mm,
hole 9 for screw M8 on request
Material: aluminium, EN AW-6063 T66

MID-CLAMP UNMOUNTED



Item No.	for screw
3190 3070 0600	M6

MID-CLAMP WITH CYLINDER HEAD SCREW

Delivery includes threaded plate M6 and cylinder head screw
Other module heights available on request.



Item No.	Module height	Screw
1190 3230 0600	30–33	M6 × 20
1190 3234 0600	34–38	M6 × 25
1190 3239 0600	39–43	M6 × 30
1190 3244 0600	44–48	M6 × 35
1190 3249 0600	49–50	M6 × 40

MID-CLAMP UNMOUNTED, BLACK ANODISED



Item No.	for screw
319E 3070 0600	M6

MID-CLAMP UNMOUNTED, BLACK ANODISED WITH CUTTING EDGE



Item No.	for screw
319E 3070 S600	M6

NEW

MODULE MOUNTING PARTS

MID-CLAMPS

Module space 19 mm, Clamp length 70 mm,
hole 9 for screw M8 on request
Material: aluminium, EN AW-6063 T66

MID-CLAMP WITH CYLINDER HEAD SCREW, BLACK ANODISED

Delivery includes threaded plate M6 and cylinder head crew
Other module heights available on request.



Item No.	Module height	screw
119E 3230 0600	30-33	M6 x 20
119E 3234 0600	34-38	M6 x 25
119E 3239 0600	39-43	M6 x 30
119E 3244 0600	44-48	M6 x 35
119E 3249 0600	49-50	M6 x 40

MID-CLAMP WITH CYLINDER HEAD SCREW, BLACK ANODISED WITH CUTTING EDGE

Delivery includes threaded plate M6 and cylinder head crew
Other module heights available on request.



Item No.	Module height	Screw
119E 3230 S600	30-33	M6 x 20
119E 3234 S600	34-38	M6 x 25
119E 3239 S600	39-43	M6 x 30
119E 3244 S600	44-48	M6 x 35
119E 3249 S600	49-50	M6 x 40

NEW

MODULE MOUNTING PARTS

END-CLAMPS AND SLIP-PROTECTIONS

Clamp length: 40 mm (individual length and other module heights on request)

Material: aluminium, EN AW-6063 T66

hole 9 for screw M8 on request

END-CLAMP



Module height	Type	unmounted	with cylinder head screw	with hexagon bolt
30	with bar	3190 2030 0610	1190 2230 0610	1190 2030 0610
31	with bar	3190 2031 0600	1190 2231 0600	1190 2031 0600
32	without bar	3190 2032 0610	1190 2232 0610	1190 2032 0610
33	with bar	3190 2033 0600	1190 2233 0600	1190 2033 0600
35	without bar	3190 2035 0600	1190 2235 0600	1190 2035 0600
38	without bar	3190 2038 0610	1190 2238 0610	1190 2038 0610
39	with bar	3190 2039 0600	1190 2239 0600	1190 2039 0600
40	without bar	3190 2040 0600	1190 2240 0600	1190 2040 0600
41	with bar	3190 2041 0600	1190 2241 0600	1190 2041 0600
42	without bar	3190 2042 0600	1190 2242 0600	1190 2042 0600
45	without bar	3190 2045 0600	1190 2245 0600	1190 2045 0600
46	with bar	3190 2046 0610	1190 2246 0610	1190 2046 0610
50	without bar	3190 2050 0600	1190 2250 0600	1190 2050 0600

MODULE MOUNTING PARTS

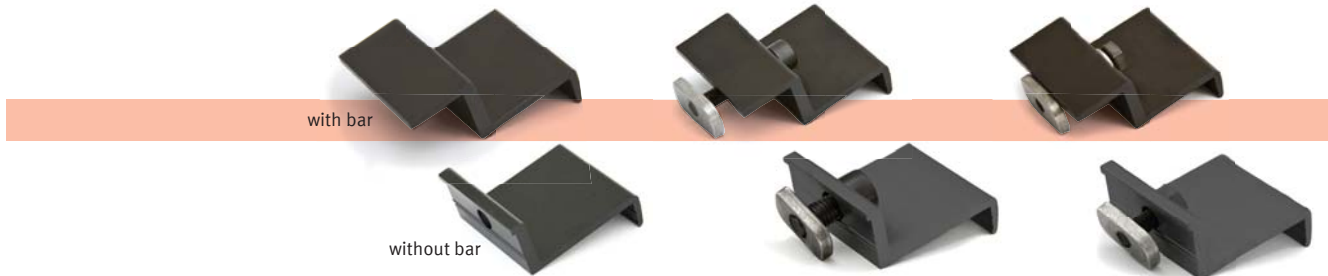
END-CLAMPS FOR BLACK PV PANELS

Clamp length: 40 mm (individual length and other module heights on request)

Material: aluminium, EN AW-6063 T66

hole 9 for screw M8 on request

END-CLAMP BLACK ANODISED



Module height	Type	unmounted	with cylinder head screw	with hexagon bolt
30	with bar	319E 2030 0610	119E 2230 0610	119E 2030 0610
31	with bar	319E 2031 0600	119E 2231 0600	119E 2031 0600
32	without bar	319E 2032 0610	119E 2232 0610	119E 2032 0610
33	with bar	319E 2033 0600	119E 2233 0600	119E 2033 0600
35	without bar	319E 2035 0600	119E 2235 0600	119E 2035 0600
38	without bar	319E 2038 0610	119E 2238 0610	119E 2038 0610
39	with bar	319E 2039 0600	119E 2239 0600	119E 2039 0600
40	without bar	319E 2040 0600	119E 2240 0600	119E 2040 0600
41	with bar	319E 2041 0600	119E 2241 0600	119E 2041 0600
42	without bar	319E 2042 0600	119E 2242 0600	119E 2042 0600
45	without bar	319E 2045 0600	119E 2245 0600	119E 2045 0600
46	with bar	319E 2046 0610	119E 2246 0610	119E 2046 0610
50	without bar	319E 2050 0600	119E 2250 0600	119E 2050 0600

NEW

END-CLAMP BLACK ANODISED WITH CUTTING EDGE



Module height	Type	unmounted	with cylinder head screw	with hexagon bolt
35	without bar	319E 2035 S600	119E 2235 S600	119E 2035 S600
40	without bar	319E 2040 S600	119E 2240 S600	119E 2040 S600

MODULE MOUNTING PARTS

SLIP-PROTECTIONS

Clamp length: 40 mm (individual length and other module heights on request)
 Material: aluminium, EN AW-6063 T66
 hole 9 for screw M8 on request

SLIP PROTECTION END-CLAMP



module height	Item No. with cylinder head screw	Item No. with hexagon bolt
30	1190 5330 0610	1190 5030 0610
31	1190 5331 0600	1190 5031 0600
32	1190 5332 0610	1190 5032 0610
33	1190 5333 0600	1190 5033 0600
35	1190 5335 0600	1190 5035 0600
38	1190 5338 0610	1190 5038 0610
39	1190 5339 0600	1190 5039 0600
40	1190 5340 0600	1190 5040 0600
41	1190 5341 0600	1190 5041 0600
42	1190 5342 0600	1190 5042 0600
45	1190 5345 0600	1190 5045 0600
46	1190 5346 0610	1190 5046 0610
50	1190 5350 0600	1190 5050 0600

SLIP PROTECTION CYLINDER HEAD SCREW

Material: A2, for mounting hole 6–9 mm



Item No.	Screw
1091 2020 6010	M6 × 10

MODULE MOUNTING PARTS

SLIP-PROTECTION FOR BLACK PV PANELS

Clamp length: 40 mm (individual length and other module heights on request)

Material: aluminium, EN AW-6063 T66

hole 9 for screw M8 on request

**SLIP PROTECTION END-CLAMP
BLACK ANODISED**



Module height	Item No. with cylinder head screw	Item No. with hexagon bolt
30	119E 5330 0610	119E 5030 0610
31	119E 5331 0600	119E 5031 0600
32	119E 5332 0610	119E 5032 0610
33	119E 5333 0600	119E 5033 0600
35	119E 5335 0600	119E 5035 0600
38	119E 5338 0610	119E 5038 0610
39	119E 5339 0600	119E 5039 0600
40	119E 5340 0600	119E 5040 0600
41	119E 5341 0600	119E 5041 0600
42	119E 5342 0600	119E 5042 0600
45	119E 5345 0600	119E 5045 0600
46	119E 5346 0610	119E 5046 0610
50	119E 5350 0600	119E 5050 0600

**SLIP PROTECTION END-CLAMP
BLACK ANODISED WITH CUTTING EDGE**

NEW



Module height	Item No. with cylinder head screw	Item No. with hexagon bolt
35	119E 5335 S600	119E 5035 S600
40	119E 5340 S600	119E 5040 S600

MODULE MOUNTING PARTS

UNIVERSAL CLAMPS

UNIVERSAL MID-CLAMP MODULE HEIGHT 35–50

Material: aluminium, EN AW-6063 T66
 Clamp length: 70 mm, module space 19 mm
 Delivery includes snap fit block M6 and cylinder head screw
 M6 × 25. Other module heights available on request.



Item No.	Description
1190 3835 0600	aluminium blank
119E 3835 0600	black anodised
119E 3835 S600	black anodised, with cutting edge

UNIVERSAL END-CLAMP

Material: aluminium, EN AW-6063 T66
 Clamp length: 70 mm. Delivery includes snap fit block M6 and
 cylinder head screw M6 × 40 resp. 45.



Item No.	Module height	Description
1190 2835 0600	35–46	aluminium blank
1190 2840 0600	40–50	
119E 2835 0600	35–46	black anodised
119E 2840 0600	40–50	

UNIVERSAL MODULE CLAMPING FOR HORIZONTALLY, ELEVATED MODULE MOUNTING – SET

Material: aluminium, EN AW-6063 T66

Material: aluminium, EN AW-6063 T66

Material: stainless steel 1.4301



Clamp		Anti-slide protection		Slip protection
Item No.	Module height	Item No.	Screw	Item No.
1190 2100 0800	25–50	1130 5640 4810	M8 × 20	1150 5100 0000

SMALL PARTS AND ACCESSORIES

- Screws, nuts, washers
- Mounting accessories
- Sample request



SMALL PARTS AND ACCESSORIES

SCREWS AND NUTS

HAMMER HEAD SCREW

Material: A2-70, General building approval Z-14.4-658



Item No.	Size
40HKS 0208 020	M8 × 20
40HKS 0208 030	M8 × 30
40HKS 0208 040	M8 × 40
40HKS 0210 030	M10 × 30

LOCKING NUT DIN 6923

Material: A2-70



Item No.	Size
4692 3020 8000	for M8
4692 3021 0000	for M10
4692 3021 2000	for M12

HEXAGON NUT DIN 934 (EN ISO 4032)

Material: A2-70



Item No.	Size
4093 4020 6000	for M6
4093 4020 8000	for M8
4093 4021 0000	for M10
4093 4021 2000	for M12

THREADED PLATE

Material: A2-70, General building approval Z-14.4-658



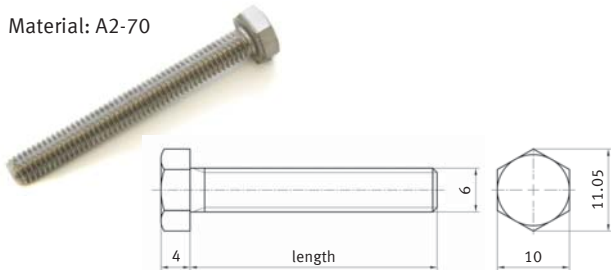
Item No.	for screw
40GP 0020 6001	M6

SMALL PARTS AND ACCESSORIES

SCREWS AND NUTS

HEXAGON BOLT M6 DIN 933 (EN ISO 4017)

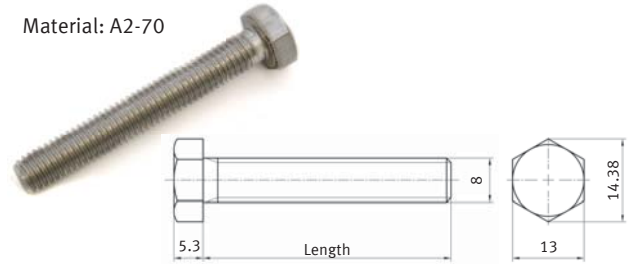
Material: A2-70



Item No.	Length
4093 3020 6045	45
4093 3020 6050	50
4093 3020 6055	55
4093 3020 6060	60
4093 3020 6065	65

HEXAGON BOLT M8 DIN 933 (EN ISO 4017)

Material: A2-70



Item No.	Length
4093 3020 8016	16
4093 3020 8020	20
4093 3020 8025	25
4093 3020 8035	35
4093 3020 8040	40

THIN METAL SCREW SELF-TAPPING

Material: A2-70, general building approval Z-14.1-537, Z-14.1-4



Item No.	d × l
4BSR P020 6025	6.0 × 25

DRILLING SCREW WITH RUSPERT COVERING

Material: A2-70, general building approval Z-14.1-537, Z-14.1-4



Item No.	d × l
4206 9220 6325	6.3 × 25

CYLINDER HEAD SCREW WITH HEXAGON SOCKET DIN 912 (EN ISO 4762)

Material: A2-70



Item No.	d × l
4091 2020 6010	6 × 10
4091 2020 6025	6 × 25
4091 2020 8016	8 × 16
4091 2020 8030	8 × 30

TORX HEAD COUNTSUNK WOOD SCREW WITH INTERNAL SERRATION FULLY THREADED

Material: A2-70, general building approval Z-9.1-729



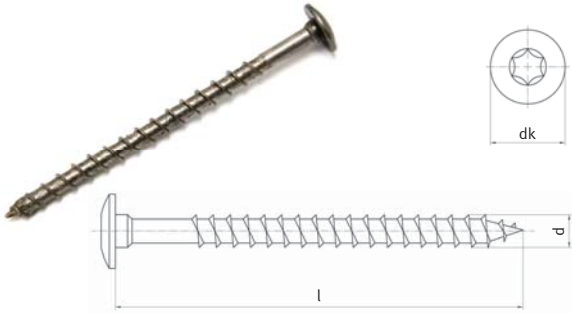
Item No.	d × l
4ASIV 0204 025	4 × 25
4ASIV 0206 080	6 × 80

SMALL PARTS AND ACCESSORIES

DIN AND STANDARD PARTS

FLAT HEAD SCREW WITH COUNTSUNK SLIT

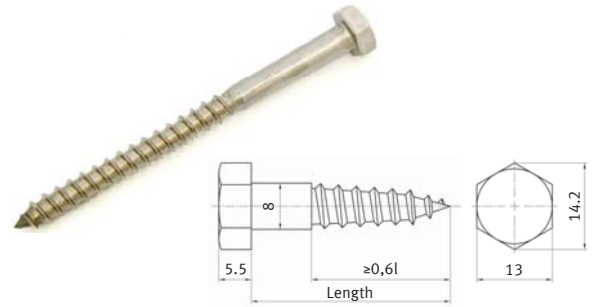
Material: A2-70, general building approval Z-9.1-453



Item No.	d × l	dk
49TK IT20 6100	6 × 100	14
49TK IT20 8100	8 × 100	17,5

HEXAGON HEAD WOOD SCREW M8 DIN 571

Material: A2-70



Item No.	Length
4057 1020 8080	80

WASHER DIN 125 (EN ISO 7089)

Material: A2-70



Item No.	Size
4012 5020 6400	for M6
4012 5020 8400	for M8

WASHER DIN 9021 (EN ISO 7093)

Material: A2-70



Item No.	Size
4902 1020 6400	for M6
4902 1020 8400	for M8
4902 1021 0500	for M10

SMALL PARTS AND ACCESSORIES**LIGHTNING PROTECTION AND FIXATION****LIGHTNING PROTECTION****Item No.**

1130 3608 0100

TERRAGRIF POTENTIAL EQUALIZATION**Item No.**

5TGR IF05 2017

SYSTEM MATT WITH FIXING FLAPS FOIL-LAMINATED

Upper side with fixing flaps, the bottom side (foil-laminated) prevents the migration of plasticizers between roof cladding and building protection mat

**Item No.**

5BSM A040 1206

Measures

400 × 120 × 6mm

FREE SAMPLES

You are welcome to configure your own sample set based on the individual components in this catalog. Request of samples is free of charge.

SAMPLE FOR PITCHED ROOF SYSTEM



Item No. MUSDM01

Contains: 1 shingle roof hook, 1 pantile roof hook, 1 profile 40 × 40 standard, 1 profile 38 × 33, 1 end cap für profile 40 × 40, 1 cross-connector, 1 end-clamp, 1 mid-clamp, 1 slip protection end-clamp, 1 hammer head screw, 1 locking nut with serrated flange

SAMPLE FOR PITCHED ROOF SYSTEM BLACK ANODISED



Item No. MUSDME01

Contains: 1 profile 40 × 40 standard, 1 end-clamp, 1 mid-clamp, 1 slip protection end-clamp

SAMPLE FOR TRAPEZOIDAL ROOF MOUNTING

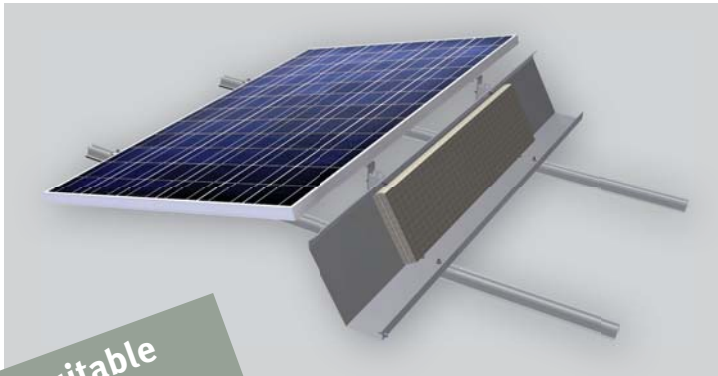


Item No. MUTDM01

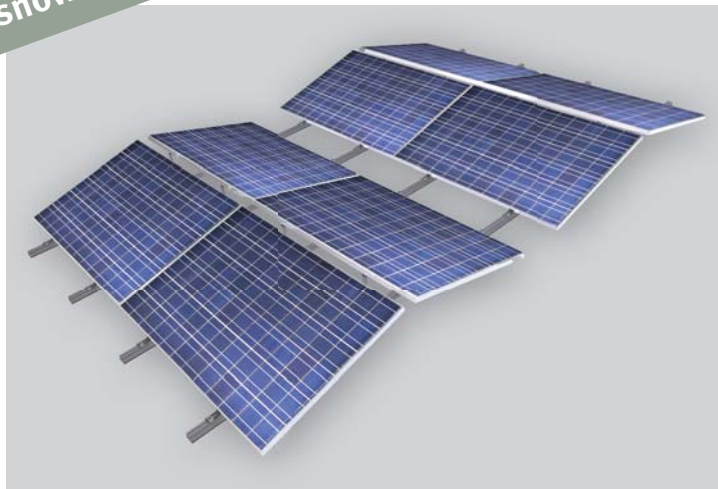
Contains: 1 ALTEC SD_TRAFIX-V-SELECT, 1 ALTEC SD_TRAFIX-V, 1 ALTEC SD_TRAFIX-H

ALTEC FD_COMPACT

OPTIMISED FLAT ROOF BALLAST SYSTEM



Also suitable
for higher
snow loads!



Both the South and the east-west-elevated system are suitable for use on most flat roofs with a maximum slope of 5°.

The 15° angle frames are physically connected by a continuous base rail. Thanks to this cross-linked structure an area up to within 0.5 m from the roof edge can be used for module placement. This is possible on a building height of up to 25 meters, even for flat roofs without parapets. The framed modules are horizontally attached to the frame bases which allows rapid assembly without any need for additional clamps.

The ALTEC flat-roof mounting system has been optimised by wind tunnel tests. For south facing elevations the ballast is applied on the rear wind sheet, with the east-west elevation frames have ballast laid on the rails underneath the modules.

Our Check list „ballast optimised flat roof system“ can be found at www.altec-metalltechnik.de/en/downloads/

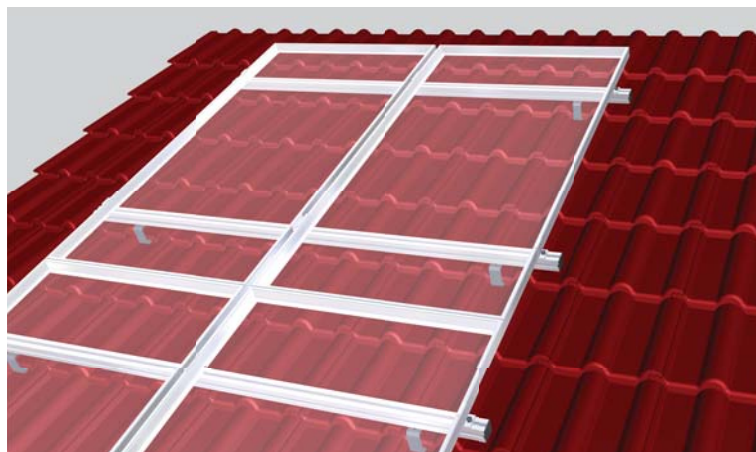
ALTEC SD_ON-ROOF

PITCHED ROOF SYSTEM – ON-ROOF MOUNTING

Select the roof mounting parts in accordance to your roof cladding:

- Roof hooks for numerous kinds of roof covering (shingle, slate, plain tile or pantile)
- Hanger bolts and solar fasteners are used for roofs with corrugated sheeting

Subsequently the profile rails will be mounted (vertically or horizontally)



Vertical mounting on tiles and corrugated roofs

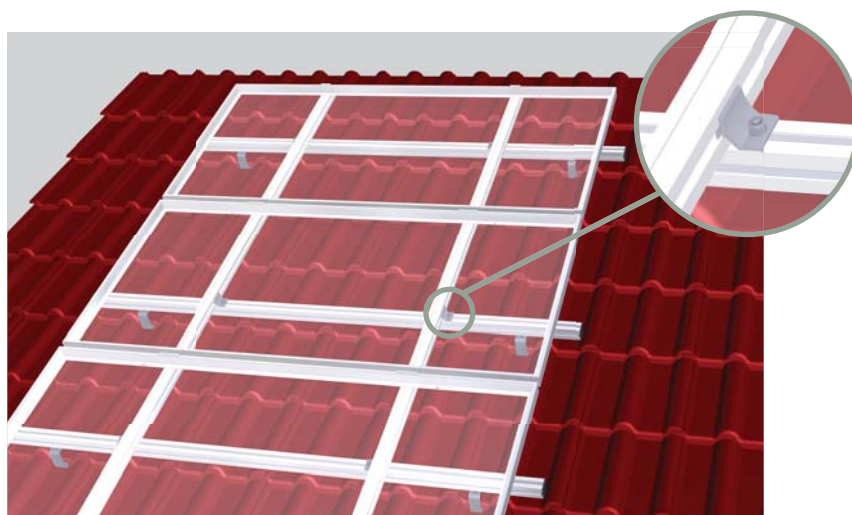
Vertical module mounting

After assembling of the mounting rails on the roof mounting parts the module will be fitted on them.

Horizontal module mounting (cross connection)

The profiles will be assembled on the roof mounting parts. The mounting rails will be fixed on the profiles by using cross-connectors.

Select from our range of clamps the most optimal component. There are module clamping angles or alternatively end-clamps and clamping plates or alternatively mid-clamps.

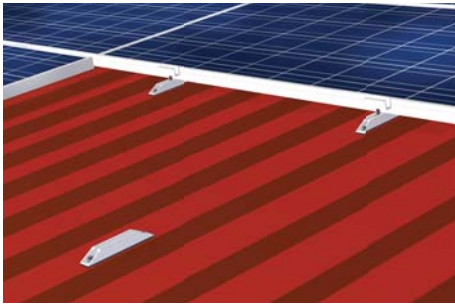


Horizontal mounting (cross connection) on tiles, seamed and corrugated roofs

Our Check list „mounting system“ can be found at www.altec-metalltechnik.de/en/downloads/

ALTEC SD_TRAFIX

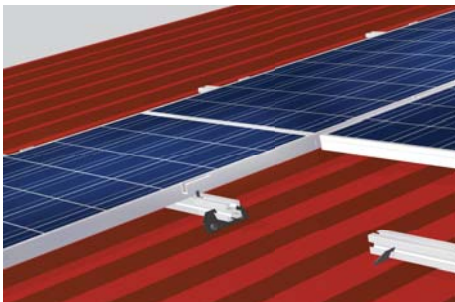
TRAPEZOIDAL ROOF-MOUNTING



ALTEC SD_TRAFIX-H

(for horizontal module installation)

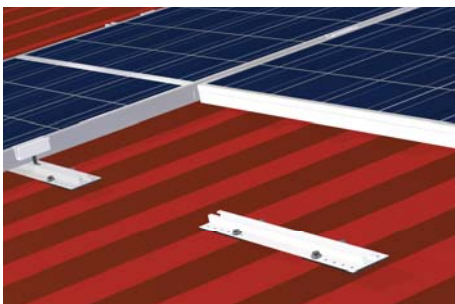
Use therefore our trapezoidal-c-profile connector, which only consists of four parts: One piece cut c-profile (pre-drilled and with EPDM tape covered), one piece of mid-clamp and end-clamp as well as two thin metal screws. No pre-drilling necessary.



ALTEC SD_TRAFIX-V

(for vertical module installation)

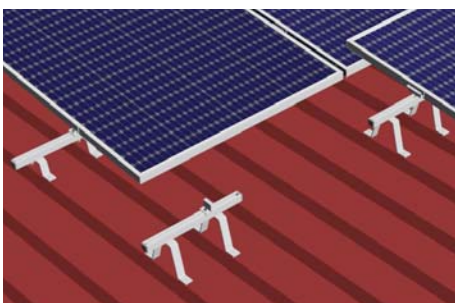
Universal using of our trapezoidal mounting system on almost all trapezoidal metal roof covering. It guarantees an easy and fast mounting, less material necessary.



ALTEC SD_TRAFIX-V-SELECT

(for vertical module installation)

For urgent projects on trapezoidal roofs with module installed vertical, this mounting system means you can work cost-effectively and flexibly. You can mount every module width with ease, because you can choose to position the solar modules at any point on the rail.



ALTEC SD_TRAFIX 5°

(for horizontal and vertical module installation)

This fixing is an easy way to achieve an optimum angle of incidence for PV modules on very flat trapezoidal sheet metal roofs. It not only has a self-cleaning effect, but also improves rear ventilation, significantly increasing performance.

See page 20.

ALTEC FD|SD_VARIO

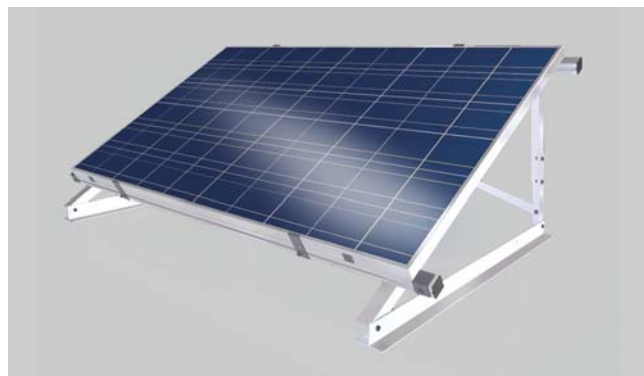
ELEVATED ASSEMBLIES FOR FLAT AND PITCHED ROOFS

If the roof isn't sloped enough, the modules can be elevated by our mounting systems for pitched roofs to get the maximum yield.

With an elevation angle, the slope of the module can be adjusted to gain the maximum annual efficiency. The construction of that elevation angle – each containing a support, bearing and base angle – is aligned and assembled locally. An optimum utilization of the roof surface is achieved when all elevation angles are erected on a continuous base angle. The distance between the module rows depends on the shade factor.

The type of mounting system used depends on the roof covering. Trapezoidal shoes or roof-hooks can all be used for attaching the angles. The selection of the material and design is determined by the individual parameters (e. g. slope of the roof, wind and snow load).

See page 29.





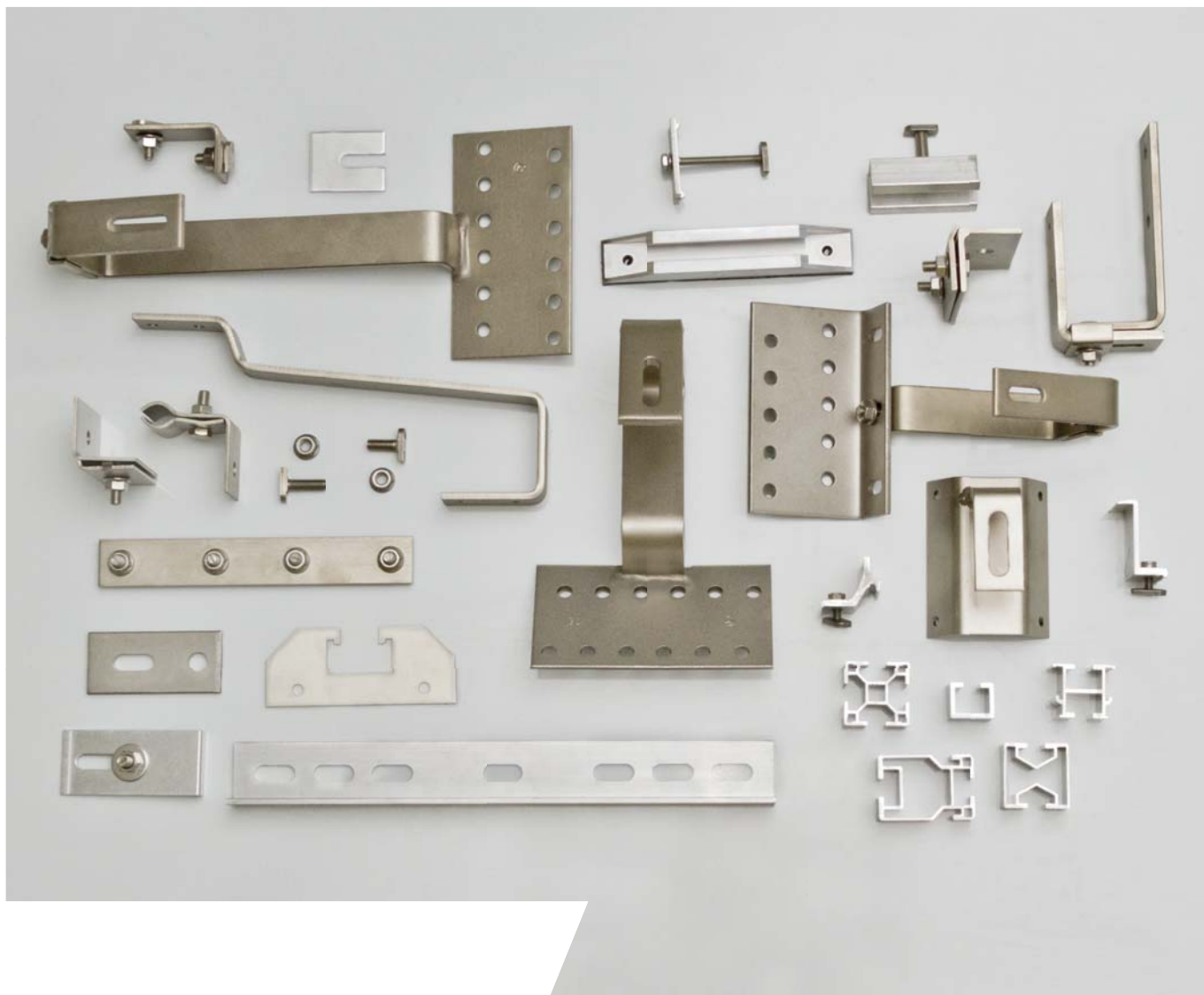
I CAN DO IT

MYSELF!

PLAN YOUR MOUNTING SYSTEM WITH [ALTEC.SOLAR.PROTOOL](https://www.altec-solar-protocol.com)

SIMPLY REQUEST A TEST ACCOUNT: [INFO@ALTEC-METALLTECHNIK.DE](mailto:info@altec-metalltechnik.de)

OR [WWW.ALTEC.SOLARPROTOOL.COM](https://www.altec-solar-protocol.com)



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All dimensions are indicated in mm.