



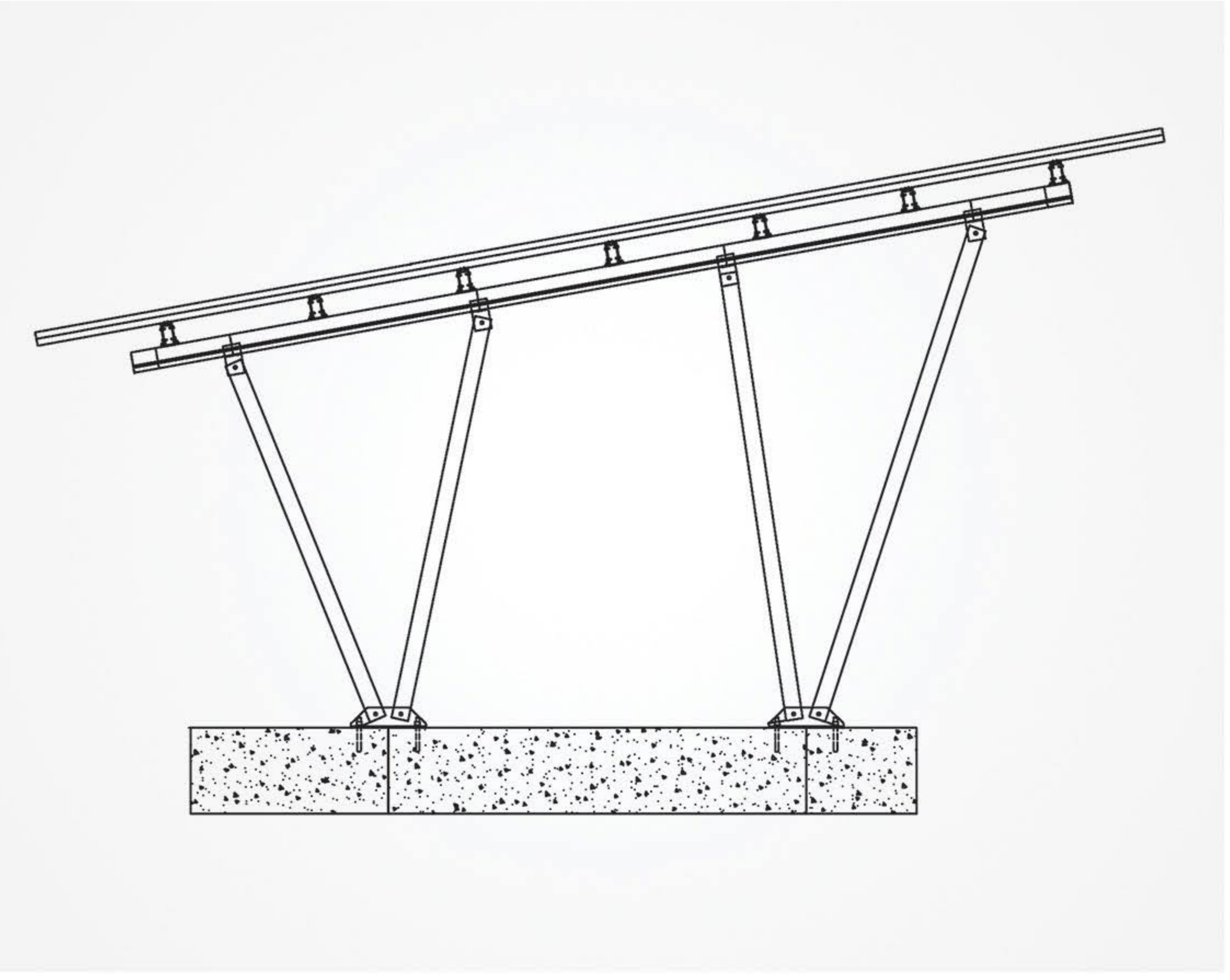
- *Photovoltaic carports*
- *Fastening elements for assembly systems*
- *Photovoltaic aluminum profiles*
- *Mounting systems mounted on the ground and roofs*



2-Car Carport
(Aluminium)

Technical Specs:	
Module orientation:	Vertical
Module quantity:	15
Suggested module dimensions:	2279x1134mm
Angle of inclination:	10°
Total power of panels on the structure:	8,1 - 8,4 kW
Spacing of supports	5,4m
Material:	Aluminium
Wind and snow resistance:	II zone
Ability to connect carports with another even quantity of positions	
Dimensions:	6x1,2x1m
Construction weight:	300kg

Innovative water drainage system
Full tightness of the roof structure





Carport according to the customer (Steel)

Technical specs

Optional size and quantity

Optional total power of structure modules

Angle of inclination: 5-15°

Panel orientation: vertical or horizontal

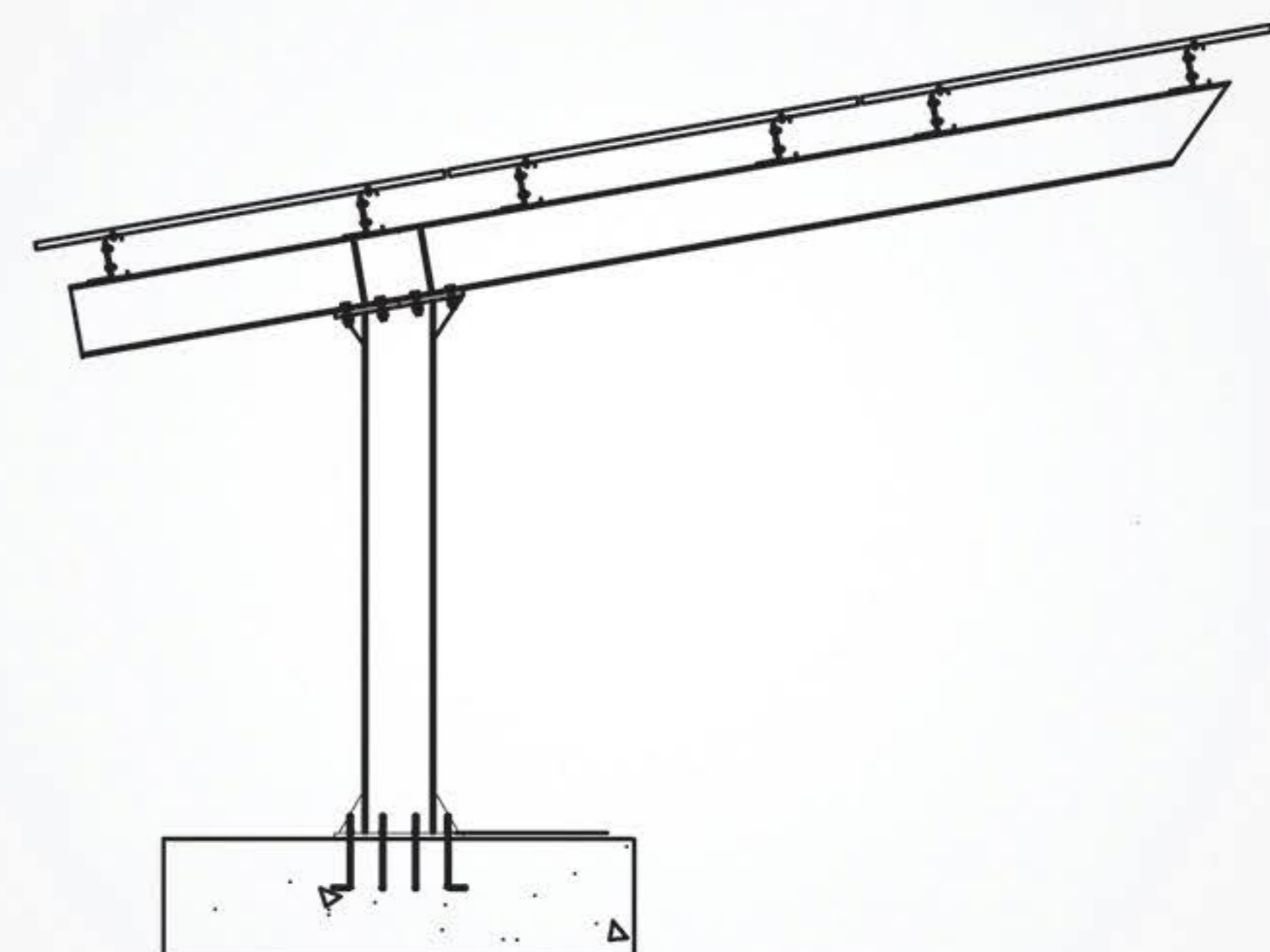
Resistance to wind and snow: III zone

Possibility to connect carports with another even number of positions

Material: hot-dip galvanized steel

Innovative water drainage system

Full tightness of the roof structure





Ground construction (Steel)

Technical specs

Module orientation:	vertical double-row
Angle of inclination:	30° (25-35° to order)
Installation:	driven into the ground or mounted to a concrete base
Material:	structural steel with increased strength
Anti-corrosion coating:	Magnelis
Use:	farms and micro installations
Resistance to wind and snow:	III zone

Additional options

Additional concentrations	
Panels orientation	East-West





Ground construction
(Aluminum)

Technical specs

Module orientation:	vertical double-row
Angle of inclination:	30° (25-35° to order)
Installation:	screwed into the ground or installation to a concrete base
Material:	aluminum with increased strength
Use:	farms and micro installations
Wind and snow resistance:	III zone

Additional options

Additional concentrations	
Panels orientation	horizontally, east-west




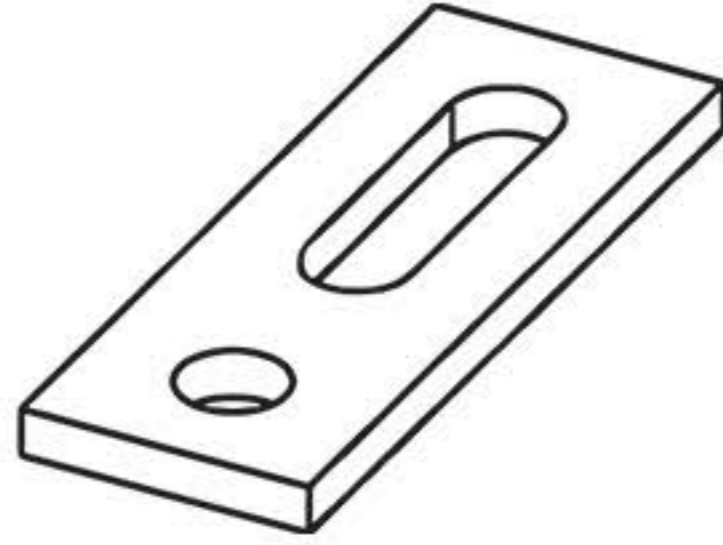



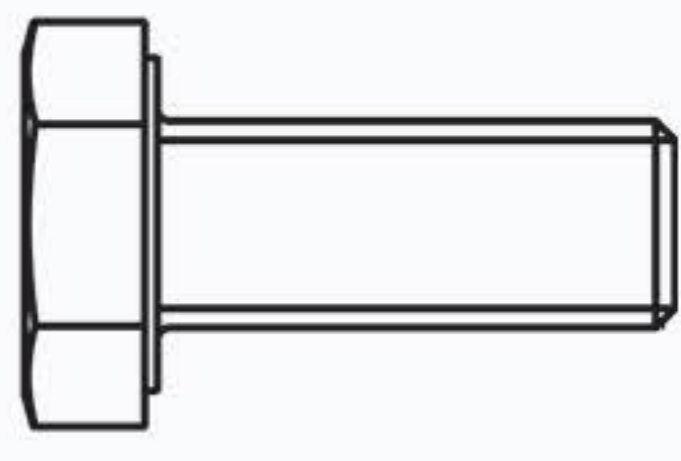
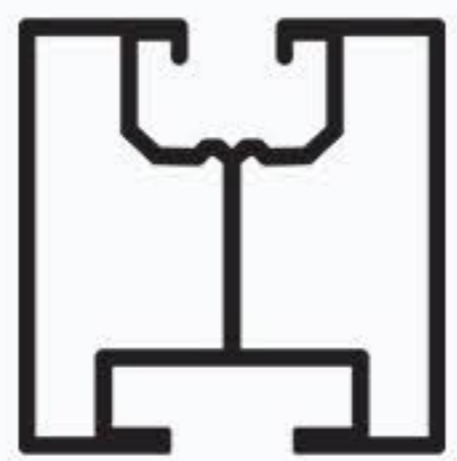
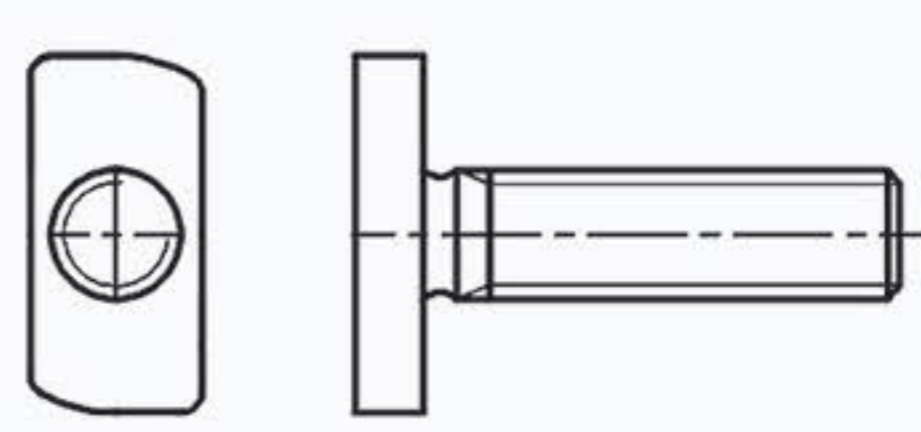

Mounting systems

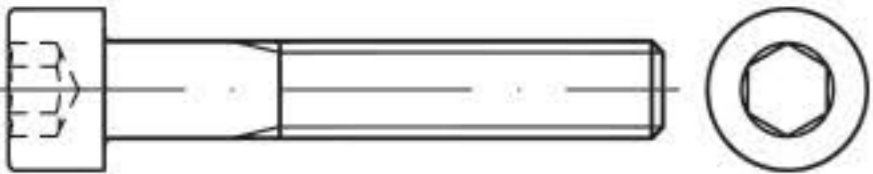

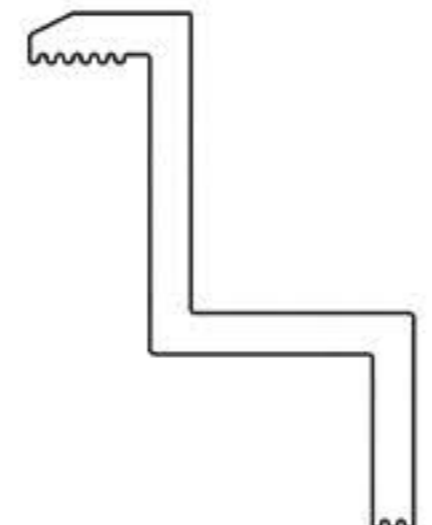
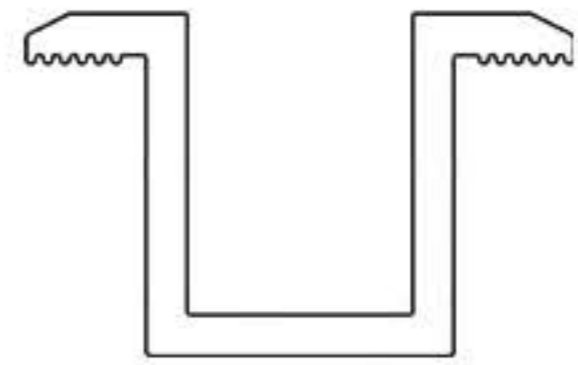
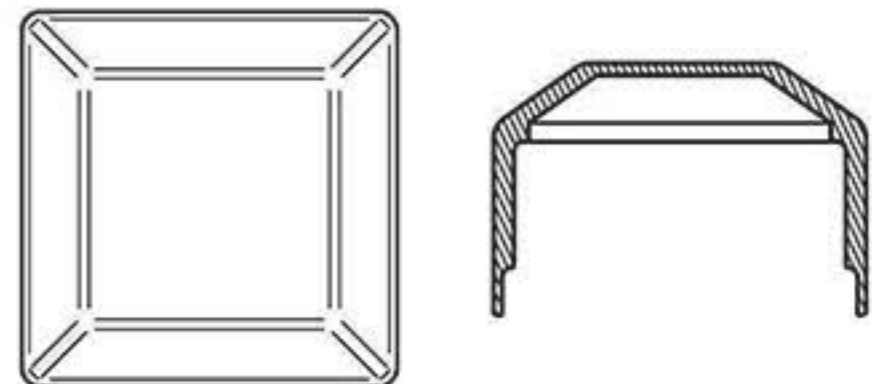


Pitched roof system (metal roofing sheet)

LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	Double screw thread	A2
3	Mounting adapter M10	A2
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Allen key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagonal bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Double screw thread 	Mounting adapter M10 	Flange nut M10 
Profile 40x40  for hexagon screw	Square nut M8 	Hexagon bolt M10x25  Installation variant A
Profile 40x40  for a T-bolt	T-bolt M10x25 	Slot nut M8  Installation variant B

Allen key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40 
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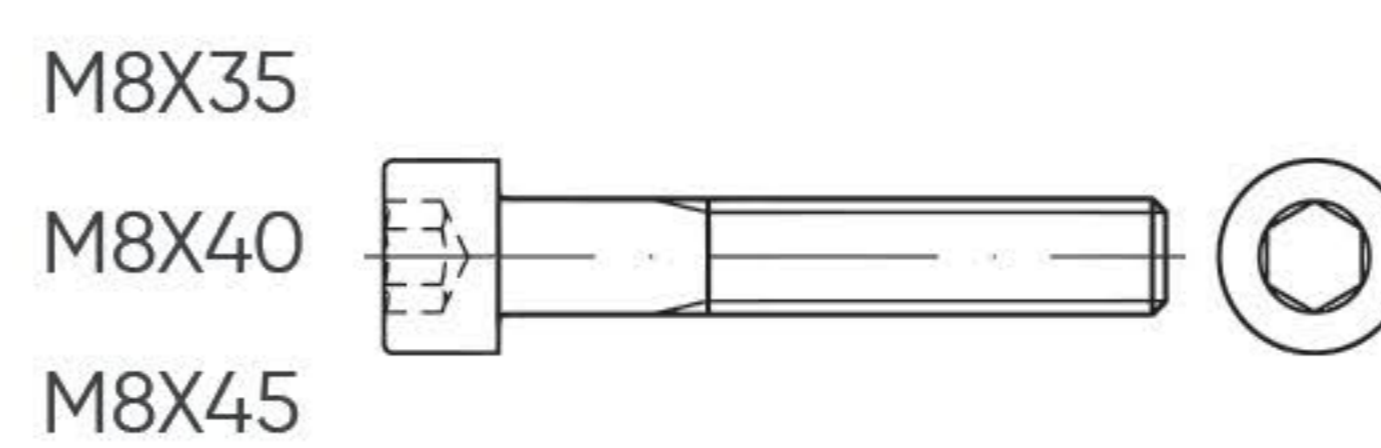
Pitched roof system (trapezoidal metal sheet)

LP	Description	Material
1	Trapezoidal bridge*	AL 6060 T6
2	End clamp **	AL 6060 T6
3	Central clamp**	AL 6060 T6
4	Allen key bolt M8x**	A2
5	Square nut M8	A2
6	Spring washer M8	A2
7	Sheet metal screw Bi-Metal	A2
8	Foam	EPDM

* trapezoidal profiles come in the following variants: T40, T60, T70, T100

** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Allen key bolt M8x**



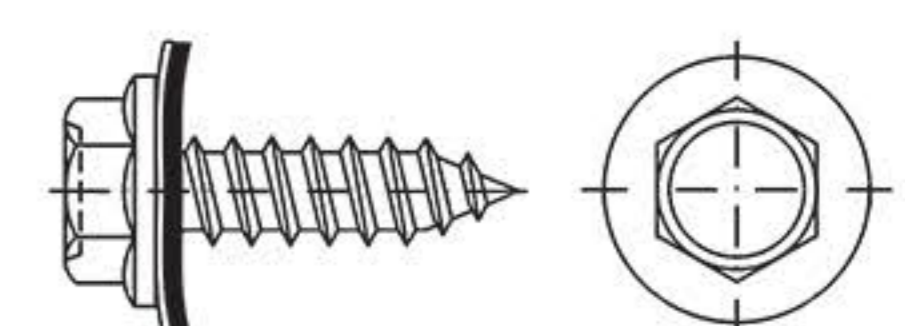
Spring washer M8



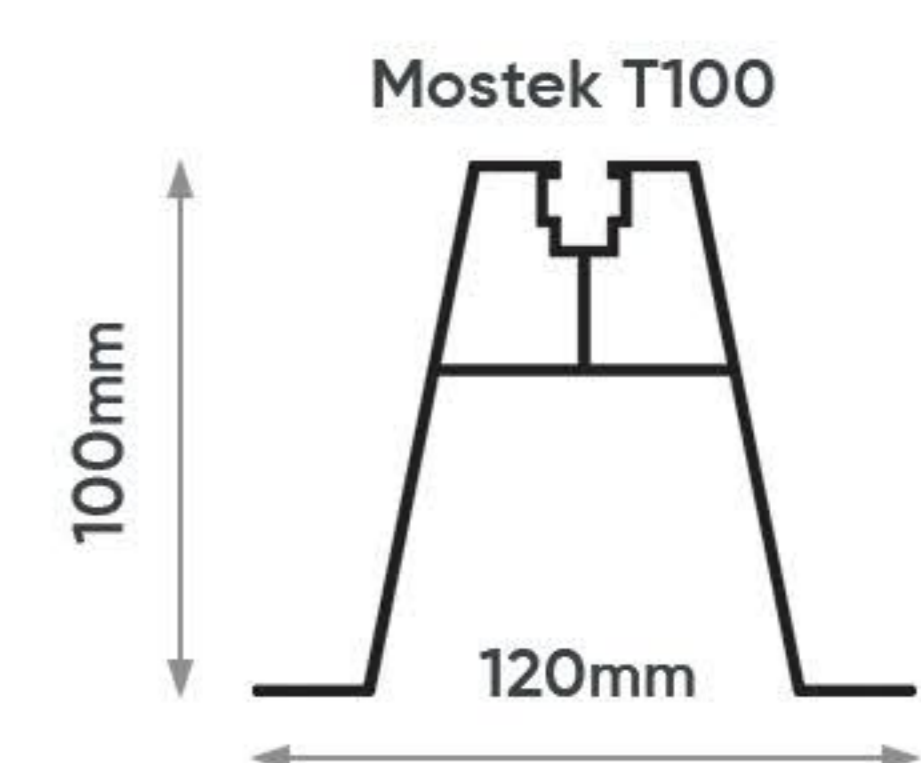
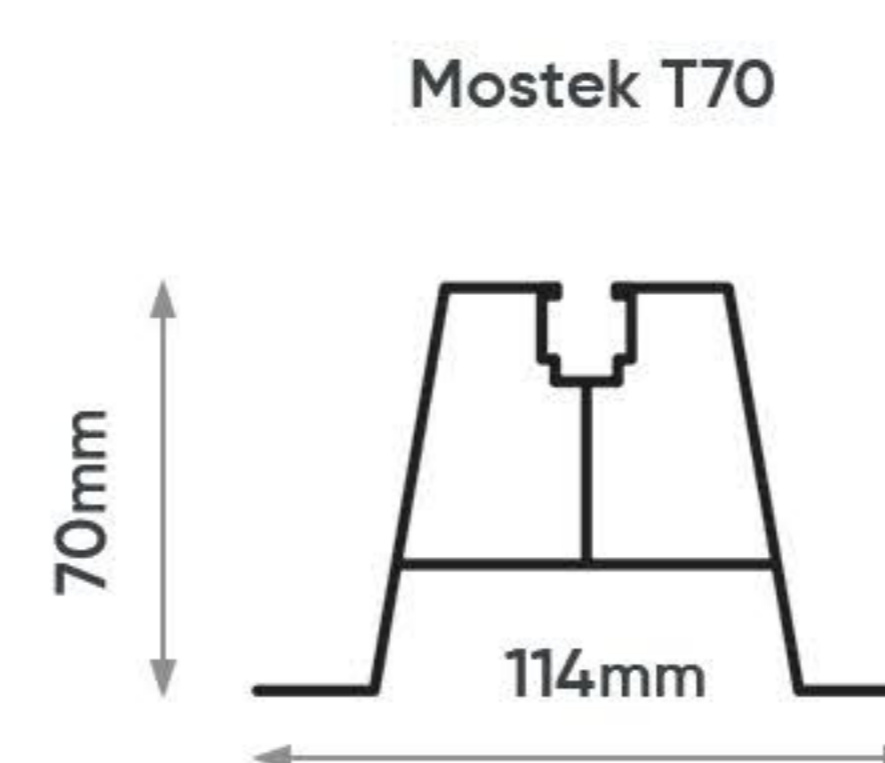
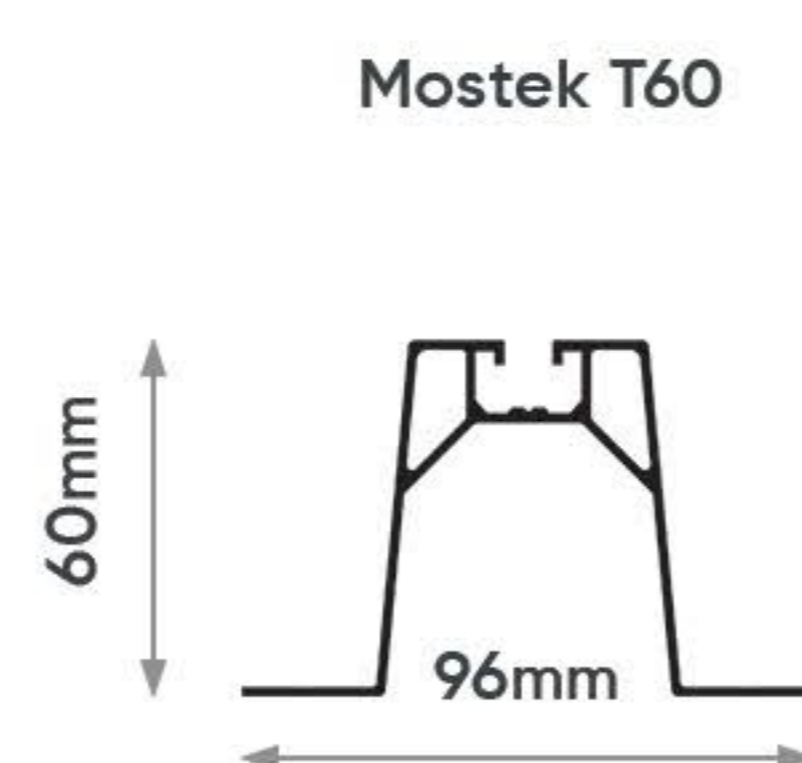
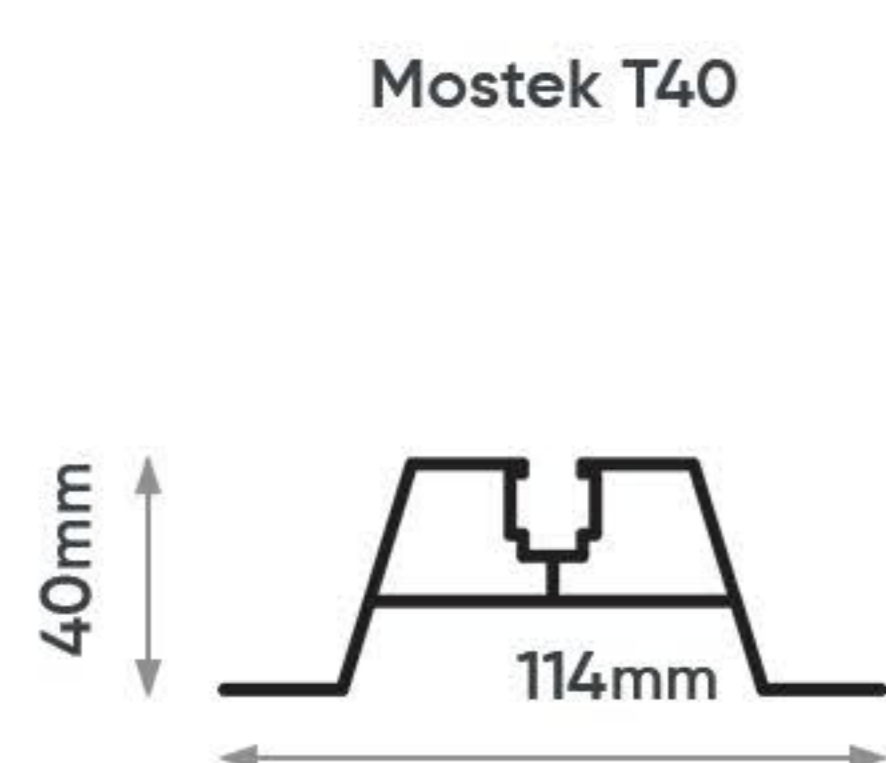
Square nut M8



Sheet metal screw



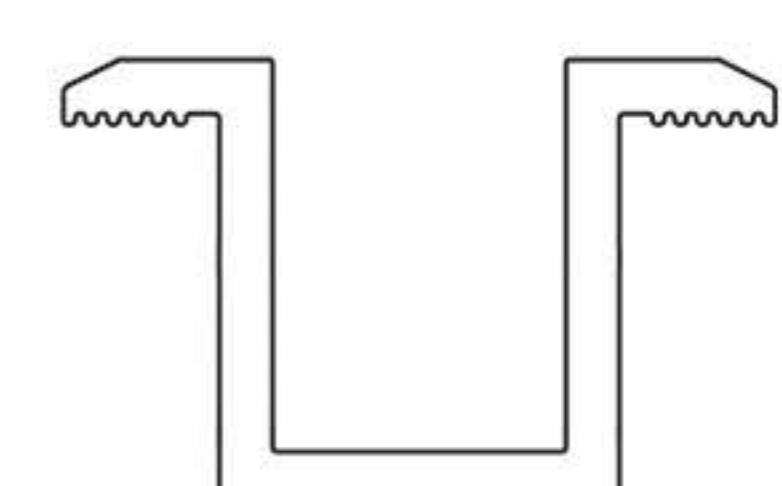
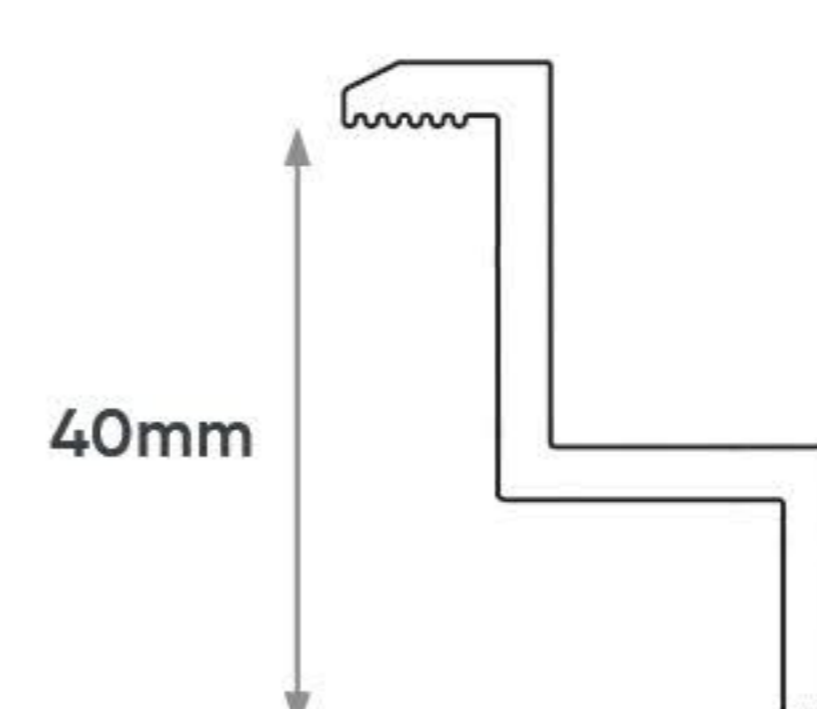
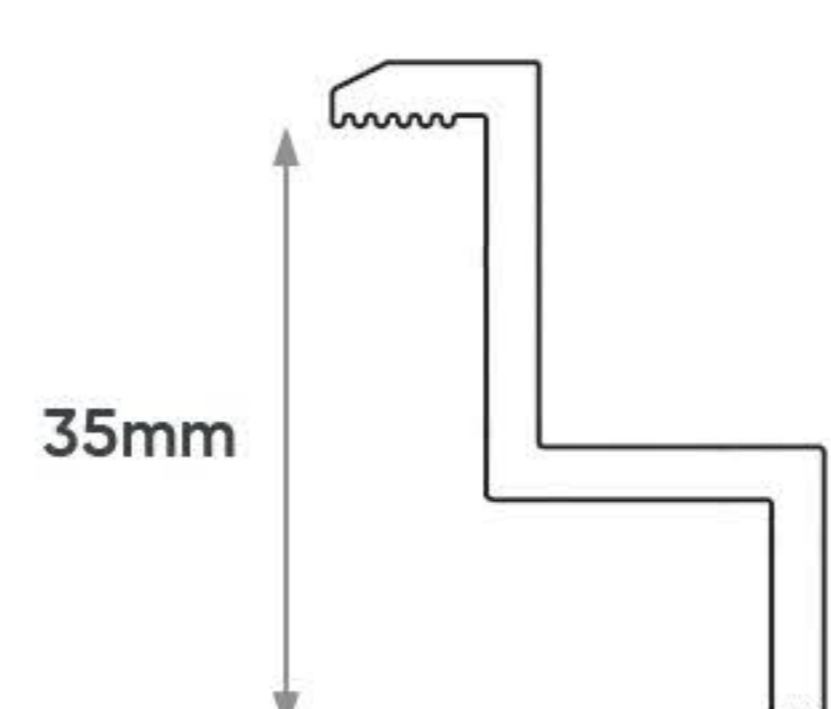
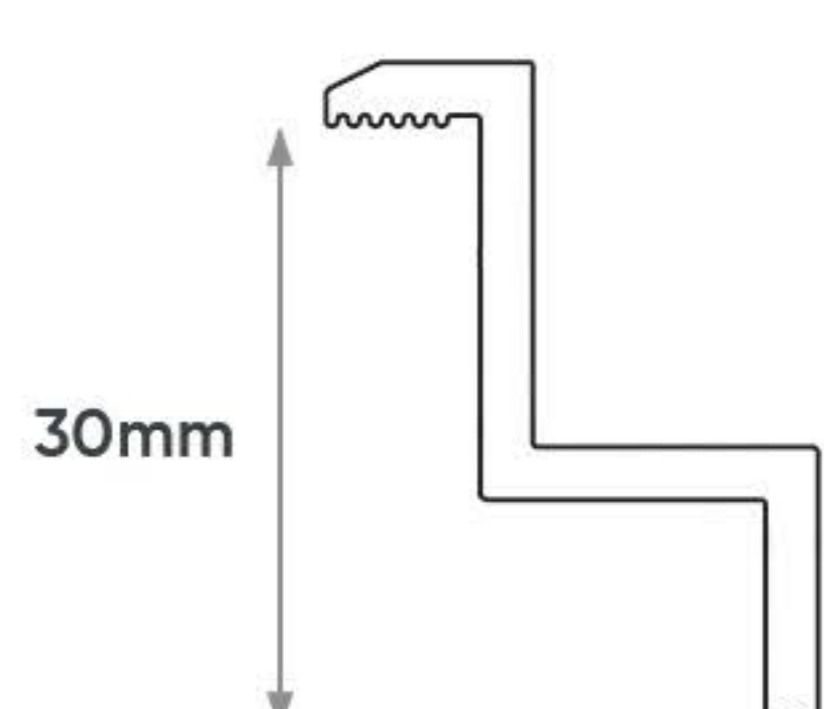
Trapezoidal bridge L= 330mm / Sticked with EPDM foam from the bottom / Can be cut to any length (made to order)



End clamp L= 50mm

Available surface variants: raw, lacquered, anodized

Central clamp L= 50mm



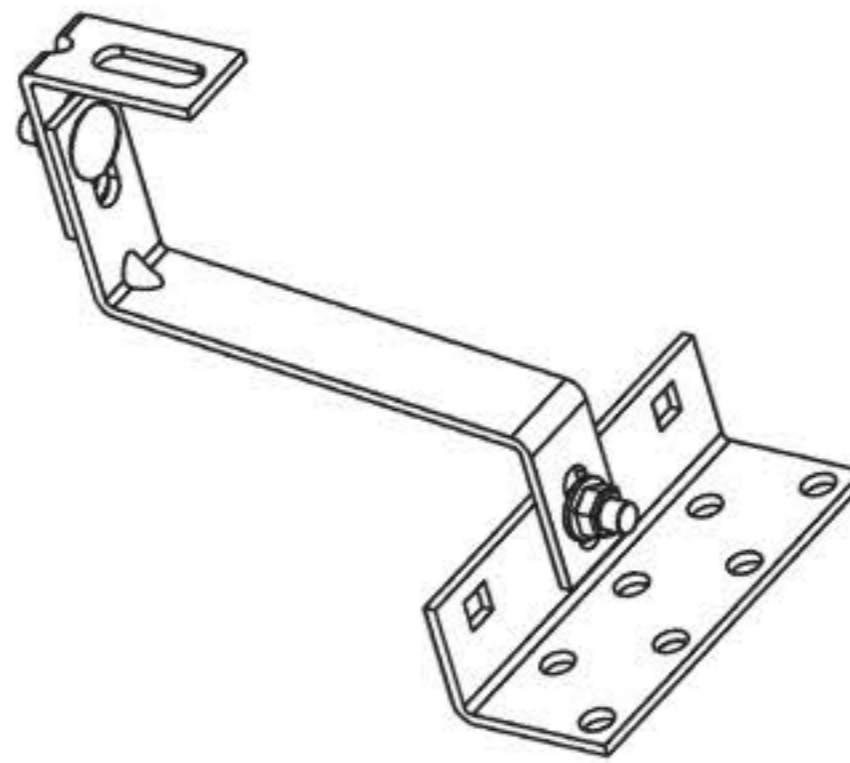
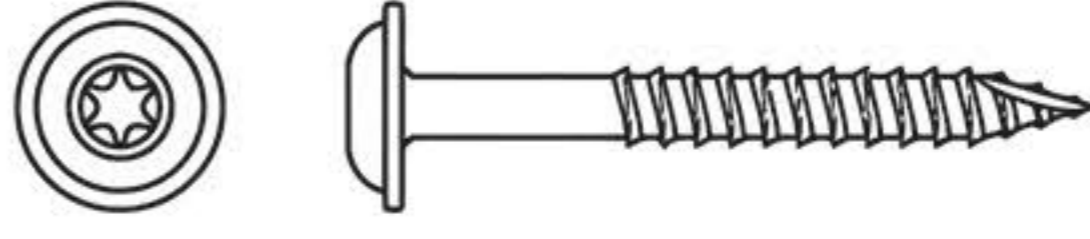
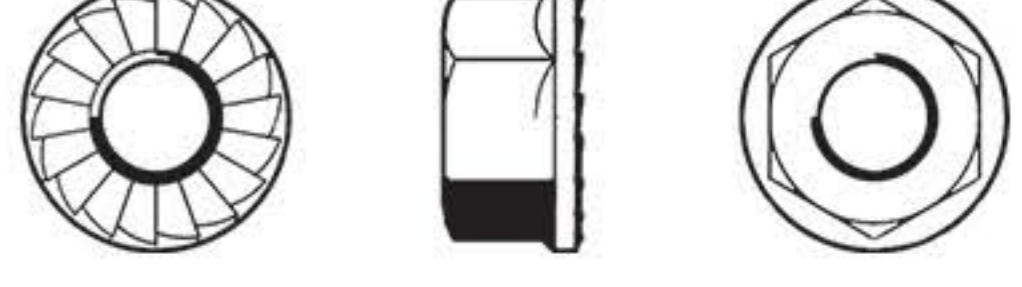
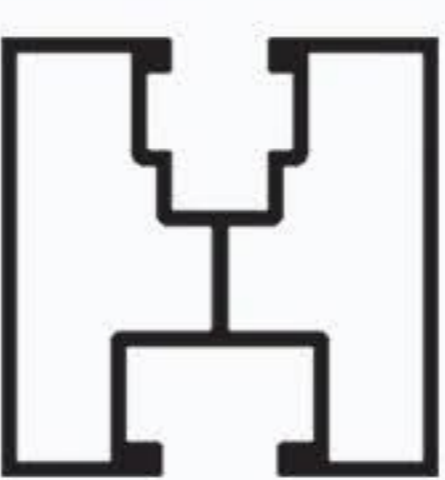

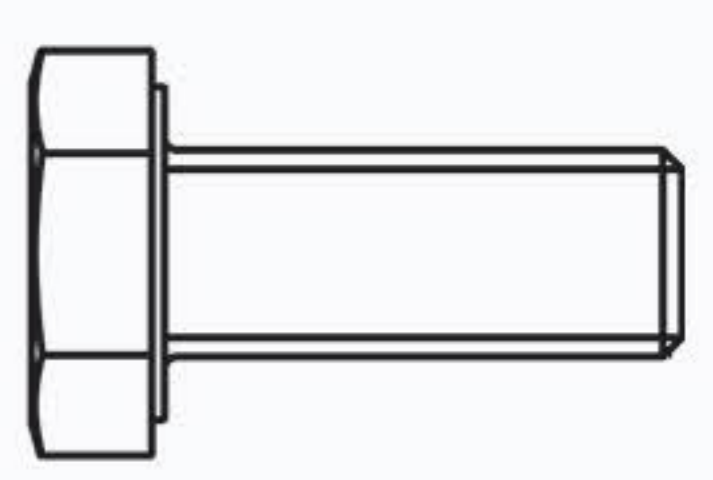
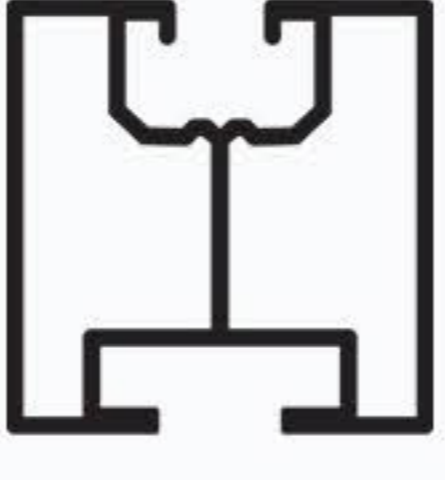
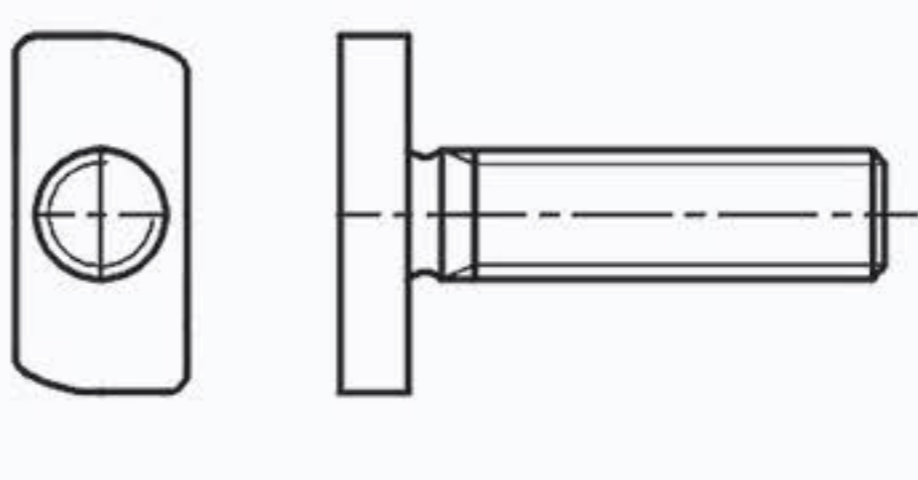

Mounting systems

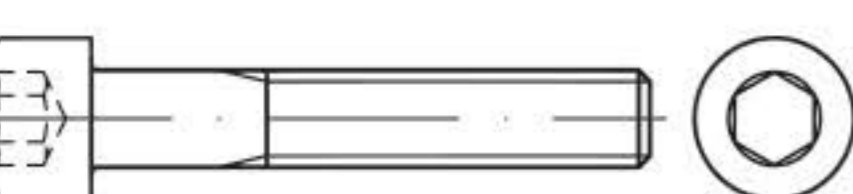

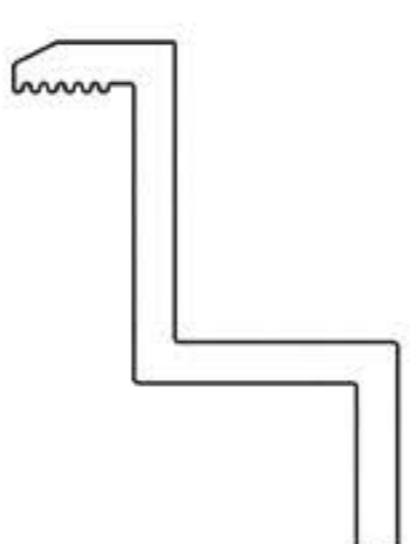
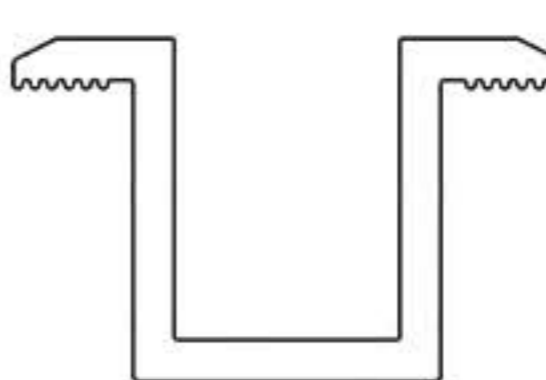
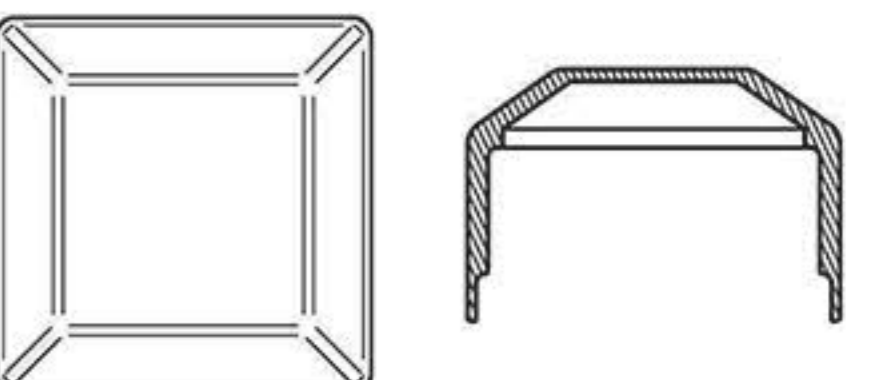


Pitched roof system (ceramic tile)

LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	Vario hook	A2
3	Wood screw TCS M8	A2
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Allen key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagon head bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Vario hook  double adjustable	Wood screw M8 	Flange nut M10 
Profile 40x40  for hexagon screw	Square nut M8 	Screw M10x25  Installation variant A
Profile 40x40  for a T-bolt	T-bolt M10x25 	Slot nut M8  Installation variant B

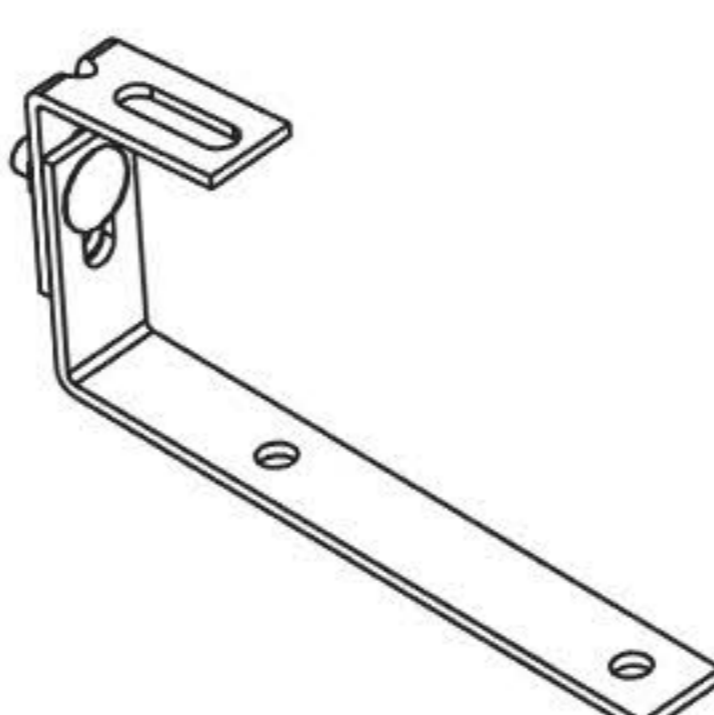
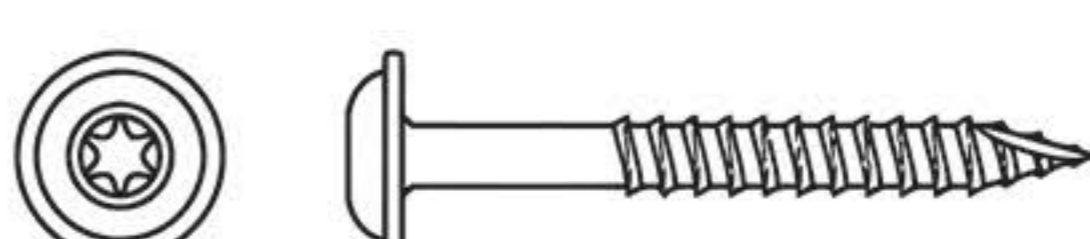
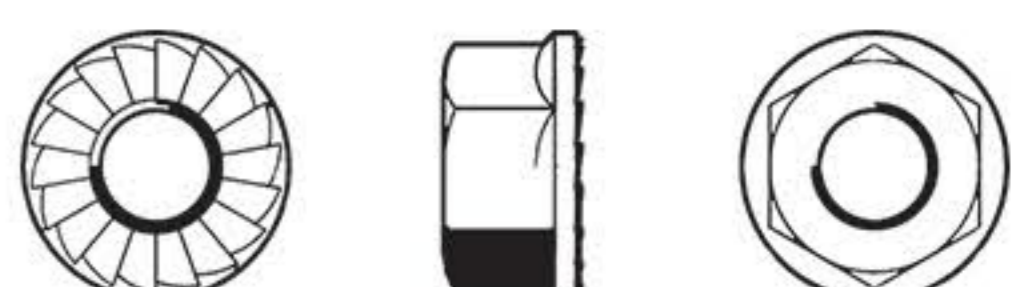
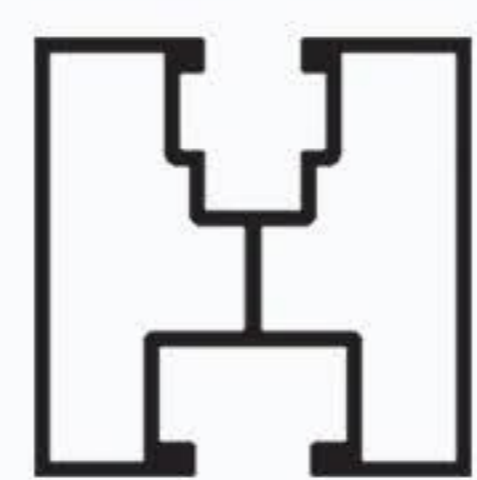

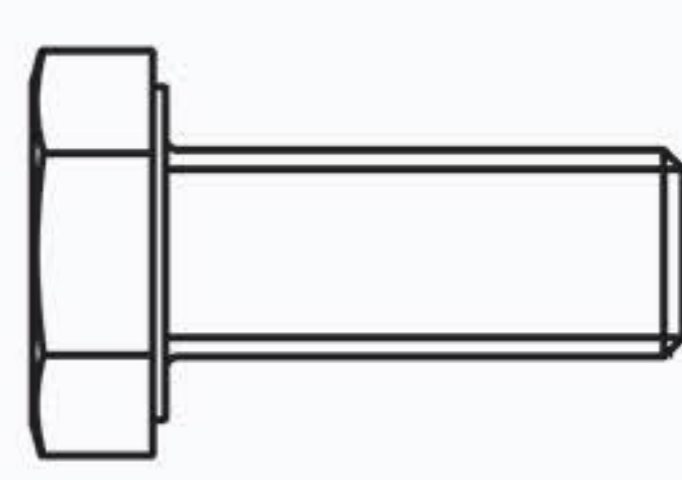
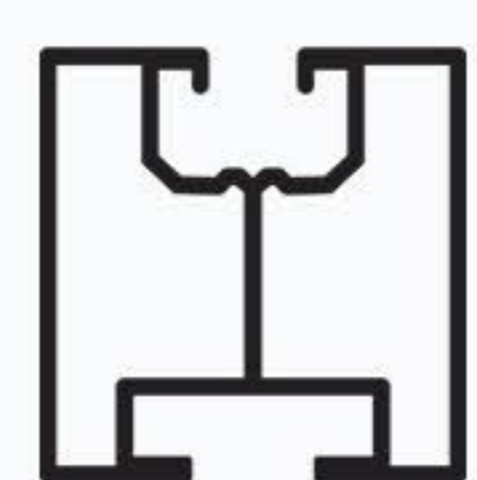
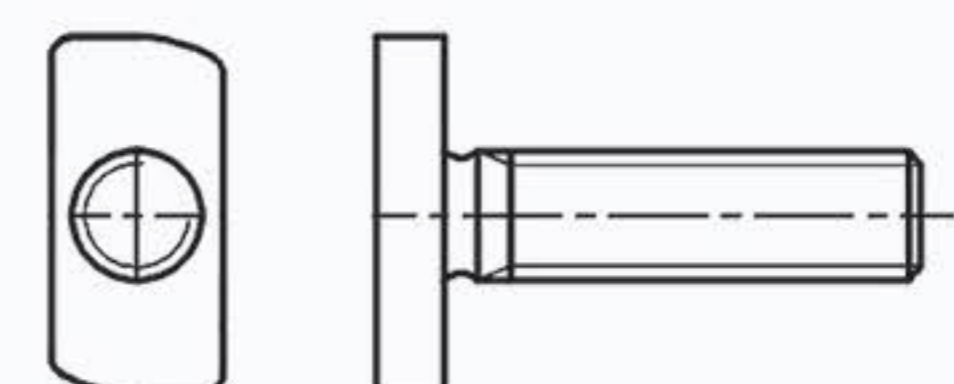

Allen key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40 
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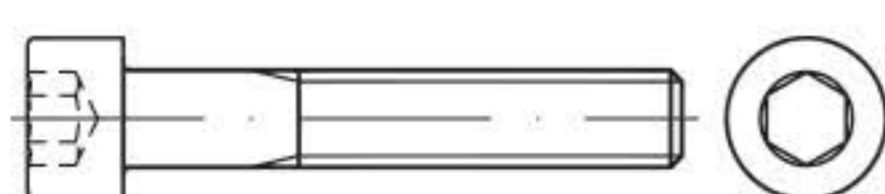

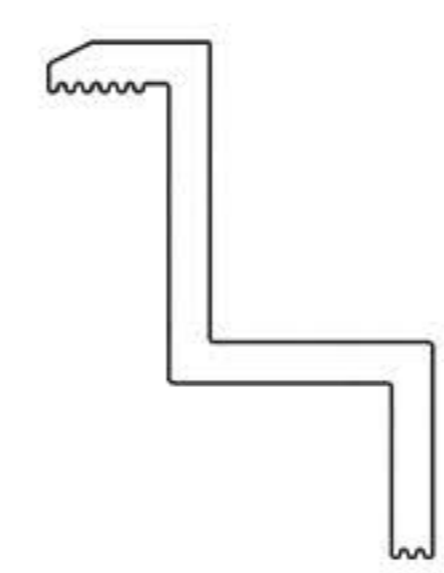
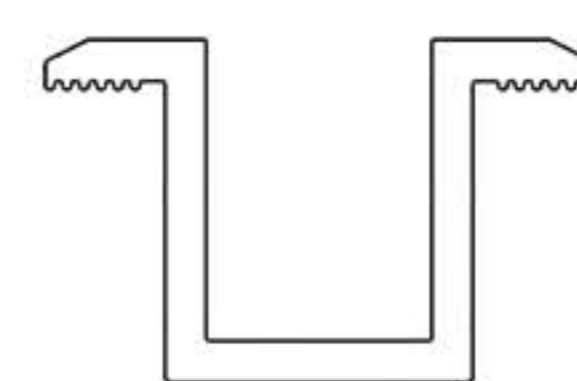
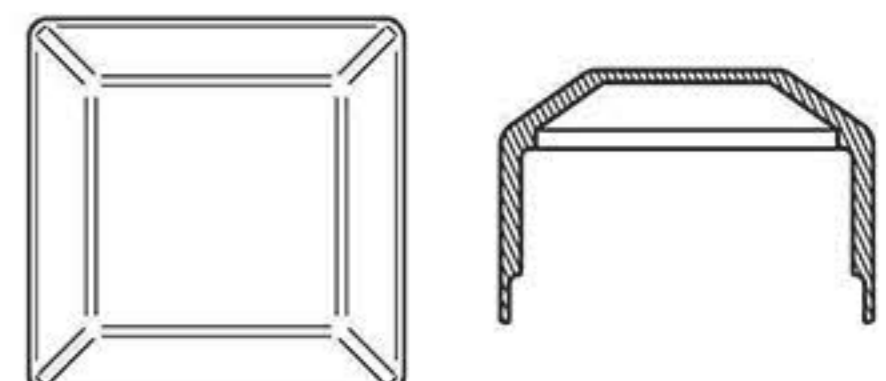


Pitched roof system
(roofing felt and shingles)

LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	J-type roof hook	A2
3	Wood screw TCS M8	A2
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Allen key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagon head bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

<p>J-type roof hook</p>  <p>adjustable or standard</p>	<p>End clamp M8</p> 	<p>Flange nut M10</p> 
<p>Profile 40x40</p>  <p>for hexagon screw</p>	<p>Square nut M8</p> 	<p>Screw M10x25</p>  <p>Installation variant A</p>
<p>Profile 40x40</p>  <p>for a T-bolt</p>	<p>T-bolt M10x25</p> 	<p>Slot nut M8</p>  <p>Installation variant B</p>

<p>Allen key bolt M8x*</p> 	<p>Spring washer M8</p> 	<p>End clamp *</p> 	<p>Central clamp *</p> 	<p>Plastic cap 40x40</p> 
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Pitched roof systems (plain roof tile)

LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	S-type roof hook	A2
3	Wood screw TCS M8	A2
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Allen key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagon head bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Roof hook 	Wood screw M8 	Flange nut M10
Profile 40x40 <p>for hexagon screw</p>	Square nut M8 	Screw M10x25 <p>Installation variant A</p>
Profile 40x40 <p>for a T-bolt</p>	T-bolt M10x25 	Slot nut M8 <p>Installation variant B</p>

Allen key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40
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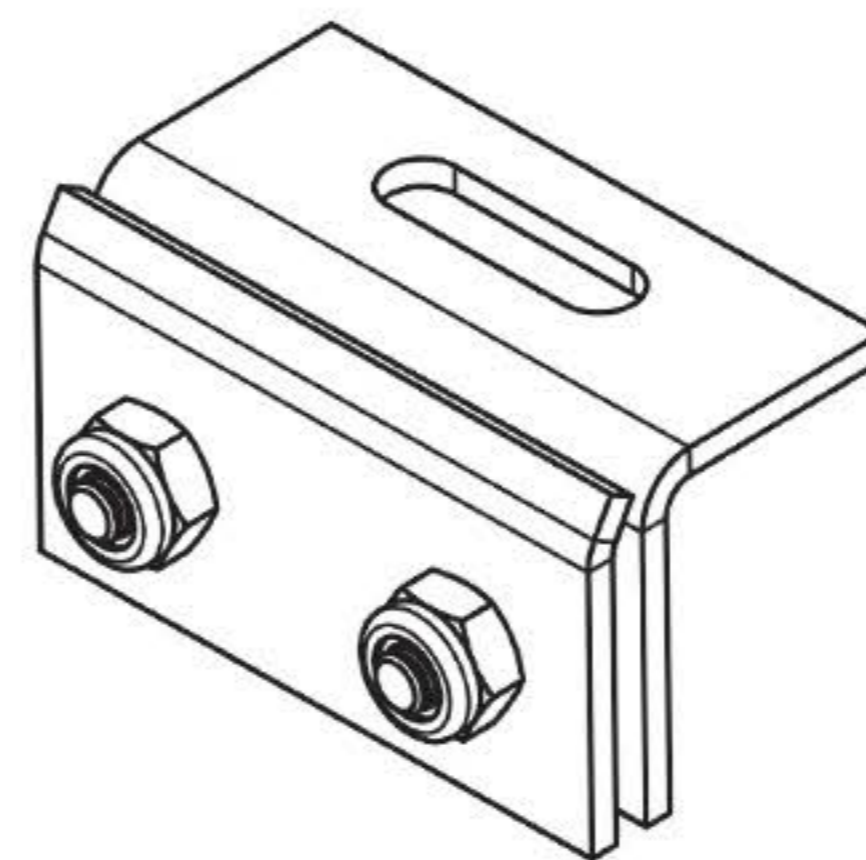
Pitched roof systems (standing seam sheet)

LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	Seamless sheet bracket	A2
3	End clamp **	AL 6060 T6
4	Central clamp **	AL 6060 T6
5	Allen key bolt M8x**	A2
6	Spring washer M8	A2
7	Square nut M8	A2
8	Slot nut	A2
9	Hexagon head bolt M10x25	A2
10	T-bolt M10x25	A2
11	Flange nut M10	A2
12	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B

** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

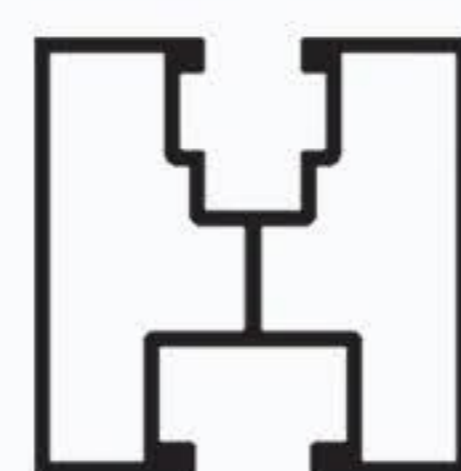
Seamless sheet bracket



Flange nut M10



Profile 40x40

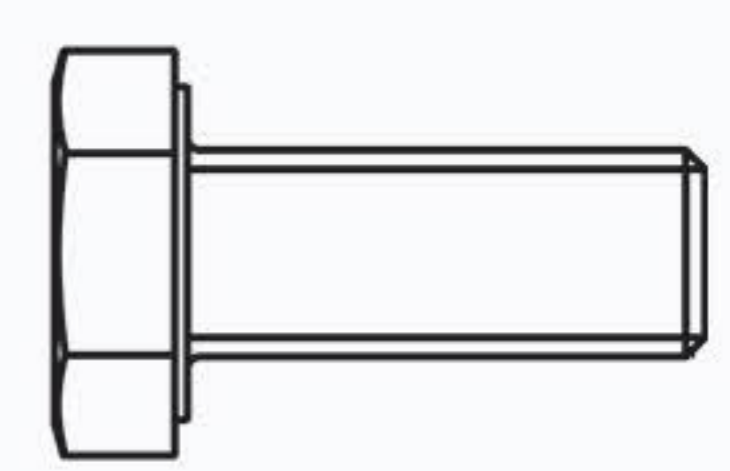


for a hexagon screw

Square nut M8

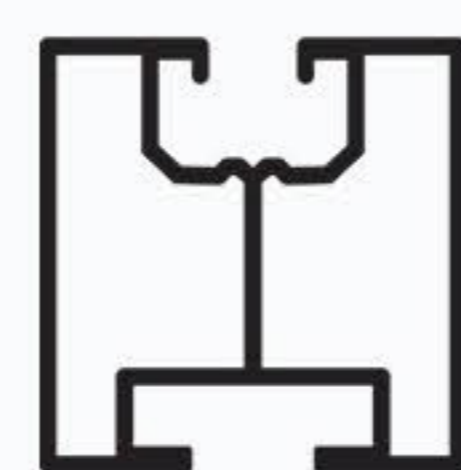


Screw M10x25



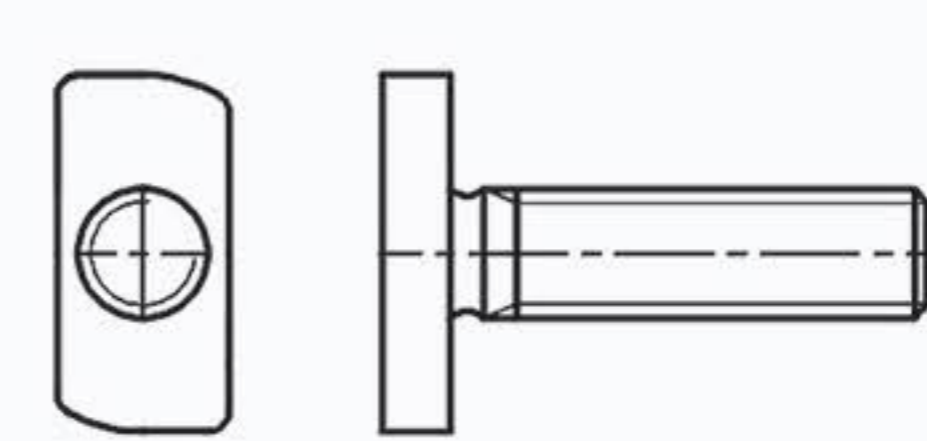
Installation variant A

Profile 40x40



for a T-bolt

T-bolt M10x25



Slot nut M8



Installation variant B

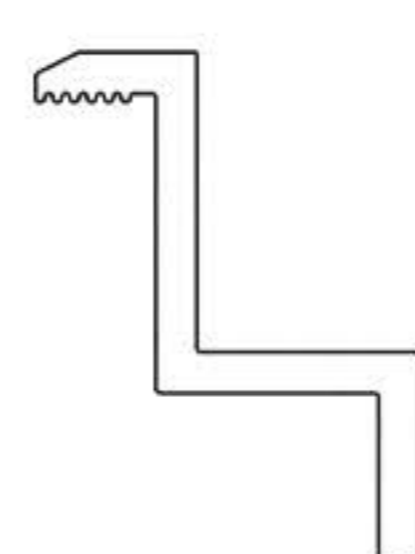
Allen key bolt M8x*



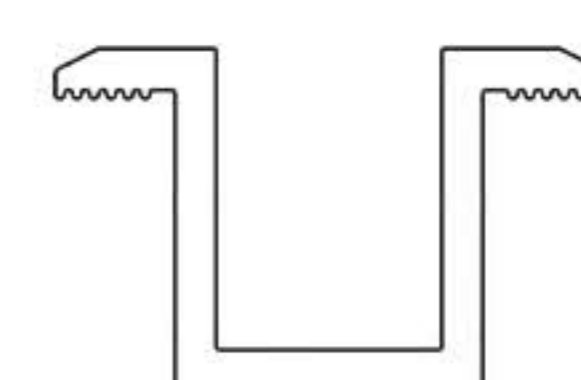
Spring washer M8



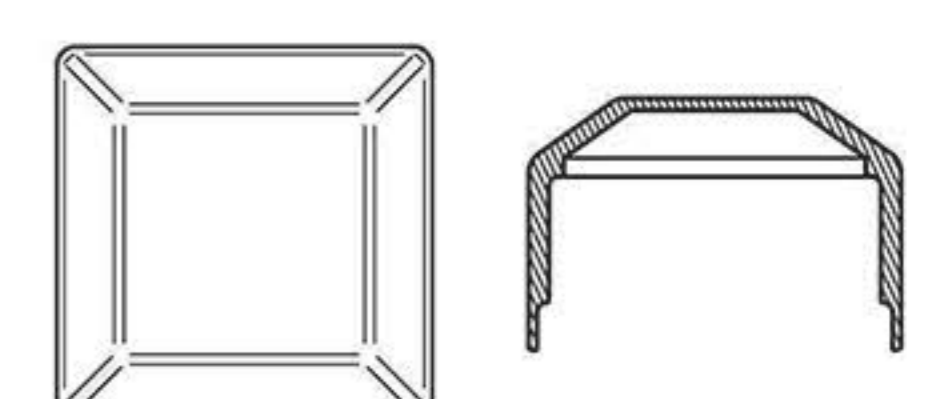
End clamp*



Central clamp*



Plastic cap 40x40



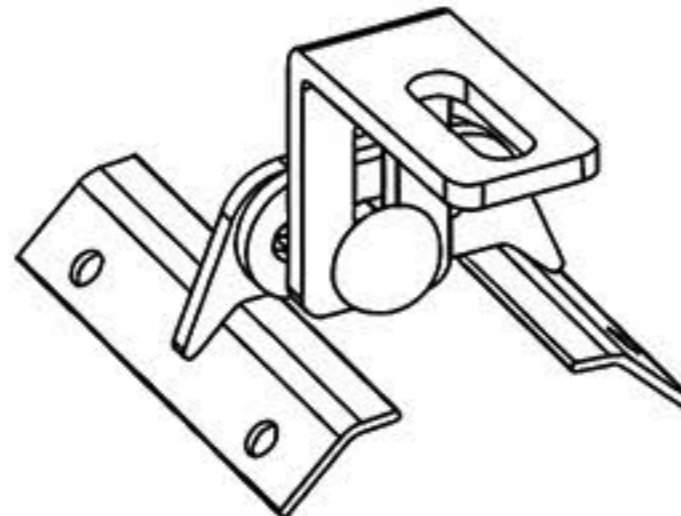
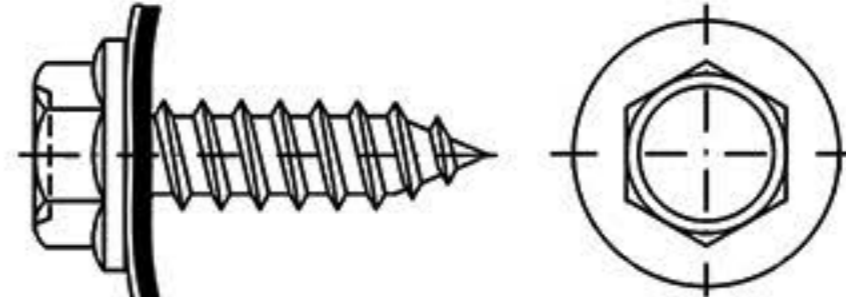

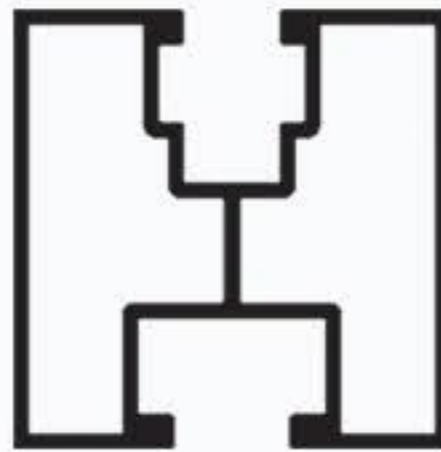

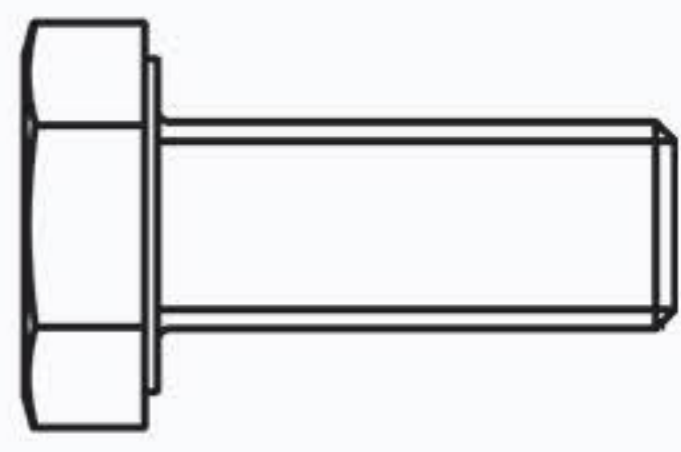
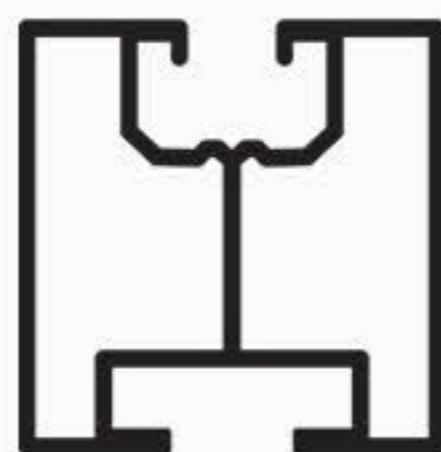
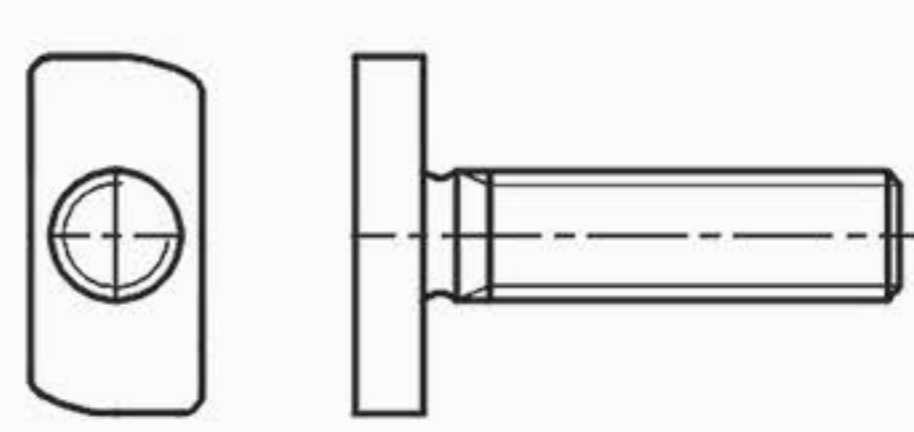



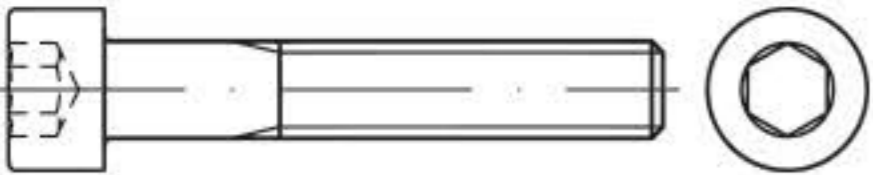

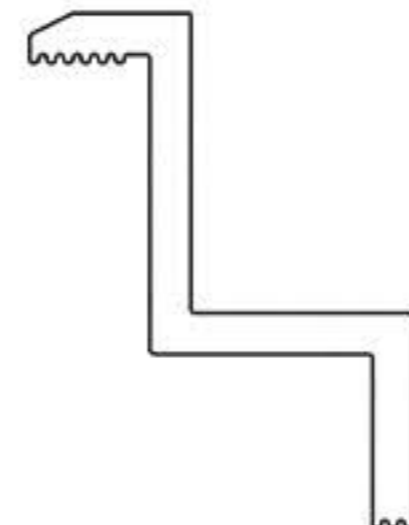
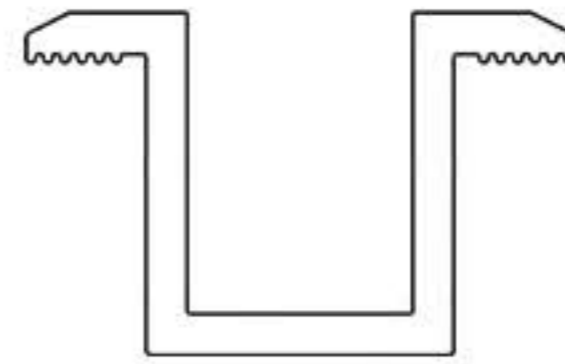
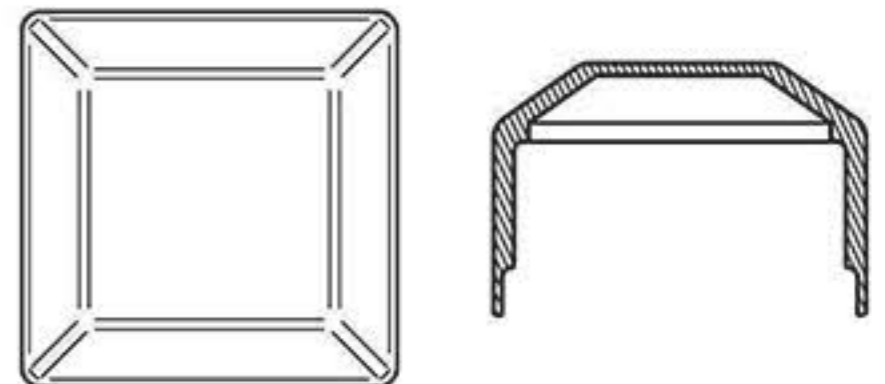
Pitched roof systems (trapezoidal metal sheet)

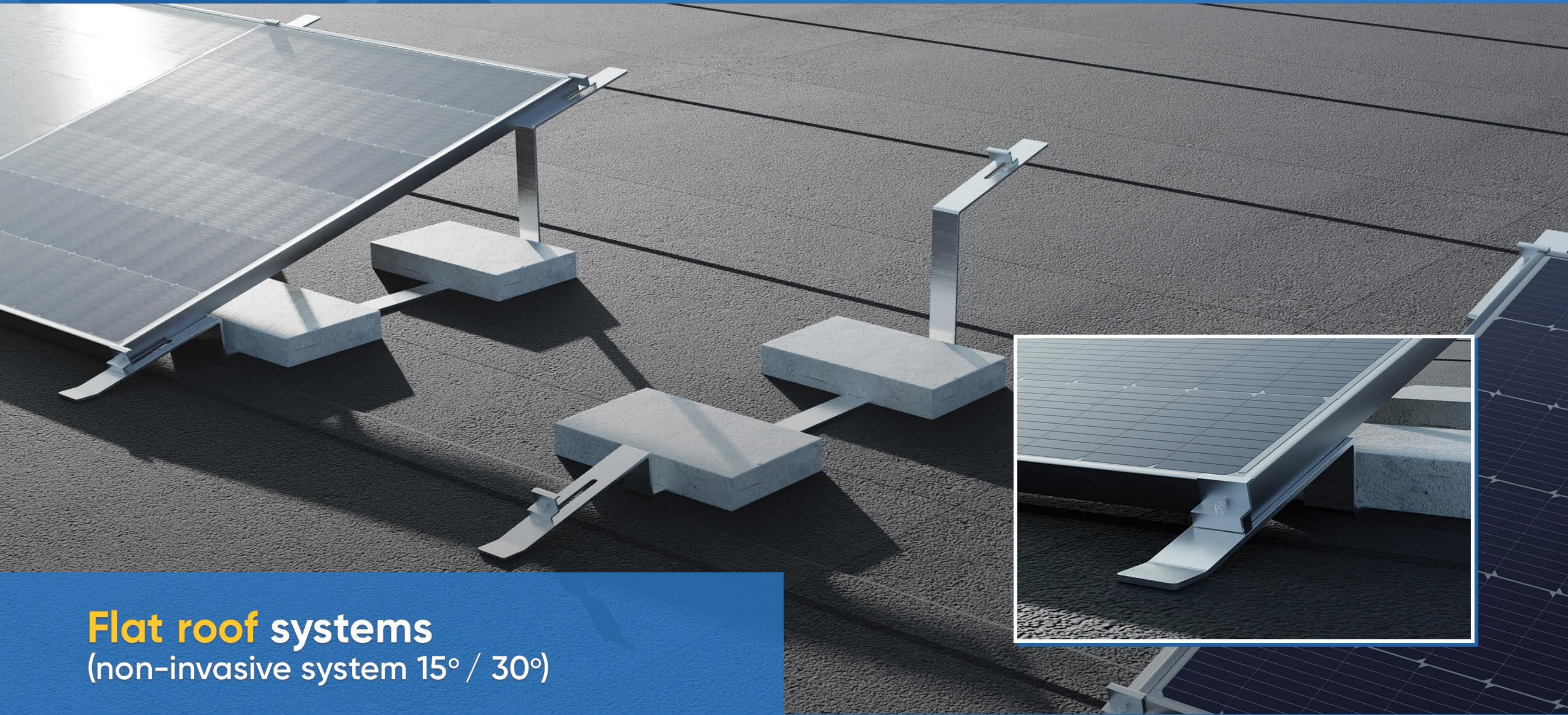
LP	Description	Material
1	Mounting profile *	AL 6060 T6
2	Trapezoidal hook	A2
3	End clamp **	AL 6060 T6
4	Central clamp **	AL 6060 T6
5	Allen key bolt M8x**	A2
6	Spring washer M8	A2
7	Square nut M8	A2
8	Slot nut	A2
9	Hexagon head bolt M10x25	A2
10	T-bolt M10x25	A2
11	Flange nut M10	A2
12	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B

** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Trapezoidal hook  adjustable	Sheet metal screw 	Flange nut M10 
Profile 40x40  for a hexagon screw	Square nut M8 	Screw M10x25  Installation variant A
Profile 40x40  for a T-bolt	T-bolt M10x25 	Slot nut M8  Installation variant B

Allen key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40 
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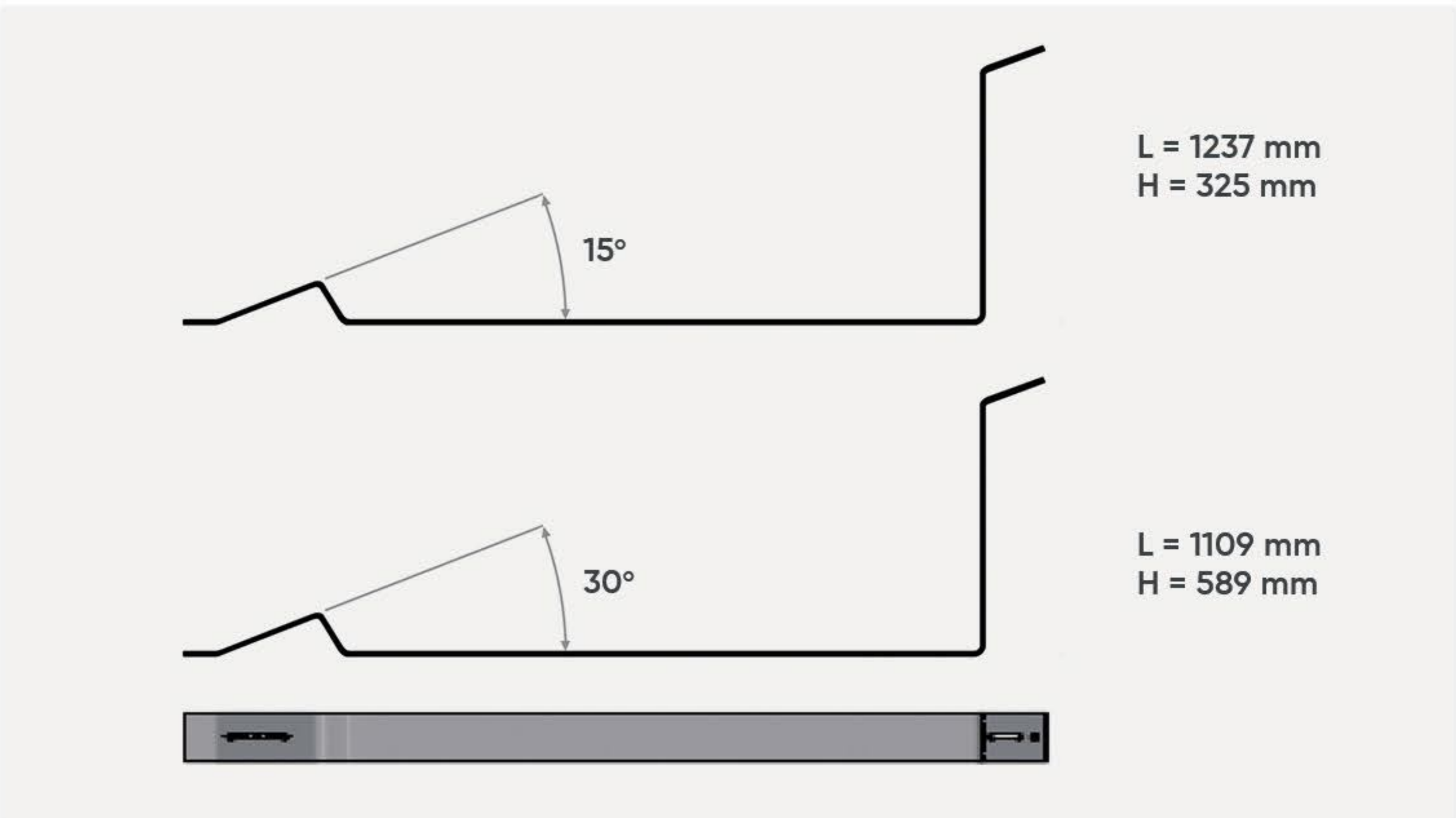


Flat roof systems
(non-invasive system 15° / 30°)

LP	Description	Material
1	Flat roof bracket	AL 6060 T6
2	End clamp*	AL 6060 T6
3	Alley key bolt M8x*	A2
4	Flange nut M8	A2
5	Spring washer M8	A2
6	Concrete block**	Concrete

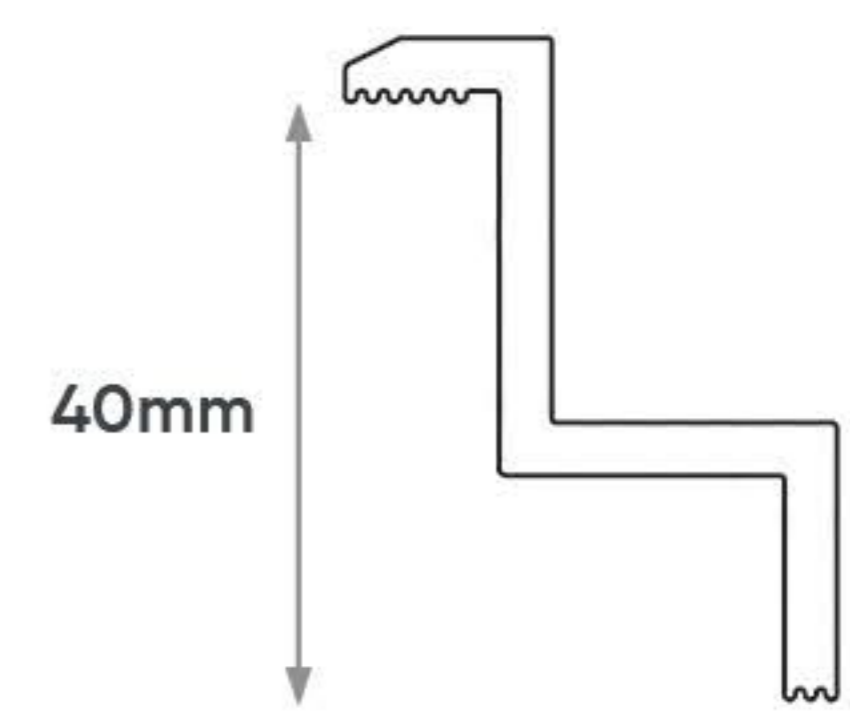
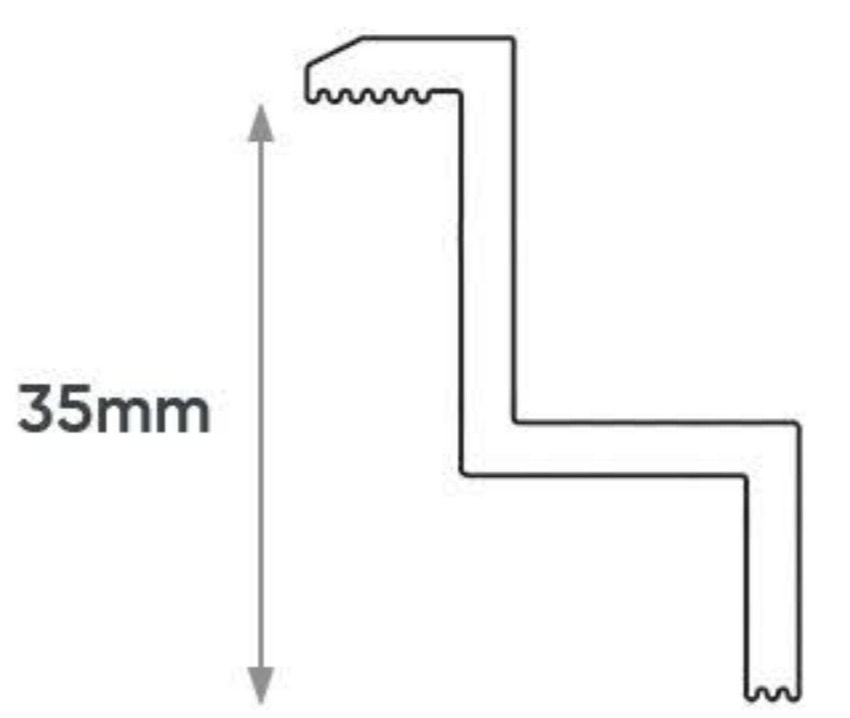
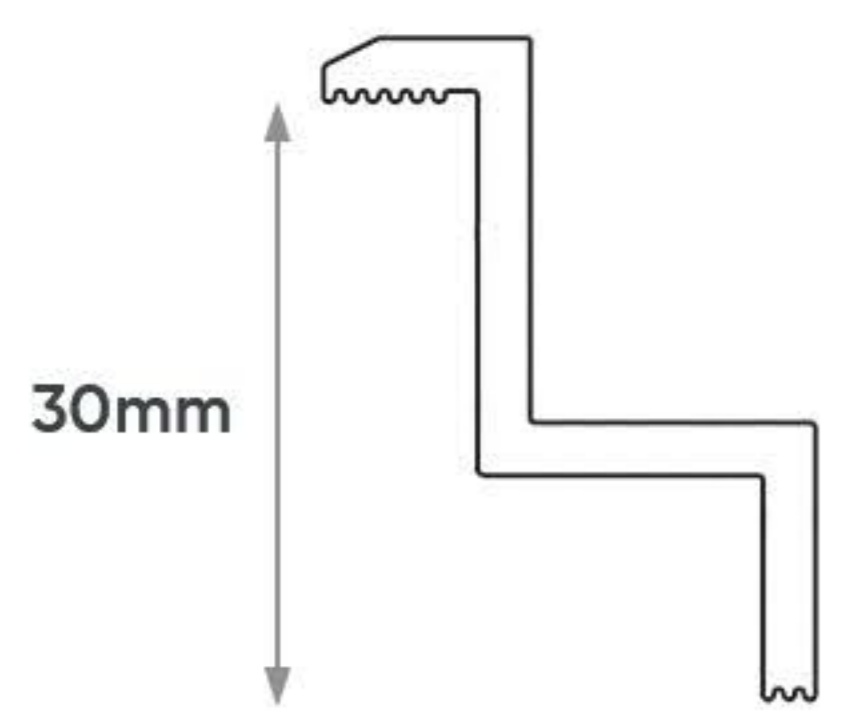
* the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel
 ** Concrete blocks are not included in the set, available for purchase separately

Flat roof bracket (taped up with EPDM foam)



End clamp L= 70mm

Available surface variants: raw, varnished, anodized

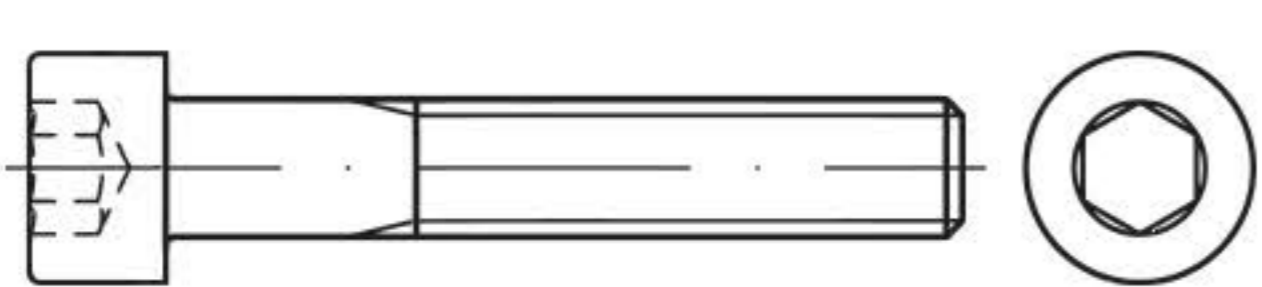


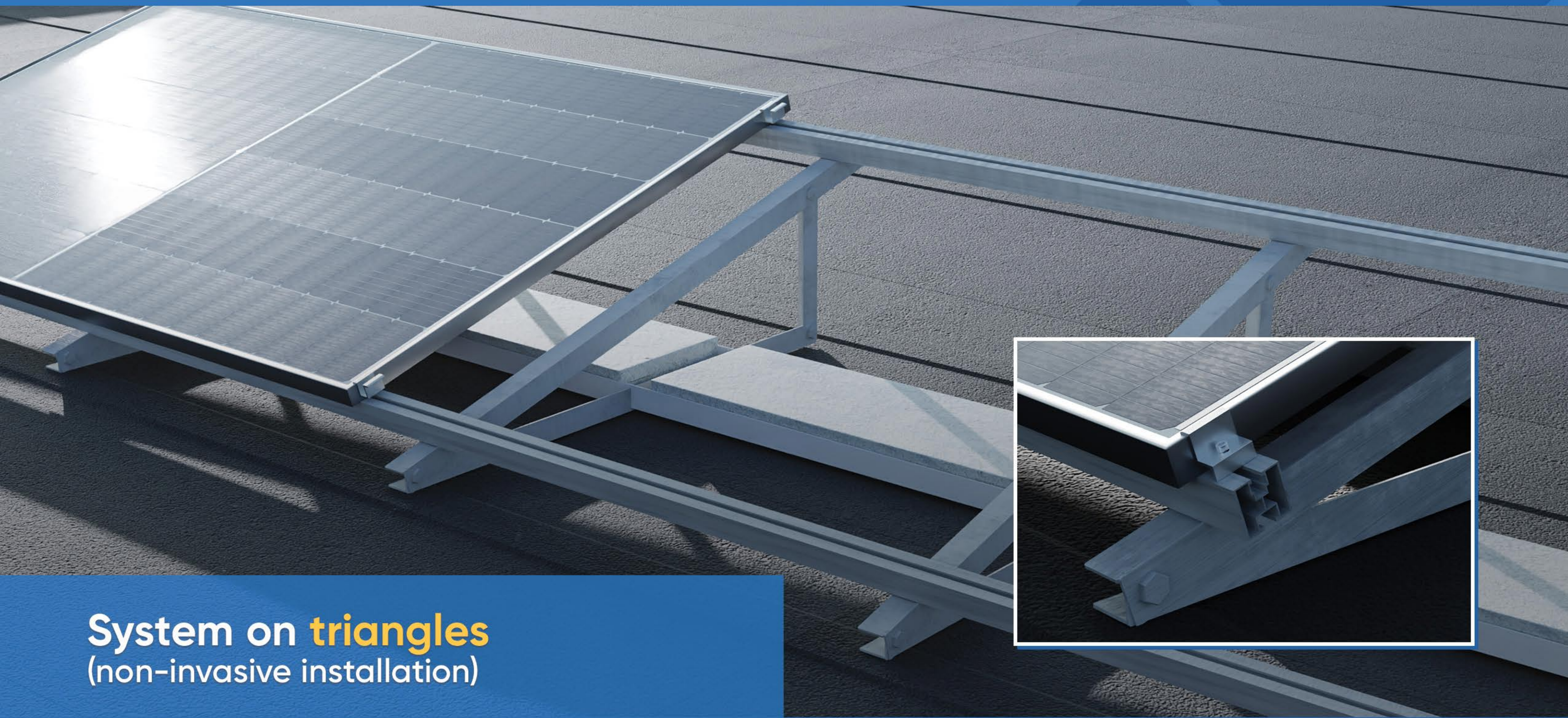
Alley key bolt

Flange nut M8

Spring washer M8

M8X35
M8X40
M8X45





System on triangles (non-invasive installation)

LP	Description	Material
1	Mounting profile*	AL 6060 T6
2	Triangle 15° / 35°	AL 6060 T6
3	Angle bracket 3mm	AL 6060 T6
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Alley key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagon head bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Triangle 15° / 35° 	Angle bracket 	Flange nut M10
Profile 40x40 for a hexagon screw	Square nut M8 	Screw M10x25 Installation variant A
Profile 40x40 for a t-bolt	T-bolt M10x25 	Slot nut M8 Installation variant B

Alley key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40
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System on triangles (screwed in)

LP	Description	Material
1	Mounting profile*	AL 6060 T6
2	Triangle 15° / 35°	AL 6060 T6
3	Hanger bolt M10	A2
4	End clamp **	AL 6060 T6
5	Central clamp **	AL 6060 T6
6	Alley key bolt M8x**	A2
7	Spring washer M8	A2
8	Square nut M8	A2
9	Slot nut	AL 6060 T6
10	Hexagon head bolt M10x25	A2
11	T-bolt M10x25	A2
12	Flange nut M10	A2
13	Plastic cap 40x40	ABS

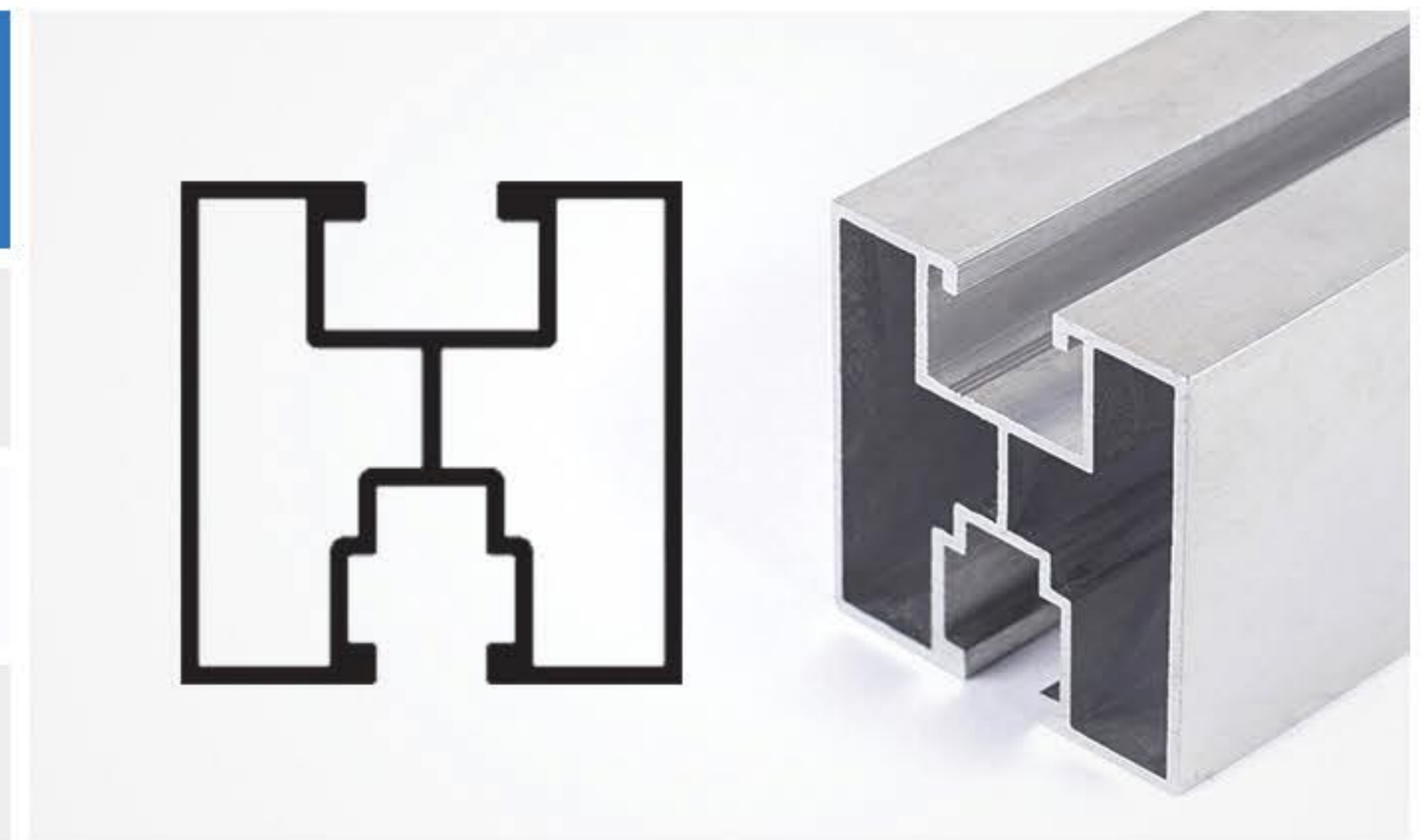
* profiles are available in assembly variants A and B
 ** the length of the screws and the height of the clamps should be matched to the thickness of the photovoltaic panel

Triangle 15° / 35° 	Hanger bolt M10 	Flange nut M10
Profile 40x40 for a hexagon screw	Square nut M8 	Screw M10x25 Installation variant A
Profile 40x40 for a T-bolt	T-bolt M10x25 	Slot nut M8 Installation variant B

Alley key bolt M8x* 	Spring washer M8 	End clamp* 	Central clamp* 	Plastic cap 40x40
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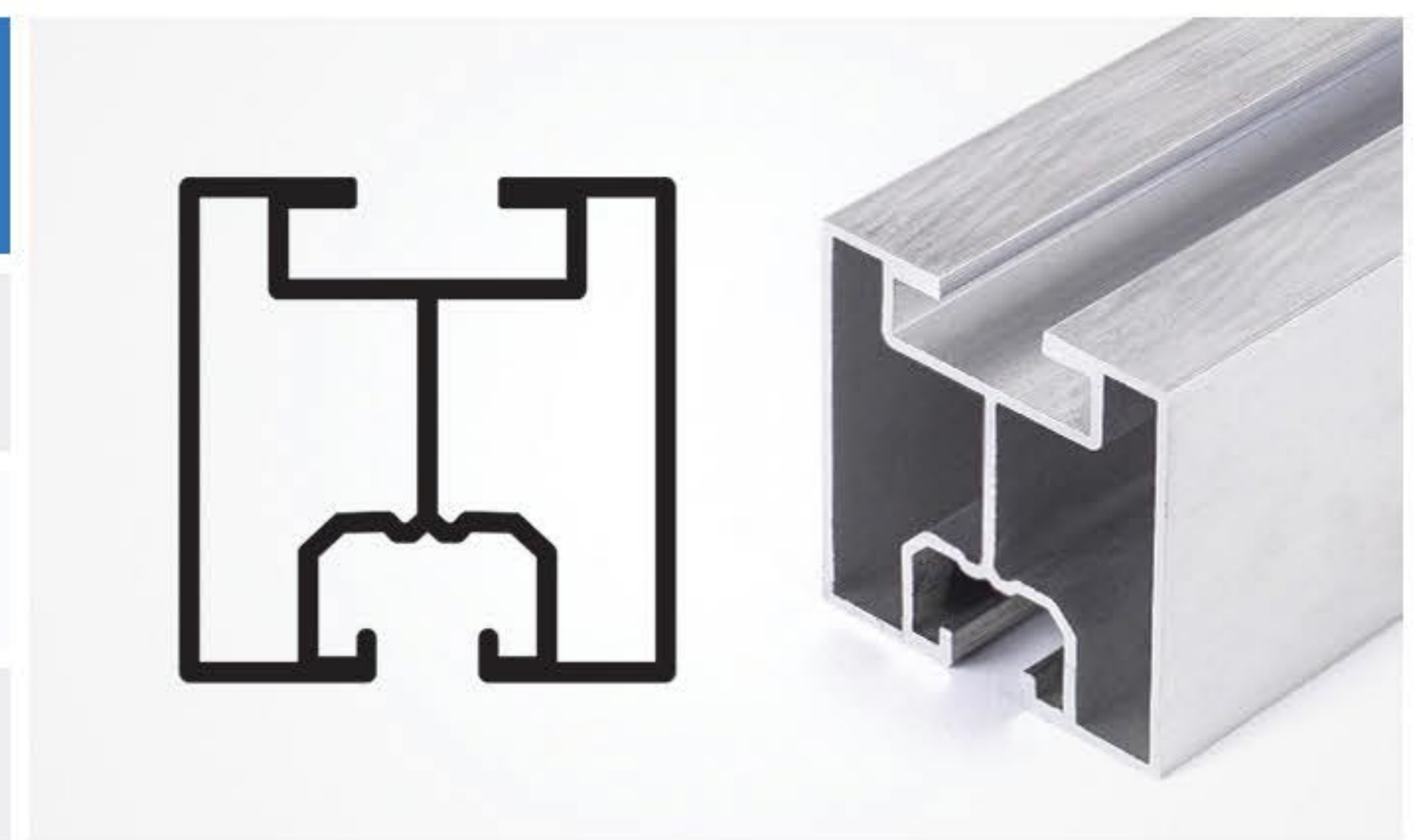
Profile for hexagon screw (raw, black)

Material	Aluminum
Dimensions (mm)	40 / 40 / 1,2
Weight (kg/m)	0,81



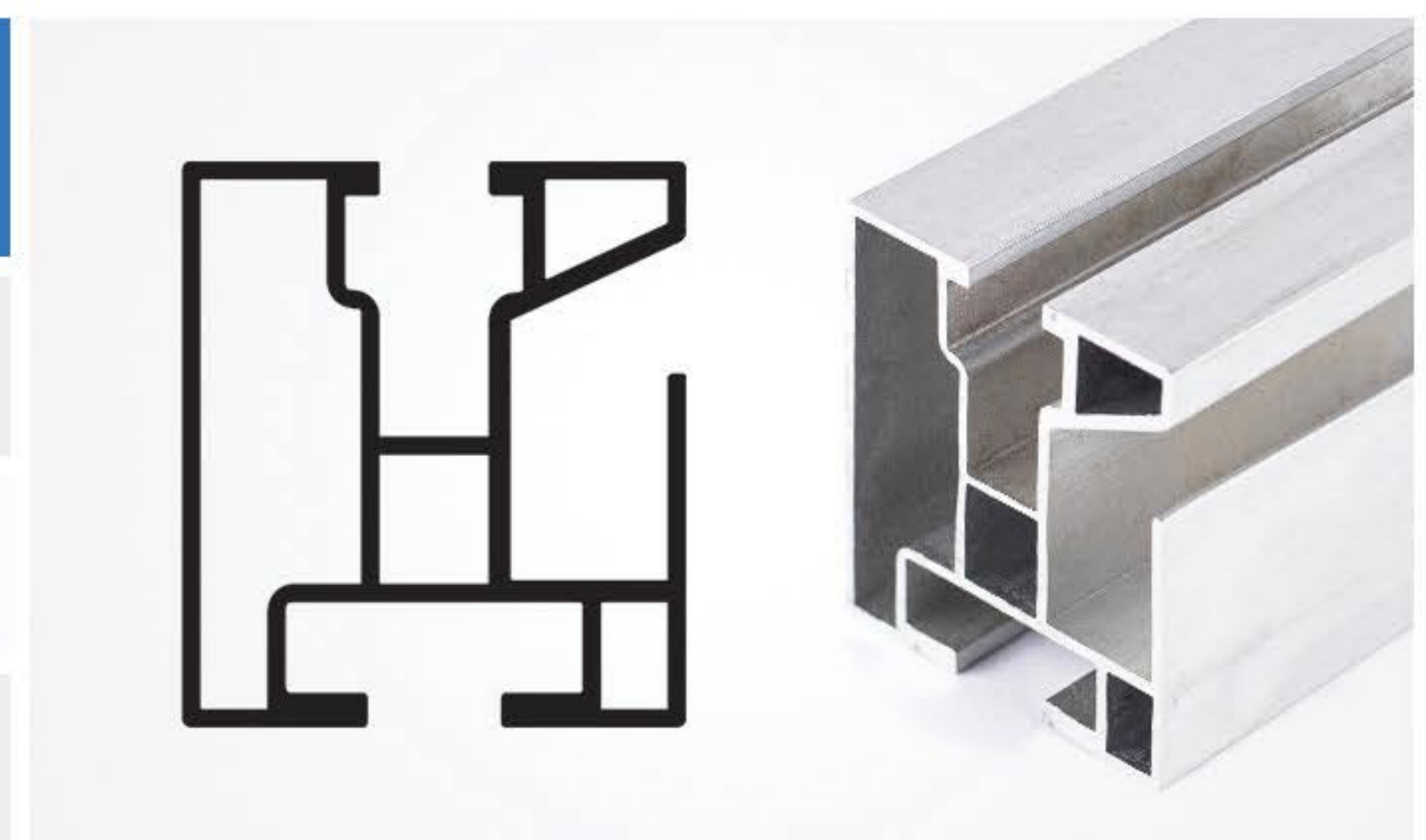
Profile for T-Bolt (raw, black)

Material	Aluminum
Dimensions (mm)	40 / 40 / 1,2
Weight (kg/m)	0,81



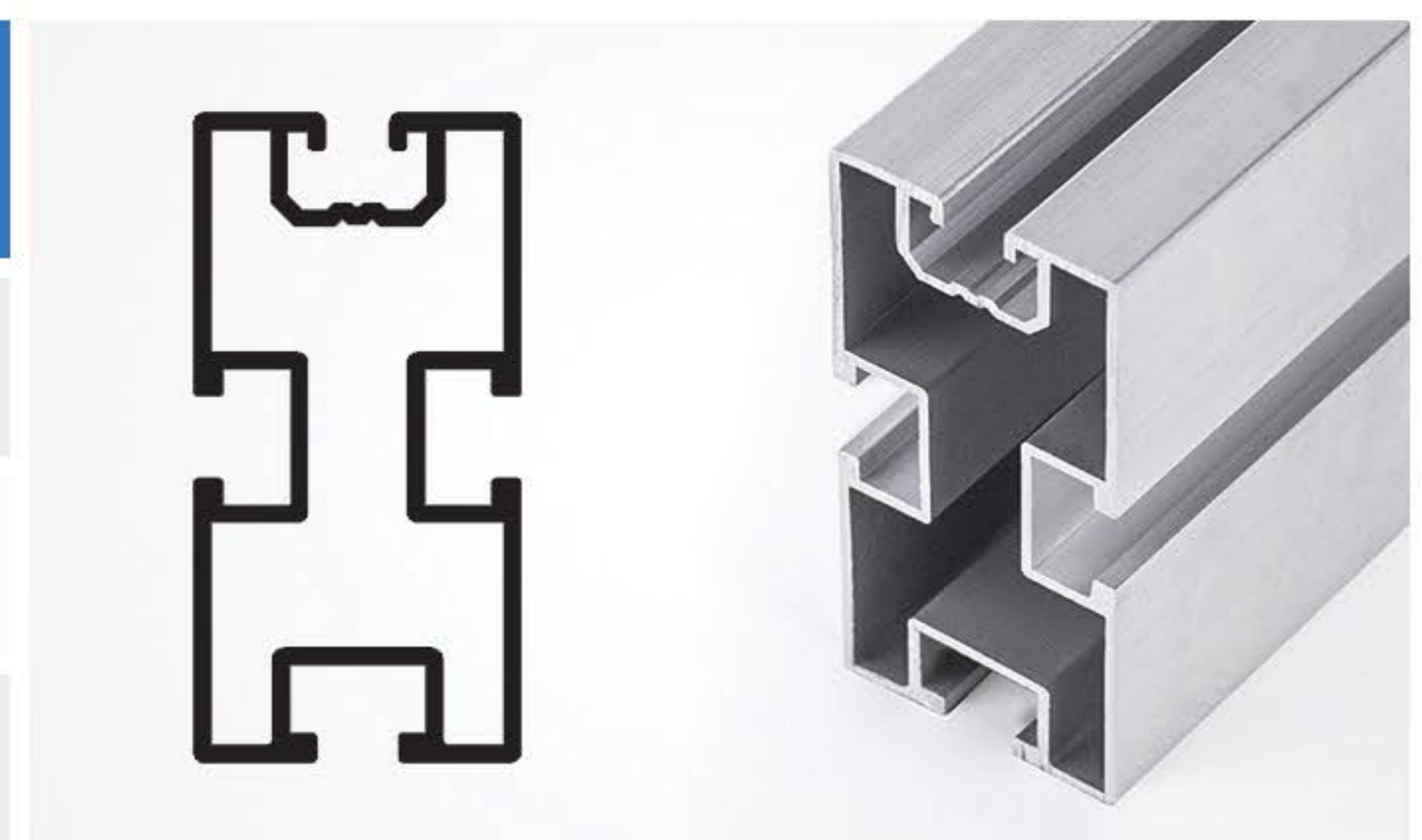
Profile for T-Bolt and Cable (raw, black)

Material	Aluminum
Dimensions (mm)	40 / 45 / 1,2
Weight (kg/m)	1



Profile reinforced 80x40

Material	Aluminum
Dimensions (mm)	80 / 40 / 1,3
Weight (kg/m)	1,55



Angle bracket (3mm)

Material	Aluminum
Dimensions (mm)	40x40x3
Weight (kg/m)	0,63



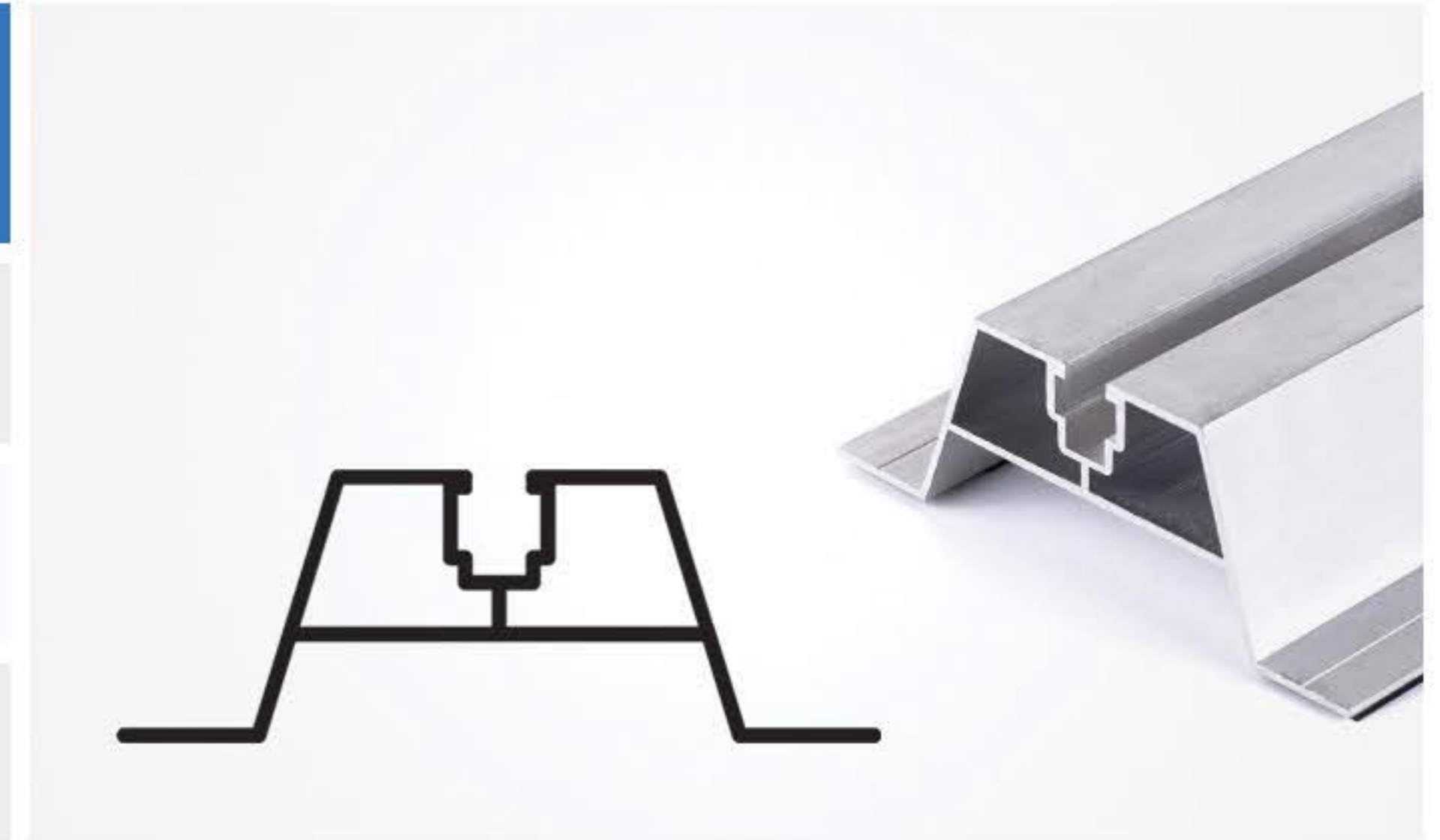
Angle bracket (4mm)

Material	Aluminum
Dimensions (mm)	40x40x4
Weight (kg/m)	0,83



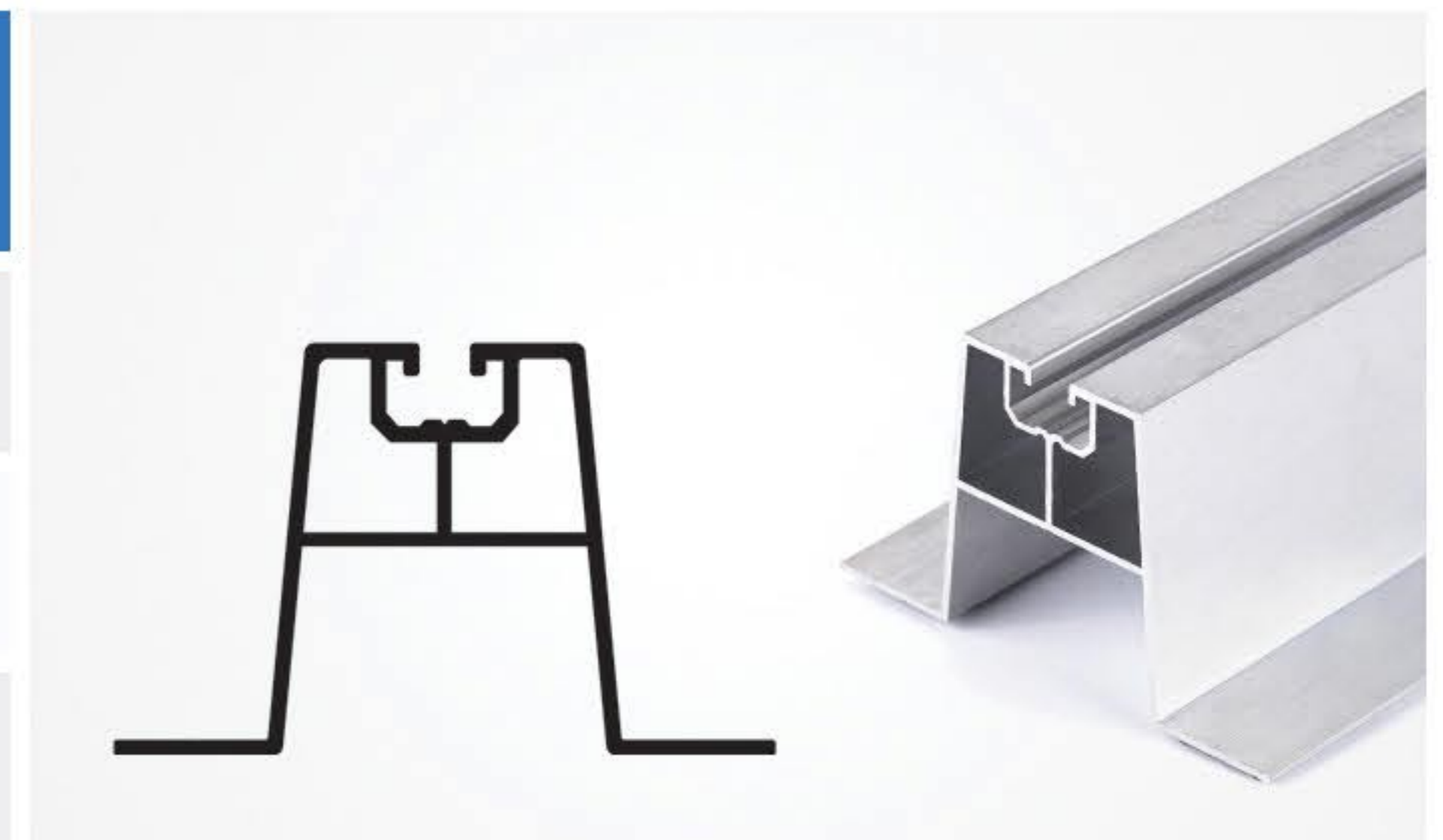
Low trapezoidal bridge: T40

Material	Aluminum
Dimensions (mm)	114 / 40 / 1,6
Weight (kg/m)	1,2



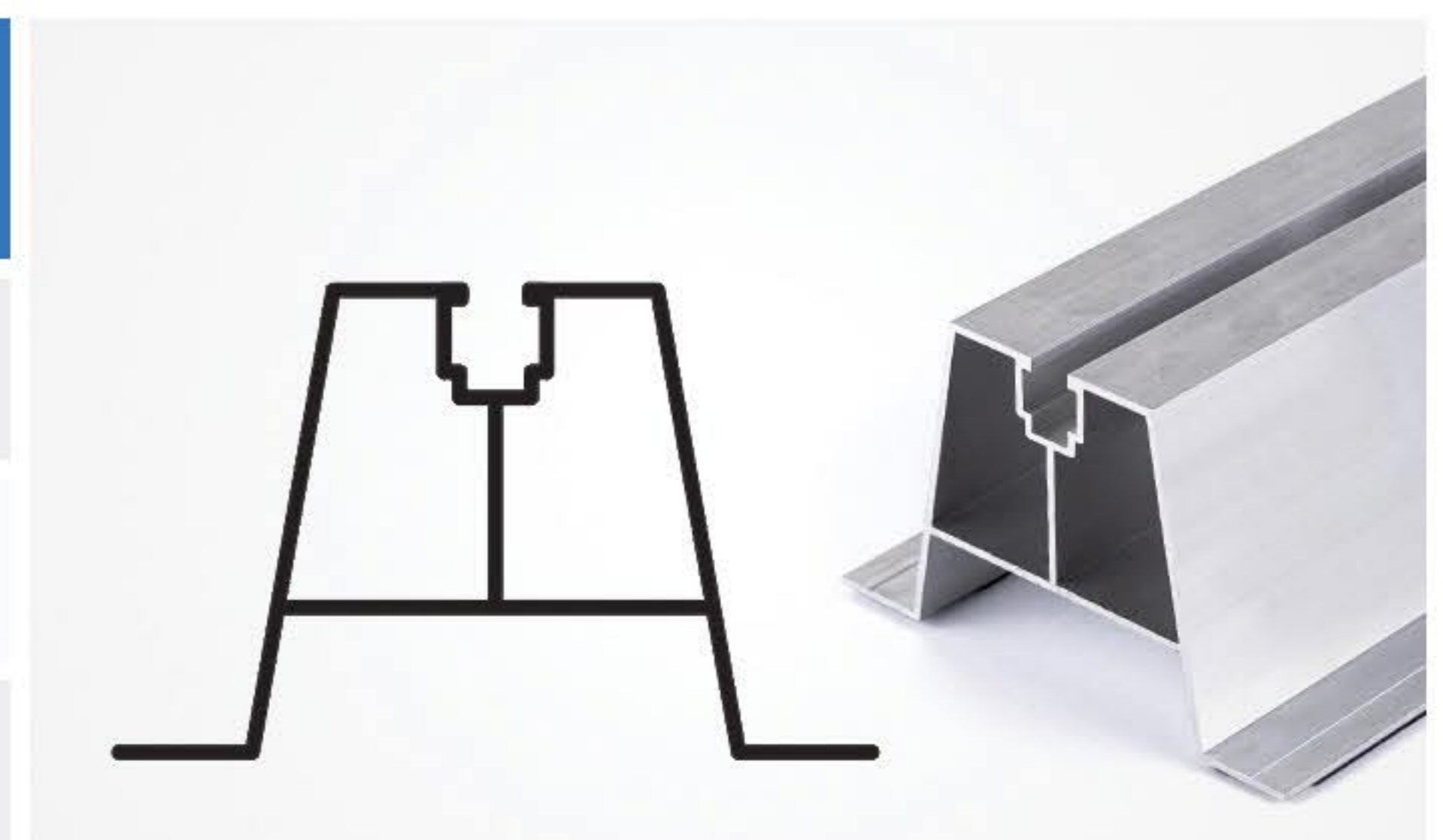
High trapezoidal bridge: T60

Material	Aluminum
Dimensions (mm)	140 / 96 / 60
Weight (kg/m)	1,09



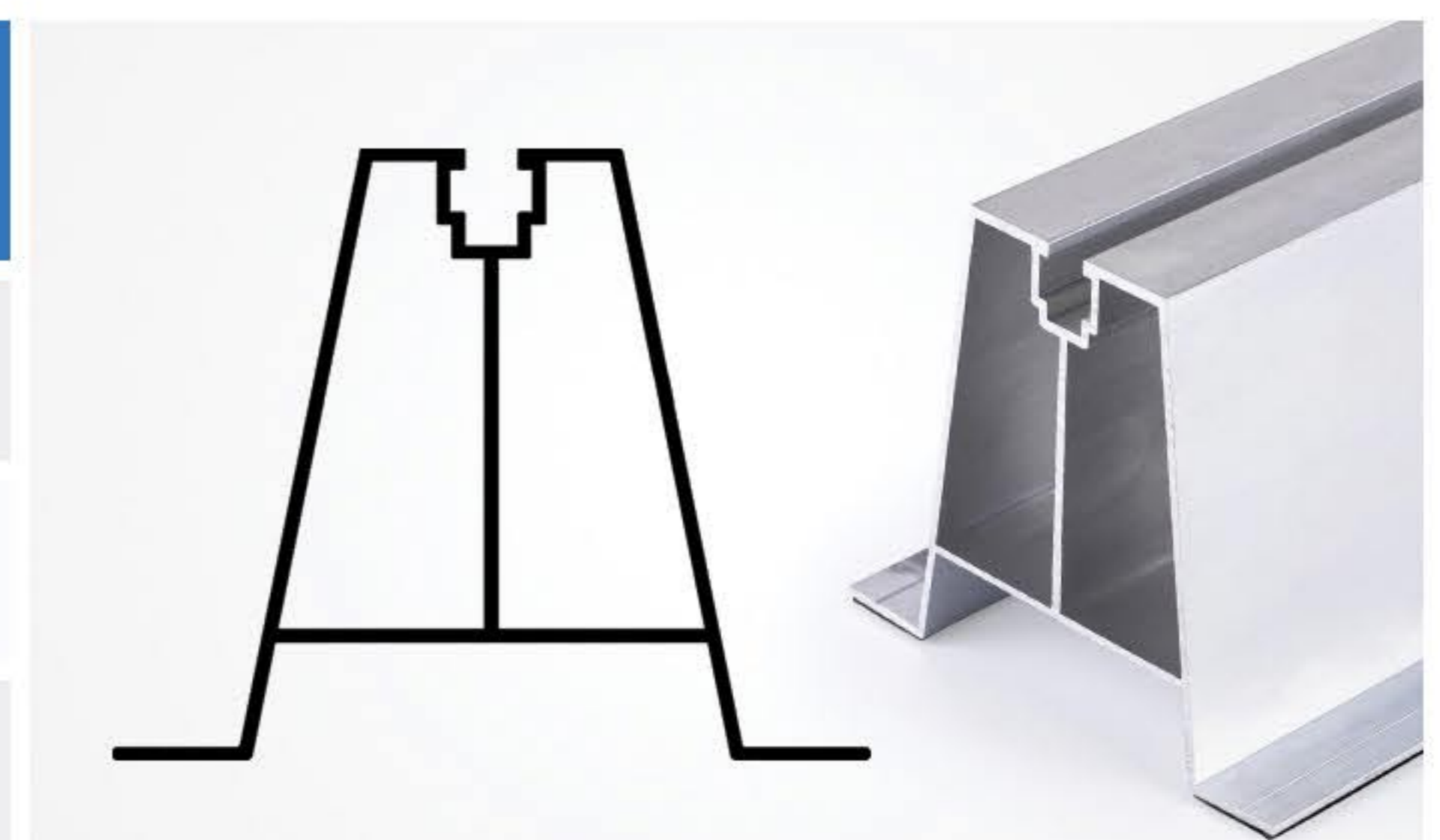
High trapezoidal bridge: T70

Material	Aluminum
Dimensions (mm)	114 / 70 / 1,7
Weight (kg/m)	1,27



High trapezoidal bridge: T100

Material	Aluminum
Dimensions (mm)	114 / 100 / 1,7
Weight (kg/m)	1,594



High trapezoidal bridge: T60 (slanting)

Material	Aluminum
Dimensions (mm)	140 / 96 / 60
Weight (kg/m)	1,09



Allen key bolt: M8 x 20/25/30/35/40

Material	Stainless steel
Height (mm)	20 / 25 / 30 / 35 / 40
Diameter (mm)	8



Hexagon head bolt: M8 x 20/25/30

Material	Stainless steel
Height (mm)	20 / 25 / 30
Diameter (mm)	8



Hexagon head bolt: M10 x 20/25/30

Material	Stainless steel
Height (mm)	20 / 25 / 30
Diameter (mm)	10



T-Bolt: M8 x 20/25/30

Material	Stainless steel
Height (mm)	20 / 25 / 30
Diameter (mm)	8



T-Bolt: M10 x 20/25/30

Material	Stainless steel
Height (mm)	20 / 25 / 30
Diameter (mm)	10



Hanger bolt: M10 x 200/250/300

Material	Stainless steel
Width / Height (mm)	20 / 25
Length (mm)	200 / 250 / 300



Wood screw: M8 x 60/80/100

Material	Stainless steel, galvanized steel
Height (mm)	64 / 84 / 104
Diameter (mm)	8



Sheet metal screw

Material	Bi-metal
Length / Height (mm)	25 / 30
Diameter (mm)	6



Flange nut M8

Material	Stainless steel
Height (mm)	8
Diameter (mm)	17,9



Flange nut M10

Material	Stainless steel
Height (mm)	10
Diameter (mm)	21



Square nut M8

Material	Stainless steel
Width / Height (mm)	13 / 6,5
Diameter (mm)	8



Slot nut

Material	Aluminum
Width / Height (mm)	13 / 10
Length (mm)	22



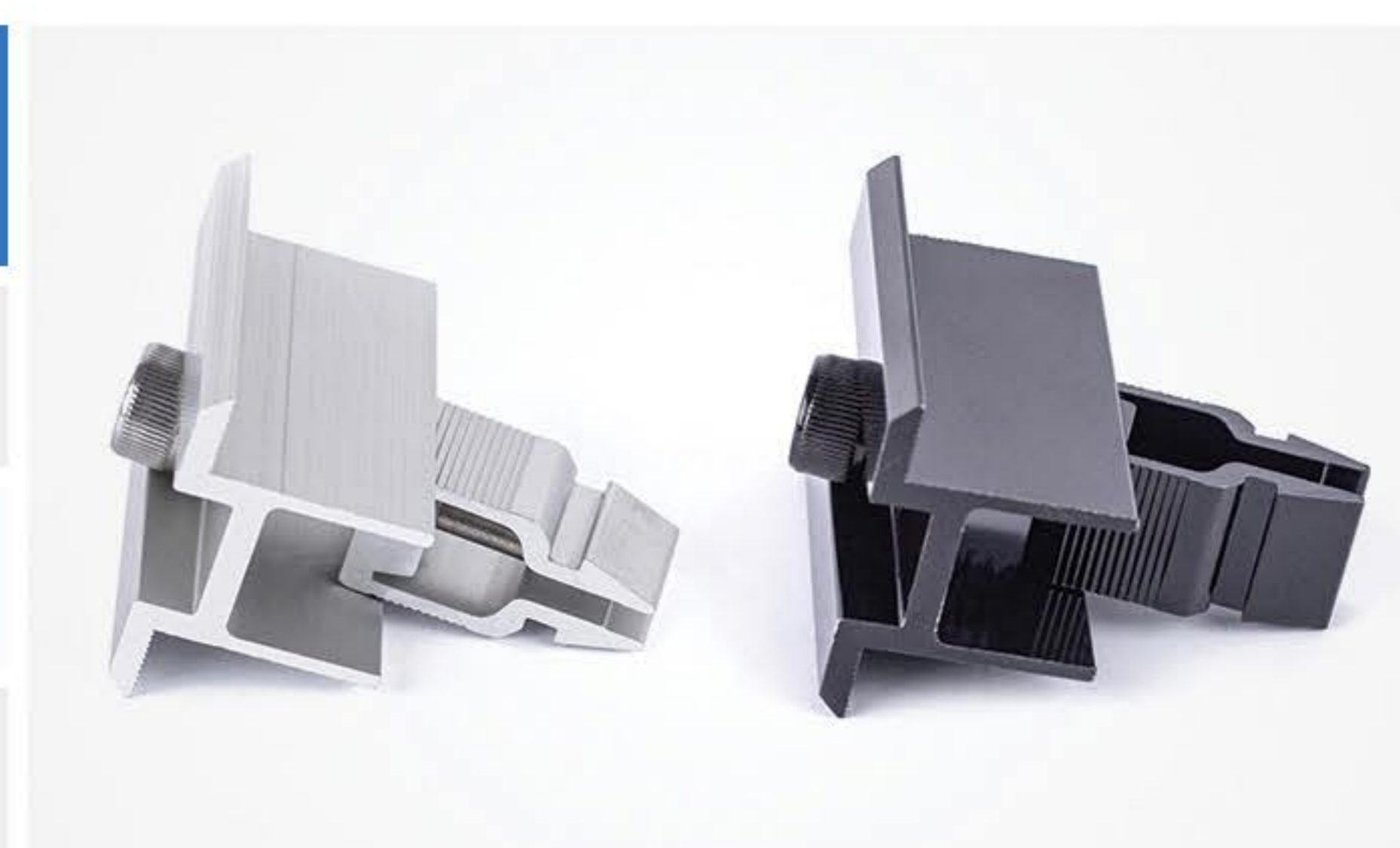
Central clamp (plain, black)

Material	Aluminum
Width / Height (mm)	20 / 25
Length (mm)	50



Central clamp KLIK (plain, black)

Material	Aluminum
Length / Width (mm)	50 / 35,5
Height (mm)	23



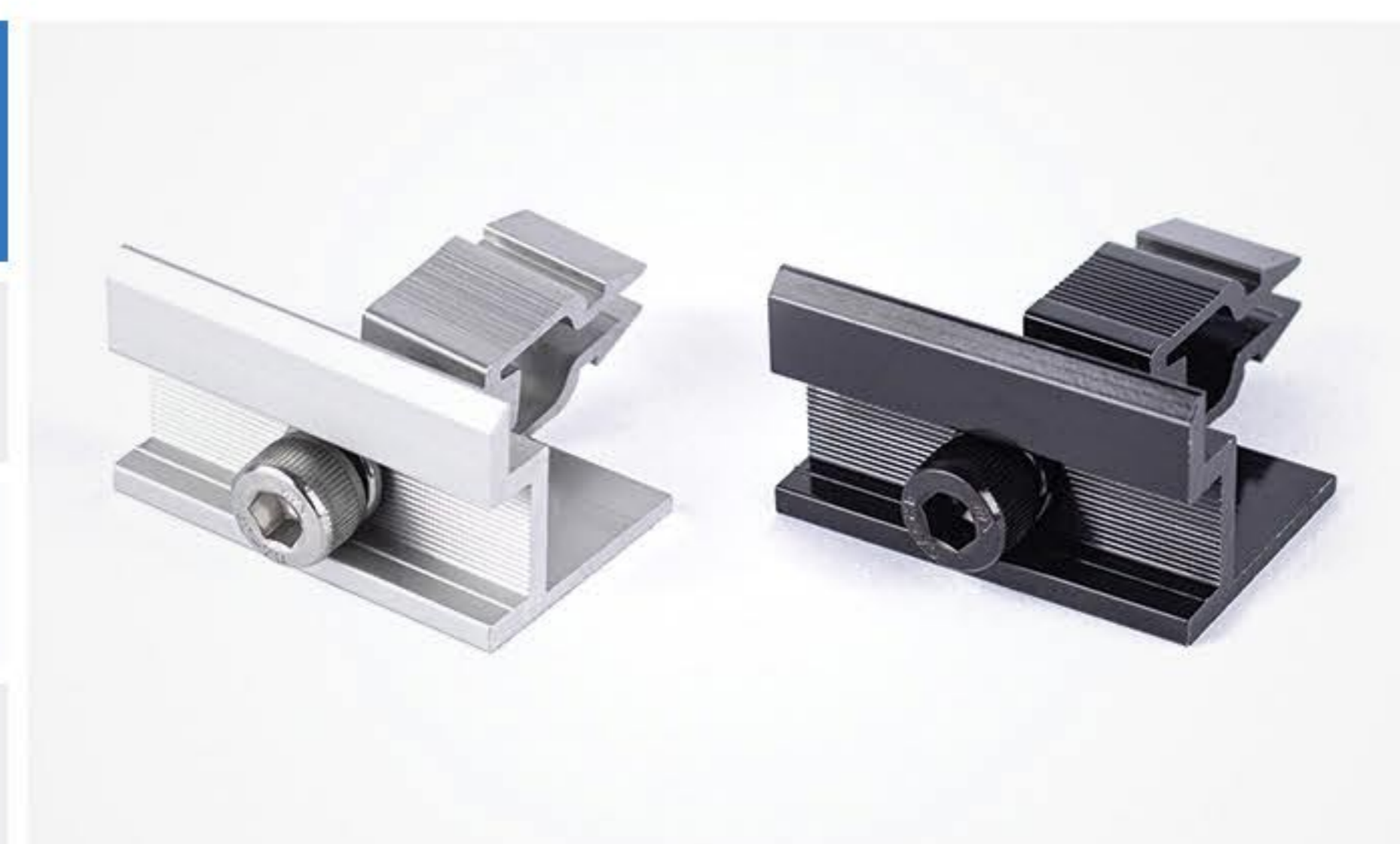
End clamp: 30/35 (plain, black)

Material	Aluminum
Height (mm)	33 / 44
Width (mm)	27



End clamp KLIK: 30/35 (plain, black)

Material	Aluminum
Length / Width (mm)	50 / 33,5
Height (mm)	43,5



Fastener for assembly profiles (plain, black)

Material	Aluminum
Length / Width (mm)	120 / 45
Height (mm)	25



Assembly adapter

Material	Stainless steel
Length / Width (mm)	81 / 30
Thickness (mm)	4



Plastic cap: 40x40 (grey, black)

Material	Plastic
Length / Width (mm)	44
Height (mm)	31



Grounding plate

Material	Stainless steel
Length / Width (mm)	40
Height (mm)	6



Vario double-adjustable hook

Material	Stainless steel
Length / Width (mm)	195 / 140
Height (mm)	135-175



Seamless sheet metal bracket (Type 1)

Material	Stainless steel
Length / Width (mm)	90 / 44
Height (mm)	44



Seamless sheet metal bracket (Type 2)

Material	Stainless steel
Length / Width (mm)	90 / 44
Height (mm)	44



Hook for trapezoidal sheet roof

Material	Stainless steel
Length / Width (mm)	65
Height (mm)	56



Z-type roof hook with EPDM (adjustable)

Material	Stainless steel
Length / Width (mm)	135 / 75
Height (mm)	45 - 65



S-type roof hook not adjustable/adjustable

Material	Stainless steel
Length / Width (mm)	470, 520 / 30
Height (mm)	4/5



Hook for plain tile roof

Material	Stainless steel
Length / Width (mm)	300 / 30
Height (mm)	70-100



Hook for plain tile roof (wide)

Material	Stainless steel
Length / Width (mm)	300 / 135
Height (mm)	240



Adjustable J roof hook (adjustable)

Material	Stainless steel
Length / Width (mm)	30x4mm
Height (mm)	75-105



Flat roof bracket with EPDM

Material	Aluminum 5mm
Length (mm)	1240 x 324,5mm
Height (mm)	600 / 324,5mm
Inclination angle (degrees)	15 and 30 degrees



Horizontal triangle H: 15/25/35 degrees

Material	Aluminum
Length (mm)	827 / 910 / 967
Width (mm)	40
Height (mm)	290 / 446 / 590
Thickness (mm)	3/4
Counter-angle (mm)	1000
Inclination angle (degrees)	15 / 25 / 35



Vertical triangle V: 15/25/35 degrees

Material	Aluminum 3/4mm
Length (mm)	1318 / 1454 / 1547
Width (mm)	40
Height (mm)	445 / 700 / 935
Counter-angle (mm)	1600
Inclination angle (degrees)	15 / 25 / 35



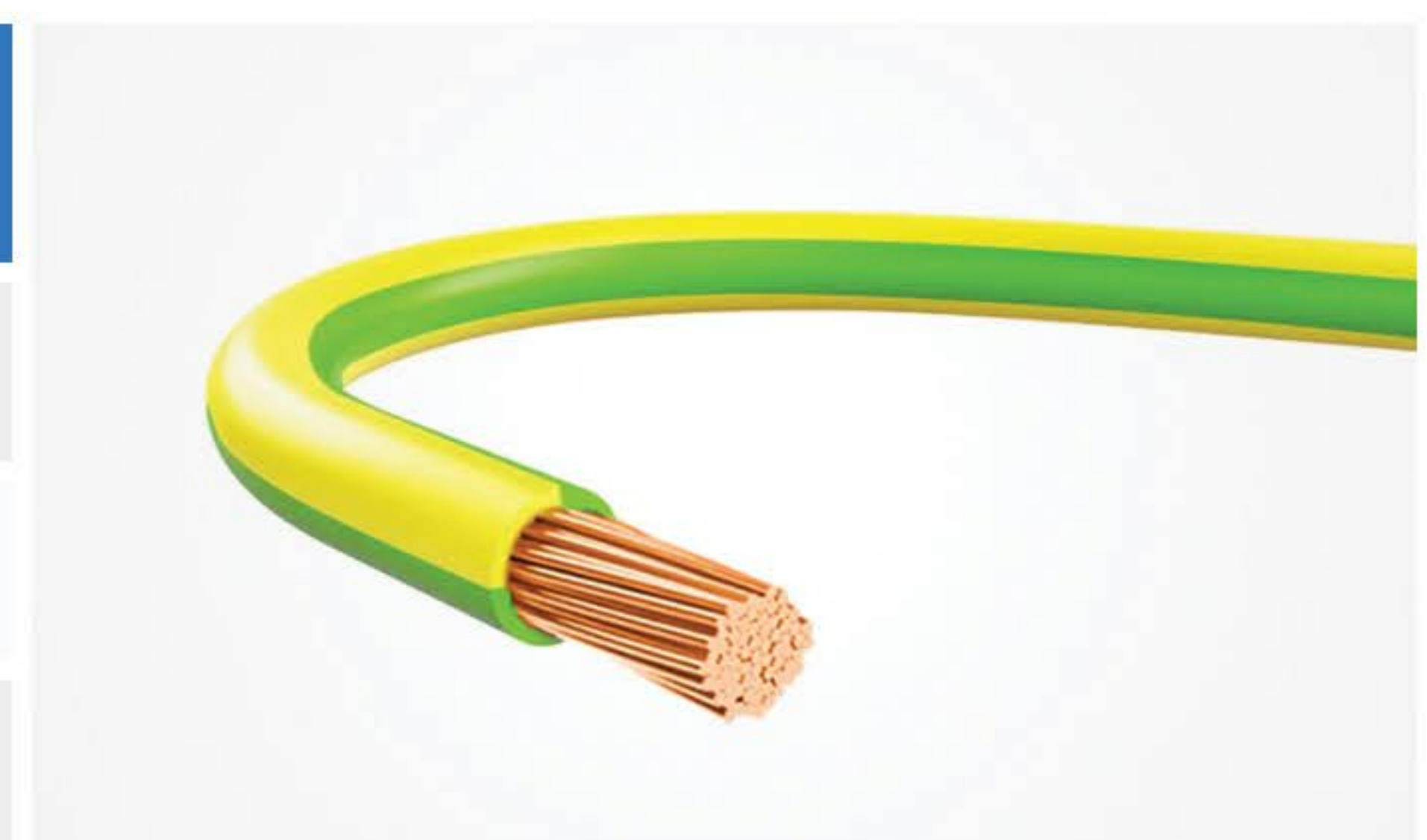
Solar cable (4/6mm)

Wire cross-section (mm ²)	4 / 6
Thickness (mm)	4 / 6
Color	black / red



Installation LGY cable

Wire cross-section (mm ²)	16
Rated voltage U ₀	450V / 750V
Color	green-yellow





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