

MUL

10

METAL

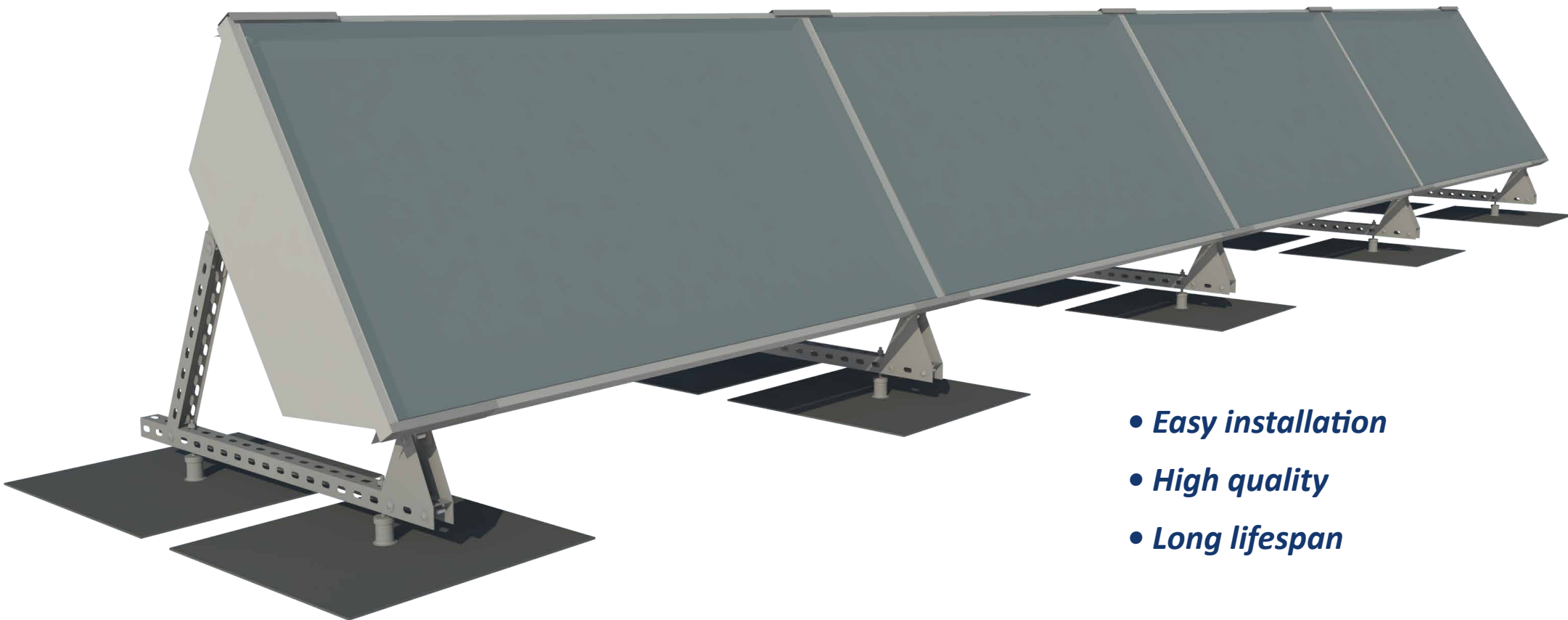
THE ROOFING SECTORS'S SAFE CHOISE

www.mul10metal.dk

Mul10 Console system for

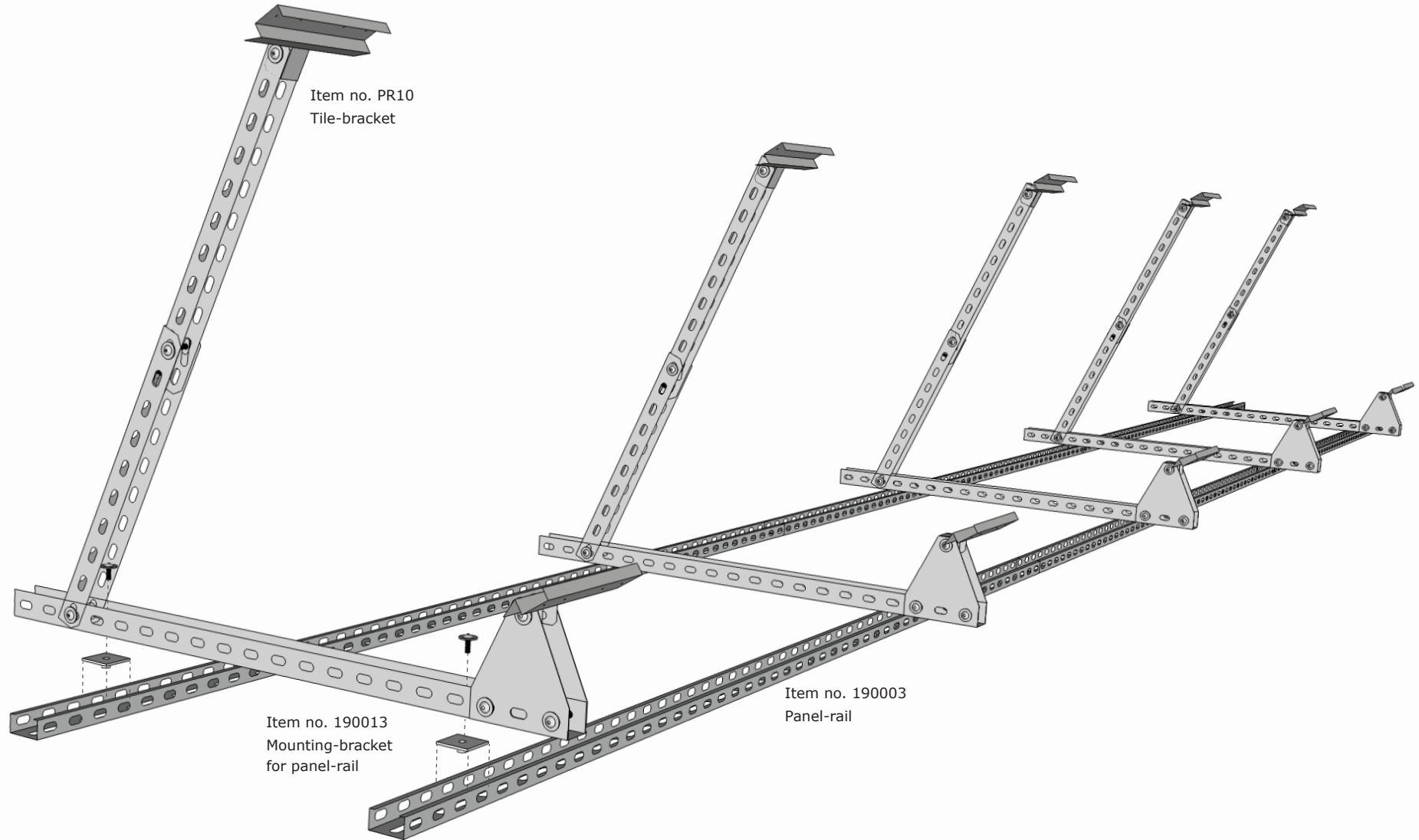
SolarVenti®

10 YEAR WARRANTY

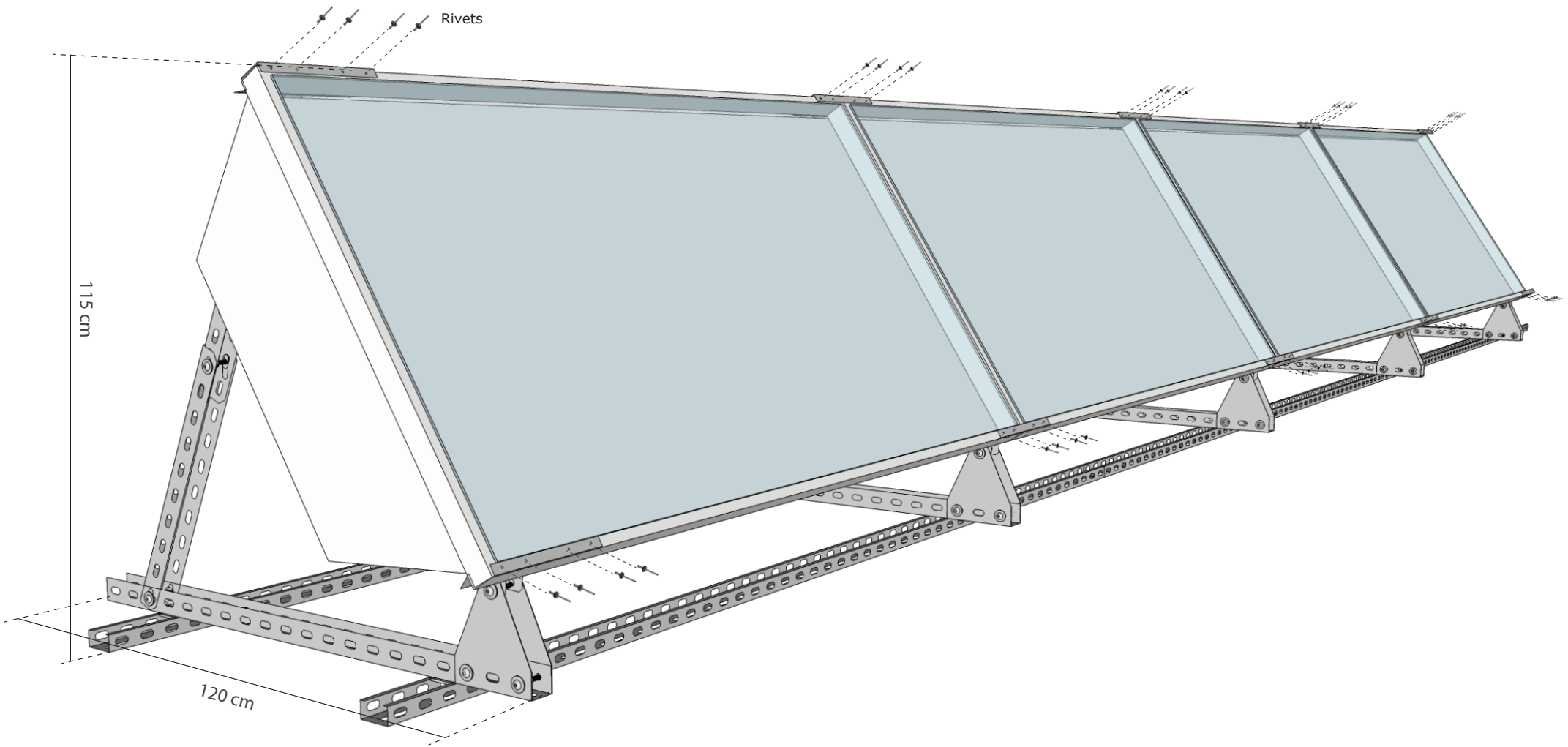


- *Easy installation*
- *High quality*
- *Long lifespan*




Tile and fibercement roofs:






Tile and fibercement roofs:



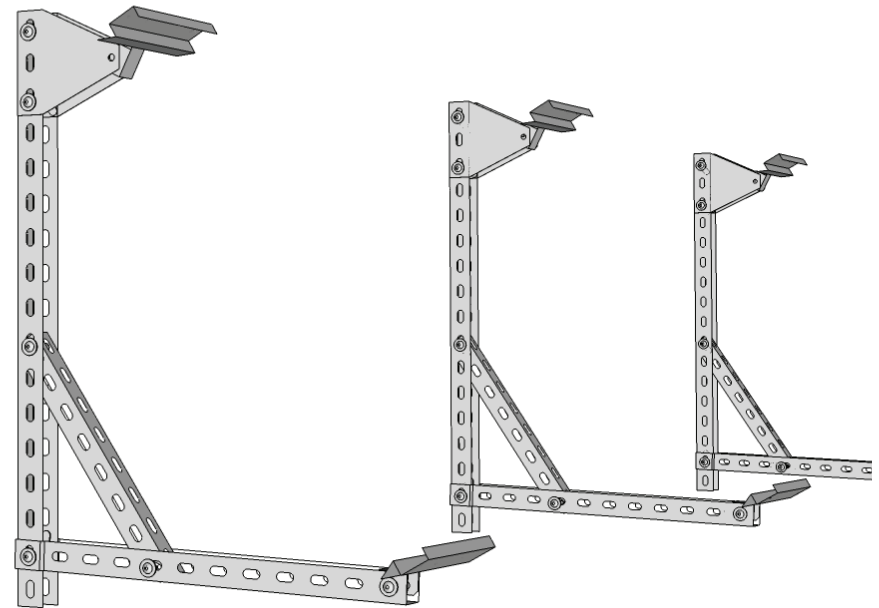
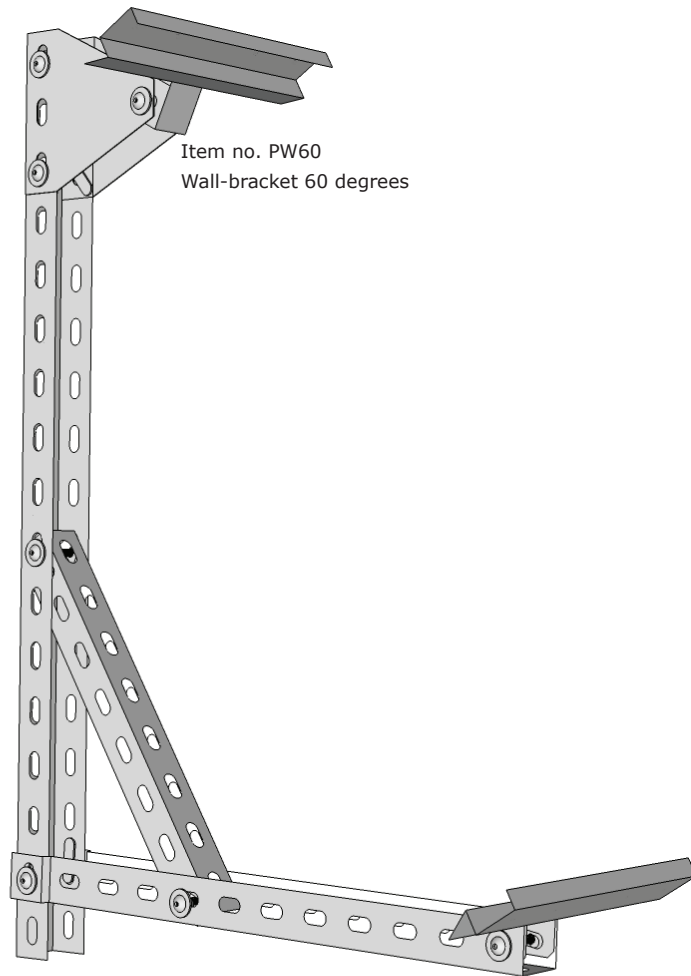
Tile and fibercement roofs:

Tile and fibercement roof	Description	Item no.
<p>Tile-bracket</p> 	<p>Tile-bracket for mounting on tile and fibercement roofs</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 13 Drop-in bolts (assembled from factory)</p> <p>Included: 8 Rivets to secure the Solar Air Collectors</p>	PR10
<p>Panel-rail</p> 	<p>Sea-water resistant Aluminium 57S</p> <p>L: 3000 mm</p> <p>13x40x70x40x13 mm</p>	190003
<p>Assembly bracket for panel-rail</p> 	<p>Sea-water resistant Aluminium 57S</p> <p>L: 240 mm</p>	190004

Tile and fibercement roof	Description	Item no.
<p>Mounting-bracket for panel-rail</p> 	<p>For mounting the tile-bracket on the panel-rail</p>	190013
<p>Drop-in bolt</p> 	<p>1xM10 pan-bolt and clamp finger of Stainless Steel</p> <p>1 washer Ø30 mm</p> <p>Sea-water resistant Aluminium 57S</p>	190007
<p>Shoulder screw</p> 	<p>Shoulder screw for fibercement</p>	190119

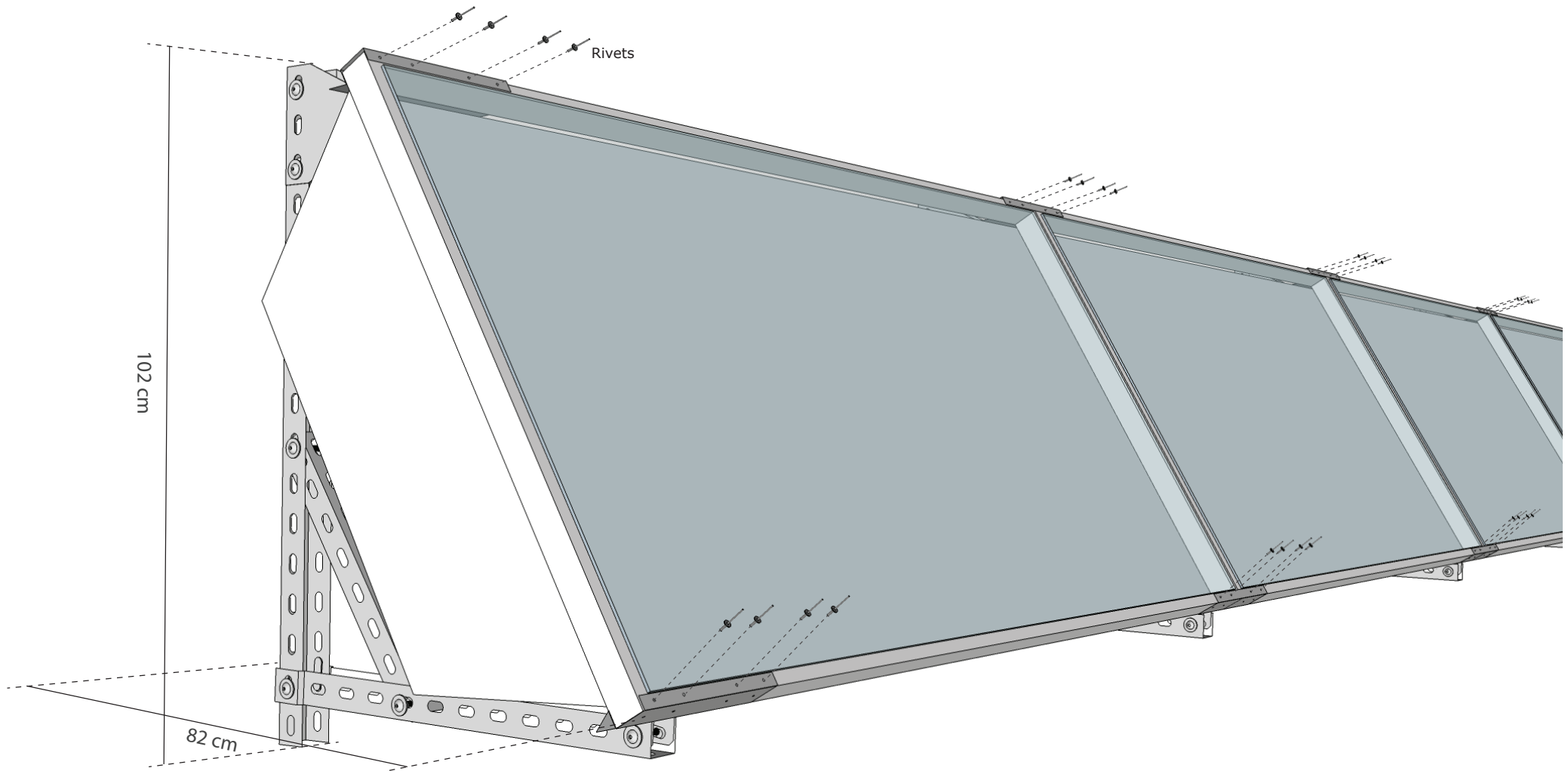
Wall:

60 degrees wall mounting



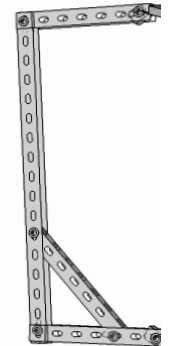
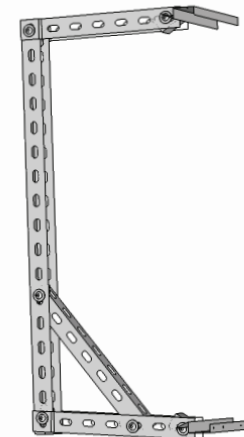
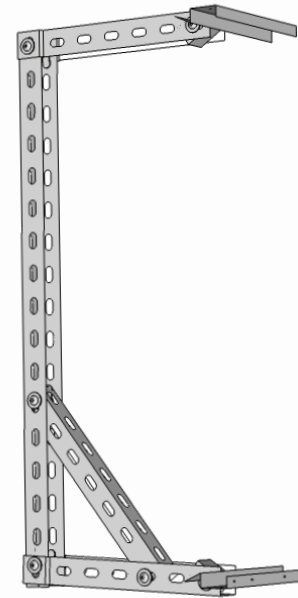
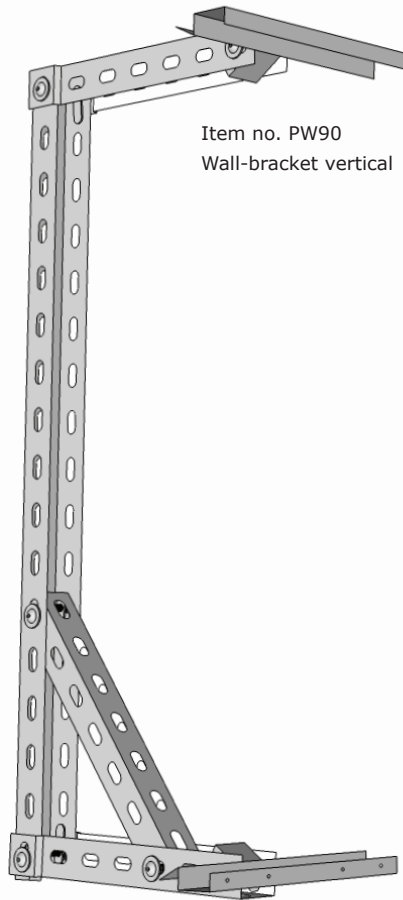
Wall:

60 degrees wall mounting



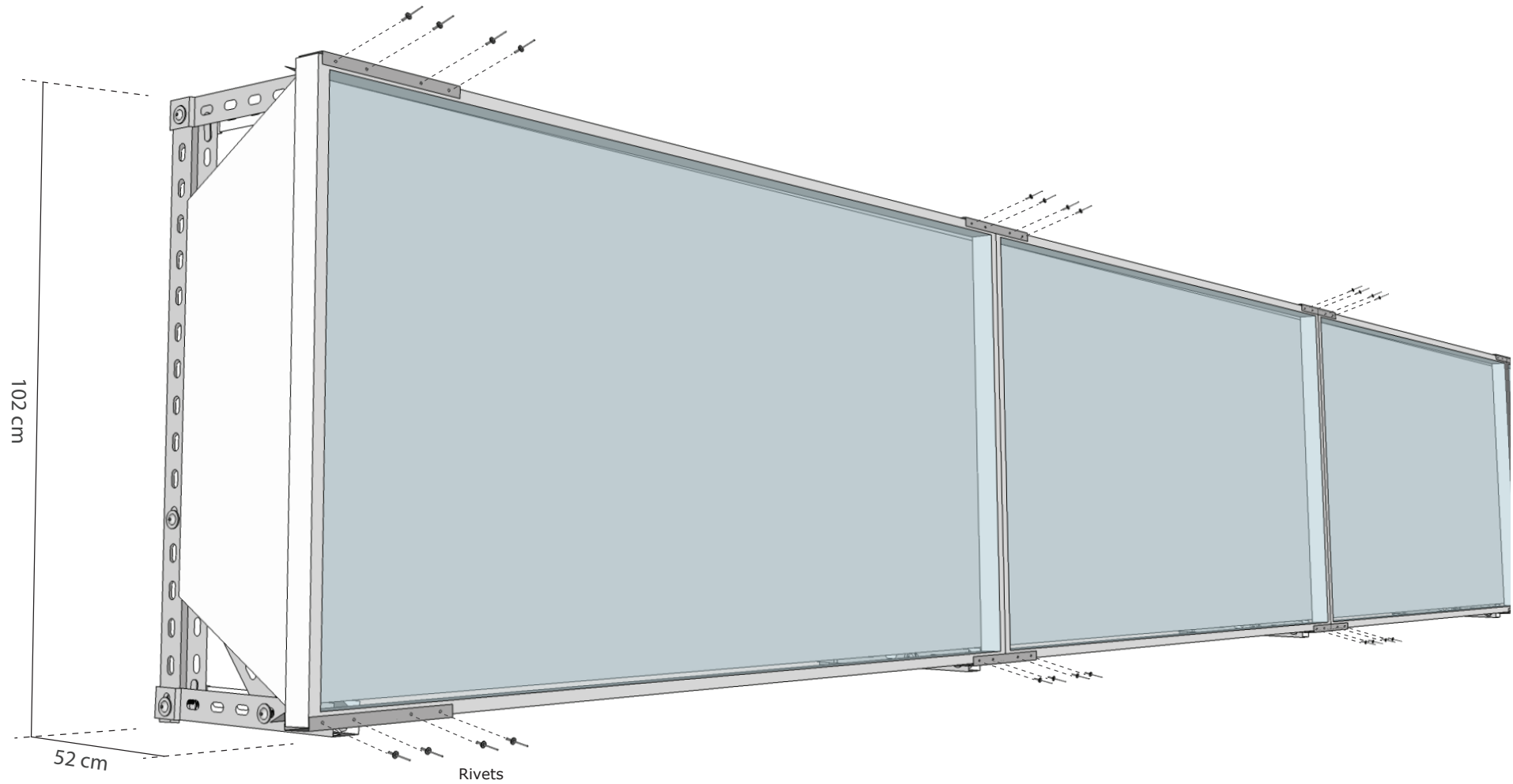
Wall:

Vertical Wall mounting

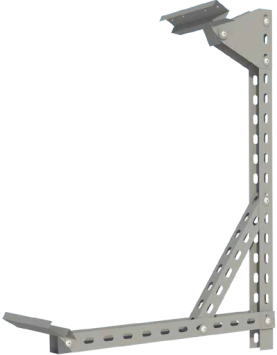



Wall:

Vertical Wall mounting



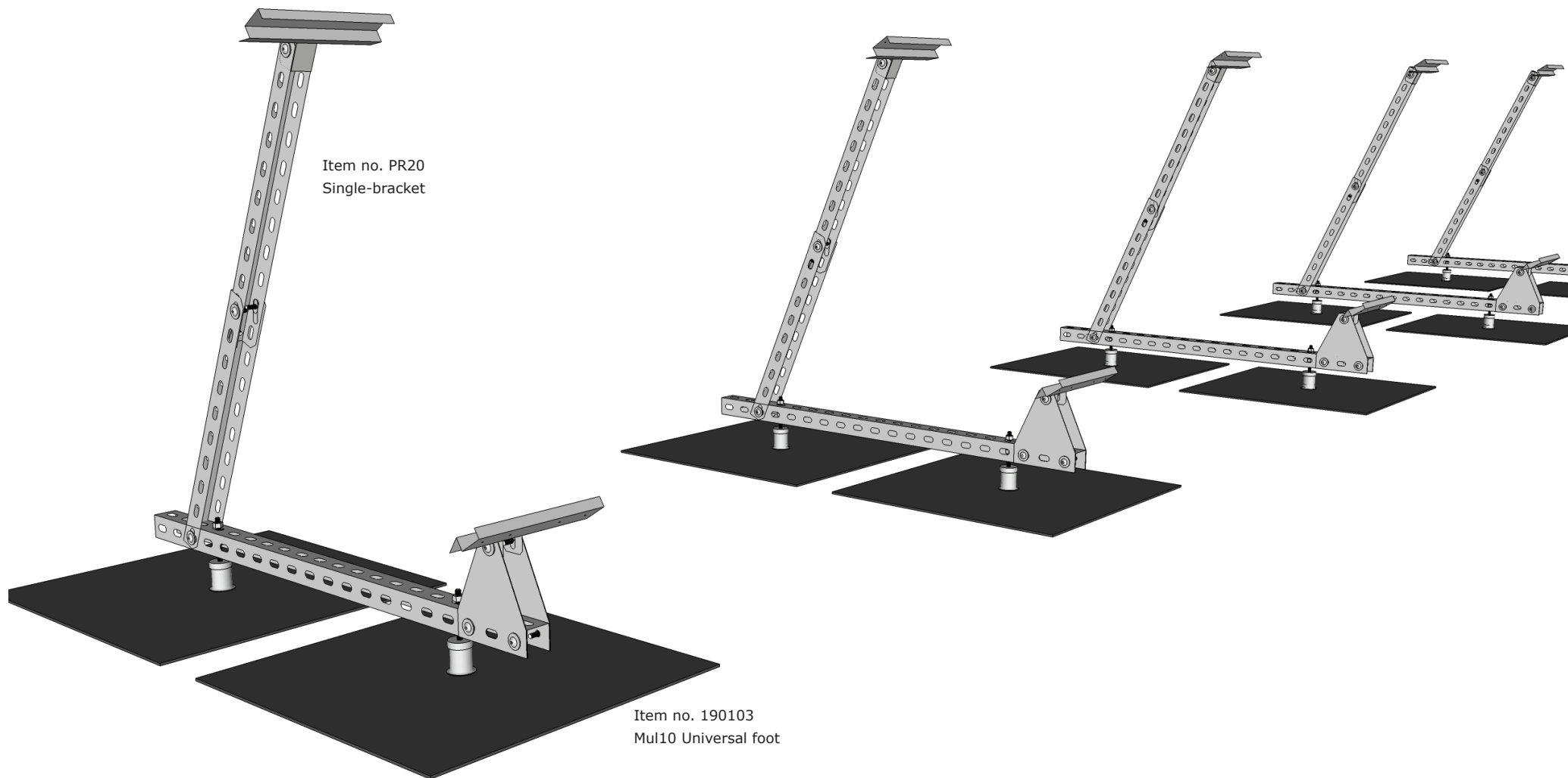
Wall:

Wall 60 degrees	Description	Item no.
<p>Wall-bracket 60 degrees</p> 	<p>Wall-bracket for mounting on wall in 60 degrees.</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 14 Drop-in bolts (assembled from factory)</p> <p>Included: 8 Rivets to secure the Solar Air Collectors</p>	<p>PW60</p>

Wall Vertical	Description	Item no.
<p>Wall-bracket Vertical</p> 	<p>Wall-bracket for vertical mounting on wall.</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 12 Drop-in bolts (assembled from factory)</p> <p>Included: 8 Rivets to secure the Solar Air Collectors</p>	<p>PW90</p>

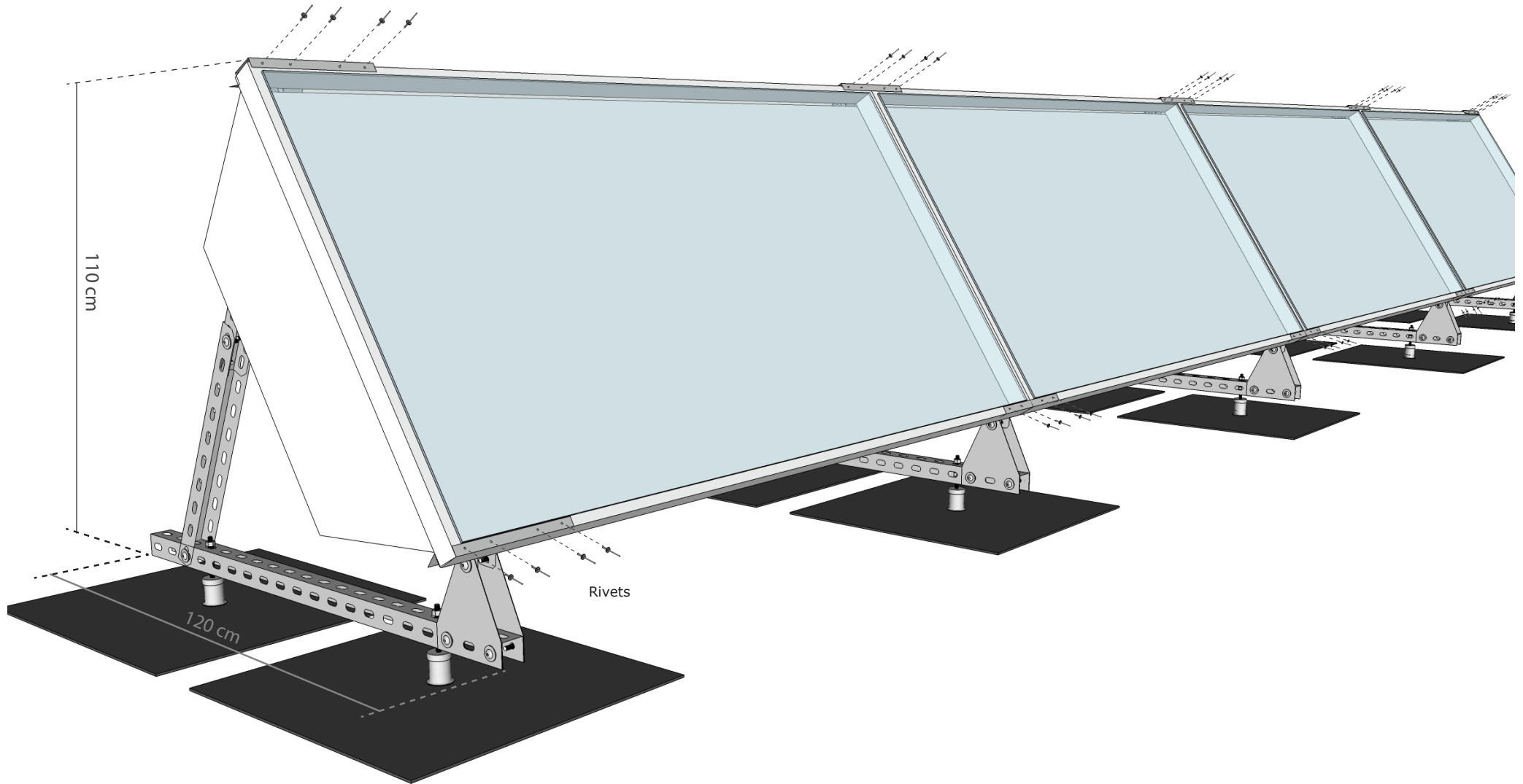
Felt and sheet roofs:

Single-bracket for roof mounting with Mul10 Universal feet.



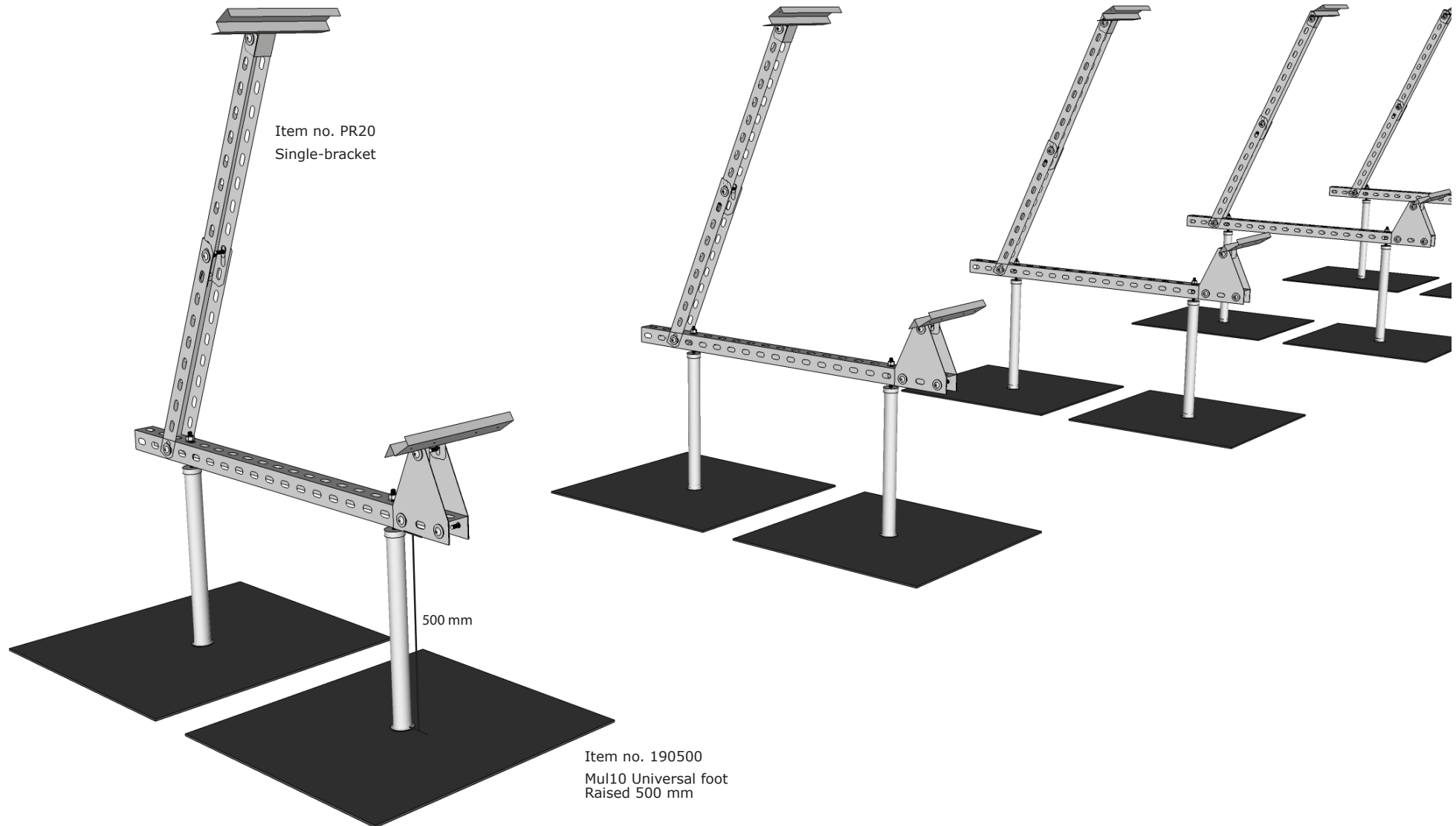
Felt and sheet roofs:

Single-bracket for roof mounting with Mul10 Universal feet.



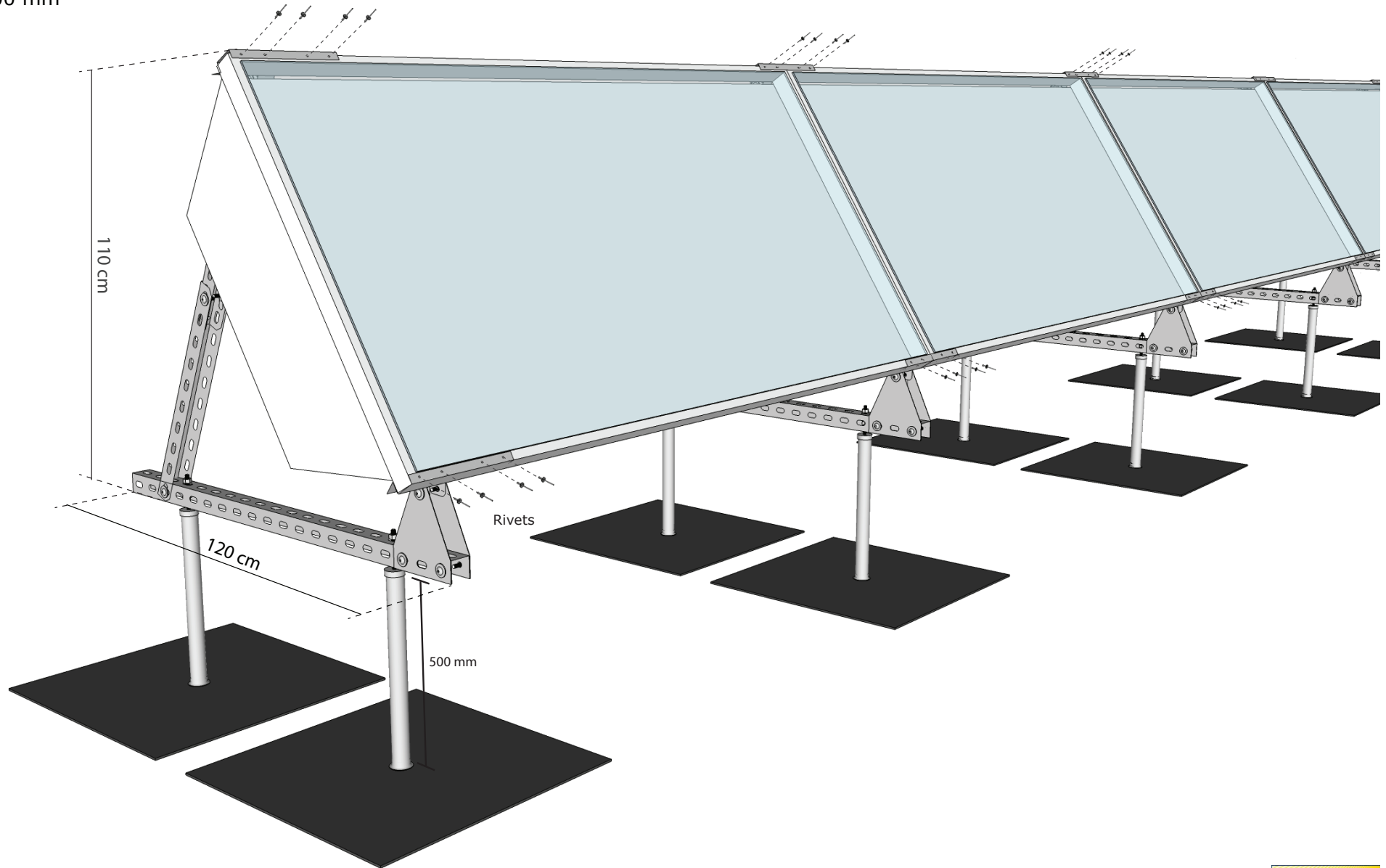
Felt and sheet roofs:

Single-bracket for roof mounting with Mul10 Universal feet.
Raised 500 mm



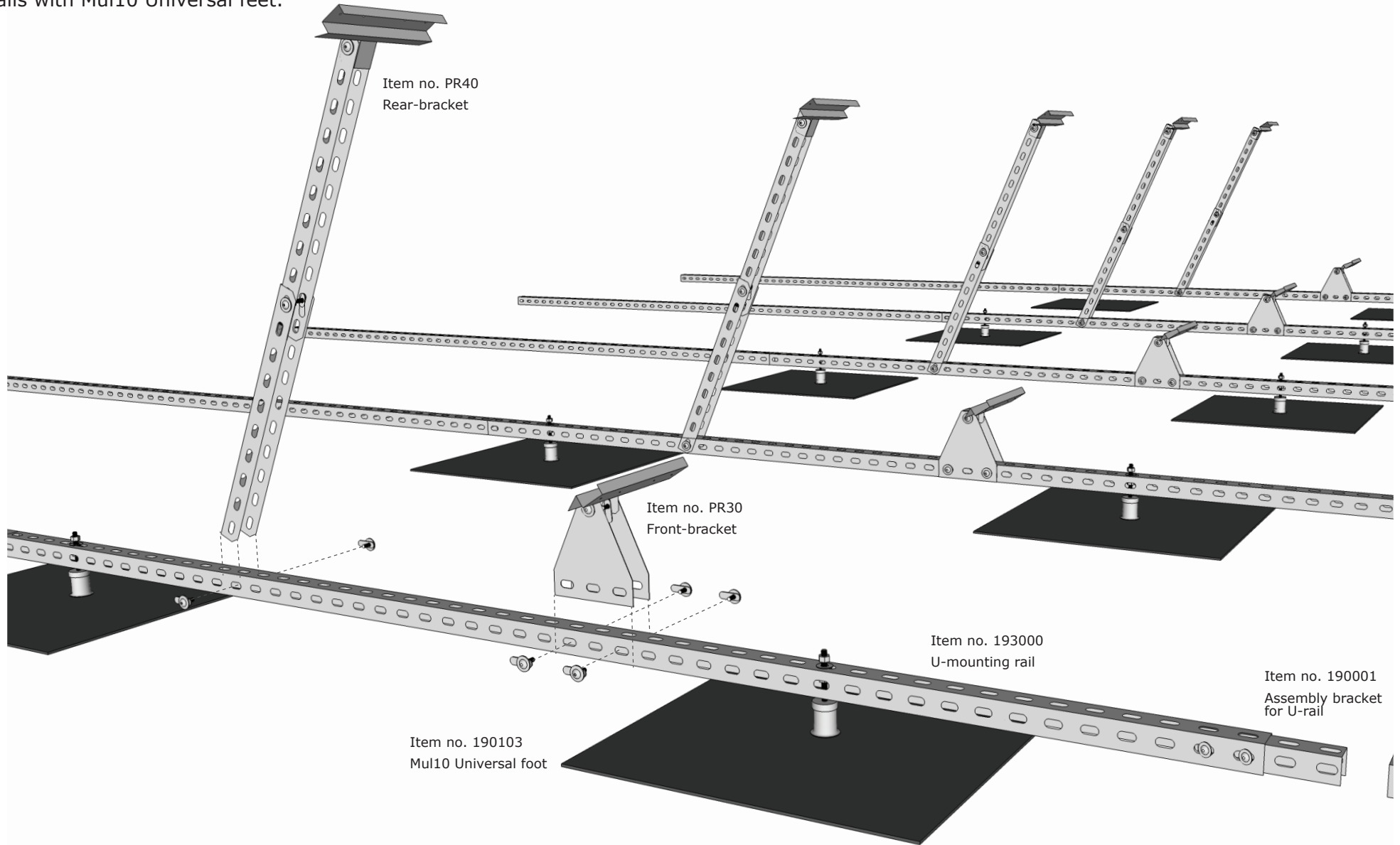
Felt and sheet roofs:

Single-bracket for roof mounting with Mul10 Universal feet.
Raised 500 mm



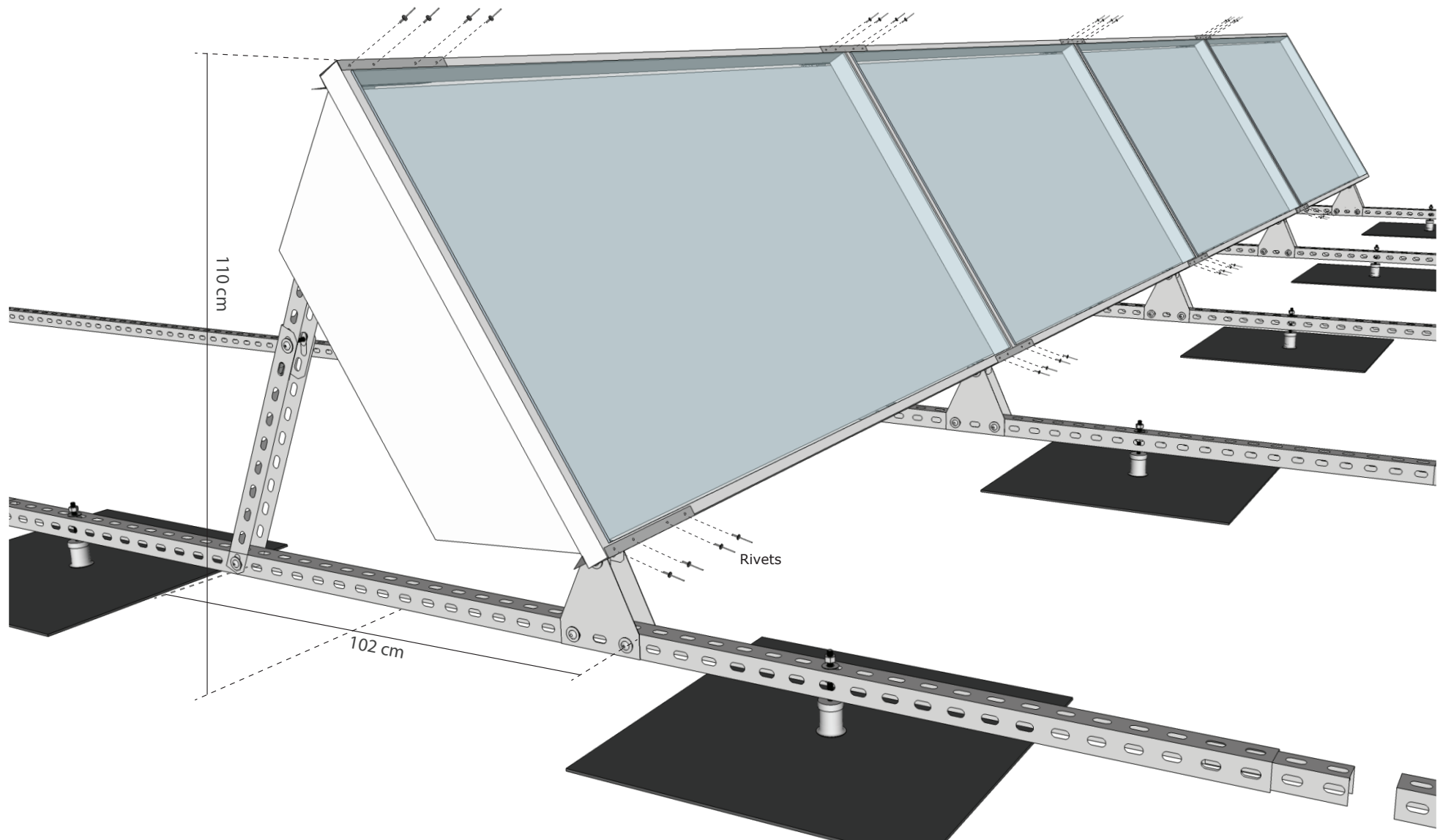
Felt and sheet roofs:

Roof mounting with front- and rear-bracket on U-mounting rails with Mul10 Universal feet.



Felt and sheet roofs:

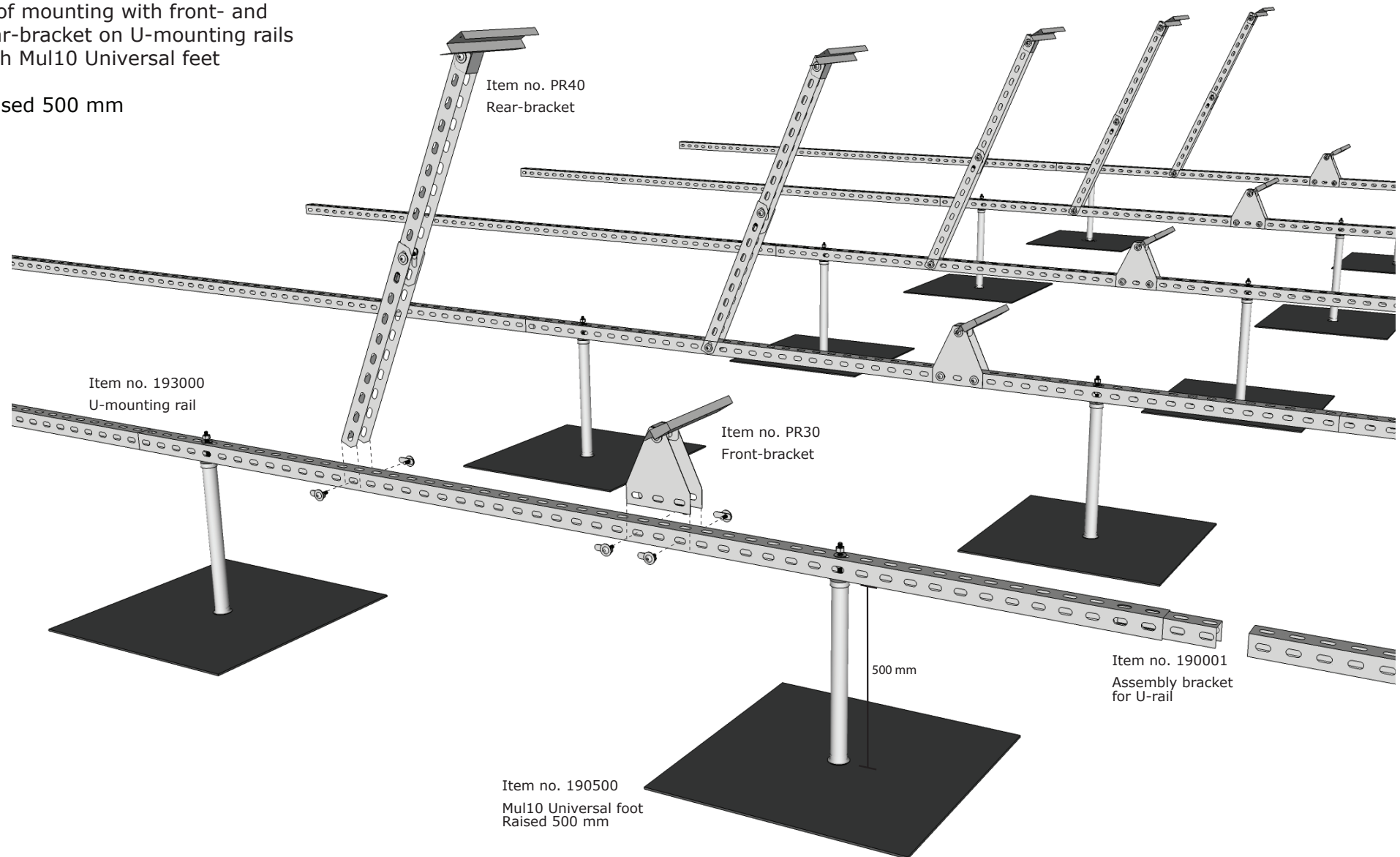
Roof mounting with front- and rear-bracket on U-mounting rails with Mul10 Universal feet.



Felt and sheet roofs:

Roof mounting with front- and rear-bracket on U-mounting rails with Mul10 Universal feet

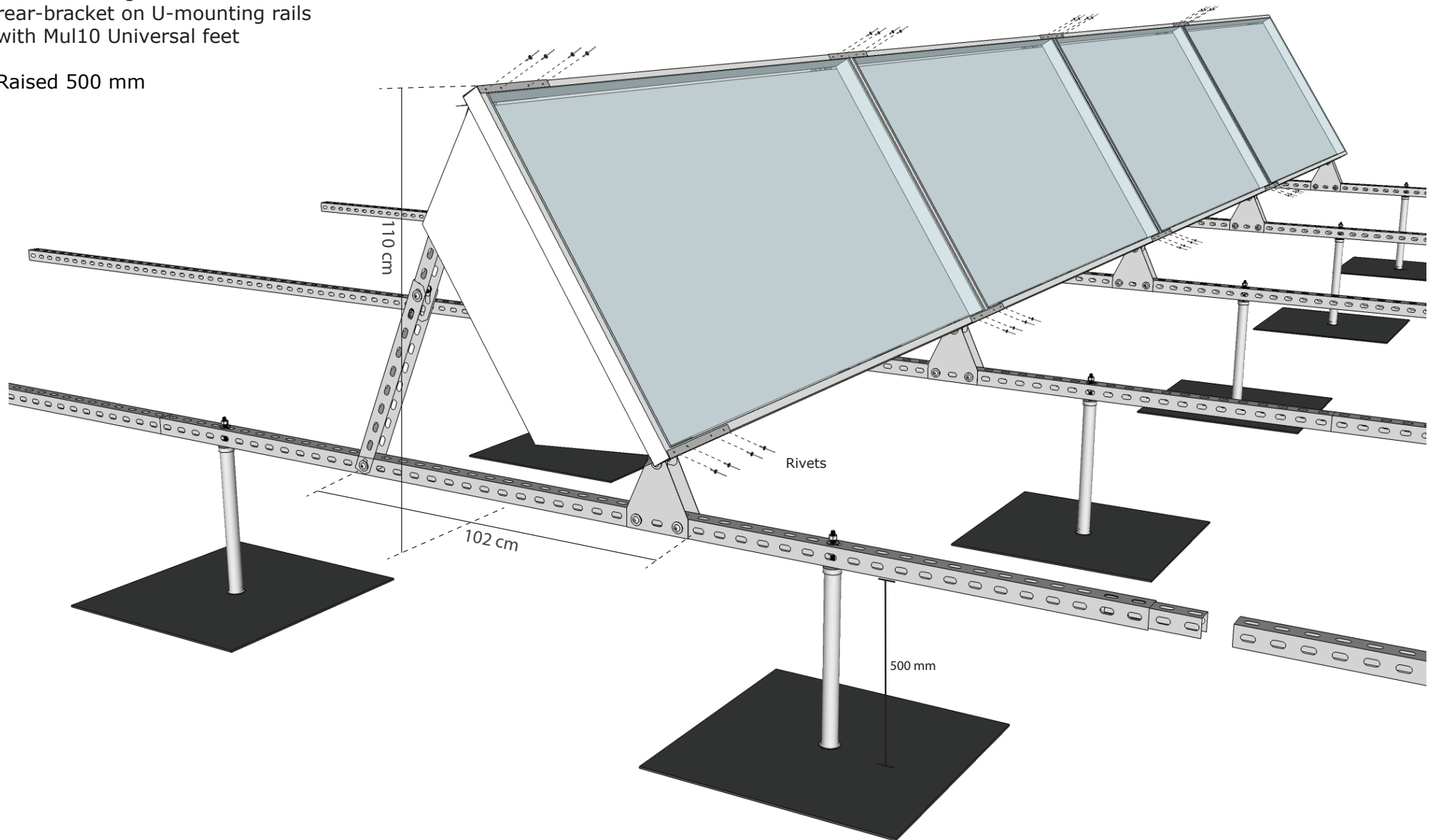
Raised 500 mm



Felt and sheet roofs:




Roof mounting with front- and rear-bracket on U-mounting rails with Mul10 Universal feet

Raised 500 mm


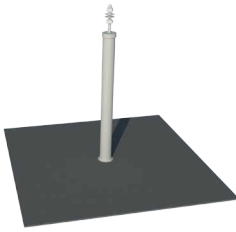



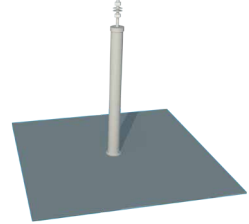

Felt and sheet roofs:

Felt and sheet roofs	Description	Item no.
<p>Single-bracket</p> 	<p>Single-bracket for roof mounting with Mul10 Universal feet</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 13 Drop-in bolts (assembled from factory)</p> <p>Included: 8 Rivets to secure the Solar Air Collectors</p>	PR20
<p>Front-bracket</p> 	<p>Front-bracket for roof mounting on U-mounting rails with Mul10 Universal feet</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 6 Drop-in bolts (assembled from factory)</p> <p>Included: 4 Rivets to secure the Solar Air Collectors</p>	PR30
<p>Rear-bracket</p> 	<p>Rear-bracket for roof mounting on U-mounting rails with Mul10 Universal feet</p> <p>Sea-water resistant Aluminium 57S</p> <p>Incl. 7 Drop-in bolts (assembled from factory)</p> <p>Included: 4 Rivets to secure the Solar Air Collectors</p>	PR40

Felt and sheet roofs	Description	Item no.
<p>Drop-in bolt</p> 	<p>1xM10 pan-bolt and clamp finger of Stainless Steel</p> <p>1 washer Ø30 mm</p> <p>Sea-water resistant Aluminium 57S</p>	190007
<p>U-mounting rail</p> 	<p>Sea-water resistant Aluminium 57S</p> <p>50x50x50 mm</p> <p>L: 3000 mm</p>	193000
<p>Assembly bracket for U-rail</p> 	<p>Sea-water resistant Aluminium 57S</p>	190001

Felt and sheet roofs:

Felt and sheet roofs	Description	Item no.
<p>Mul10 Felt-steel Universalfoot</p> 	<p>Adjustable hight 75 mm</p> <p>Stainless acid-proof steel AISI 316</p> <p>SBS top-felt and SBS under-felt mounted</p>	190103
<p>Mul10 Felt-steel Universalfoot</p> 	<p>Raised 500 mm</p> <p>Adjustable hight 75 mm</p> <p>Stainless acid-proof steel AISI 316</p> <p>SBS top-felt and SBS under-felt mounted</p>	190500
<p>Mul10 sheeting Universalfoot</p> 	<p>Adjustable hight 75 mm</p> <p>Stainless acid-proof steel AISI 316</p> <p>2-layer sheeting* mounted</p> <p>*Foil-type as required when ordered.</p>	190104

Felt and sheet roofs	Description	Item no.
<p>Mul10 sheeting Universalfoot</p> 	<p>Raised 500 mm</p> <p>Stainless acid-proof steel AISI 316</p> <p>2-layer sheeting* mounted</p> <p>*Foil-type as required when ordered.</p>	190504
<p>Treaded rods</p> 	<p>M12 Threaded rod with concrete screw</p>	PR50
	<p>M12 Threaded rod with wood screw</p>	PR60
	<p>M12 threaded rod with torque-controlled expansion anchor for trapezoidal roof</p>	PR70

Easy Installation of Universal foot with threaded rod:



Universal foot and 12 mm threaded rod.



1 Drill an 8 mm hole 80 mm into the concrete deck.



2 12 mm stainless steel threaded rod with pre-mounted concrete screw, screw fully down into the hole.



3 Shorten the threaded rod according to the template.



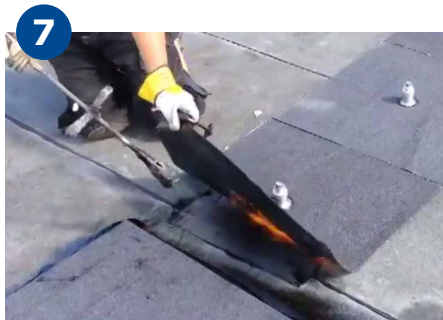
4 Deburr the threaded rod.



5 Tighten the universal foot directly down onto the threaded rod so there is 100% mechanical connection from the concrete screw to the console system.



6 Burn the under-felt to seal it according TOR's instructions.

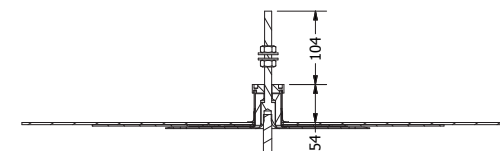


7 Burn the top-felt to seal it according to TOR's instructions.

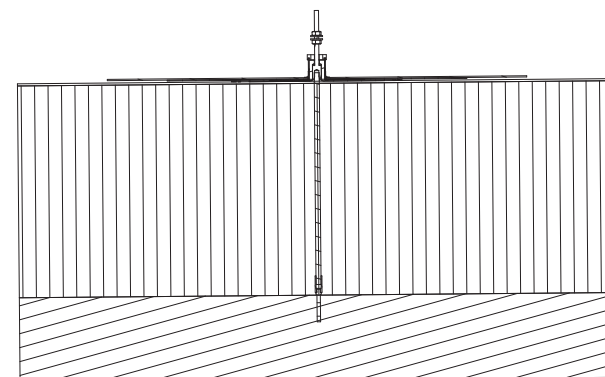


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Mounting with threaded rod:

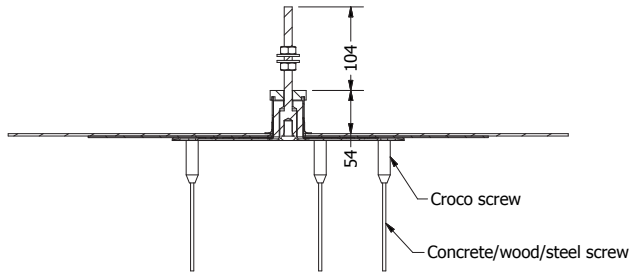


12 mm threaded rod
M12 / M10 reduction
Concrete screw

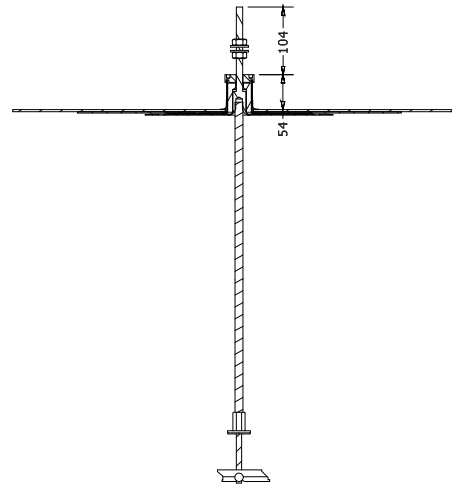


Mounting variations:

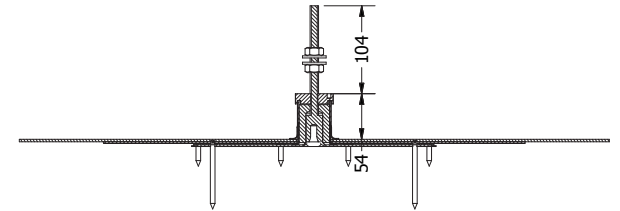
Mounting with Croco screws - concrete/wood/steel:



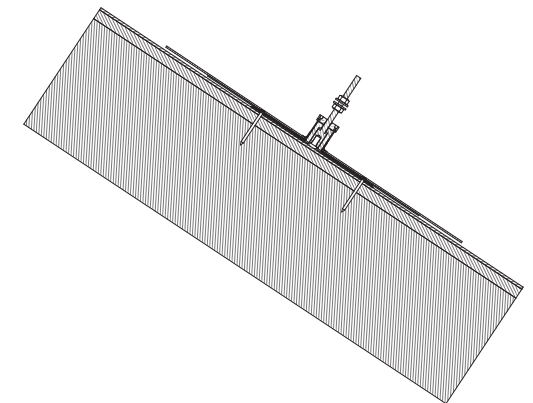
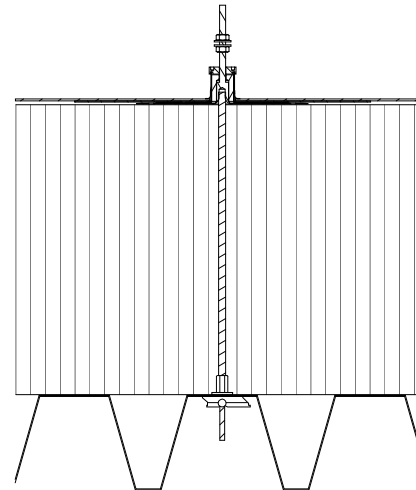
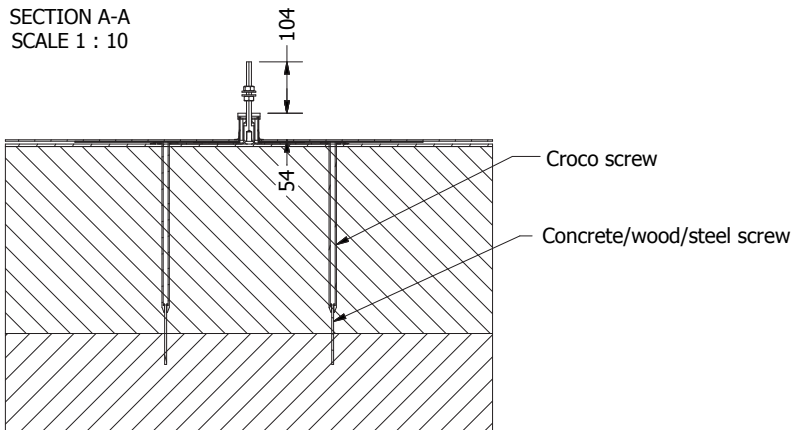
Fitting with torque-controlled expansion anchor on trapezoidal profile:



Installation on plywood/rafters

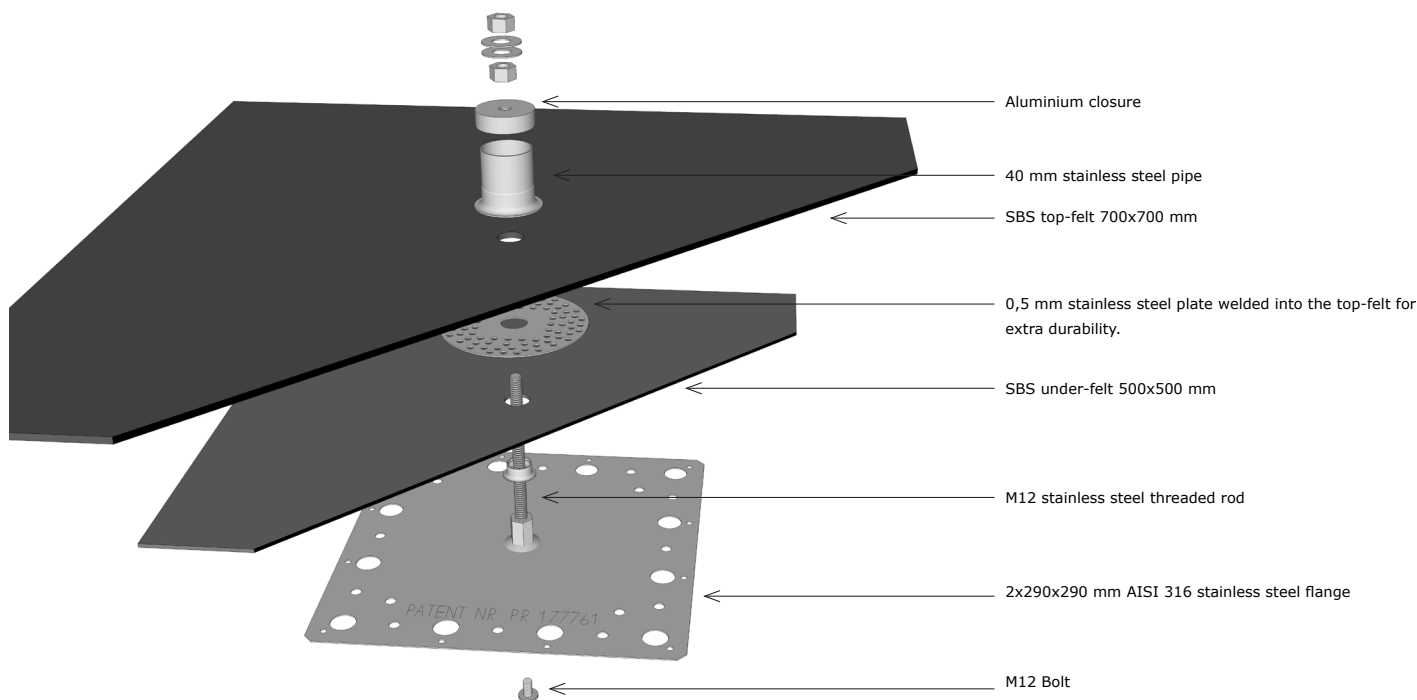


SECTION A-A
SCALE 1 : 10



Mul10 Universal foot:

The Universal foot is equipped with integrated felt or sheeting flange and ensures a fast and sealed fitting.



Patented Universal foot:

- Our patented universal foot is reinforced with two layers of steel.
- The two-piece top consists of a 40 mm stainless steel tube and a special closure made of aluminium.
- The stainless steel connection is sealed with silicone and provides a total waterproof penetration of the roof's membrane, while also ensuring a low level of heat transmission.
- It is supplied with all types of standard roofing membranes.

Thoroughly tested product:

- Vertical tensile test using a 12 mm stainless steel threaded rod attached in concrete deck. Test stop at 1000 kg, which is the scale's maximum load.
- Horizontal test, carried out by Grontmij in September 2012 and adjusted according to Eurocode 0.
- Mul10metal, in collaboration with Hega, represented by Henrik Pennerup, have developed a Fastening Calculator and a Console System Calculator.

Console foot's bearing capability:

- The console feet have a calculated lateral shear strength of 0.85 kN and up to 8.5 kN tensile strength, depending on the underlying material under the insulation.
- It is therefore recommended to perform a tensile test on the roof surface.

For high load:

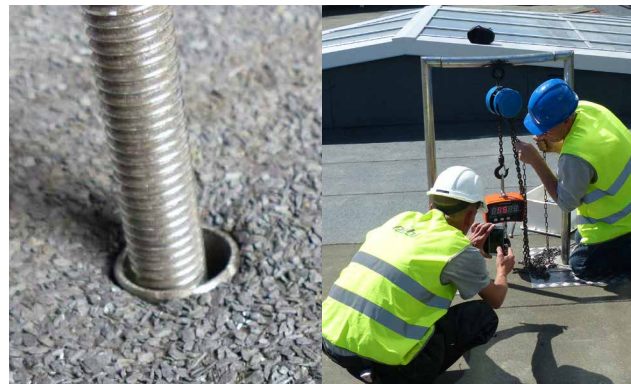
- In case of large/heavy loads (e.g. for ventilation systems, railings, wind breaks etc.), a 20 mm diameter stainless steel tube must be mounted around the threaded rod.
- This provides the console foot with a calculated bearing capacity with tubular support of 40 kN per console foot, which can be transferred to the supporting structure under the insulation.

Installation of pipe support between the console foot and the supporting structure:

- It is important to ensure that the Ø 20 pipe is in direct contact with the supporting structure and to shorten the pipe just below the top of the roof surface so that the console foot is in full contact with the underlay when it is screwed onto the threaded rod.



Installation with pipe support



Installation with pipe support

Tensile test for documentation

Mul10 calculators:

rektsværdi for skrue / bolt	350 kg	Hvis underlagets styrke ikke er bekendt, anbefales det at I foresøger en udvækslingsværdi. Beregningerne gælder kun værdien af skrue / bolte pr. fod i henhold til den indtastede værdi for udvækslingsstyrke, på de skrue / bolte, som ledderne fastgøres med.
celler pr. række	10 stk	
cellelængde i montereretning	120 m	
cellebredde i montereretning	165 m	16.5 Længde solcellestativ i meter
er bygningsspring, tagvinduer eller mere end en række solceller væg (ja eller nej)	Ja	Indtast monteringsvinkel af solceller i forhold til vandret
Kraftsvækninger pr. fod	0.70	Indtast bygningshøjden i m
Vandret forskydningskraft i kN/fod	4.25	
Lodret træk i kN/fod	0.81	
Vandret forskydningskraft i kN/fod	4.08	
Lodret træk i kN/fod	0.81	
Vandret forskydningskraft i kN/fod	2.86	
Lodret træk i kN/fod		
Bygning set fra siden		
De viste tal udenfor de farvede celler angiver mål i meter		
Tagplan		
3,0 G	F G F	Indtast bygningens bredde i m
G 19	I 19	
7,5 F	F G F	
F 5,0	F G F	Indtast bygningens længde i m
I 1		
Viste tal i de farvede celler med bugstav, viser antal fædder pr. stativ i det til bogstavet hørende område		
Det kan forekomme af 2x F er større end bredden eller længden på bygningen. Hvis det er tilfældet gælder antallet af fædder i F området for tallene i G & I. Områder med en farve / bogstav har samme værdi		

- Calculates the required number of feet.
- The calculator takes account of the location on the roof.
 - Edge zones: F, G, I.

Enter the following:

- Expected attachment vertically.
 - Panel size and direction.
 - One or more rows
 - Pitch of the panels.
- The height and width of the building.

Then the Mul10metal calculator will specify the optimized minimum number of Mul10metal feet.

General terms of sale and delivery for Mul10 Metal A/S

1. APPLICATION

The present general terms of sale and delivery apply to all deliveries from Mul10 Metal, unless otherwise agreed in writing.

2. OFFER & ORDER CONCLUSION

Unless otherwise agreed, any offer is non-binding and contingent on the Supplier's confirmation. Shipment is carried out in accordance with the Supplier's order confirmation and encompasses additional specifications in the order confirmation. The delivery estimate is determined from the time when the written order confirmation is submitted. Any delays in the delivery of the order do not entitle the Buyer to compensation.

3. DELIVERY

Unless otherwise agreed delivery is made ex-factory, and therefore shipment of the order is at the Buyer's expense and risk. Delivery within Denmark is free for orders exceeding 4,000 DK ex. VAT.

4. FORCE MAJEURE

In the event of major disturbances that prevent or substantially hinder the order execution or transport to the place of delivery, such as strike or lockout, in the event of delays beyond the Supplier's control concerning delivery of equipment, or because of the lack of qualified labour, as well as in the event of war, blockade, or unforeseeable collapse in the production plant, the delivery will be postponed without liability for the Supplier by a time-frame equal to the period of disturbance. The Buyer shall not be entitled to compensation of any kind for losses or similar, nor does the delay entitle the Buyer to withdraw from the purchase.

5. PRICE & PAYMENT

If an order, or part thereof, is confirmed for a delivery date further than 2 months away from the confirmation date, the Supplier reserves the right to debit the order at the price on the delivery date if the latter is higher. Unless otherwise agreed, payment terms are net 14 days. In case of failure to pay within the time limit, a 2% interest rate will be added to the order price per commenced month. The Supplier reserves the right to alter the agreed terms of payment in the event of justified suspicion pertaining to a Buyer's decreased capacity to pay for an order.

Any delay in payment grants the Supplier the right to suspend further deliveries, and in addition release them of any covenants with the Buyer including agreed obligations. Any counter-claim, for example arising from complaints regarding the delivered, shall not entitle the Buyer to withhold any portion of the payment.

6. LIABILITY FOR DEFECTS

Upon delivery, the Buyer shall immediately make such examination of the sold order as proper business use requires. If the Buyer wishes to claim a defect, the Buyer shall, at the latest 8 days after the defect is or should have been discovered, give the Supplier notice and specify what the defect entails.

If the Buyer discovered or ought to have discovered the defect, and he has not made a claim as indicated, the Buyer cannot make a claim at a later date. This must be done before the item is put in use. In the event of defects, Mul10 Metal A/S is entitled and obligated to remedy these in accordance with Mul10 Metal's choice to carry out repairs or issue a replacement. However, the Supplier repeals any liability for goods supplied no later than 5 years after delivery of the goods. Aside from the above, Mul10 Metal bears no liability for defects. This applies to any loss the defect may cause, including loss of production, loss of profit or other indirect losses and costs.

6.1 EXTENDED WARRANTY REGARDING MUL10 CONSOLE PRODUCTS (in force from June 2015)

Mul10 Metal A/S provides a 10 year warranty on console products (for Solarventi) that within this period break down and thereby lose their functionality. In addition, a 10 year warranty is provided on the SolarVenti product, if properly fitted in Mul10 Metal's console system, not detaching from the Mul10 Metal console system. Finally, the Supplier provides a 10 year warranty on the Mul10 multi-purpose foot, if properly fitted, not detaching from the roof or losing its compactness. The guarantee covers the replacement of the defective equipment.

The warranty is void if any of the following are true:

- a) the product was not installed in accordance with the instructions enclosed with the individual product or if non-original parts have been used.
- b) damage caused by improper use of the product.
- c) the damage is a consequence of natural disasters, acid rain and/or atmospheric conditions, including abnormal conditions.
- d) the damage has occurred due to lack of inspection - when installed on flat roofs, the console system must be inspected once a year.

7. CANCELLATION & RETURNS

Cancellation or changing of orders will be accepted if the Supplier assesses that the manufacturing process is not already too far under-way. Any modification is only valid once a written confirmation is made available. Received goods can only be returned with prior agreement and with reference to the packing slip or invoice. The goods must be unused and in defect-free condition. Specially manufactured goods are not returnable. Approved products are usually credited with a 20% deduction of the purchase price ex. VAT.

8. LIABILITY FOR DEFECTIVE PRODUCTS

The Buyer shall indemnify the Supplier to the extent that the Supplier is held liable to third parties for such damage and subsequent loss that the Supplier according to the second and third sections is not responsible towards the Buyer. The supplier is not liable for damage caused by goods:

- a) To real estate or fittings occurring while the goods are in the possession of the Buyer.
- b) For products in which they are included, or for damage to real estate or fittings that these products, as a result of the material goods, cause. In no event shall the Supplier be liable for consequential loss, loss of profit or other consequential economic loss.

The aforementioned limitations of the Supplier's liability do not apply if the Supplier has been guilty of gross negligence. If a third party makes claims against one of the parties of liability under this paragraph, it shall immediately inform the other party thereof. The Supplier and Buyer are mutually obliged to let themselves be sued by the Court or Arbitration Body which deals with claims that are made against one of them on the basis of damage or loss allegedly caused by the product. The interrelationship between the Buyer and the Supplier must, however, always be settled by arbitration in accordance with the law on arbitration which is applicable in the Supplier's country.



THE ROOFING SECTOR'S SAFE CHOICE

www.mul10metal.dk

Mul10Metal A/S

Gammelgårdsvej 18, Klakring
7130 Juelsminde
Denmark

Tel: +45 76 83 01 01

Fax: +45 76 83 01 00

mul10metal@mul10metal.dk



www.solarventi.dk

SolarVenti A/S

Fabriksvej 8

8881 Thorsø

Denmark

Tel: +45 86 96 67 00

info1@solarventi.dk