

ZELOS - Pitched roof

Translation of the assembly instruction into english



- + cost-effective and secure application
- + triple adjustable roof hook (2x vertical and 1x horizontal)
- + universal profile connection (3x channel for hammerhead screw connection)
- + easy and fast click-system for fastening the PV-modules
- + compact profile for smaller spans

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Translation of the assembly instruction

English

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Version 1

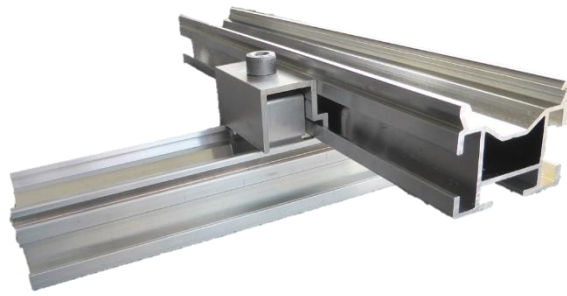
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1 ZELOS pitched roof solution

The ZELOS mounting system is used to mount a photovoltaic system on sloping roofs of all types (rafter/ purlin roofs; roof tiles, plain tile roofing, sliding tiles, trapezoidal sheet metal, seam roofing, sandwich elements, fibre cement panels). Depending on the roof, the roof is attached with hanger bolts, roof hooks and clamps. Especially the ZELOS roof hook ALU



VAR, which is triple adjustable in two directions, provides flexibility. The connection of the ZELOS profile is universally possible due to its side and bottom channels with hammerhead screws M8 28/15 and flange nut M8. Another strength of the mounting system is the Click system for assembling the module clamps onto the rails. The modules are mounted horizontal or vertical parallel to the roof. Depending on this, the system is assembled in one or two layers in a cross-laminated system. The ZELOS system is therefore a flexible system for small spans with short assembly times. It is supplemented by a project-specific wind suction calculation as proof of stability.

2 Usage of the assembly instruction




The **assembly instructions** are part of the ZELOS assembly system. The document contains important information on all phases of the product's life, especially on assembly. The assembly instructions are intended for qualified specialist for the (dis)assembly and maintenance of the ZELOS assembly system.




Qualified specialist are persons who, based on their technical training, knowledge and experience as well as their knowledge of the relevant standards, are able to assess the specified assembly steps and carry them out professionally as well as recognize possible hazards.




3 General instructions




- Keep the installation instructions for the entire lifetime of the product.
- Observe all country-specific regulations.
- Carry out the installation exclusively according to the project-specific module allocation plan of T.Werk GmbH.
- Coordinate all changes in the assembly of the mounting system as well as all changes to the building that take place after the project-specific module layout plan and the project-specific wind suction calculation have been created with T.Werk GmbH. Otherwise, the warranty and the proof of stability shall expire. The same applies to incorrect information provided when placing the order.

4 General safety instructions

 WARNING		
	<p>Warning of loose components due to improper assembly</p> <ul style="list-style-type: none"> ➤ Make sure that you have read and understood the assembly instructions completely before starting the assembly work. ➤ Carry out the installation according to the specifications of T.Werk GmbH - in accordance with these installation instructions. ➤ Only carry out the planning if you are qualified specialist. ➤ Only carry out the subsequent installation if you are a qualified specialist. ➤ Only carry out the subsequent commissioning if you are a qualified specialist. ➤ Only carry out maintenance and servicing if you are a trained specialist. ➤ Failure to do so may result in personal injury and damage to the system. 	

 WARNING		
	<p>Warning against sharp-edged assembly components</p> <ul style="list-style-type: none"> ➤ Use gloves for assembly work. ➤ Failure to do so may result in injury to the hand. 	

 WARNING		
	<p>Warning of heavy falling assembly components.</p> <ul style="list-style-type: none"> ➤ Use safety shoes for assembly work. ➤ Failure to do so may result in injury to the foot. 	

 WARNING		
	<p>Risk of falling and injury</p> <ul style="list-style-type: none"> ➤ Observe the national accident prevention regulations. ➤ Install fall protection devices in accordance with the applicable standards. ➤ Prevent unauthorised persons from entering the assembly area. ➤ Block off the assembly area. 	

5 Warranty conditions



We guarantee that, with proper handling and installation and under normal conditions of use, operation and maintenance, for a period of twelve years from the date of sale from T.Werk GmbH, our components will be free from defects in material and workmanship.

If, despite proper handling and installation, the quality of a component does not meet the warranty conditions or damage occurs, we will replace the affected component or provide a replacement immediately within the warranty period. We reserve the right to repair defective components.

Any costs incurred for the removal, return transport and reinstallation of the components are excluded from this guarantee.

The obligation to provide a guarantee does not apply in the case of:

- improper installation and handling of the system
- force majeure, exceptional forces of nature and exceptional circumstances beyond our control (e.g.: biological and chemical effects, storm damage, volcanic eruptions, earthquakes, hurricanes, lightning, ...)
- improper maintenance
- instability and insufficient stability of the building substrate
- Signs of wear / wearing parts
- Optical surface changes (e.g.: Discolouration of edges and punched holes on galvanized materials or discolouration on the surfaces of aluminium and steel profiles).
- Vandalism or wilful damage
- misuse or negligent application
- Alteration of the products

Claims under the guarantee may not be made by third parties without our consent.

Claims can only be asserted by our contractual partner.

No claims can be made if the damage is covered or can be covered by insurance.

A requirement for the effectiveness of this guarantee is the exclusive use of our components or components recognized by us as well as compliance with our assembly instructions and the legally prescribed or generally recognized standards and the full payment of our components or the contract on which the components are based. Offsetting or rights of retention are not permitted.

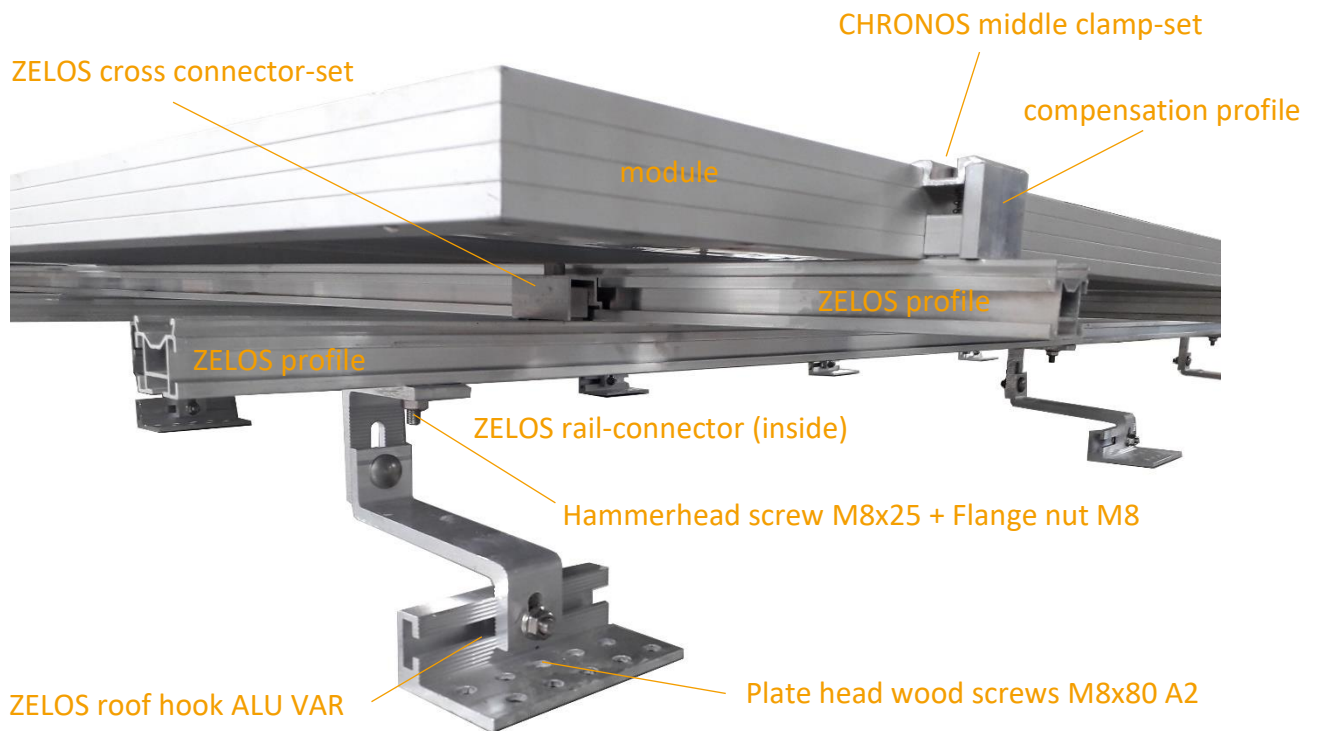
T.Werk GmbH is not liable for additional or consequential damages.

In case of justified warranty claims, please contact T.Werk GmbH or your authorized seller immediately in writing.



Legal warranty or liability claims remain unaffected by this guarantee. Our General Terms and Conditions as well as German law apply.






6 Structure of the ZELOS – Pitched roof solution

The structure of the ZELOS mounting system is explained by way of example in the version with roof hooks and in cross-connection.








An overview of all components of the ZELOS mounting system is shown in the following table.

article	execution	article-nr.	weight
 <p>ZELOS roof hook ALU VAR</p>	<p>triple adjustable roof hook pre-assembled with CHRONOS roof adapter Bracket, angle: 35 mm, EN AW 6082 T6 Base plate: 120 mm, EN AW 6063 T66 Screws: SW13, A2</p>	SOV01098	0,45 kg
 <p>Roof hook STD</p>	<p>Material: stainless steel 1.4301 Bracket: 30 mm x 6 mm Base plate: 150 mm x 50 mm x 5 mm</p>	SOV00033	0,65 kg

 Roof hook plain tile	Material: stainless steel 1.4301 Bracket: 30 mm x 5 mm Base plate: 30 mm x 75 mm x 5 mm Only in combination with metal roof panel plain tile VAR /VAR CU	SOV00116	0,52 kg
 Metal roof panel plain tile	Plain tile VAR	SOV00230	0,8 kg
	Plain tile VAR CU	SOV00117	0,4 kg
	Other metal roof panels on request	Depending on type	Depending on type
 Plate head wood screws	M8 x 80 Material: stainless steel V2A; Drive: TX40 with building authority approval	SOV0068	0,02 kg
	M8 x 120 Material: stainless steel V2A; Drive: TX40 with building authority approval	SOV00069	0,03 kg
	other lengths up to 300 mm on request	Depending on length	Depending on length
 Hanger bolt (on wooden substructure)	M10 x 200 mm; 3xFM + 1xEPDM seal/calotte; SW7; stainless steel A2; building approval	SOV00036	0,121 kg
	M10 x 250 mm; 3xFM + 1xEPDM seal/calotte; SW7; stainless steel A2; building approval	SOV00037	0,136 kg
	M12 x 200 mm; 3xFM + 1xEPDM seal/calotte; SW9; stainless steel A2; building approval	SOV00246	0,2 kg
	M10 x 250 mm; 3xFM + 1xEPDM seal/calotte; SW7; stainless steel A2; building approval	SOV00038	0,215 kg
	M10 x 300 mm; 3xFM + 1xEPDM seal/calotte; SW7; stainless steel A2; building approval	SOV00039	0,24 kg
 Solar fastener (steel substr.)	M10x Length mm Length depending on shaft/bead height or sandwich thickness of cover (height + 20 mm) Stainless steel A2 with special sliding coating FM + EPDM seal/calotte Clamping range: depending on length Internal hexagon 5 mm incl. sealing washer E19 and calotte Approval by the building authorities	Depending on length	Depending on length

 <p>Adapter plate</p>	11 mm round hole; 11 mm slotted hole Adapter plate for hanger bolt M10 Dimension: 82 x 40 x 5 mm Stainless steel A2	SOV00022	0,11 kg
	13 mm round hole ; 11 mm slotted hole Adapter plate for hanger bolt M12 Dimension: 82 x 40 x 5 mm Stainless steel A2	SOV00023	0,11 kg
 <p>Various clamps standing seam</p>	Sheet metal seam clamp A2 STD	SOV00029	0,4 kg
	CHRONOS sheet metal seam clamp	SOV00402	0,35 kg
	KalZip clamp A2	SOV00030	0,4 kg
	CHRONOS KalZip clamp	SOV00403	0,3 kg
	Round seam clamp Alu	SOV00539	0,05 kg
	Round seam clamp Alu big	SOV01050	0,05 kg
	RIB-ROOF 465 clamp A2	SOV00225	0,4 kg
	RIB ROOF 500 clamp A2	SOV00838	0,4 kg
	RIB ROOF 500 clamp original	SOV00957	0,4 kg
	Domitec-clamp	SOV00720	0,04 kg
	S-5® standing seam clamp Typ E	SOV00996	0,106 kg
	S-5® standing seam clamp Typ E Mini	SOV00932	0,066 kg
	S-5® standing seam clamp Typ E-Mini-FL	SOV00717	0,044 kg
S-5® standing seam clamp Typ Z-mini	SOV01092	0,176 kg	
S-5® standing seam clamp Typ Z-mini-FL	SOV01166	0,176 kg	
 <p>Hammerhead screw 28/15 M8x25 A2</p>	Material: stainless steel A2 Type: 28/15 PU: 100 pcs	SOV00699	0,038 kg
 <p>Flange nut M8</p>	Material: stainless steel A2 DIN 6923 with locking teeth PU: 100 pcs	SOV00051	0,007 kg

 <p>Adapter bracket</p>	<p>Length: depending on the high bead distance Material: aluminium AW6060 Dimensions: 40 x 40 x 4 mm with slotted holes 11 mm</p>	<p>Depends on length</p>	<p>Depends on length</p>
 <p>ZELOS profile</p>	<p>Length: 3,2 m Material: Aluminium EN AW 6063 T66 EN 755-9 Surface press-finished w x h: 42 x 34 mm upper channel: CHRONOS Click lower / side-channel: HHS 28/15</p>	<p>SOV01061</p>	<p>2,99 kg</p>
 <p>ZELOS rail connector</p>	<p>Material: Aluminium EN AW 6063 T66 Surface press-finished dimensions: 22,6 x 11,4 x 200 mm internal rail connector for CHRONOS Click: 2 pcs for ZELOS: 1 pc</p>	<p>SOV01066</p>	<p>0,055 kg</p>
 <p>ZELOS cross connector</p>	<p>ZELOS cross connector with CHRONOS clamping adapter and cylinder head screw M8x35 Material: Aluminium EN AW 6063 T66 / A2 Surface: bright pressed Dimensions: 29,3 mm x 26,3 mm x 50 mm / 39.4 mm x 10 mm x 25 mm pre-assembled</p>	<p>SOV01096</p>	<p>0,062 kg</p>
 <p>CHRONOS middle-clamp-set</p>	<p>Pre-assembled centre clamp for all framed PV modules from 29 - 51 mm frame height. Clamp width 19 mm</p>	<p>SOV00278</p>	<p>0,055 kg</p>

 <p>Compensation profile</p>	<p>Available for every frame height (FH)</p>	<p>Depends on FH</p>	<p>0,014 kg bis 0,020 kg</p>
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7 Transport

For the transport of the ZELOS assembly system, the ZELOS profiles are packed in bundles according to the length of the profiles and lashed. The small material of the ZELOS assembly system is picked in cartons and then packed together on pallets, wrapped and lashed.




Make sure that all packages are well secured and protected from damage during transport. Otherwise, the packages may be damaged or lost.

8 Storage

Recommendation of T.Werk GmbH:

Only store the assembly material in closed rooms, fenced areas or under supervision. Otherwise there is an increased risk of theft of the assembly material.

9 Unpacking

 DANGER		
	<p>Danger of asphyxiation from foils and packaging material.</p> <ul style="list-style-type: none"> ➤ Dispose of the foils and packaging material as soon as possible after unpacking. 	

Cut the lashing straps wrapped around the bundles and pallets with a cutter knife. Then remove the foils. Then cut the straps of the individual boxes. Now remove the assembly material.

Check the assembly material immediately after receipt for completeness and for possible damage during transport. In the event of a defect, contact T.Werk GmbH immediately..

10 Assembly



Needed Tools

- 1.) Measuring tools for marking the module field (laser, angle, chalk/string, tape measure, chalk/marker pen).
- 2.) Cordless screwdriver/torque wrench
- 3.) Screwdriver bits for hexagon socket SW6
- 4.) Torx TX-40
- 5.) Angle grinder with diamond disc
- 6.) Safety goggles
- 7.) Open-end spanner SW13



Requirements

- 1.) First check the roof for damage (cracks, holes, brittleness, ...). If necessary, document the existing damage to the roof. Submit the documentation to your client before the start of construction and before components are placed on the roof.
- 2.) Before working on the roof, be sure to check the roof's residual load-bearing capacity. During the entire assembly work, make sure that the maximum local load of the roof is not exceeded. Otherwise the roof may be damaged.
- 3.) Make sure that the roof is free of dirt, moss, water accumulation, snow, ice and objects. Do not start the installation until all these conditions are met.
- 4.) Measure the module field according to the module layout plan. Separate the module fields after approx. 15-20 modules. This allows for thermal expansion of the modules and creates a maintenance aisle. Mark the outer edges of the module field. Check all dimensions on site before you start the installation.
- 5.) Observe the module manufacturer's specifications in the installation instructions for clamping and module mounting.

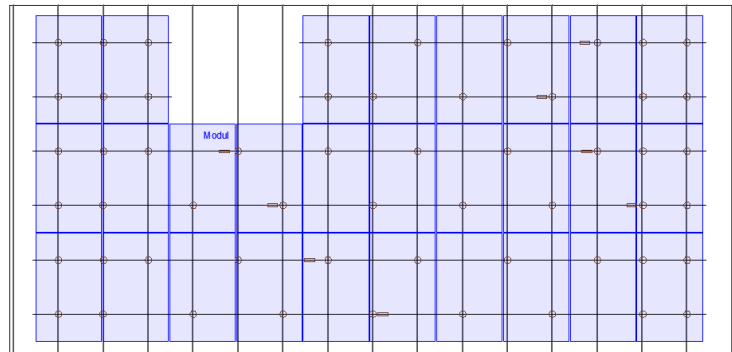


1 Install the roof fastening for a rafter roof (depending on variant 1 - 2)

Measure the first profile layer and the places for the roof hooks and then mark them.

Variant 1:

Rafter roof
Modules vertical
single-layer system



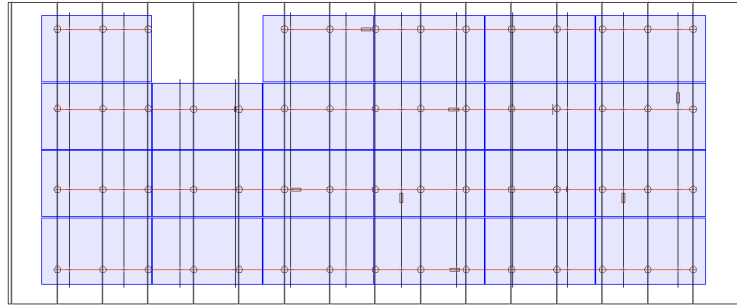
- Rafter
- ZELOS Profile
- ZELOS Roof hook
- ZELOS Rail connector

1.1

Roof fastening	1. Profile position	2. Profile position	ZELOS RC
<p>Specification for number and placement of roof hooks: statics, rafter spacing (65 - 120 cm).</p> <p>Cantilever up to 500 mm depending on snow load</p> <p>With low snow loads and small rafter spacing: roof hooks on every second rafter; edge area on every rafter due to increased wind suction loads.</p> <p>Recommendation for even loading: roof hooks alternately on the rafters.</p>	<p>two ZELOS profiles per module row</p> <p>Distance depends on: Module alignment, module dimensions, clamping range of the modules (module manufacturer's specifications).</p> <p>Spacing of modules between rows: approx. 10 mm</p> <p>Position of the profiles depends on the distance between tile / roof panel</p>	-	<p>Rail connector near the roof hook, distance max. 25 - 30 cm</p>

Variant 2:

Rafter roof
Modules horizontal
double-layer system



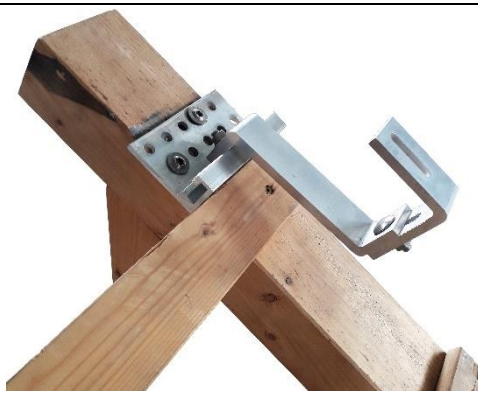
- Rafter
- ZELOS Profile
- ZELOS Profile
- + ZELOS Cross connector-set
- o ZELOS Roof hook
- ZELOS Rail connector



Roof fastening	1. Profile position	2. Profile position	ZELOS RC
<p>Specification for number and placement of roof hooks: statics, rafter spacing (65 - 120 cm).</p> <p>Cantilever depending on snow load up to 300 mm</p>	<p>horizontal distance of the 1st profile and number of roof hooks depending on statics depending on snow load: approx. 80 to 125 cm</p> <p>Position of the profiles depends on the distance between tile/roof panel</p>	<p>two ZELOS profiles per module row</p> <p>Distance depends on: Module dimensions, clamping range of the modules (specification of the module manufacturer).</p> <p>Distance between the modules in the rows: approx. 10 mm</p>	<p>near the roof hook (1st profile layer), in the area of the 1st profile layer (2nd profile layer), distance max. 25 - 30 cm</p>

1.2 Carefully remove the roof tiles /sheets in the area of the rafters at the point where the roof hooks are to be placed.

1.3 Tighten a string to set the roof hooks in alignment (1).
 Make sure that the brackets of the roof hook are aligned exactly the same in height and direction to the pro-file. Adjust the variable roof hook if necessary or use spacers (2).
 If the rafter is too narrow, double up the rafter with wood; screw edge: min. 4 x screw diameter (3)

1.4 Then set the roof hooks that the bracket comes out of the roof in the corrugation valley of the roof tile/panel.
 Fasten the roof hooks to the rafter with at least two pan-head wood screws at the exposed point.



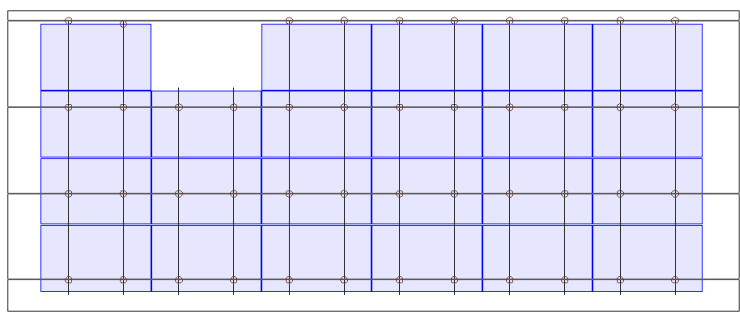
	Remove the bottom seam of the roof tile/panel with an angle grinder.
1.5	<div style="background-color: red; color: white; padding: 2px;">⚠ DANGER</div> <div style="display: flex; align-items: center;">  <div style="flex-grow: 1;"> <p>Danger from sparks</p> <ul style="list-style-type: none"> ➤ Put on protective goggles to protect your eyes when working with the angle grinder. ➤ Failure to do so may result in injury to the eye. </div>  </div>
1.6	<p>Put the roof tile/panel back in its original place. (1)</p> <p>Replace the plain tile with a metal replacement tile. (2)</p>
1.7	The roof fastening for a rafter roof is in place.

2 Attach the roof fastening for a purlin roof

On roofs with corrugated sheets, trapezoidal sheet metal or sandwich elements, the substructure is mainly laid horizontally (wooden or steel purlins). Therefore, it is common to lay the modules horizontally with a single-layer system.

Measure the profile position and the position of the roof hooks. Then mark the position.

2.1 Purlin roof
Modules horizontal
Single layer system



Purlins
 ZELOS Profile
 Adapter plate bar with hanger bolt

Roof fastening	1. Profile position	ZELOS RC
<p>Specification for number and placement of hanger bolts: statics, purlin spacing for > 1.35 m: 2 hanger bolts each at the spacing of the high beads/shafts + angle adapter for mounting the profiles.</p> <p>Cantilever depending on snow load up to 250 mm</p>	<p>two ZELOS profiles per module row</p> <p>Spacing depending on: Module measurement, clamping range of the modules (specification of the module manufacturer), high beading/shafts.</p> <p>Spacing of the modules between the rows: approx. 10 mm</p>	<p>near the hanger bolt, distance max. 25 - 30 cm</p>



The purlin spacing is visible by the fixing screws of the fibre cement boards, trapezoidal sheets or sandwich panels. The fixing screws can also be replaced by hanger bolts.

Drill the following pilot holes to set the hanger bolts:

Diameter hanger bolt (wood)	M10	M12
Diameter pilot hole in mm	7,0	8,0
Anchorage depth wood screw	4-12 x screw diameter	

2.2

Solar fastener (Steel)				
Steel thickness in mm	1,5-5,0	5,0-7,5	7,5-10	>10
Diameter pilot hole in mm	6,8	7,0	7,2	7,4

Pilot hole Fibre cement panels: with an diameter of 14 mm

2.3

Remove all contamination, including pre-drilling chips, from the surface of the roofing.

2.4

Place the storm domes on the high beads/shafts. Make sure that the EPDM seals, which are already pre-mounted on the hanger bolt, are in full contact.

2.5

Screw the hanger bolts vertically downwards.
Do not tighten the hanger bolt with torques.
When screwing, make sure that the EPDM seals are lightly compressed and lie on the full surface.

2.6

Adjust the hexagon nut for the adapter plate to the required height (1).
Secure the adapter plate between the two washers with a lock nut (2).
Align the adapter plates exactly (3).
Tighten the lock nut firmly with two open-ended spanners.

2.7

Tension a cord from the upper to the lower adapter plate of a row (1).
The exact alignment in height and position makes it easier to screw on the ZELOS profile. Align the adapter plate exactly (2).
Then tighten the M8 flange nut firmly (3).

2.8

The roof fastening for a purlin roof is in place.

3 Attach the roof fastening on a seam roof

Measure the first profile position and the position of the clamps. Then mark them afterwards.

Seam roof, modules vertikal, single-layer:

Roof fastening	1. Profile position	2. Profile position	ZELOS RC
<p>Specification for number and placement of clamps: statics, distance between seams</p> <p>depending on snow load: skip rebates; clamp each rebate at the outermost two rebates</p> <p>Cantilever depending on snow load up to 250 mm</p>	<p>two ZELOS profiles per module row</p> <p>Distance depends on: Module dimensions, clamping range of the modules (specification of the module manufacturer).</p> <p>Distance between the modules in the rows: approx. 10 mm</p>	-	<p>in der Nähe der Klemme, Abstand max. 25 - 30 cm</p>

3.1

Seam roof, modules horizontal, double-layer:

Roof fastening	1. Profile position	2. Profile position	ZELOS RC
<p>Specification for number and placement of clamps: statics, distance between seams</p> <p>depending on snow load: skip rebates; clamp each rebate at the outermost two rebates</p> <p>Cantilever depending on snow load up to 250 mm</p>	<p>Vertical distance of the 1st profile and number of clamps depending on statics</p> <p>depending on snow load: approx. 80 to 125 cm</p>	<p>two ZELOS profiles per module row</p> <p>Distance depends on: Module dimensions, clamping range of the modules (specified by the module manufacturer).</p> <p>Distance between the modules in the rows: approx. 10 mm</p>	<p>near the clamp (1st profile layer), in the area of the 1st profile layer (2nd profile layer), distance max. 25 - 30 cm</p>

3.2 Mount the clamps at the marked positions.

3.3 Tension a cord from the upper to the lower clamp of a row (1).
The exact height and position alignment facilitates the assembly of the ZELOS profile.
Align the clamps exactly (2).
Tighten the clamp (3).

3.4 The roof fastening for a seam roof is attached.

4 Mount the first layer of ZELOS profiles

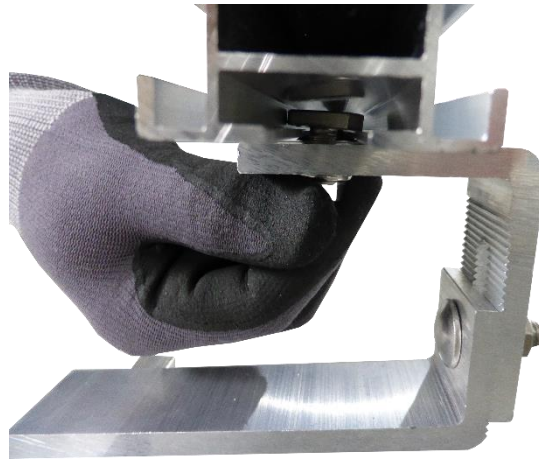
4.1

Position the ZELOS profiles at the desired position on the roof. Make sure that the connection point to the next profile is close to a roof fastening point.



4.2

Insert or turn the M8x25 hammerhead screws into the bottom channel of the ZELOS profile. Insert the hammerhead screw through the hole patterns provided for the fastening points already attached to the roof. Place the ZELOS profile on the fastening points.



4.3

Tighten the hammerhead bolts with an M8 flange nut to fix the ZELOS profile to the fixing points.



4.4

Insert the ZELOS rail connector at joints into the internal channel at the end of the first profile.



4.5

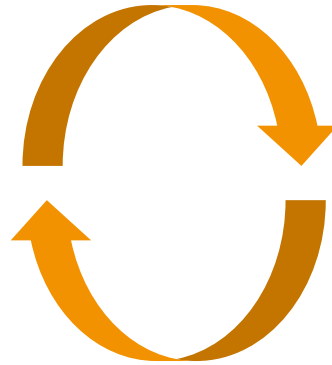
Slide the second profile onto the rail connector.



4.6

Now screw the profile that you have just attached to the rail connector to the roof fastening points according to 4.2 and 4.3.

Repeat the above assembly steps for each row of profiles.



4.7

The first layer of ZELOS profiles is attached.







5 Optional: Mount the second layer of ZELOS profiles (for cross mounting).

5.1

Measure the second profile layer and mark it.



<p>5.2</p>	<p>Click the ZELOS cross connector sets into the upper click channel of the first profile layer at the just marked crossing points (1).</p> <p>Position the ZELOS cross connector sets exactly (2).</p>	
<p>5.3</p>	<p>Place the ZELOS profiles in their respective positions. Make sure that the cross connector is inserted in the side channel of the upper rail.</p>	
<p>5.4</p>	<p>Screw in the cylinder head screw M8x35 of the ZELOS cross connector set with a hexagon socket SW6 at a torque of 10 Nm to fix the second profile layer and the ZELOS cross connector set on the first profile layer.</p> <p>The ZELOS rail connectors are set according to 4.4 - 4.6.</p>	
<p>5.5</p>	<p>The second layer of ZELOS profiles is attached.</p>	

6 Attach the modules

6.1

Click the CHRONOS middle clamp sets into the ZELOS profiles at the clamping points.



6.2

Place a module and slide it onto the CHRONOS centre clamp sets already clicked in at the beginning of the rail.

Make sure that there is a distance of 3.5 cm from the end of the profile.



6.3

Place one compensating profile each on the CHRONOS center clamp set on the free-standing side at the beginning of the row (1).


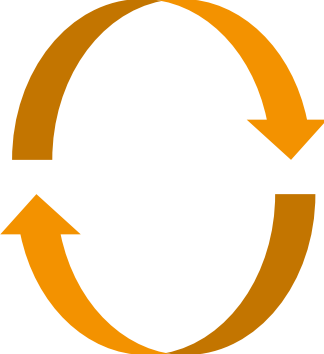

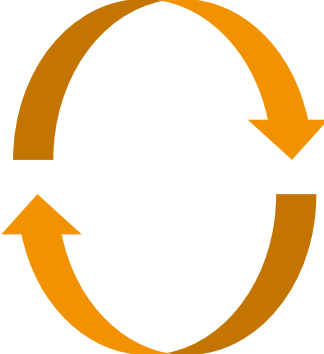
Then screw in the cylinder head screw of the CHRONOS center clamp set with a hexagon socket SW6 with a torque of approx. 10 Nm (observe the specifications of the module manufacturer) (2).



6.4

Place the next module in the row against the one already mounted.



<p>6.5</p>	<p>Then screw in the cylinder head screw of the CHRONOS centre clamp set with a hexagon socket SW6 with a torque of approx. 10 Nm (follow the specifications of the module manufacturer).</p>	
<p>6.6</p>	<p>Repeat assembly steps 6.4 and 6.5 until the end of the row.</p>	
<p>6.7</p>	<p>At the end of the row, an additional compensating profile must be positioned under the middle clamp set on the free-standing side of each CHRONOS middle clamp set.</p>	
<p>6.8</p>	<p>Repeat assembly steps 6.2 to 6.7 for each row.</p>	

6.9

The ZELOS mounting system is fully mounted on the roof.



11 Maintenance and servicing

Inspect the ZELOS mounting system once a year. In addition, inspect the ZELOS mounting system after extraordinary events (severe storms, earthquakes, ...). Annual maintenance is an important prerequisite for the guarantee.

1. Visually check that all modules are in the correct position.
2. Spot-check the strength of all screws.
3. check the correct position of the balancing profile at the end of the row.

Contact T.Werk GmbH if any components are damaged. Replace them with new functional components.

12 Disassemble

Disassemble the ZELOS mounting system in reverse order of assembly.

To do this, carry out the assembly steps from the chapter Assembly starting from the latter to the former aspect.

13 Disposal

Dispose of the individual components of the ZELOS assembly system separately, observing the local and official regulations.

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