SOLARSTONE

Solar Carport Classic Single and Classic Duo

Technical Specifications & Installation Manual

Version: 1.0 | 28-Mar-2023

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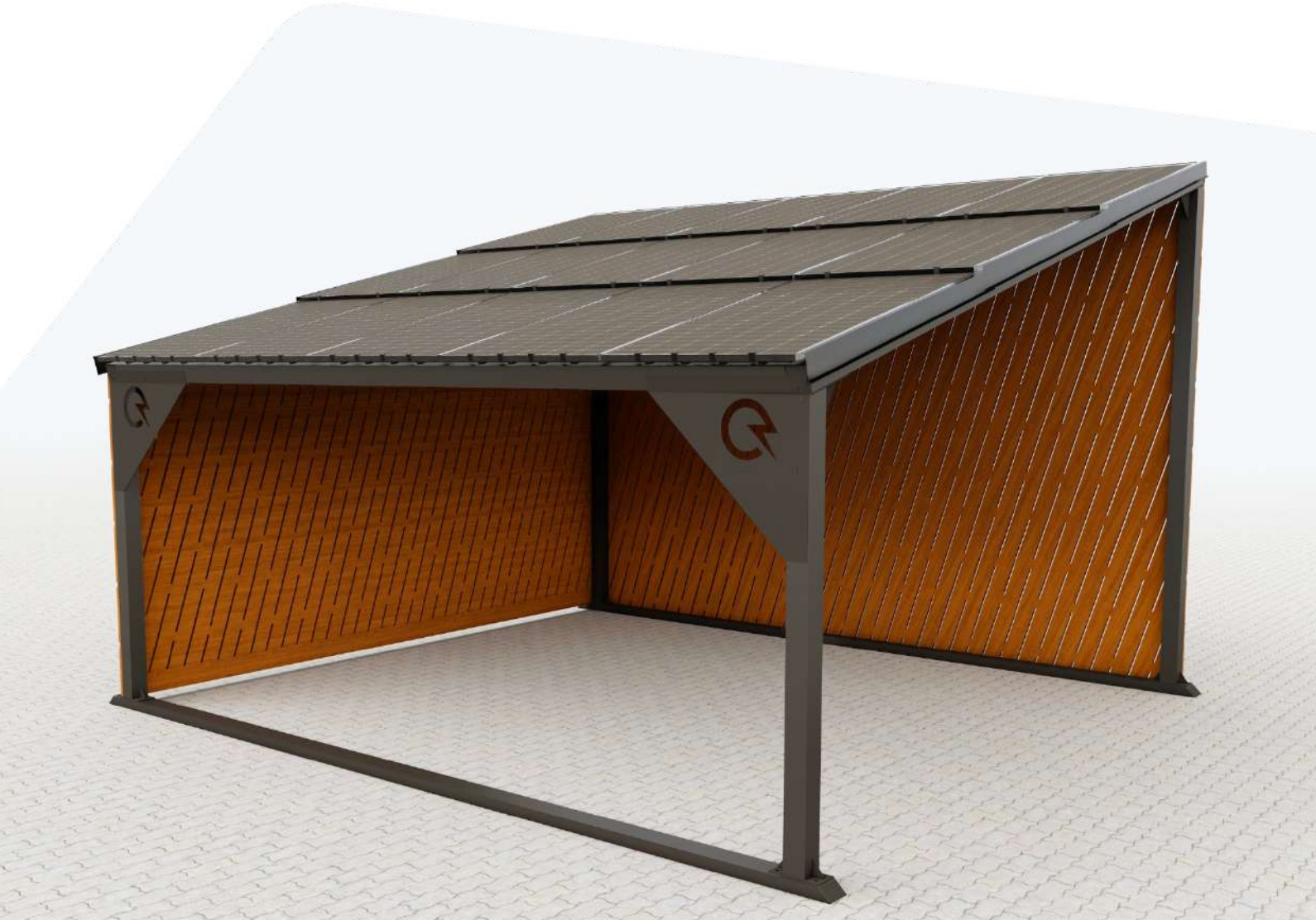

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Description

Solarstone® Solar Carport produces electricity for self-consumption and can charge an electric car. Surplus energy can be sold back to the grid – that way the carport pays for itself. Solarstone®'s building-integrated solar panels ensure resource efficiency, a pleasing appearance and water-tightness. The most modern components of the PV industry are used in the carports, which have passed safety tests.

With Solarstone®'s awarded and patented Click-on® technology, we can use 390 W solar panels and achieve high productivity even on a small roof surface. The Solar Carport will generate electricity for at least 25 years. The carport is incredibly durable and was designed, developed and tested for the Nordic market!

Solarstone®'s Solar Carport comes with an integrated 22 kW EV charger (optional). For optimal gains the carport should be connected to the power grid. This will allow you to use surplus energy for self-consumption or charge your electric car at any time of day. If desired, you can make a simple modification on your phone to charge your car with solar energy only, and no additional electricity will be purchased from the grid.

- Solar power for self-consumption
- Earn credit by selling surplus energy
- Charge electric vehicles
- Less dependence on electricity prices

Solar Carport Classic Single can park one car and has a 3.9 kWp solar roof which will produce approximately 3000 kWh per year. **Solar Carport Classic Duo** can accommodate two cars and has a 5.85 kW solar roof which will produce approximately 5000 kWh per year. The carport's sides can be cladded with timber boards or plexiglass to provide even more protection against different weather conditions.

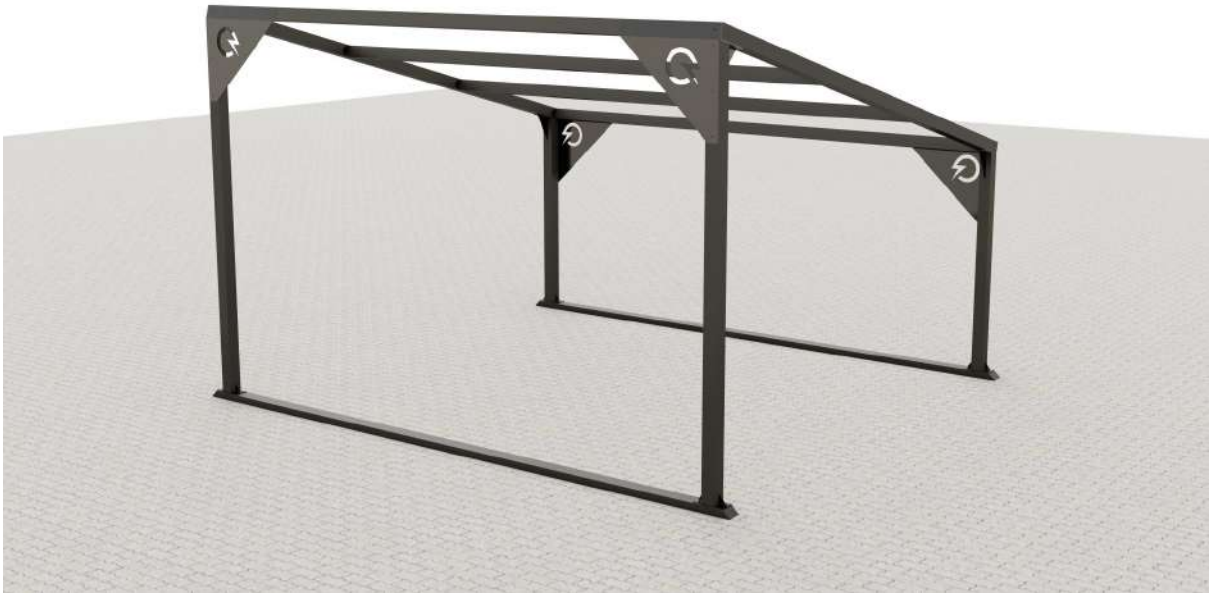
- Protects cars from direct sunlight
- Provides protection from the weather
- Offers functionality similar to that of a garage
- Electric car charging option – do so economically and using renewable energy
- Less dependence on fluctuations in electricity prices

Specifications

Solar Carport Classic Single and Duo			
TOTAL OUTPUT	3900 W (Single) or 5850 W (Duo)		
PROFILE MATERIAL	Galvanized steel		
FRAME THICKNESS (mm)	120	120	4
EXTERNAL MEASUREMENTS (mm)	Single: 3481x5897x2458-3381 (WxLxH) Duo: 5181x5897x2458-3835 (WxLxH)		
AVAILABLE COLORS	Black (BLK)		
MANUFACTURER	Solarstone OÜ (Estonia)		
PV-MODULE	Risen-390W		
ROOF DIMENSIONS	Single: 3564x5607 (WxL) Duo: 5321x5607 (WxL)		
INVERTER	HUAWEI/HOYMILES		
SUPPLY CABLE	5G10 Cu (for up to 22kW charger)		
CHARGER	SOLARSTONE		
PV PANEL DIMENSIONS	Length: 1096mm x Width: 1754mm		
PLYWOOD CEILING PANEL DIMENSIONS	1340mm x 1733mm		
ROOF SLOPE	15°		
TOTAL AMOUNT OF PANELS	15		
CLICK-ON® A PROFILE KIT	15		
CLICK-ON® STARTER CLAMP (30/50)	20		
CLICK-ON® REGULAR CLAMP (30/50)	20		
CLICK-ON® VENTILATION FLASHING	5		
CLICK-ON® VERGE FLASHING (1,8mm)	7		
PEST GUARD	5		
FRAME CONNECTOR BOLTS	88		

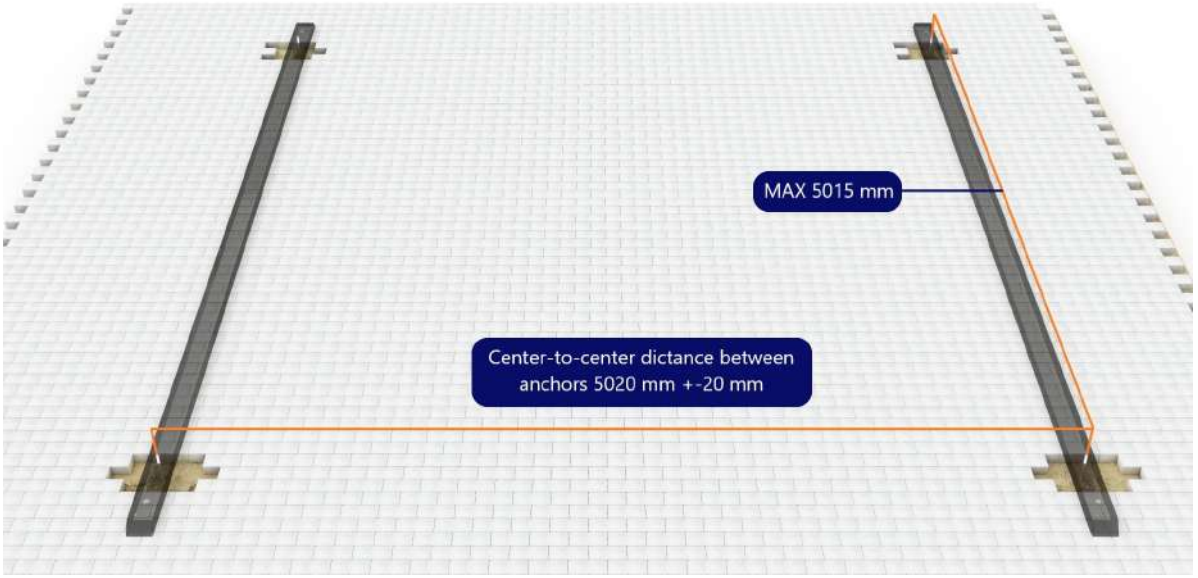
Metal Structure specification		
Components	Item	Quantity
Base Rails	A1	2
Right Rear Corner Post	P1	1
Right Front Corner Post	P2	1
Left Rear Corner Post	P3	1
Left Front Corner Post	P2	1
Eave Strut	R1	2
Purlin	R2	2
Left Roof Beam	T1	1
Right Roof Beam	T2	1
Right Rear Corner Gusset Plate	pl15	1
Left Rear Corner Gusset Plate	pl16	1
Right Front Corner Gusset Plate	pl17	1
Left Front Corner Gusset Plate	pl18	1

Metal frame component list

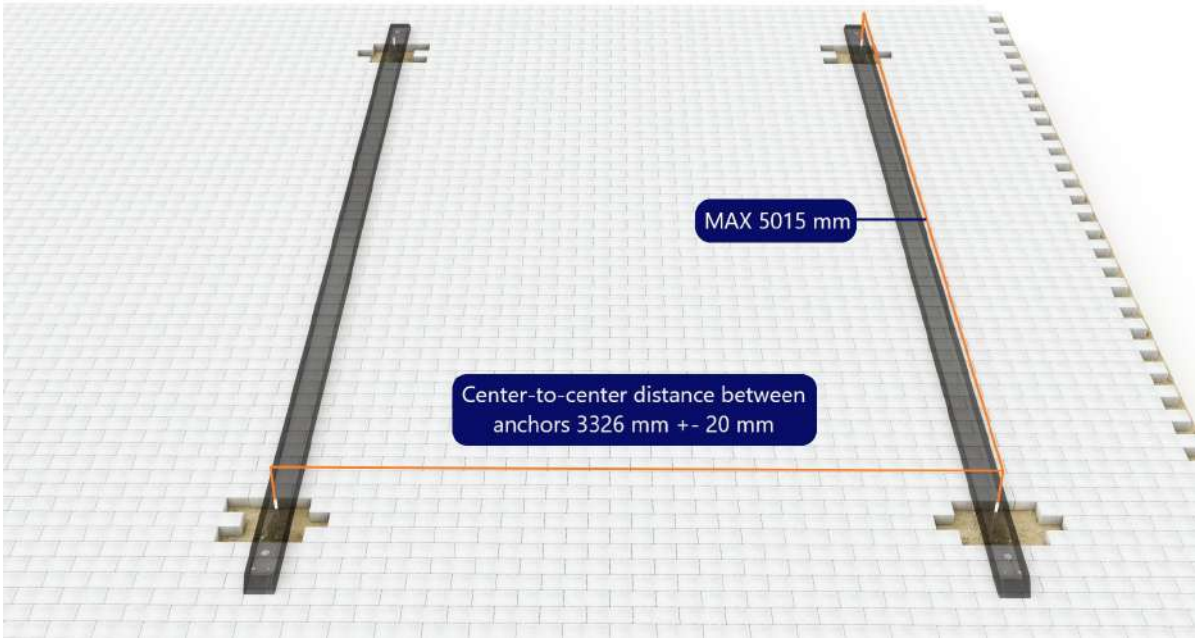


Step 1 | Earth anchor and cable assembly

- Step 1A - Install earth anchors under Solar Carport **Classic Duo**



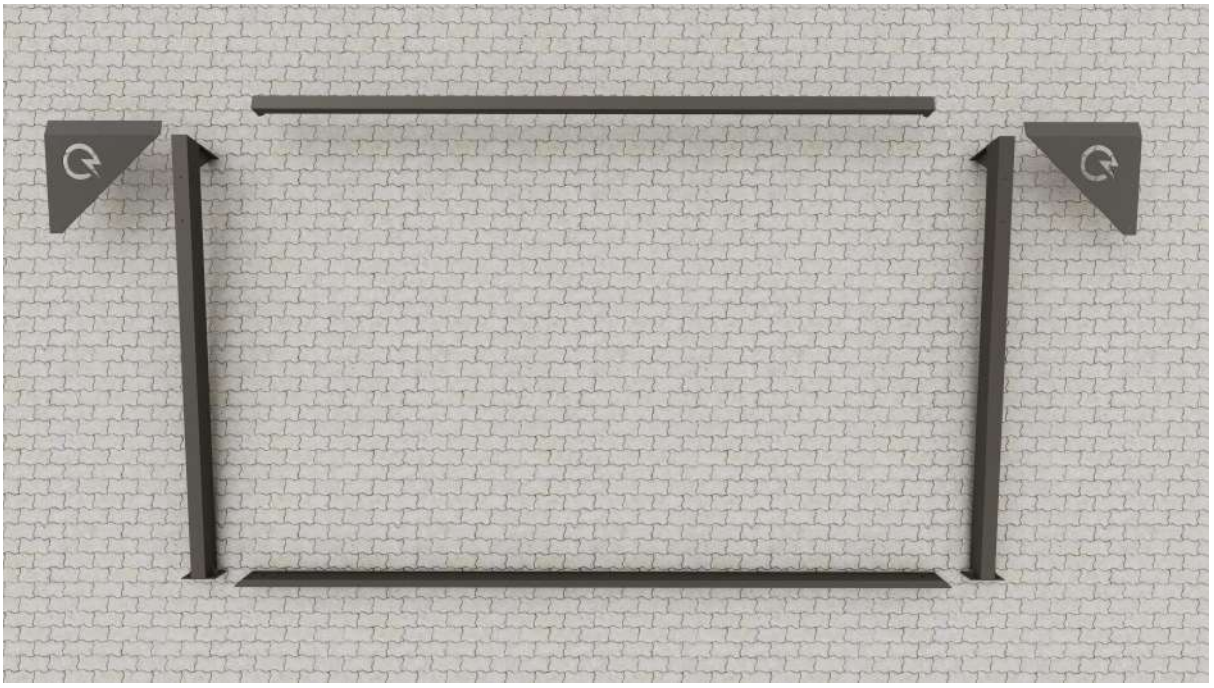
- Step 1B - Install earth anchors under Solar Carport **Classic Single**



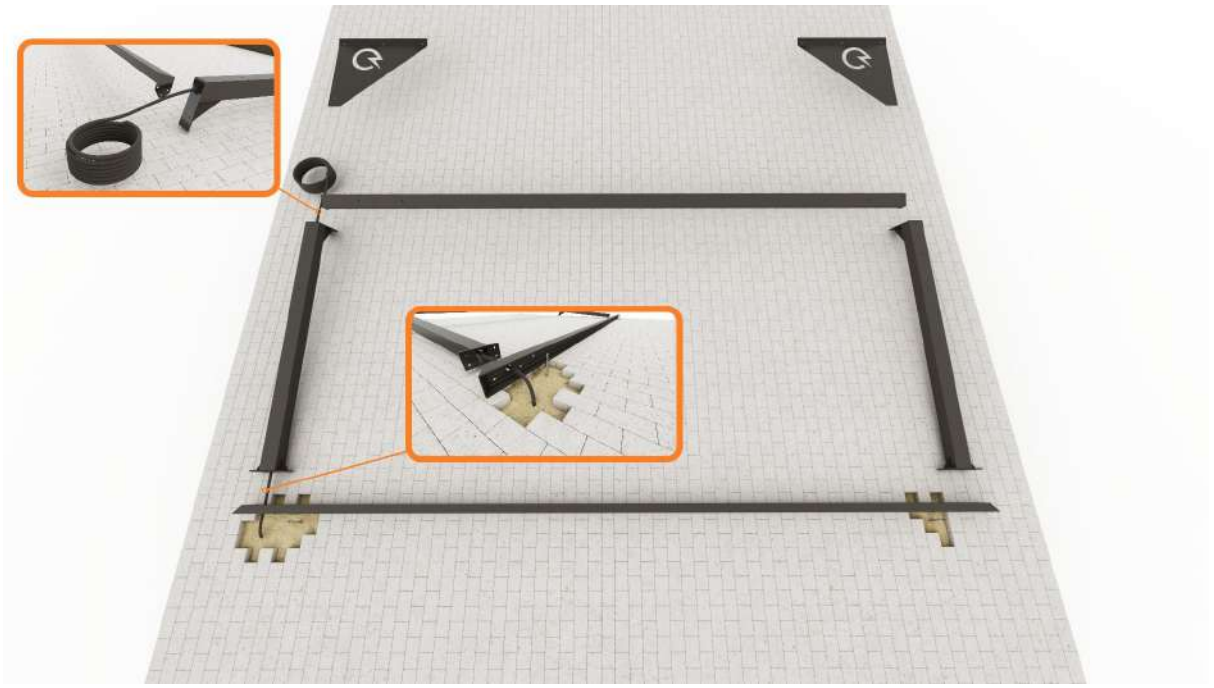

Unlocked
Locked

Steps 2-12 | Metal frame assembly

- Step 2 - Place one side of carport frame next to ground screws

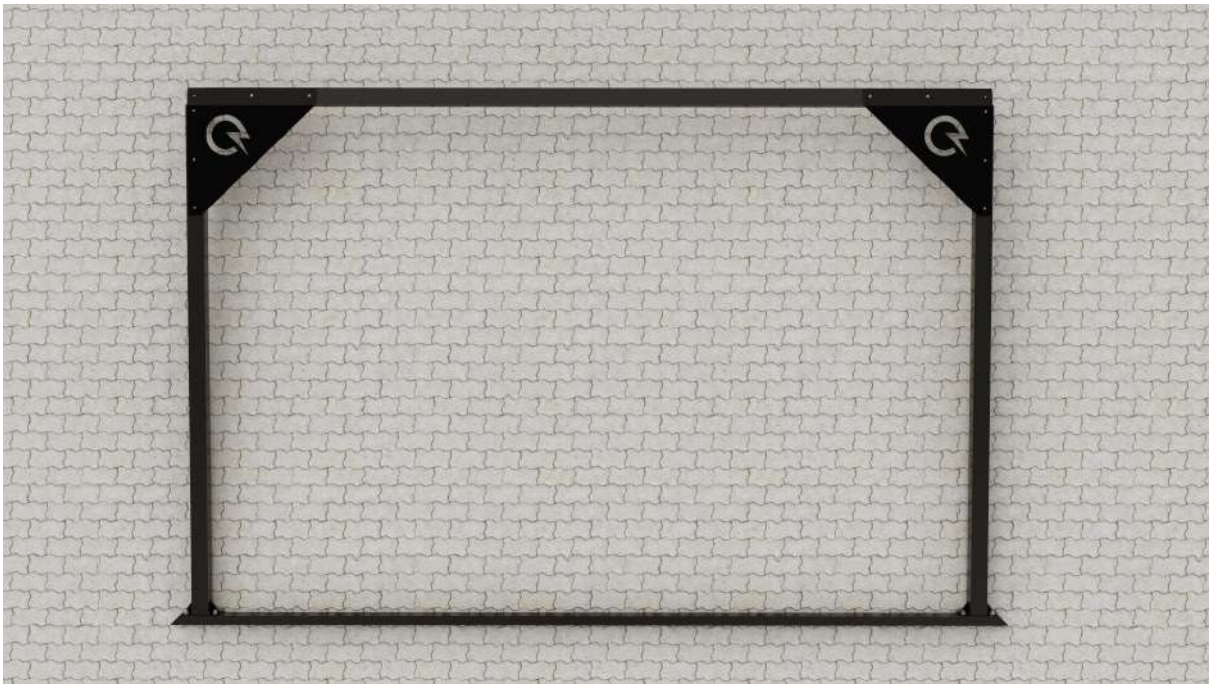


Step 3 - Power cable installation



Step 4 - Place connection bolts into base rails

Step 5 - Connect corner posts and roof beams



Step 6 - Connect corner posts and base rails

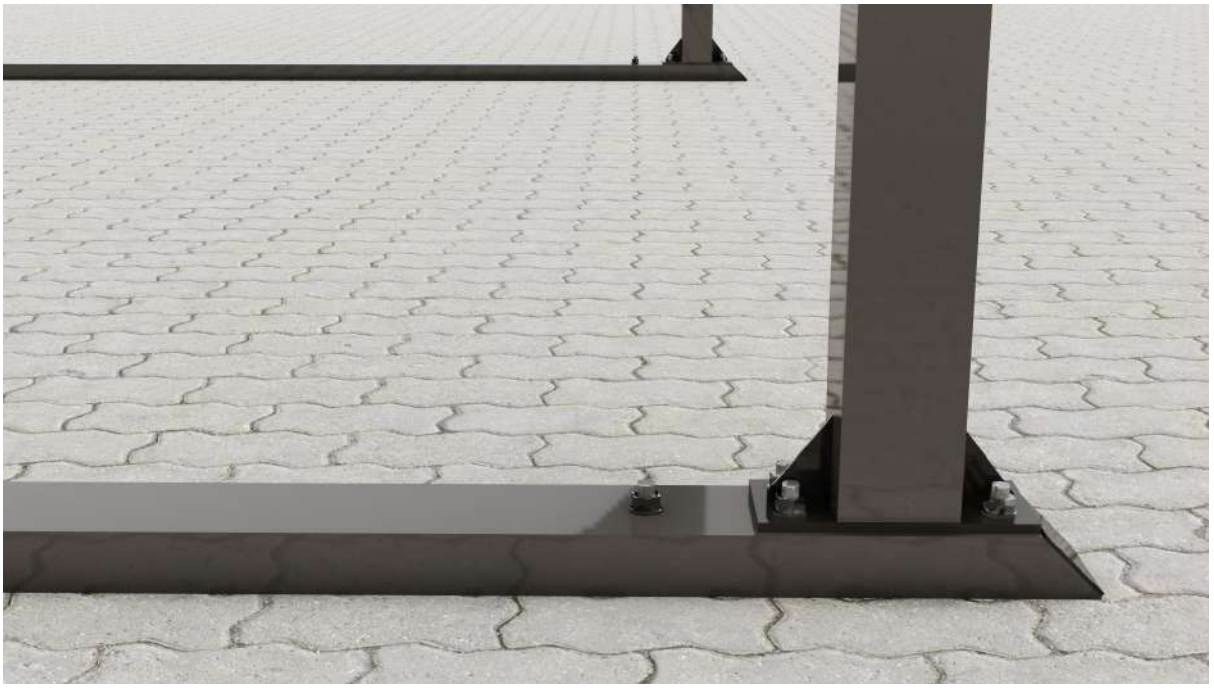
Step 7 - Connect corner posts and roof beams

- Step 8 - Lift up both sides of carport and connect eave strut

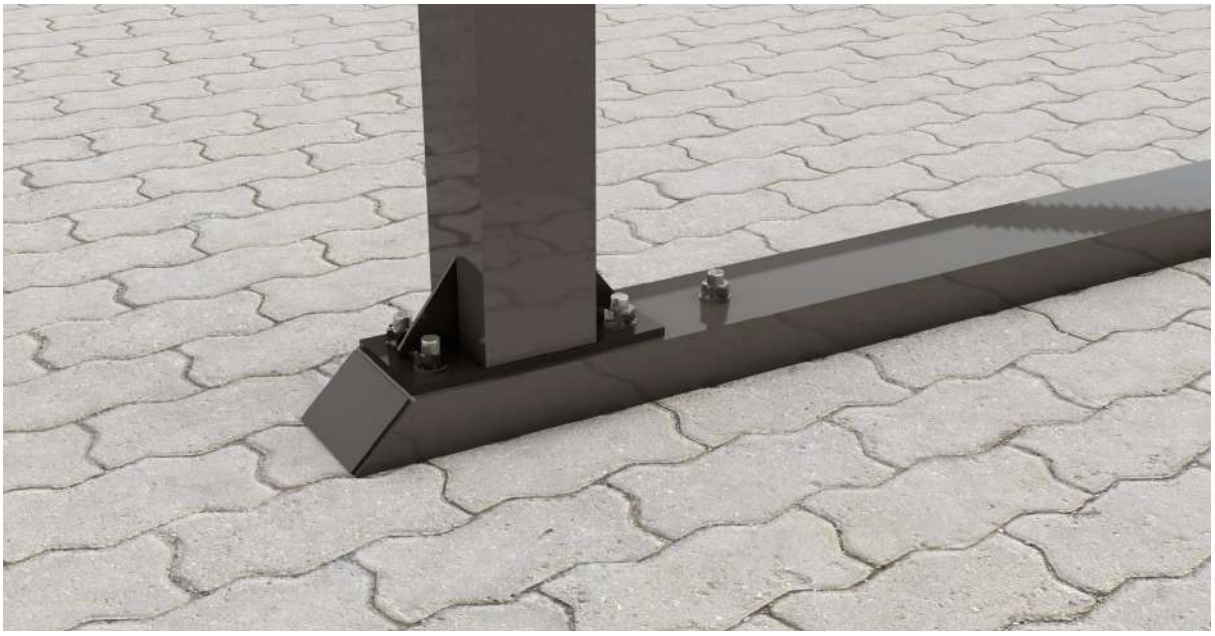
- Step 9 - Connect eave struts and gusset plates

Step 10 - Connect purlins

- Step 11 - Connect Base Rails with earth anchors (avoid supporting post connections)

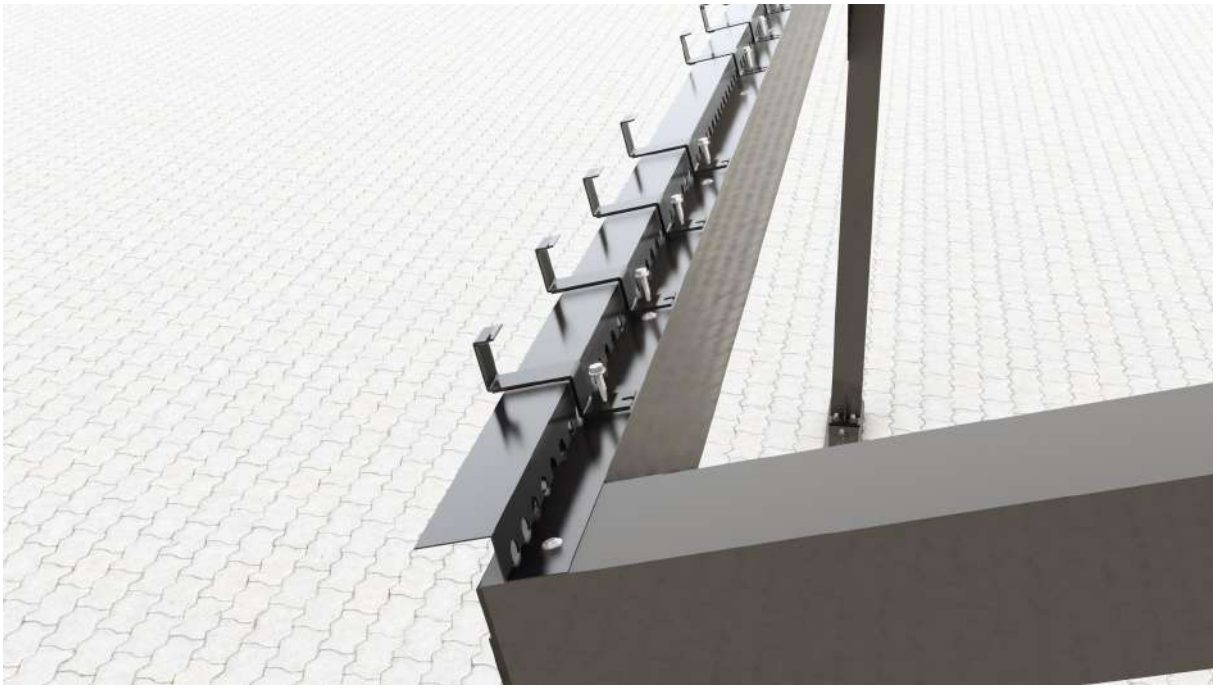


Step 12 - Connect Base Rails with earth anchors (avoid supporting post connections)



Steps 13-19 | Solar Full Roof™ Installation

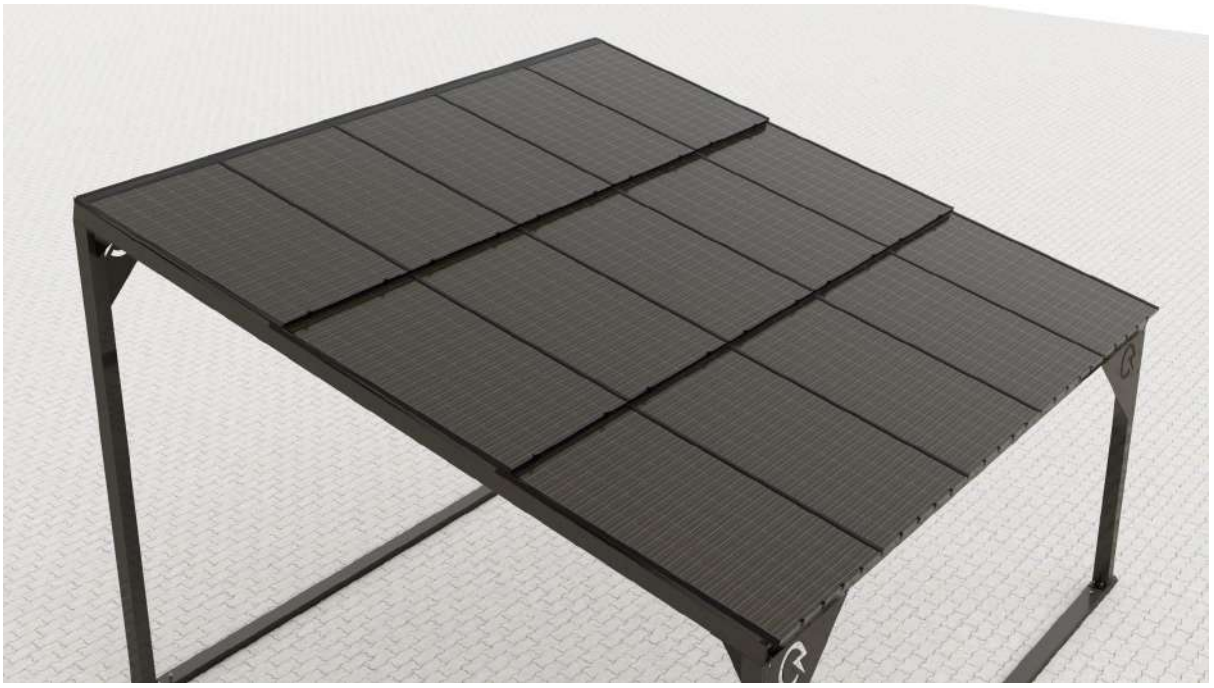
- Step 13 - Install first row PV clamps



Step 14 - Install first row brackets, ventilation lath and first row PV panels

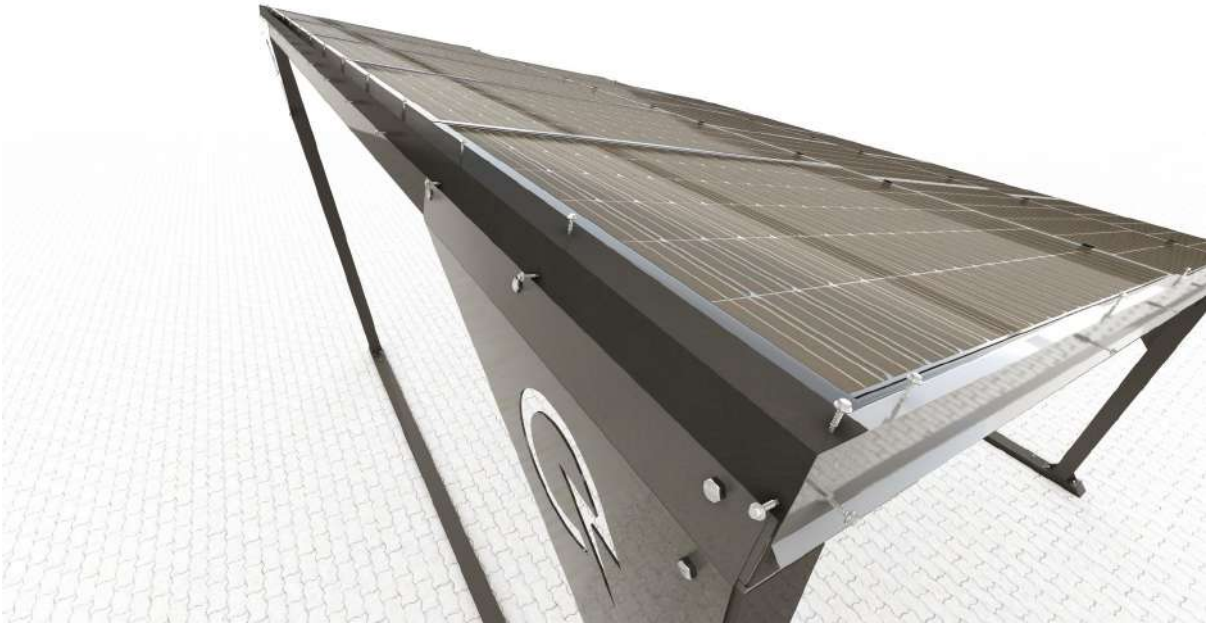
Step 15 - Install second row PV panels

Step 16 - Install third row PV panels



Step 17 - Install side flashing

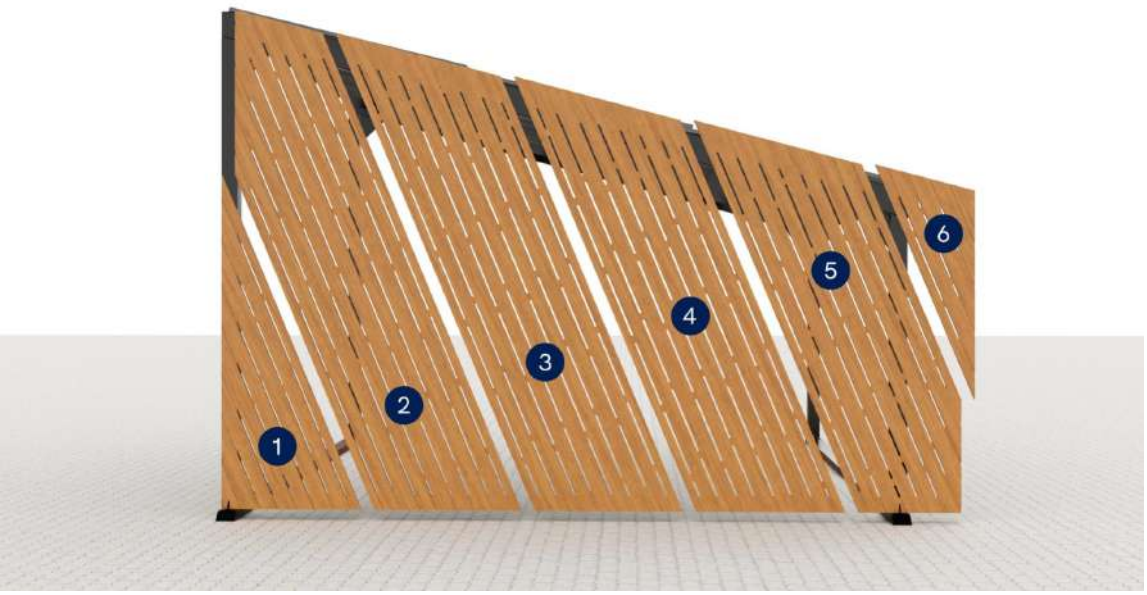
Step 18 - Install upper flashing



Step 19 - Connect screws

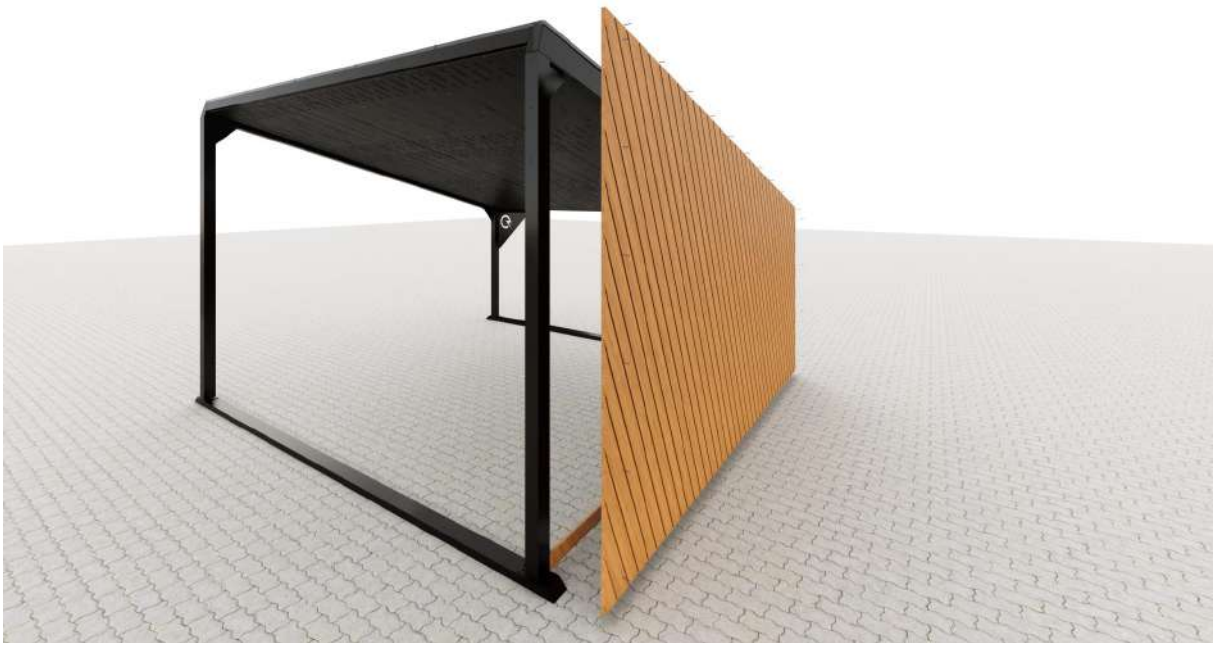
Steps 20-23 | Timber cladding installation

- Step 20 - Install first row CLT timber cladding with screws

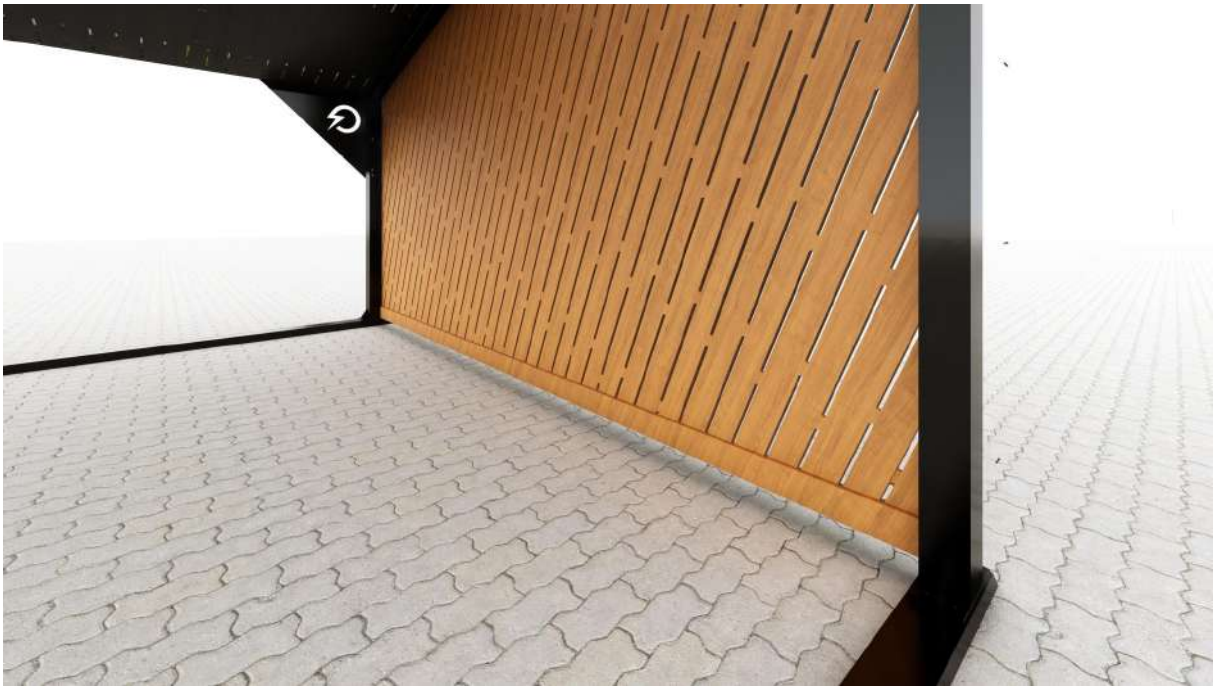


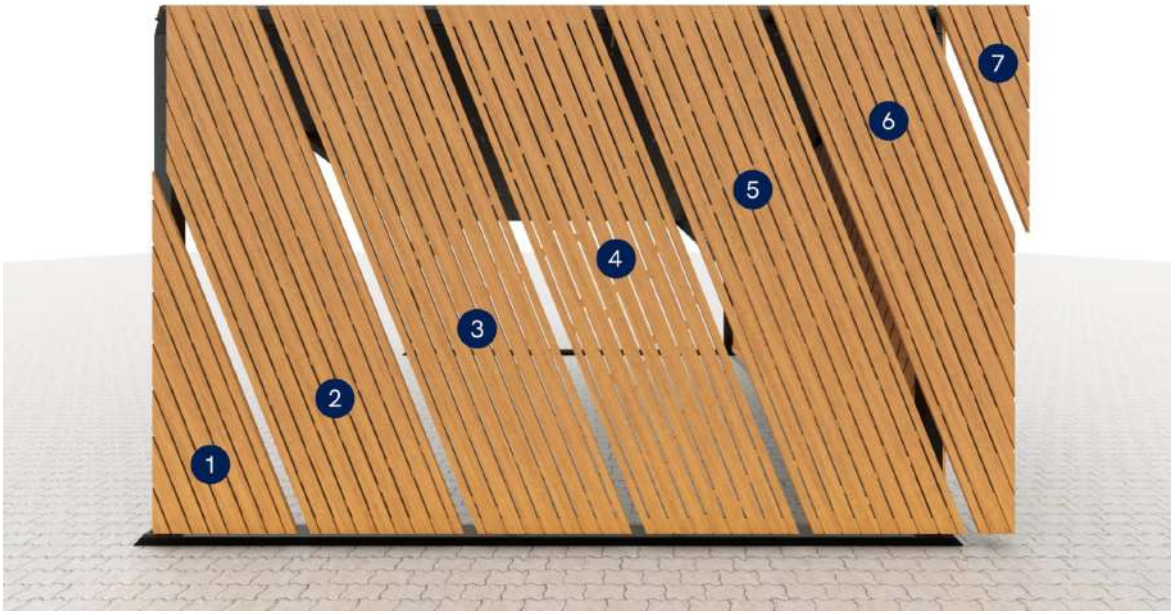
- Step 21 - Connect mortise and tenon joints and install the next row of CLT panels

- Step 22 - Connect all CLT panels with screws

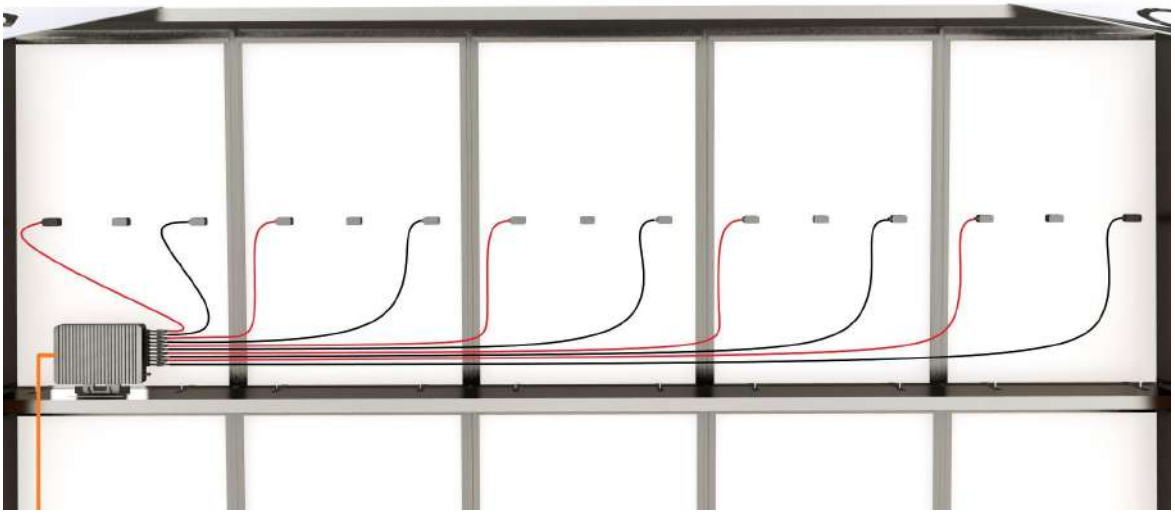


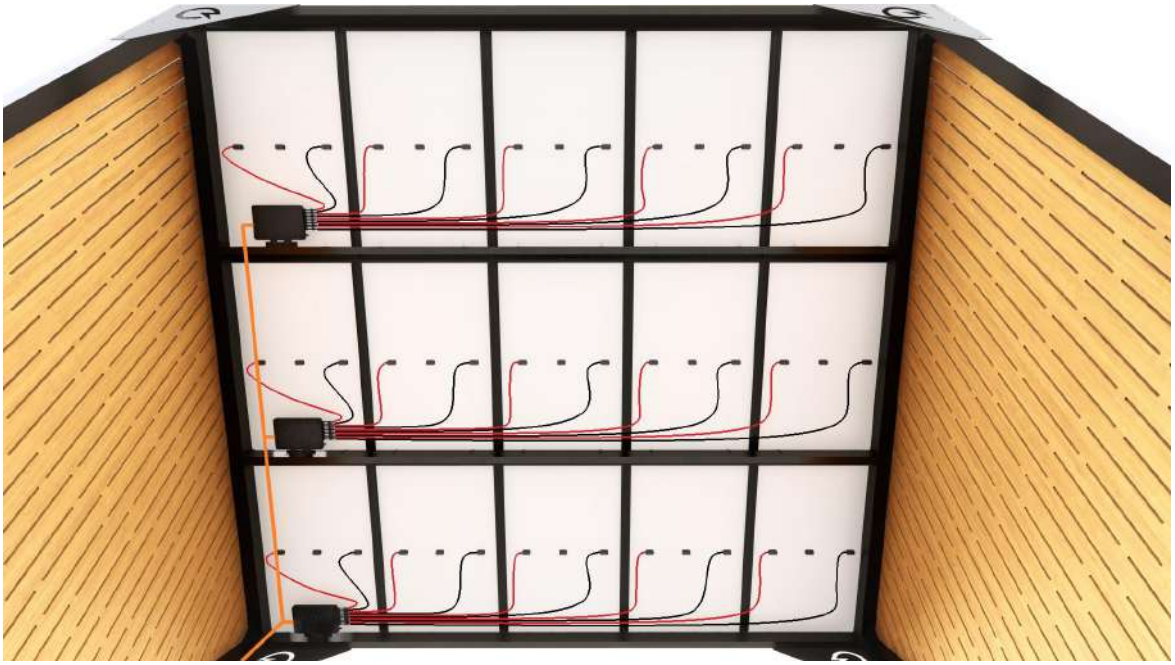
- Step 23 - Connect timber board behind CLT timber cladding's lower edge with screws

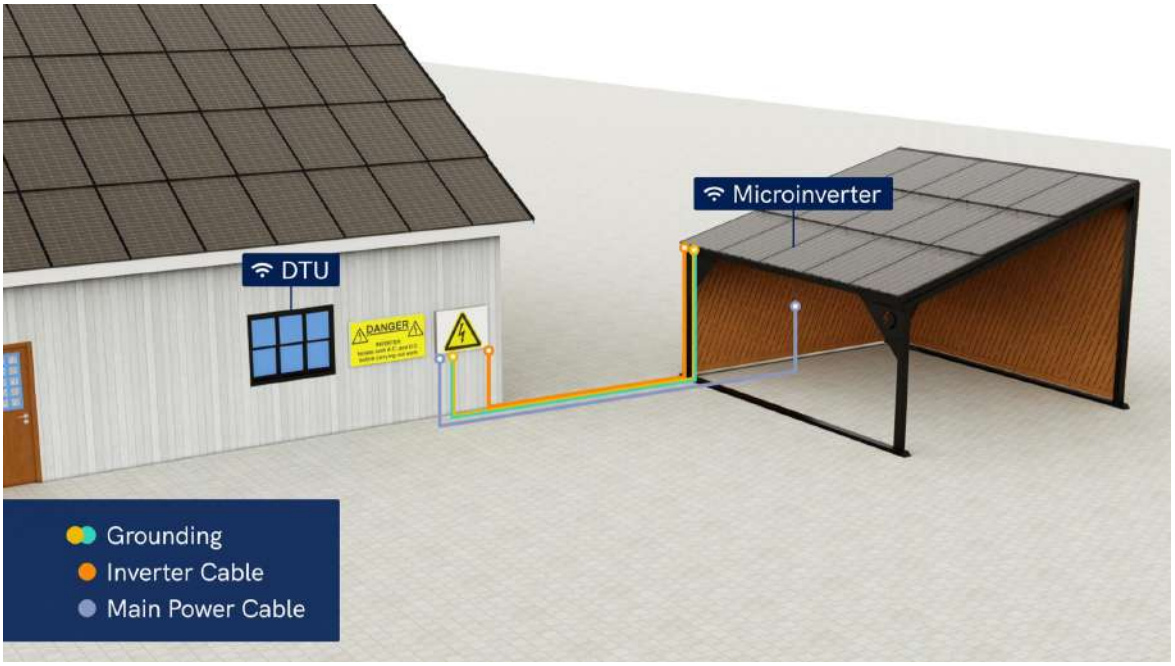



1
2
3
4
5
6
7

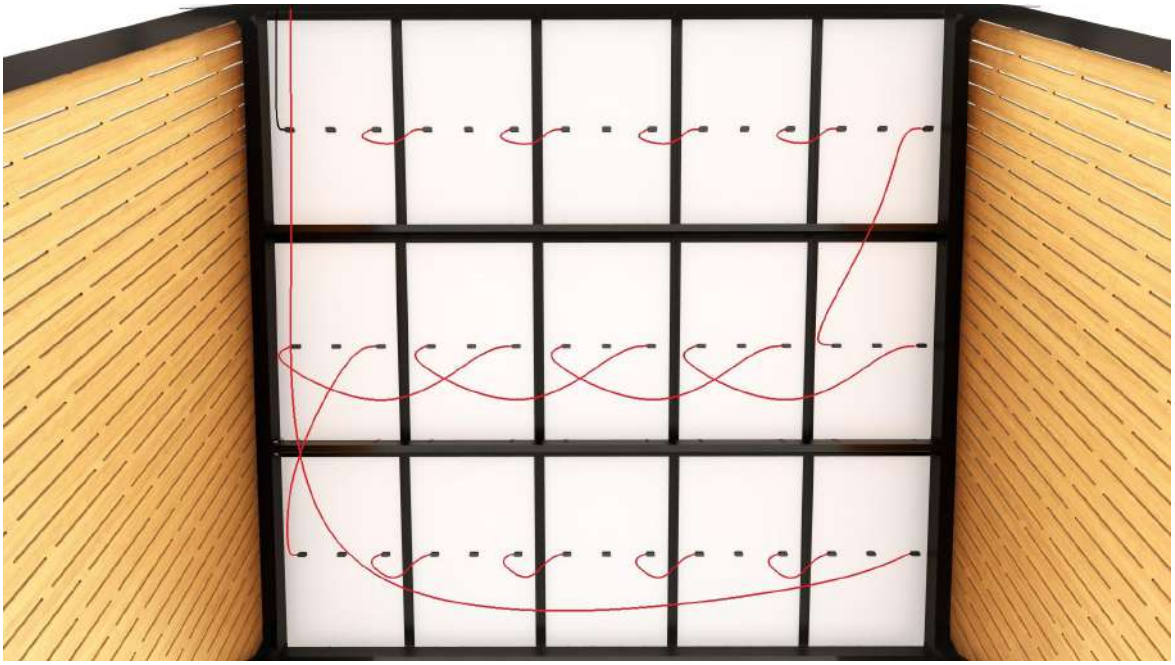
Step 24 | Microinverter

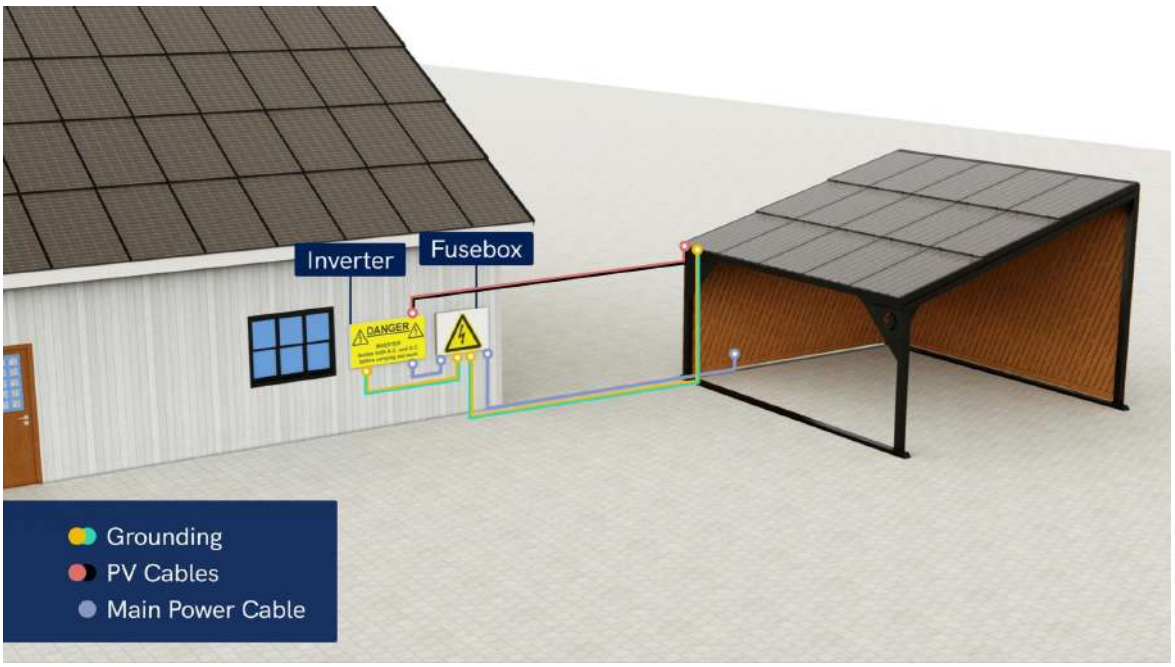





DTU
DANGER
Microinverter
Grounding
Inverter Cable
Main Power Cable

Step 25 | String inverter



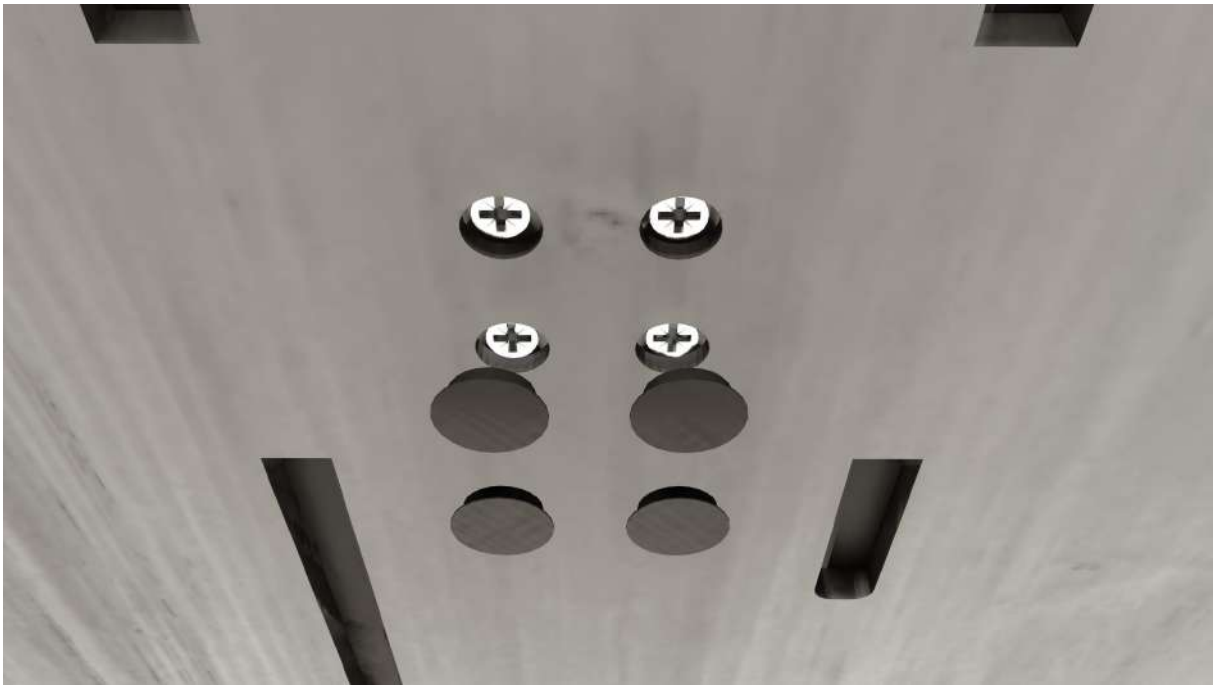


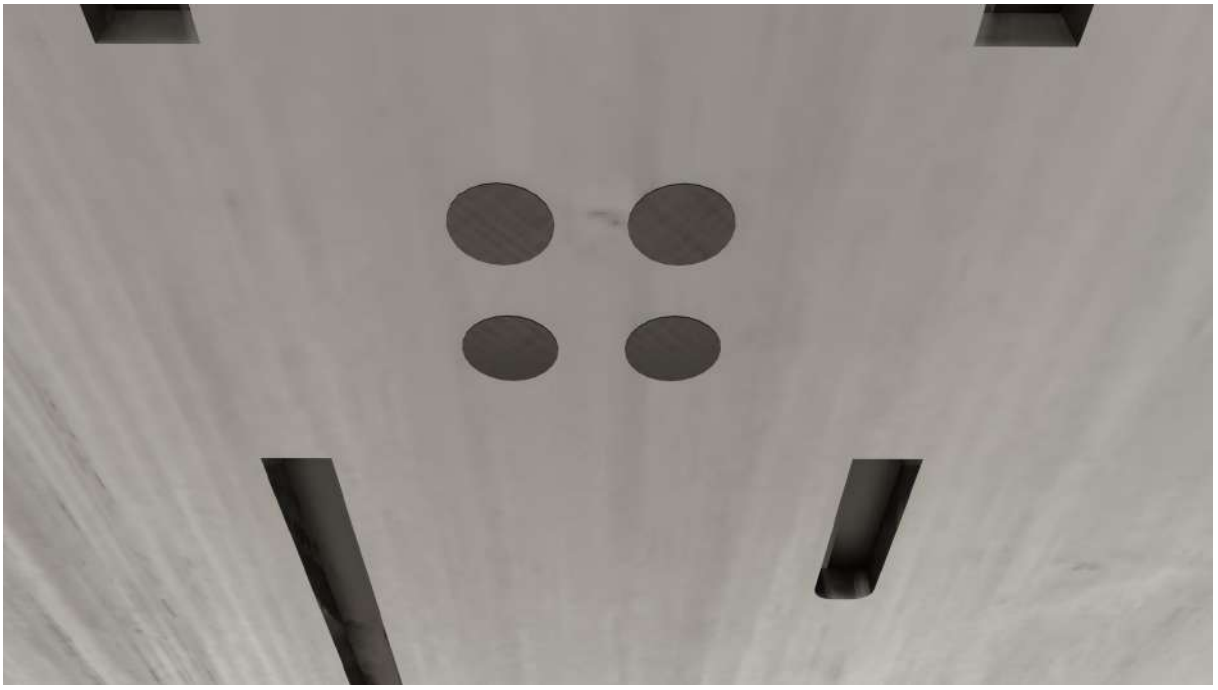
Steps 26-28 | Ceiling installation

- Step 26 - Connect timber board into plywood with screws

- Step 27 - Connect plywood ceiling onto purlins with screws

Step 28 - Install screw caps





Version

NO	DATE	DESCRIPTION	WHO
1.0	28.03.2023	Released version	Erkki Ehasalu

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