

SL RACK CARPORT SYSTEMS

IDEAS FROM GERMANY



Carport variant
with sun protection

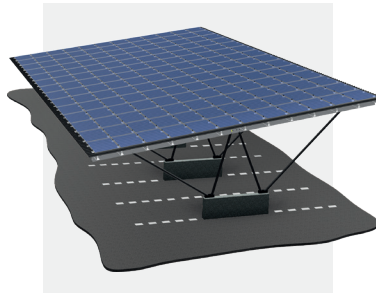


Carport variant
with rain protection

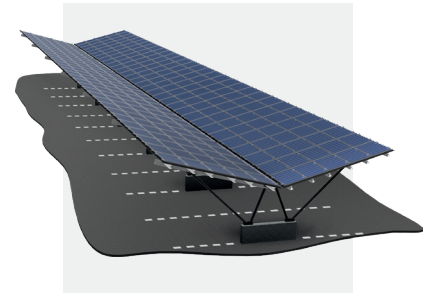
C1



C2



C2Y



- » **C1** for parking on one side (south-facing roof pitch)
- » **C1S** sun protection on one side
- » **C1R** rain protection on one side

- » **C2** for parking on both sides
- » **C2S** sun protection on both sides
- » **C2R** rain protection on both sides

- » **C2Y** Y version for parking on both sides (east/west variant)
- » **C2YS** Y version, sun protection on both sides
- » **C2YR** Y version, rain protection on both sides

All carports up to a maximum inclination of 15°

Manufacturer/Address



SL Rack GmbH

Münchener Straße 1

D-83527 Haag i. OB

Tel.: [+49 80723767-0](tel:+49807237670)

www.sl-rack.de | info@sl-rack.de

1. REQUIREMENTS FOR PROJECT PLANNING & ASSEMBLY

- 1.1. Environmental conditions 4
- 1.2. Local and ecological conditions..... 4

2. PLANNING 5

3. SCOPE OF DELIVERY

- 3.1. Module supporting parts 6
- 3.2. Connecting components 7
- 3.3. Fasteners 7
- 3.4. Structure description 7

4. TOOLS REQUIRED

- 4.1. Measuring and staking out the concrete foundations 8
- 4.2. Installing the concrete foundations and carport frame 8
- 4.3. If necessary, trapezoidal sheet mounting for C1R or C2R version..... 9
- 4.4. Module assembly 9

5. TRANSPORT, LOADING AND UNLOADING 10-11

6. INSTALLING THE CONCRETE FOUNDATION

- 6.1. Drawing up installation plans in good time..... 12
- 6.2. Positioning..... 13
- 6.3. Complying with required tolerances 13

7. ASSEMBLING THE CARPORT SYSTEM 14-17

- 7.1. Keeping individual parts ready..... 14
- 7.2. Observing the planning specifications 14
- 7.3. Drawing up an assembly/installation plan 14

8. INSTALLING THE PHOTOVOLTAIC MODULES 18-22

- 8.1. Assembling the solar modules on carport variant C1S and C2S..... 20
- 8.2. Assembling the solar modules on carport variant C1R and C2R 21

9. BASIC INFORMATION

9.1. Important safety instructions.....	23
9.2. Responsibilities of the operator	23
9.3. Training of the assembly and installation personnel.....	23
9.4. Obligation of the operator	23

10. SAFETY

10.1. Signs used and highlighting.....	24
10.2. Commandment signs used.....	24
10.3. Safety guidelines	24
10.4. Ensuring that authorised persons are present.....	25
10.5. Wearing personal protective equipment	26
10.6. Safeguarding the working environment.....	27
10.7. Safe assembly.....	27
10.8. General notes on intended use	27
10.9. Improper use.....	28

11. SAFETY INSTRUCTIONS

11.1. Convention for safety instructions	29
--	----

12. WARRANTY AND LIABILITY 30

13. DISASSEMBLY AND DISPOSAL

14. Supplementary documents (for project planning	31
14.1. Installation plan.....	31
14.2. Drawings and layouts	31

FOR PROJECT PLANNING & ASSEMBLY

1.1. Environmental conditions

Before installing the system, the operator must ensure that the following requirements are met.

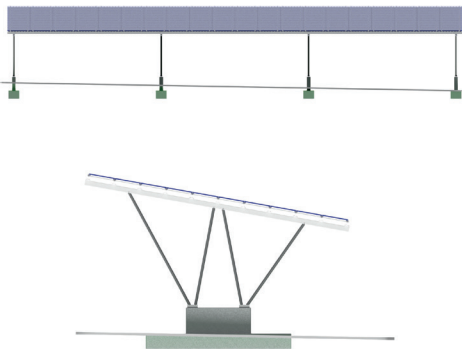
1.2. Local and ecological conditions

- Make sure that the information has already been passed on to the manufacturer, SL Rack GmbH.

1.2.1. Terrain

The carport system has been developed for installation on almost level ground.

- Check the site before planning.
- If necessary, level the area with appropriate construction machinery.
- After excavation, have a geologist check whether compaction of the soil is necessary. The building should be flat, otherwise stresses could occur in the material and possibly weaken it.



The maximum slope in all directions is 1 % (guideline value).

This depends on the slope characteristics, such as soil composition, rock, etc.

In the case of steeper slopes, it must be checked in each individual case whether local reinforcements are possible, but this must also be taken into account beforehand in the planning.

1.2.2. Taking terrain deviations into account

Differences in ground level can only be levelled out to a limited extent via the concrete foundations.

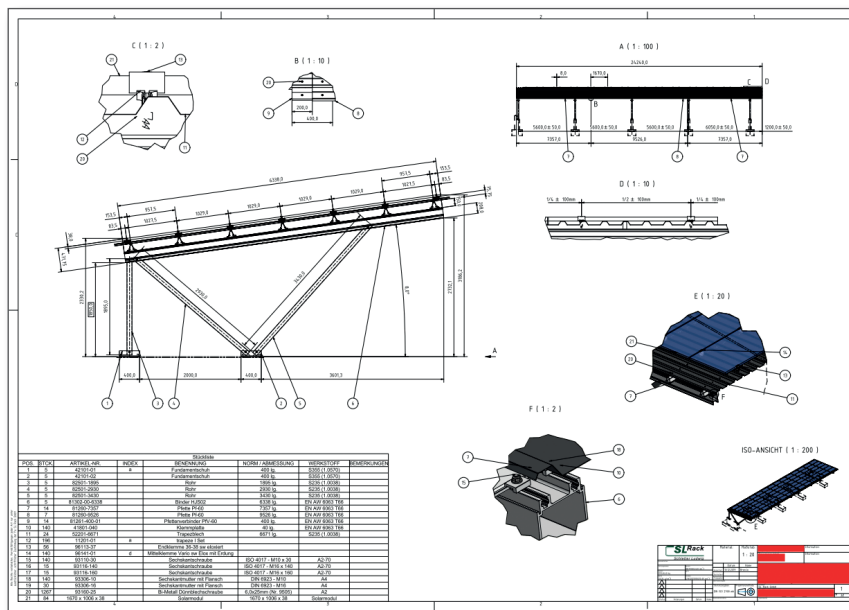
- Clarify major terrain deviations in advance.

These must be taken into account in the structural design.

SL Rack GmbH creates an overview drawing of each system before delivery.

This drawing shows the defined dimensions and the position of the individual components and fasteners.

All components are shown in different views. This means that all items can be assigned with quantity and article numbers on the delivery note.

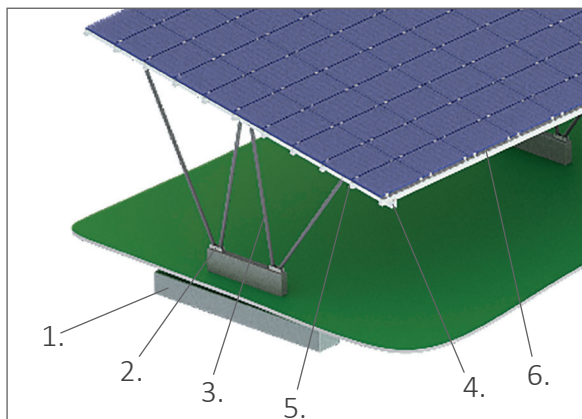


A carport system is assembled on site from various components to form “tables”. As delivered, a table usually consists of the following assemblies:

Module bearing parts	Connecting components	Fasteners
<ul style="list-style-type: none"> Concrete foundation Foundation shoes Supports Trusses Purlins If necessary, trapezoidal sheets (“rain”) Trapezoidal roof fasteners: Trapezoid 3 or 5 	<ul style="list-style-type: none"> Clamping plates Purlin connectors Module clamps 	<ul style="list-style-type: none"> Screws Nuts Washers If necessary, self-tapping screws (“rain”)

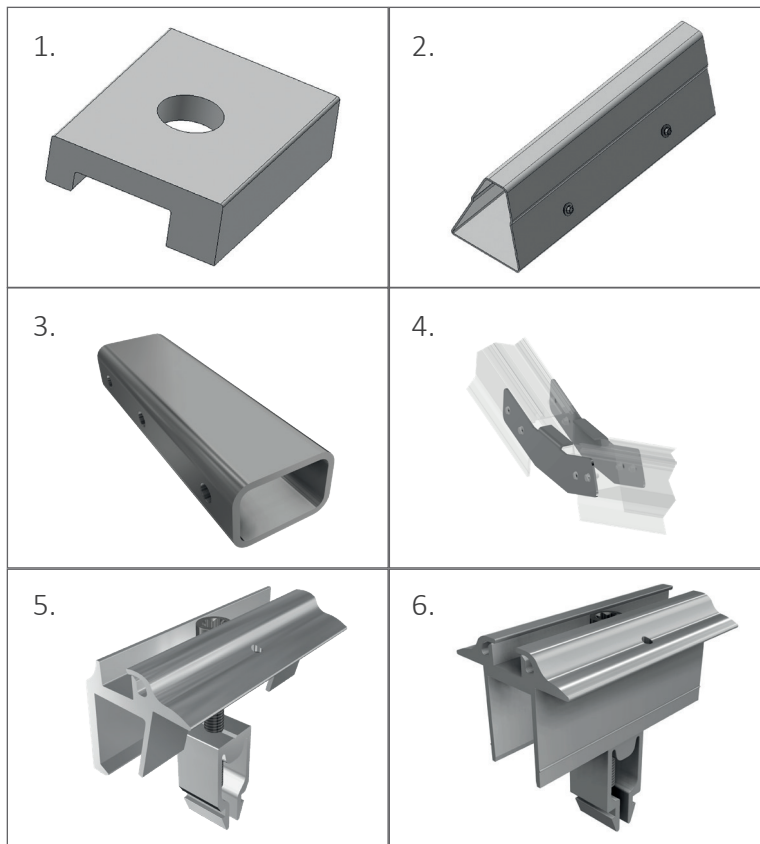
- Check all parts supplied.
- Report incorrect deliveries and/or damaged parts immediately to SL Rack GmbH at slrab@sl-rack.de

3.1. Module bearing parts



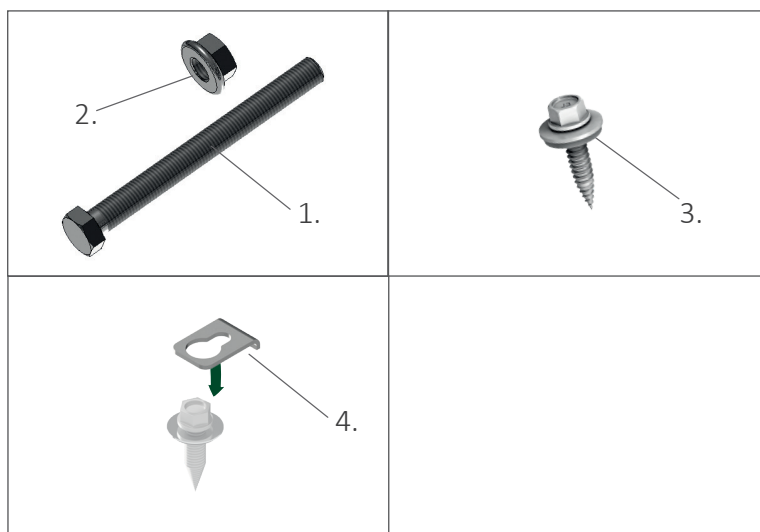
1. Concrete foundation (on site)
2. Foundation shoes
3. Supports
4. Trusses
5. Purlin
6. Possibly trapezoidal sheets

3.2. Connecting components



1. Clamping plates
2. Purlin connectors
3. Truss internal connectors
4. Connectors 10°/15°
depending on type
5. Module end clamp
6. Module centre clamp

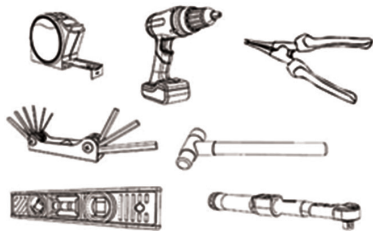
3.3. Fasteners



1. Screws
2. Nuts
3. Self-drilling screws
4. Potential equalisation
plate for rain variant

3.4. Structure description

Depending on the project planning, the concrete foundation can be at ground level or protrude above the floor surface. The foundations must be laid and aligned on the site in accordance with the installation plan.



Sketch: Tools

The tools that are normally required to install the carport system are listed below.

Additional tools required for special cases such as setting the foundations in concrete etc. are not listed here.

4.1. Measuring and staking out the concrete foundations

- Levelling device
- Measuring tapes (100 m)
- String nails (approx. 20 pieces)
- Mason's rope
- Hammer
- Wooden pegs
- Colour spray (for floor markings etc.)
- Waterproof coloured pen

4.2. Installing the concrete foundations and carport frame

- Appropriate equipment (construction machinery) for compacting the ground surface
- All-terrain forklift or crane truck
- Measuring the foundations with a levelling device
- Torque wrench (30 Nm to 300 Nm)
- 17 mm, 18/19 mm and 24 mm socket for screws and flange nuts
- Hammer
- Plastic hammer
- Protractor spirit level
- Measuring tape
- Mason's rope
- Cordless screwdriver

4.3. If necessary, trapezoidal sheet mounting for C1R or C2R version

- Mason's rope
- Measuring tape
- Protractor- steel angle
- 8 mm nut
- Cordless screwdriver

4.4. Module assembly

- Mason's rope
- Measuring tape
- Possibly spacers for distance between modules
- Cordless screwdriver
- Screwdriver bit 40 TX
- Digital torque wrench (<8 Nm)
- TX 40 bit for torque wrench



WARNING

Warning of falling, heavy parts in case of handling errors

- Always wear safety shoes, a hard hat, safety goggles, protective gloves and a high-visibility waistcoat when unloading parts of the rack components.
- Also wear your personal protective equipment as specified in your factory regulations for the job in question.
- Follow your work instructions for this.
- Never step under lifted loads.
- Ensure that no unauthorised persons can enter the danger areas.



Note applicable documents

Important information, instructions and safety instructions for transport and loading are project-specific and cannot be reproduced in full in these instructions.

- Please note the project-specific information on statics and ballasting requirements enclosed with the project report from the Solar.Pro.Tool.
- Check all parts supplied.
- Report incorrect deliveries and/or damaged parts to SL Rack GmbH immediately.

Delivery of the components

The parts/components for the carport system are delivered by

- truck or via
- overseas containers 20' or 40'

Preparing for delivery

- Provide a firm and passable surface for the delivery.
- Make sure that all
 - access roads
 - manoeuvring areas and
 - unloading areas

are accessible by trucks and can be used by forklifts and lifting equipment.

Keeping forklift trucks and lifting equipment at the ready

- Organise suitable forklifts and lifting equipment for the time of delivery.
- Choose suitable forklifts and lifting equipment together with the responsible site management.
- Ensure that the components, pallets and long goods can be unloaded properly.
- Organise forklifts and lifting equipment with different fork spacing or with adjustable forks.
- Note that components, pallets and bundles will have the following weights and dimensions:
 - Weights up to 1,500 kg
 - Maximum lengths up to 11.00 m, then cut into pieces (at 13 m = 2 x 6.5 m)
 - Widths/loads up to 1.20 m
 - Height up to 1.00 m

Having trained personnel ready

- Ensure that only trained specialist personnel carry out the loading and transport work.
- When selecting personnel, also observe the requirements of the DIS unloading guideline.



ATTENTION

Store components safely

Components are also delivered in boxes on pallets.

- Only unload the components on firm and load-bearing ground.

In this way, you prevent damage even before installation.



Note applicable documents

Important information, instructions and safety instructions for transport and loading are project-specific and cannot be reproduced in full in these instructions.

- Observe the enclosed planning specifications and the foundation distances, depths and cantilevers shown.
- Please also read and follow the enclosed geological report.
- Only have installation work carried out by specialist companies.



WARNING



Warning about sharp-edged surfaces and chipping metal parts

- Always wear safety shoes, a hard hat, safety goggles, protective gloves and a high-visibility waistcoat when carrying out installation work.

This way you protect yourself from impact injuries and cuts.

- Ensure that no unauthorised persons can enter the danger areas.



6.1. Drawing up installation plans in good time

The installation plans are required at least one week before the start of the installation work.

- First have special installation plans drawn up using a digital terrain model with contour lines. (not from us)
- Have the position of the concrete foundations shown in these plans, dimensioned accordingly or indicated with GPS coordinates. (DWG of construction site with reference point) (on site)

6.2. Positioning

Work exactly according to your installation plans.

- Use a GPS navigation system to display the exact installation positions, or (DWG)
- mark the first and last concrete foundation of each row of carports with a wooden stake.

For rows longer than 50 metres, markings (wooden stakes) are also required within the rows.

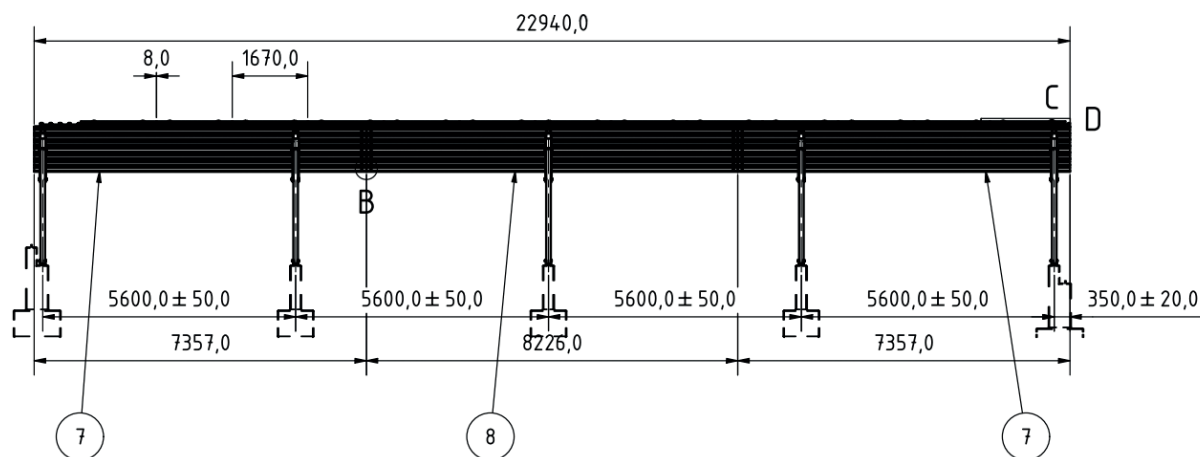
6.3. Complying with required tolerances

The carport frames are always designed to withstand the effects of wind and snow at the respective location. In terms of cost-effectiveness, the individual components are typically utilised up to their load-bearing capacity.

Therefore, compliance with the tolerances listed below is essential for the stability of the frame.

- **Only have installation work carried out by specialist companies.**

In this way, you create the basic prerequisite for compliance with the required tolerances during further assembly.



The inclination in all directions and the torsion of the concrete foundations should not exceed $\pm 1\%$ -> stresses -> material fatigue



7.1. Keeping individual parts ready

All individual parts for the following assembly instructions are listed in **Chapter 3** “Scope of delivery”.

- Have the individual parts ready for assembly.

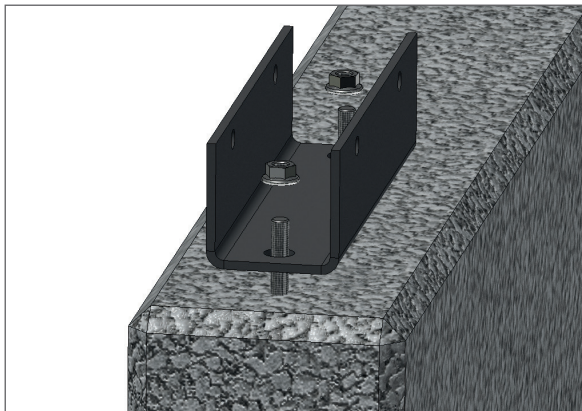
7.2. Observing the planning specifications

The required mounting positions depend on the carport structure and the planned module arrangement.

- Determine the positions of the concrete foundations.

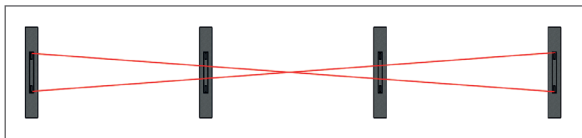
7.3. Making an assembly/installation plan

7.3.1. Assembling the foundation shoes



1. Place the foundation shoes on the threaded bolts of the concrete foundations, align horizontally and diagonally using a levelling rod and string and tighten the nuts.

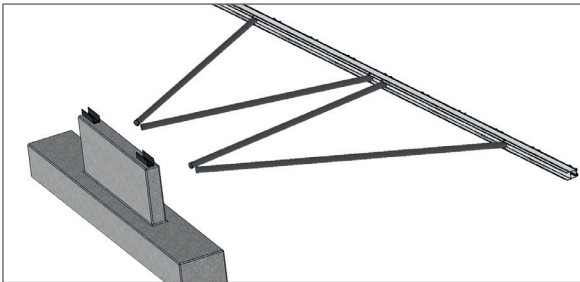
The thread of the anchor in the concrete foundation may protrude a maximum of two threads beyond the nuts.



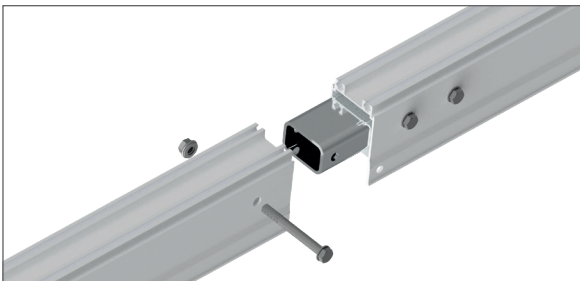
7.3.2. Pre-assembly of tubes (struts), trusses



Attention! To avoid the risk of injury, pre-assembly should be carried out on the ground.

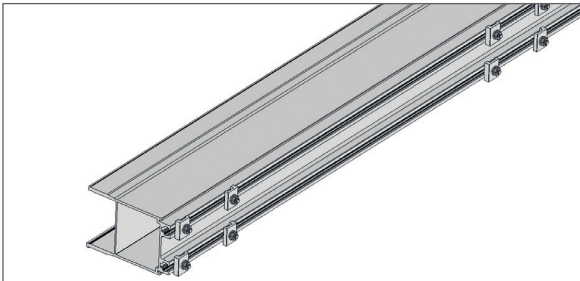


2. Lay out the truss on the floor and connect the tubes (struts) with the hexagon head screws. The correct position of the individual parts is shown in the overview drawings. Initially only tighten the screws and nuts "hand-tight".



3. Tightening torque of truss inner connector (if necessary) (C2)(M20): 280 Nm

The required tightening torque must be checked with a torque wrench.



4. Pre-assemble all clamping plates for the module support profiles on the trusses. To do this, the clamping plates are pushed approximately to the final position (dimensions from the overview drawing).

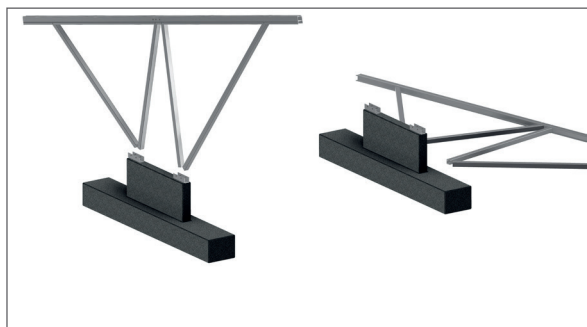


SAFETY INSTRUCTIONS

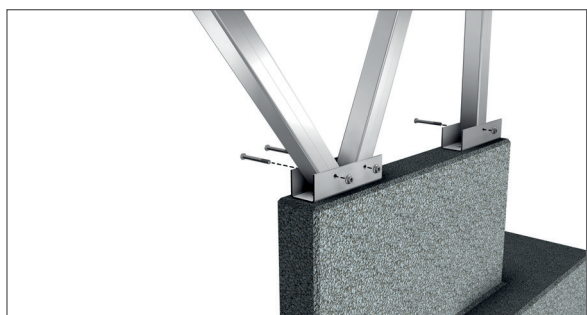
There is a risk of falling when working on ladders, easels or lifting platforms

- The accident prevention regulations must be observed and
- suitable fall protection measures must be undertaken.
- Ensure that all persons working on the machine are equipped with and use personal protective equipment (PPE).

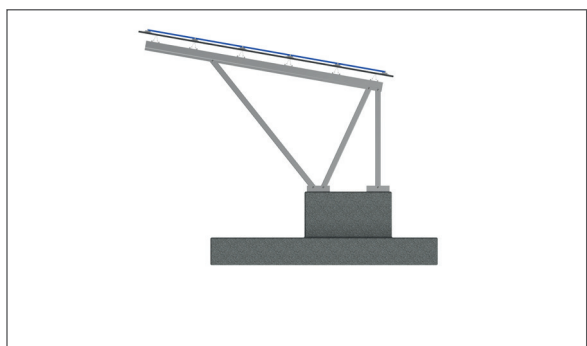




5. Set up the pre-assembled "frame" using a suitable lifting device and thread it into the foundation shoes.

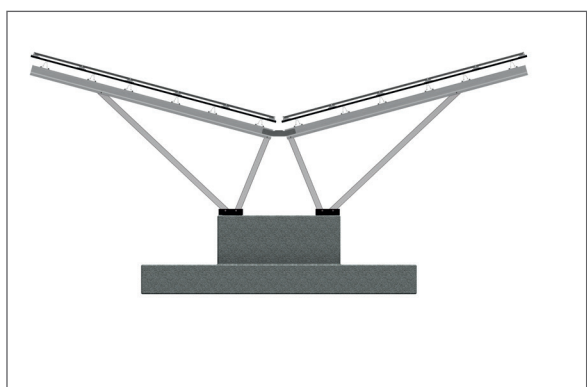


6. Connect the tubes (struts) to the foundation shoes using nuts and bolts. Tighten the nuts again by hand.



7. With a positive or negative carport:
Align the vertical pipe vertically using a spirit level.
Tighten all M20 screws using a torque wrench.

Tightening torque: 135 Nm

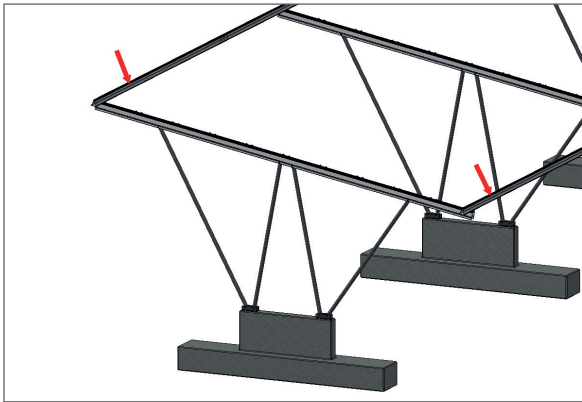


8. For the so-called butterfly carport (C2Y), the tubes (struts) must either be set up using a digital spirit level or the heights and distances must be measured accordingly using a tape measure

Tighten all M20 screws using a torque wrench here too.

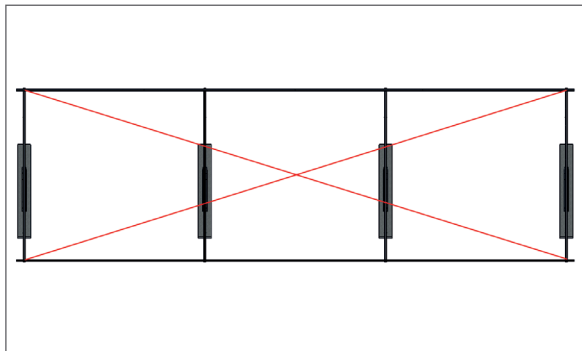
Tightening torque: 135 Nm

7.3.2. Pre-assembly of tubes (struts), trusses



9. Place one module support profile (purlin) each on the lower and upper truss, hook into the pre-assembled clamping plates, align dimensionally and check the horizontal using a spirit level.

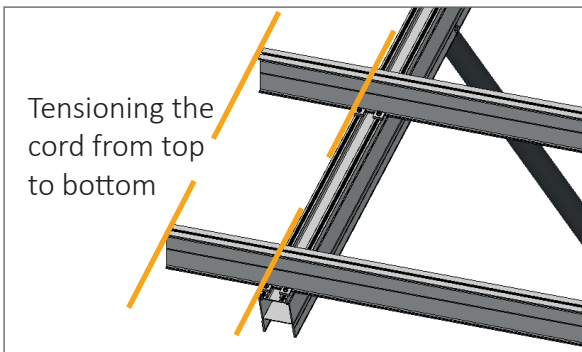
If necessary, loosen the screws and nuts of the tubes (struts) on the foundation shoes again and adjust the heights.



10. For exact alignment, it is also necessary to check the diagonal dimensions of the two module support profiles (these must be identical) and realign them if necessary. (+/- 5 mm)

Tighten all M10 screws using a torque wrench.

Tightening torque: 35 Nm



Tensioning the cord from top to bottom

11. Place the remaining module support profiles in position, hook in the clamping plates, align to size and screw tight.

Tighten all M10 screws using a torque wrench.

Tightening torque: 35 Nm

Please note the slight overhang



Attention!

Further assembly differs depending on the carport variant.

For variant C1S, C2S and C2YS (S for "sun"), the solar module is placed directly on the module support profile and fastened using module clamps. However, only appropriate modules with general technical approval (use in overhead areas) may be used for this purpose.

With variant C1R, C2R and C2YR (R for "rain"), a trapezoidal sheet is screwed onto the module support profiles as rain protection and only then are the solar modules mounted onto the trapezoidal sheet using appropriate connecting elements.



WARNING

Risk of crushing and impact from transport vehicles during unloading

- Secure the unloading area over a wide area.
- It is necessary for unloading personnel to wear personal protective equipment.

Warning against sharp-edged surfaces and free-standing profile ends at head height

- Always wear safety shoes, a hard hat, safety goggles, protective gloves and a high-visibility waistcoat when carrying out assembly work.

This way you protect yourself from impact injuries and cuts.

- Ensure that no unauthorised persons can enter the danger areas.



DANGER



Danger from electric current

As soon as solar modules are exposed to light, they generate electricity. All cables from the modules are live and cannot be disconnected.

The risk of sparking and fatal electric shock is significantly increased, especially in solar power systems with a large number of connected modules.

In the event of insulation damage to cable or plug connectors, even the solar frame can be exposed to current.

- Have assembly and installation work carried out exclusively by trained electricians.
- Observe all the safety instructions of your module or inverter manufacturer and
- only use insulated, antistatic tools.



Installation instructions

- In any case, comply with the module manufacturer's installation instructions.
- You are responsible for requesting these from the module manufacturer.

The system manufacturer SL Rack GmbH offers various installation solutions, depending on the module type. Fastening solutions from SL Rack GmbH are also available for attaching the cables to the mounting system or module frame.

Information material and corresponding installation instructions are available from:



SL Rack GmbH

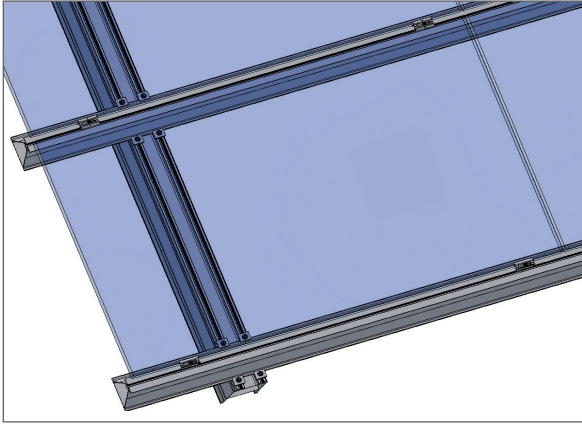
Münchener Straße 1
D-83527 Haag i. OB

Tel.: [+49 8072 3767-0](tel:+49807237670)

Email: info@sl-rack.de

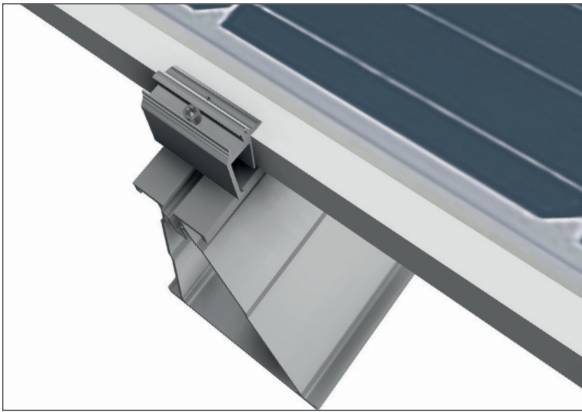
Web: www.sl-rack.de

8.1. Assembling the solar modules on carport variant C1S and C2S



The distance of the module clamp and thus of the solar module from the edge can be seen in the overview drawing. The clamping points of the solar module are also dimensionally marked on it.

The modules must be aligned according to the drawing and fastened using the module clamp. Ensure that the modules are spaced at an appropriate distance from each other (also noted on the drawing).



The screws of the module clamps must be tightened again using a torque wrench.
Tightening torque: 6 Nm

You can find the current module clamp product sheet at www.sl-rack.de

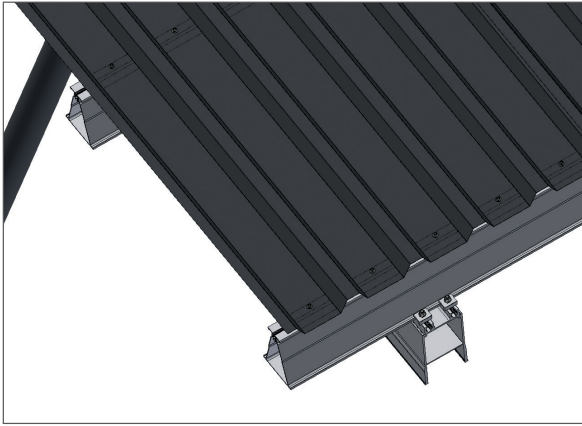


Attention!

When wiring the modules, it is also important to ensure that sagging cables are not crushed. These must be fixed in place using cable ties or cable conduit in such a way that no friction of the cables in the cable ties is caused by gusts of wind.

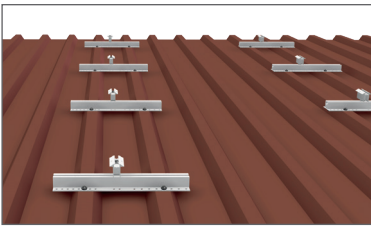
The electrical installation must be carried out by an authorised specialist.

8.2. Assembling the solar modules on carport variant C1R and C2R



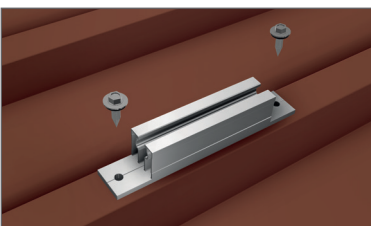
Place the trapezoidal sheets on the purlins, align according to the drawing specifications and fasten using self-drilling screws and a cordless screwdriver.

The module supports for variant C1R and C2R differ both in their structure and in the way they are attached. Possible components that can be used on all trapezoidal shapes are:



Trapezoid 3

- Lightweight construction, very easy assembly
- Largest possible distance to the water-bearing layer
- Convenient to screw in from above
- No module support profile necessary
- Mounting on the high bead



Trapezoid 5

- Lightweight construction, very easy assembly
- Largest possible distance to the water-bearing layer
- Convenient to screw in from above
- No module support profile necessary
- Mounting on the high bead

Trapezoids should run in parallel, otherwise clamping cannot be guaranteed.

Depending on which component is installed: Align trapezoid 3 or 5 according to the drawing and fasten accordingly using the separately available self-tapping screws.

Then install the solar modules as described in section 12.1 "Assembling the solar modules on carport variant C1S and C2S".

Trapezoid accessories:



Art. no.

93155-25

Self-tapping drilling screw 5.5 x 20-25 DS 16 mm

Drilling capacity for steel 0.5 mm - 2.0 mm

Drilling capacity for aluminium..... 0.5 mm - 2.0 mm

Packaging unit (PU)..... 100 pieces



93160-25

Self-tapping drilling screw 6.0 x 25-25 DS 16 mm

Drilling capacity for steel 0.4 mm - 2.0 mm

Drilling capacity for aluminium..... 0.5 mm - 2.0 mm

Packaging unit (PU)..... 100 pieces

93161-25

PREMIUM self-tapping drilling screw 6 x 25 DS 16 mm

Drilling capacity for steel 0.5 mm - 1.5 mm

Drilling capacity for aluminium..... 0.4 mm - 2.0 mm

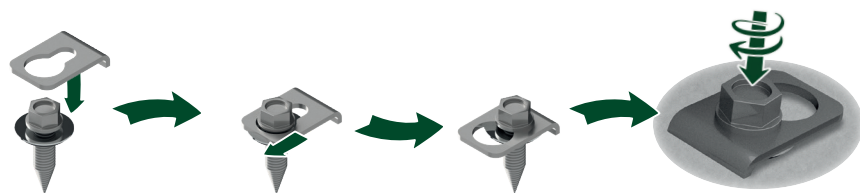
Packaging unit (PU)..... 100 pieces



93201-00

Potential equalisation plate

The potential equalisation plate is used to transfer the potential of the system/modules to the trapezoidal roof. The trapezoidal sheet metal roof must be earthed in order to function properly. The potential equalisation plate must be positioned between the screw head and the sealing washer.



9.1. Important safety instructions

Only use the system for the purpose described in these instructions. Otherwise you may endanger yourself or damage parts of the system.

You will endanger yourself and others if you install the system incorrectly or do not observe the safety and/or warning instructions. Serious injuries or considerable damage to property can be the result.

9.2. Responsibilities of the operator

The operator shall organise the following before commencing assembly

- a supervising person and ensure that
- the construction site is inspected with the help of sector plans and
- the position of all types of underground pipes and non-load-bearing soil must be marked with marking paint or barriers.

9.3. Training of the assembly and installation personnel

The system may only be assembled and installed by trained and instructed personnel.

Electrical equipment of the system may only be opened by a trained electrician.

- Assembly and installation work may only be carried out by **specialist personnel trained** for the respective activity.
- These must be demonstrably able to recognise hazards and risks that emanate or may emanate from the respective activity due to their training and occupational activity.
- The responsibilities of staff must always be clearly defined before each activity.
- Personnel to be trained may only work on the system under the supervision of an experienced person.






9.4. Obligation of the operator

Every operator is obliged to read and observe the instructions relevant to the respective activity, in particular the safety and warning instructions.






This chapter contains information on the safe use of the system described in this document.

10.1. Signs used and highlighting

Residual hazards emanating from the system that cannot be eliminated by design are indicated in the description of the respective system component. The following notes are used for this purpose:

	Warning! Non-observance of the instructions may cause personal injury .
	Warning! Non-observance of the instructions may cause damage to the system .
	Dangerous electrical voltage! Possible dangerous situation due to high electrical voltages.
	Warning of obstacles and tripping hazards on the ground.
	This sign is in front of notes and useful information.

10.2. Commandment signs used

	Wear a safety waistcoat		Wear a safety helmet
	Wear safety shoes		Use safety goggles
	Wear protective gloves		

10.3. Safety guidelines

The underlying safety guidelines regulate the authorisation to use the system and the resulting responsibility of the respective user.

10.4. Ensuring that authorised persons are present



WARNING

Insufficiently qualified personnel can cause personal injury and damage to property.

The descriptions and instructions contained herein assume the knowledge of an instructed specialist.

Do not work on or with the system unless you

- have received instruction on safe operation and
- have read and understood the contents of the operating instructions.
- Otherwise you endanger yourself and others.
- Always comply with the relevant accident prevention regulations and environmental protection regulations.

Never work on or with the system,

- if you are under the influence of alcohol,
- drugs or
- medication.

Only assemble and install the system in the following cases,

- if you are a **trained specialist** for the relevant activity.
Descriptions and instructions for maintenance, servicing and repair work require the expertise of a trained specialist.
- To this end, also comply with the relevant accident prevention regulations and regulations on environmental protection.



DANGER

Danger from electric current

The system operates at high voltage.

- **Never** open switch cabinets and terminal boxes of the electrical equipment if you are **not a trained electrician**.
- **Always** have the absence of voltage checked by a **trained electrician** before working on or near parts of the electrical equipment.

The solar modules of the system generate electricity through solar radiation.

With a large number of switched solar modules, the risk of sparking between the individual modules increases.

- Check **daily** the condition of the electrical equipment of the system.
- **Never** work on or with the unit if you notice any damage.
- In such a case, inform your supervisor and the maintenance staff immediately.

10.5. Wearing personal protective equipment



WARNING

Warning against moving, heavy and sharp-edged parts

- Always wear a hard hat and safety shoes when working on or with the system.
- Also wear your personal protective equipment as specified in your factory regulations for the job in question.
- Follow your work instructions for this.



Warning against dusts and substances hazardous to health

- Wear protective gloves, safety goggles and a respirator mask if you are
- carrying out grinding and cleaning work.
- Please also observe the safety data sheets of the substances used.



Warning of cluttered workplaces

- Wear a high-visibility waistcoat as soon as you enter areas of the site.

10.6. Safeguarding the working environment



WARNING

Warning against the use of third-party machines, tools and aids

- Also observe the operating instructions for the machines, tools, auxiliary and lifting equipment required for assembly, repair and maintenance.

10.7. Safe assembly



WARNING

Warning against unauthorised changes

- Never modify parts of the system without obtaining a written clearance certificate from the manufacturer.
- Only use original SL Rack spare parts or accessories expressly approved by the manufacturer.

10.8. General notes on intended use



Warning!

Non-intended use of the system is prohibited and can lead to serious bodily injury or even death if not observed.

The intended use of the system is generally subject to the following guidelines:

- The system may only be used within the scope of its intended use according to the technical specifications. Any other use or use in excess thereof shall be deemed improper.
- The system may only be used under the installation, connection and operating conditions specified in these operating instructions.
- Faultless and safe operation of the system requires proper storage, proper transport, correct installation and assembly or installation and commissioning.
Furthermore, careful operation, maintenance and service by sufficiently qualified personnel is a prerequisite for this.
- In addition, the operating manuals of any connected systems must be observed with regard to the interfaces and signal sequences.

10.9. Improper use

**Warning!**

Non-intended use of the system is prohibited and can lead to serious bodily injury or even death if not observed.

SL Rack GmbH accepts no liability for any damage or injuries of any kind that may occur if the components are not used as intended and no warranty for the correct and functional operation of the components.

Non-intended use of the systems **typically** includes:

- Use of the system for purposes other than those specified in the intended use.
- The transport, installation and supply (electrical and/or pneumatic/hydraulic), and the interface connection, if this was carried out under installation, connection and operating conditions other than those defined in these operating instructions.
- The electrical/pneumatic/hydraulic connection of individual modules separated from the system. Only the complete system may be connected and operated.
- The use of unauthorised spare parts, unauthorised accessories and additional modules.
- Operating the system and carrying out service and maintenance work by unqualified personnel.
- Access to code-protected and/or password-protected functions of the system by personnel not authorised for this purpose.
- The opening of service doors (e.g. switch cabinet) and/or the removal of protective covers by persons not authorised to do so.
- The operation of the system with tampered or removed safety devices.
- Failure to observe the instructions in this operating manual.

11.1. Convention for safety instructions

The system was designed and built taking into account a risk analysis and after careful selection of the harmonised standards to be complied with and other technical specifications. It thus corresponds to the state of the art and ensures maximum safety.



However, this safety can only be achieved in operational practice if all the necessary measures are taken to achieve it. It is the duty of care of the operator of the system to plan these measures and to monitor their implementation.

The operator must in particular ensure that

- the system is only used for its intended purpose
- the system is only operated in perfect working order and the safety devices in particular are regularly checked to ensure that they are in good working order
- required personal protective equipment is available and used for the operating, maintenance and repair personnel
- the operating instructions are always available in a legible condition and complete at the place of use of the system
- only sufficiently qualified and authorised personnel operate, maintain and repair the system
- this personnel is regularly instructed in all applicable matters of occupational safety and environmental protection and is familiar with the operating instructions and in particular the safety instructions contained therein
- all safety and warning notices attached to the system are not removed and remain legible.

In principle, the installation company is responsible for the proper assembly and installation of the carport system.

Exclusions

Guarantee, warranty and liability claims for personal injury and property damage against the manufacturer SL Rack GmbH are excluded if they are attributable to one or more of the following causes:

- Non-compliance with the assembly and installation instructions or the operating and maintenance instructions
- Improper installation, commissioning, maintenance or repair
- Operation with defective spare parts or equipment not agreed with the manufacturer
- Unauthorised structural changes or manipulation of the car port system
- Use of third-party components
- Neglect of the monitoring obligation
- Neglect or non-compliance with the specified maintenance and/or inspection and inspection intervals

Damage and consequential damage attributable to or arising from one or more of the above-mentioned causes shall be borne exclusively by the customer.

The assembly and installation instructions as well as the operating and maintenance instructions refer exclusively to the mechanical metal construction supplied by SL Rack GmbH.

Components of the photovoltaic system itself, such as modules, cable and plug connectors, inverters or electrical control boxes are not included in these instructions and are therefore not covered by the warranty and liability of SL Rack GmbH.

Damage to items that are not part of the scope of delivery are excluded from any liability.

Safely disposing of individual parts

- Separate the materials
 - Steel
 - Plastics
 - Electrical and electronic waste
 - Aluminium
 - Stainless steel
- Dispose of the components in accordance with local regulations or
- return the components to the manufacturer.



Logo: Recycling

Separating electrical and electronic waste

- **Never** throw electronic components into the household waste.
- Only dispose of electronic waste in the collection containers provided by your waste disposal company.



Logo: Collection
container electrical and
electronic waste

14. Supplementary documents (for project planning)

14.1. Installation plan

14.2. Drawings and layouts



SL Rack
[YouTube](#)



SL Rack
[Website](#)



SL Rack
[Online ordering system](#)



Contact us for your personal offer:

SL Rack GmbH
Münchener Straße 1
83527 Haag i. OB
Email: sales@sl-rack.de
Tel.: [+49 8072 3767-0](tel:+49807237670)
www.sl-rack.de

Subject to technical changes and
printing errors.
Version 07/2024 V16

