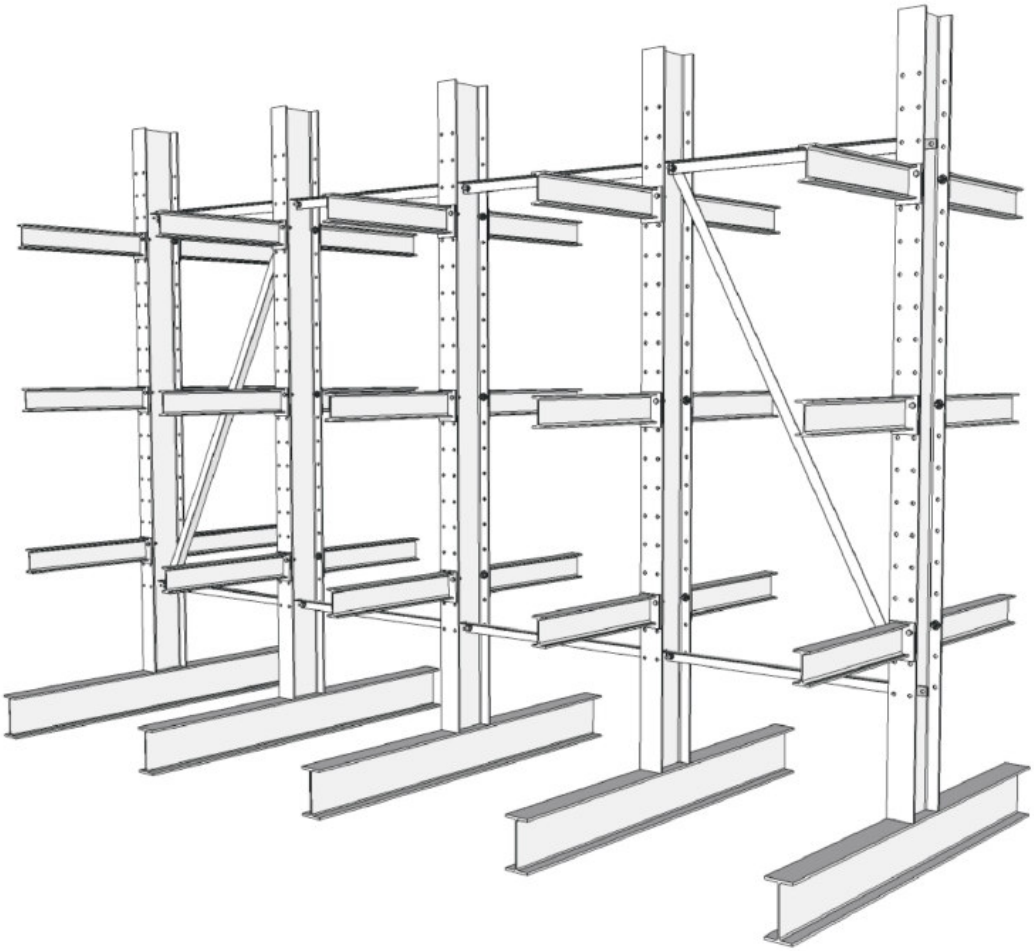
Regalsysteme Bruckamp



Cantilever racks
Installation and operating instructions

for a cantilever racking system made of hot-rolled steel profiles
with height-adjustable cantilever arms

Dear Customer,

Thank you very much for choosing a product from Bruckamp GmbH.

For the storage of long goods and bulky goods, we recommend the use of **cantilever racks**. They enable space-saving storage and are available from us in single-sided and double-sided versions. As **a certified** manufacturer of **hot-dip galvanized shelving systems,** we also implement individual solutions for our customers. Our shelves can be designed in rows of any length and can be adapted in terms of load capacity and size. The shelves can be combined with various accessories such as gratings, roll-off protection and push-through protection, collision protection or trapezoidal sheet metal for roof and rear wall cladding. You benefit from a range of products certified in accordance with DIN EN 1090 and a **load-bearing capacity** of the heavy-duty racks that has been statically proven in accordance with applicable specifications.

Please read these assembly and operating instructions before assembling the shelves. It contains important information. Please note the safety and operating instructions starting on page 3.

Warranty and warranty claims only exist if they are professionally installed in accordance with the installation instructions.

Your team from Bruckamp GmbH

Content

Installation Instructions and Safety Regulations	Page 3
Safety and operation	Page 4
Installation of cantilever racks	Page 5-7
Assembly Accessories Parts	Page 8 –16
Load Tables Stock Goods	Page 17
Maintenance book	Page 18

General information

The racking system must be installed properly on a level, sufficiently load-bearing surface.
Flatness tolerances from Table 3 of DIN 18202 for floors.

Spalte	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Zeile	Bezug	Stichmaße als Grenzwerte in mm, bei Meßpunktabständen in m												
		0,1*	0,6	1*	1,5	2	2,5	3	3,5	4*	6	8	10*	15*
3	Flächenfertige Böden,z. B. Estriche als Nutzestriche, Estriche zur Aufnahme von Bodenbelägen Bodenbeläge, Fliesenbeläge, gespachtelte und geklebte Beläge	2	3	4	5	6	7	8	9	10	11	12	13	14

* Values for these measuring point distances are given in Table 3 of DIN 18202. The values for the other distances are interpolated.
Source: Handbook for the Screed and Flooring Industry Central Association of the German Construction Industry.

As a foundation, we recommend reinforcement with reinforced concrete mats Q257 and concrete of concrete quality C25 / 30 at the top and bottom.

Important information on use and liability

The shelving components supplied by us may only be used in accordance with their intended purpose. In addition, our General Terms and Conditions (GTC) apply.
Warranty and liability claims for personal injury and property damage caused by improper use, misuse, incorrect assembly or disassembly, unauthorized repairs, attachments or other external influences are excluded, unless we are guilty of intent or gross negligence. The statutory regulations on liability for injury to life, limb and health as well as under the Product Liability Act remain unaffected by this (see §§ 10, 11 of our GTC).

Mounting design

The assembly must be carried out by qualified personnel (ideally at least 2 people) with appropriate tools. No brute force must be used when assembling the components. It is to be assembled according to the instructions below. Any discrepancies must be agreed with our specialist staff.
The applicable regulations of the employers' liability insurance association must be observed. See DGUV-I 208-061
The permissible loads on the shelves must not be exceeded. You can find the burden on the load signs and accompanying documents. The specifications apply to evenly distributed static load.

Safety

Shelves must be set up vertically. The deviation of the racks from the perpendicular direction in the longitudinal and depth directions must not exceed 1/200 of the shelf height. The deviation of the horizontal is no longer equal to 1/200 of the field width.
The racks are not suitable for carrying dynamic loads.
Damaged shelf parts must be replaced immediately.
All load specifications apply to indoor construction, in areas not at risk of earthquakes.
Shock loads from unusual loads are not provided.

The Regal Inspection

The Industrial Safety Ordinance regards storage equipment / racks as work equipment. According to §10 of the BetrSichV, these must be regularly checked by qualified persons. Any damage must be recorded, measured and documented. The controls are based on the new European standard DIN EN 15635. It determines the sequence of inspections of storage facilities/racks.

The rack must be loaded from bottom to top.

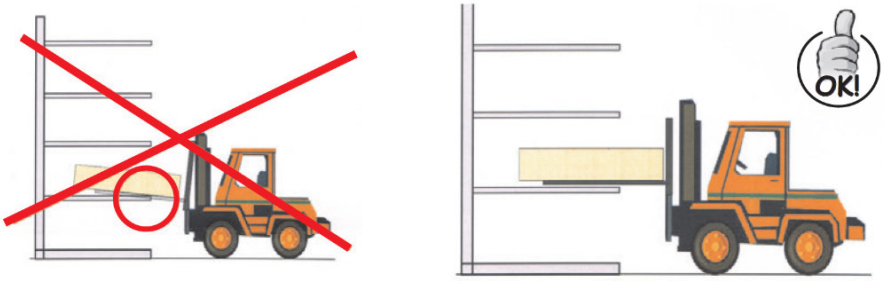
The goods to be stored must be carefully and slowly placed on the shelf footboards and the shelf arms. Care must be taken not to damage the cantilever arms, the shelf uprights and the bandages.

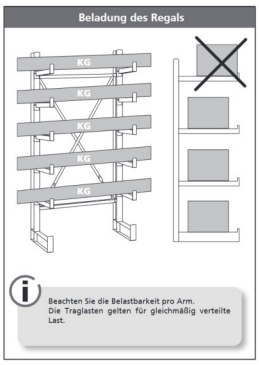
The goods must not protrude more than half a span width laterally over a cantilever arm.

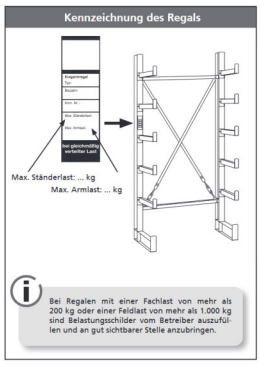
When removing goods from the shelf, care must be taken to ensure that the shelf is not damaged. There is a risk that cantilever arms will be lifted by the forklift forks. In particular, the
Arms of the above level should not be lifted by the forks or the fork carriage or the goods.

In the event of damage to the rack, the rack must be relieved immediately. It may only be carried out after professional
replacement of the damaged parts or can be used again after proper repair.

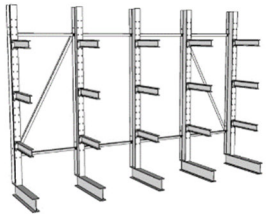
The shelf must be checked regularly. In particular, in the event of damage, the procedure described in point 11 must be followed.

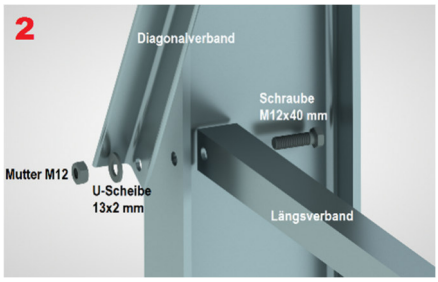


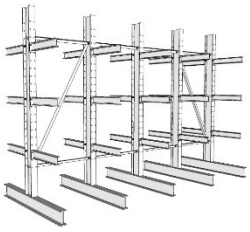


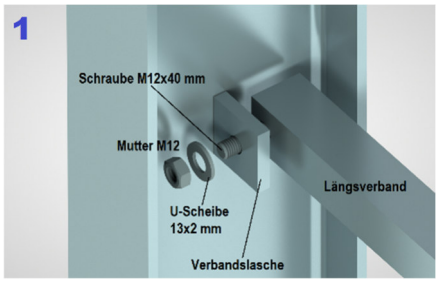


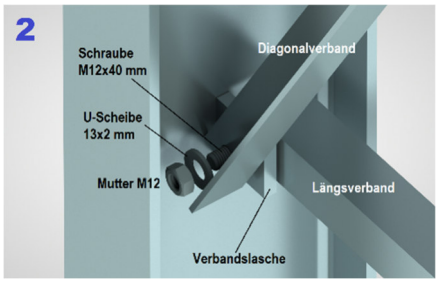
1. The attachment of the longitudinal and diagonal braces made of angle and flat steel and their screwing is carried out according to our sketch (see Figure 1: Longitudinal braces and Figure 2: Diagonal bracing).



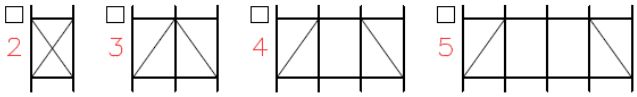


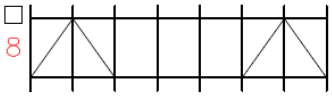


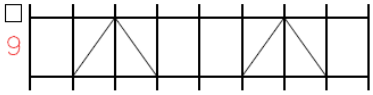


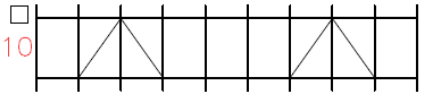


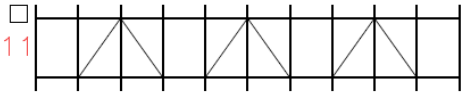
2. The bandages are to be arranged according to the number of stands and bandages as shown. Deviations due to the number of stands or bandages can be downloaded free of charge from our homepage under https://www.bruckamp.de/technische-hinweise/montageanleitung .

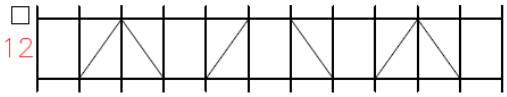


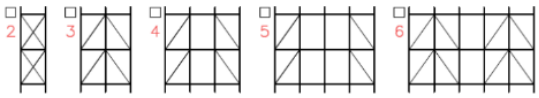


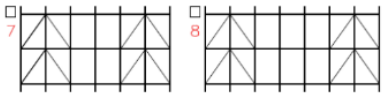


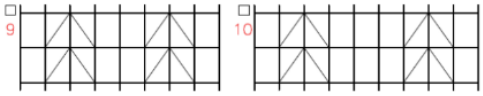


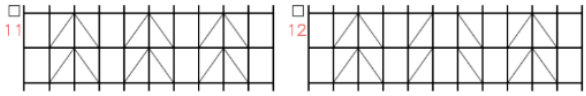


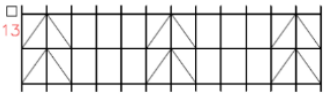




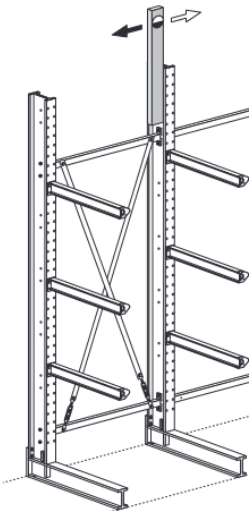


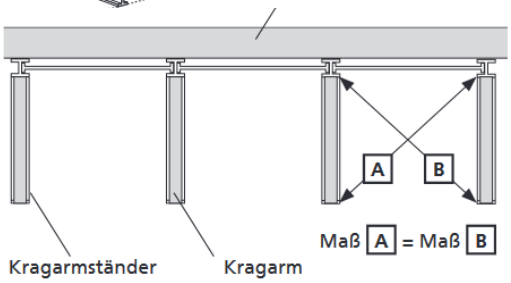


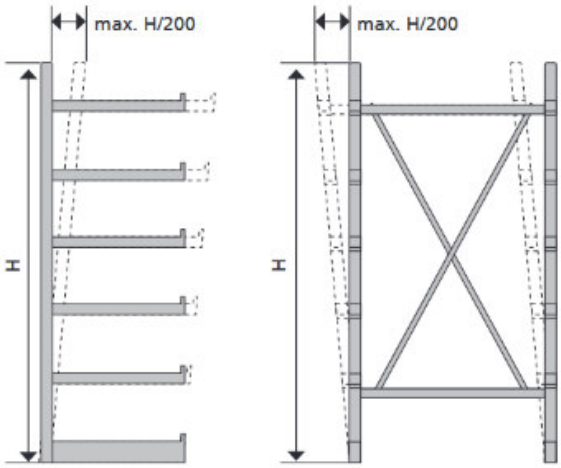




3. Make sure that the depths and widths are aligned at right angles and perpendicular







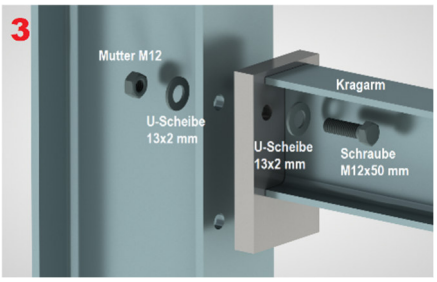
Eine maximale Lotabweichung in Tiefen- und Breitenrichtun
von H/200 ist einzuhalten!

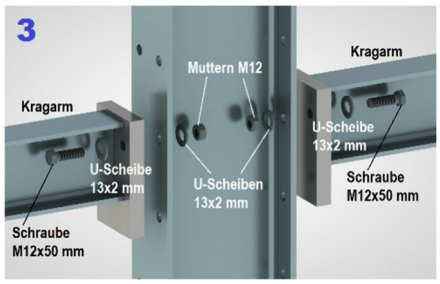
Beispiel: 2.000 : 200 = 10 mm max. Abweichung

Rechtwinklige Ausrichtung der Kragarmständer und Kragarme

Überkreuz messen, wenn Maß A = Maß B ist, dann O.K.!

3. The screwing of the cantilever arms is done according to our sketch (see picture 3). In particular, the washers shall be located on the inside of the carrier flange.





The following applies to the screw connection of the cantilever arm fastening: Unprestressed screw sets must be tightened at least hand-tightly in accordance with the EN 1090-2 design standard, taking care to ensure that they are not overloaded. In order to achieve a uniform, tangible condition, more than one tightening pass may be necessary. Hand Firm = condition that can be achieved by a person with a normal-sized wrench without extension.

Richtwerte „Handfest“ – Anziehmomente *		
Schraube	M 12	M 16
Anziehmoment Nm	15	35

* Auszug aus Ausführungen von Stahlbanken (Tab. KII 8-1)

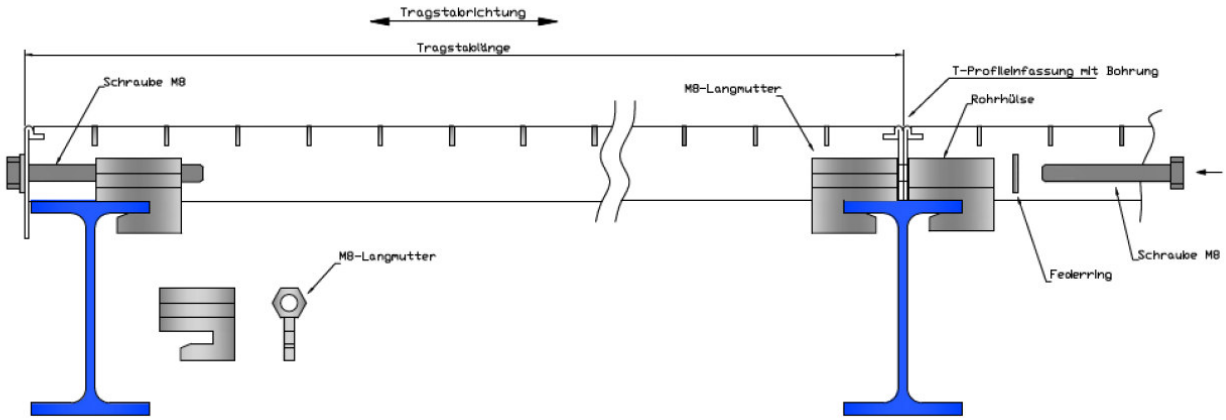
4. The connected components are to be pulled together in such a way that they reach a largely flat system. Screws and nuts must not be welded. Nuts must be installed in such a way that their marking is visible during the inspection after assembly.

5. The shelf foot parts are suitable for securing in their position, especially against unintentional displacement (e.g. by forklift forks). For fastening to a concrete foundation, approved ground anchors, e.g. Würth fixed anchors W-FAZ/S-15-M12x110mm or W-FAZ/S-25-M16x145mm for indoor use or Würth fixed anchors W-FAZ/A4-20-M12x115mm or W-FAZ/A4-25-M16x145mm for outdoor use or identical anchors of other
manufacturer. For outdoor use, we recommend stainless steel ground anchors.

6. The stress signs must be installed in clearly visible places.
The specified loads are permissible maximum loads with an even load on the rack.

Pluggable roll-off protection

Gratings on top



Kragarm - Endbefestigung

Kragarmbefestigung

Gratings inserted

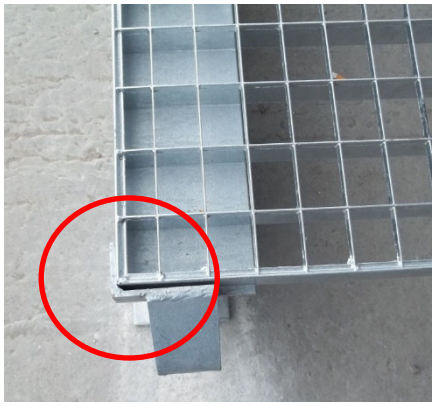
Attention: There are various gratings and associated shelf stands / cantilevers.
When assembling the rack, please note the position of the brackets so that the gratings can then be in the corresponding fields.

1. Foot and / or arm external grates
2. Foot and/or arm inner grates
3. Left Wing
4. Inside
5. Right Wing

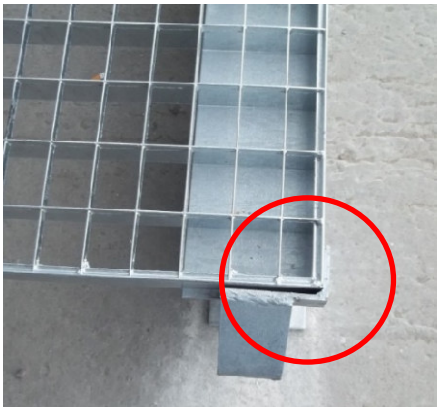
Foot level with gratings:

Arm level with gratings:

Shelfstand left Outside:

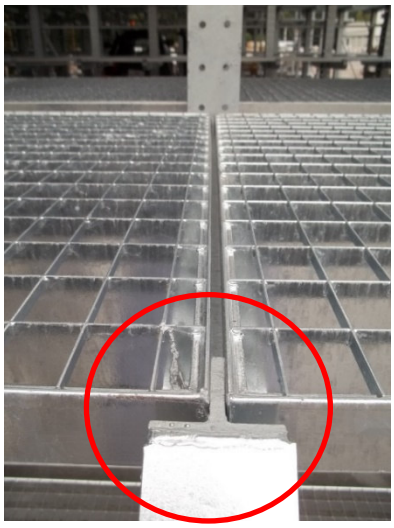


Shelfstand right outside:

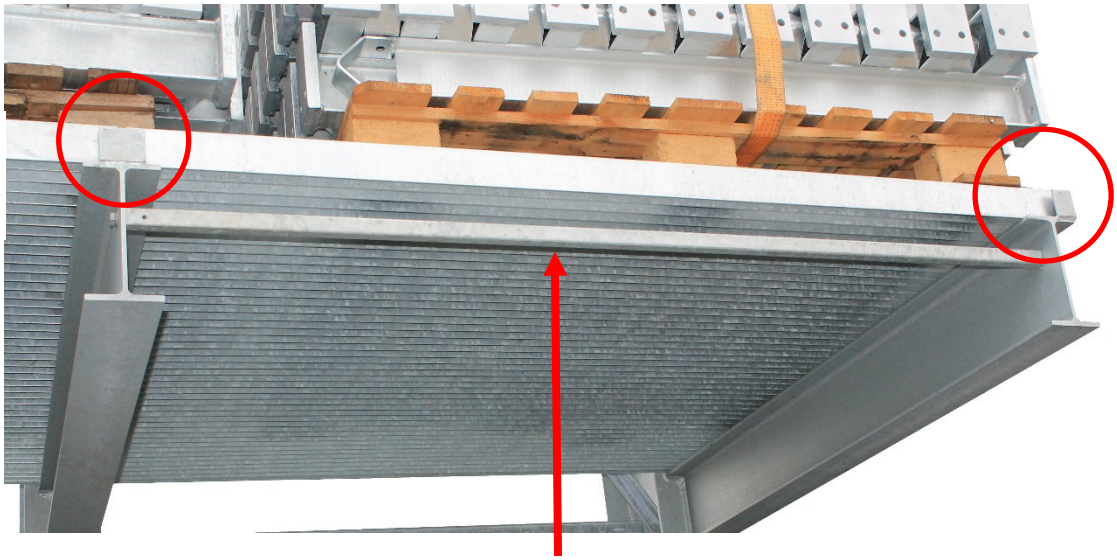


Shelfstand arm

Inside:



Cantilever inside

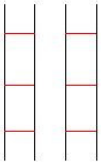


Cantilever outside

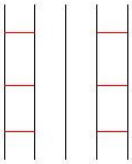
Drawbar

Aufteilung der Zugrohre

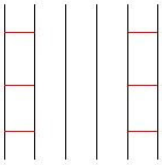
Jedes Feld



Jedes zweite Armfeld



Jedes dritte Armfeld



Jedes vierte Armfeld

Bitte beachten Sie folgende Punkte:

- Die Zugrohre müssen immer im ersten und letzten Feld verbaut werden!
- Zugrohre gehören nur in die Armfelder
- Nicht alle Arme sind gebohrt.

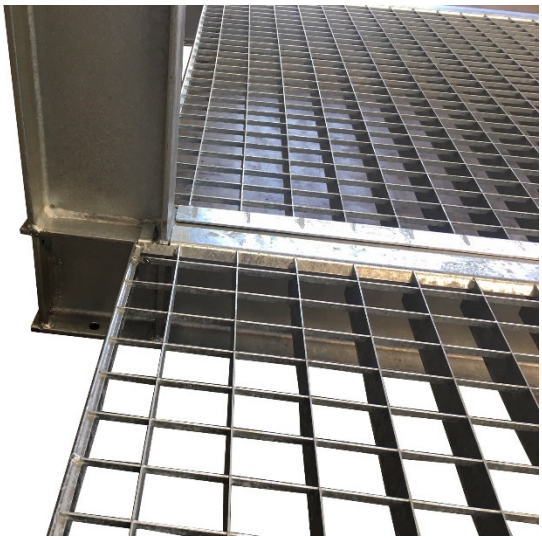
  Bitte sortieren Sie die Arme entsprechend,
  bevor Sie sie an die Ständer montieren.

Gratings for hanging in

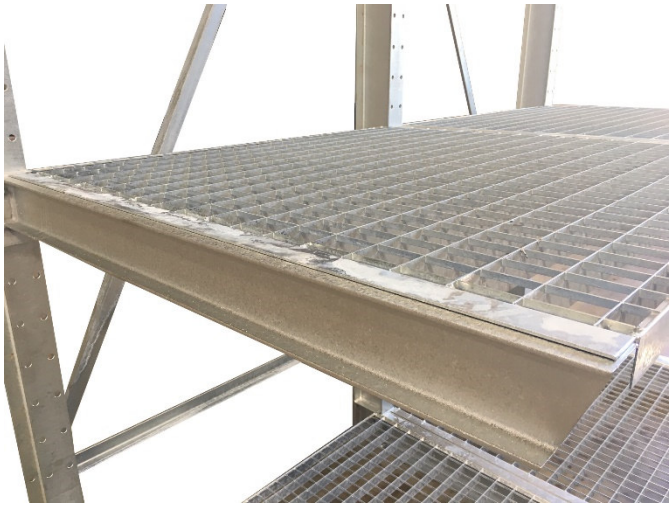
Attention: There are different gratings. Please sort before assembly!

1. Foot grates
2. Arm grates on the left outside
3. Arm praised within
4. Arm grates on the far right

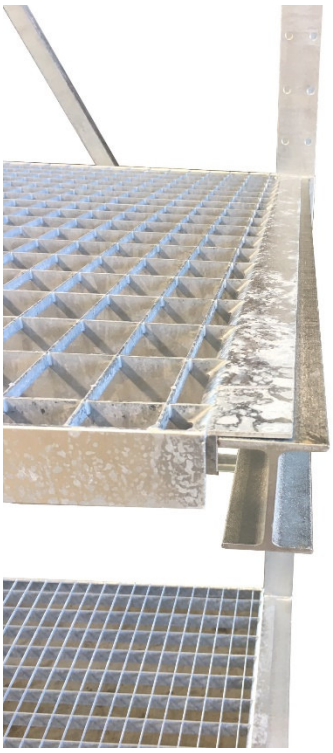
1. Foot grates:



2. Arm <u>on the</u> left outside: extra large wing on the left



3. Arm on the right outside: extra large wing on the right



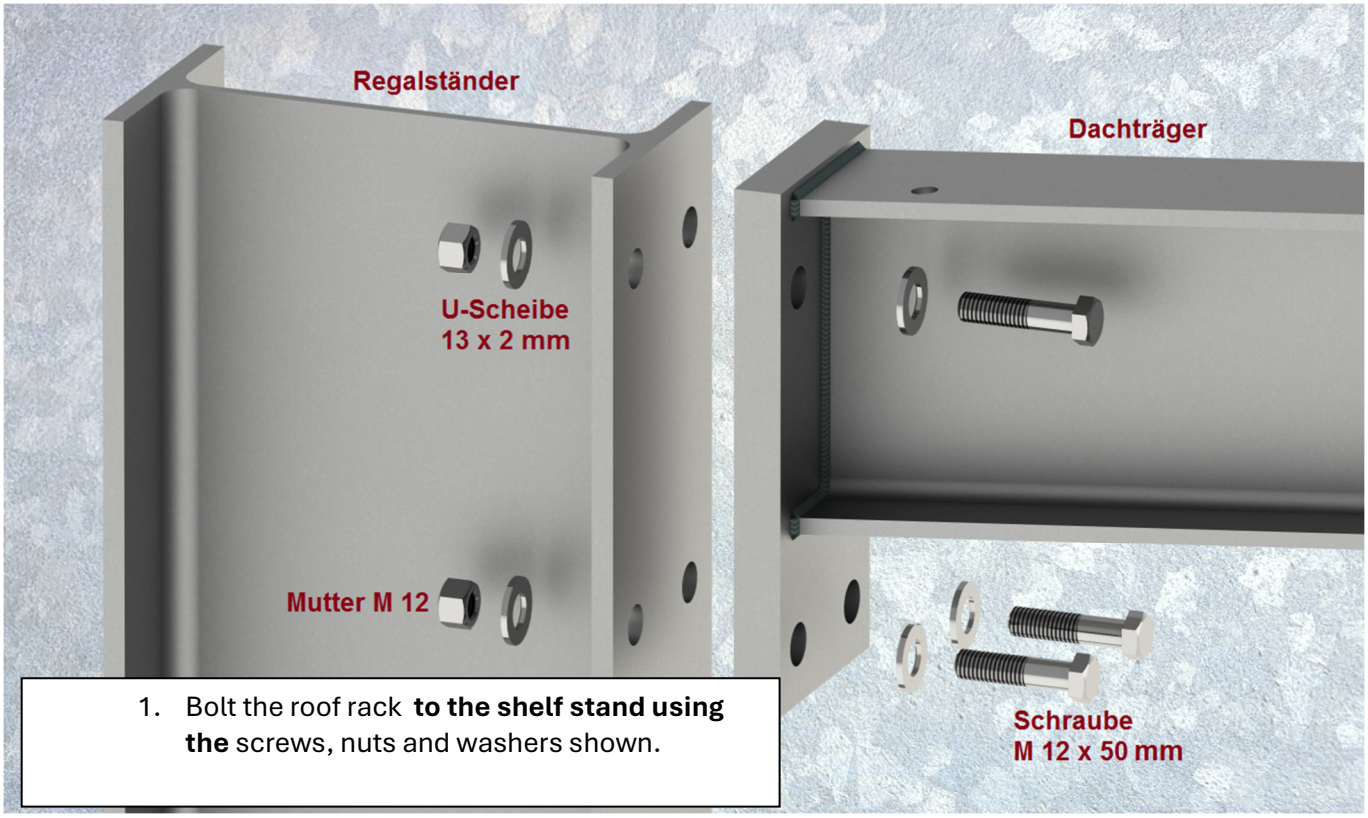
4. Inner arm: Wings of the same length

Cantilever racks
Mounting Accessories

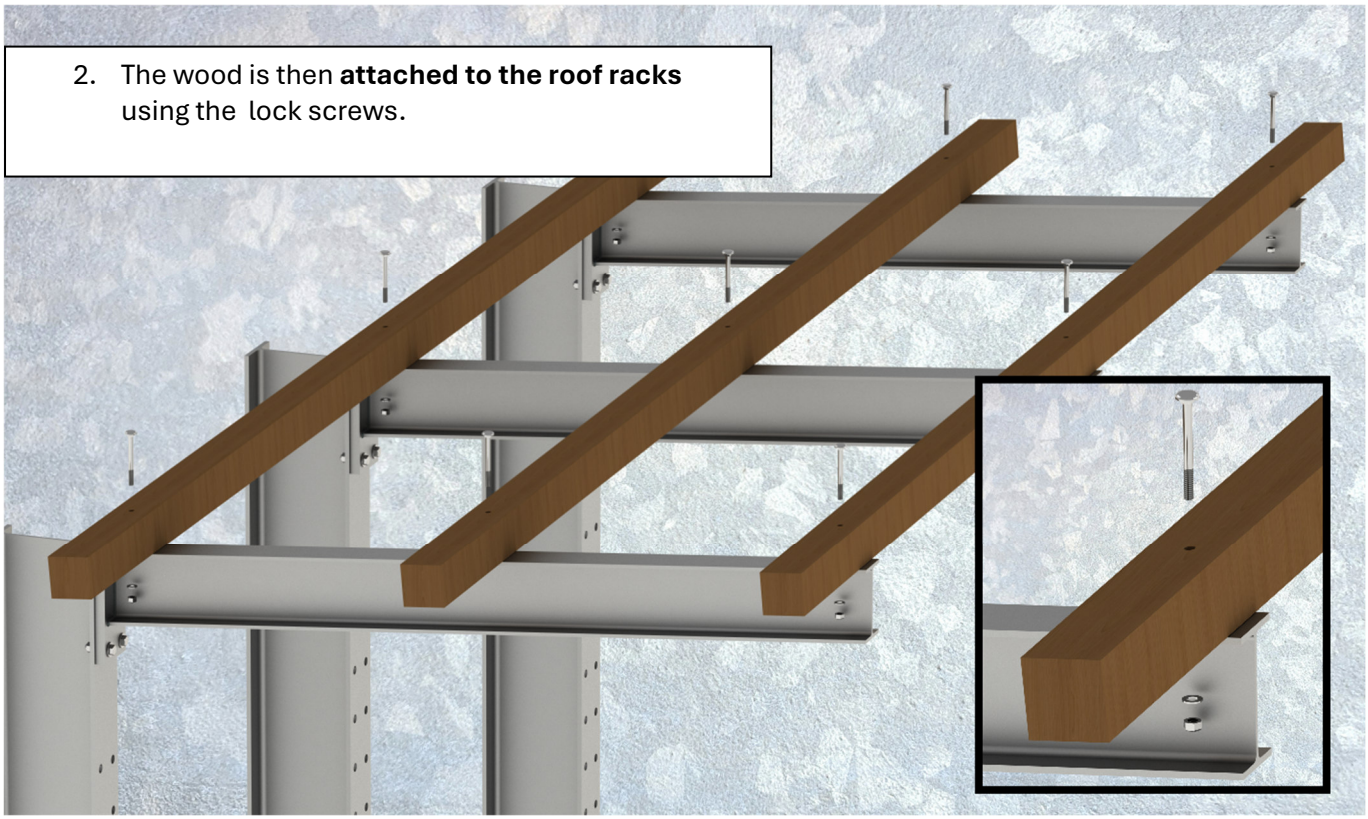
Roof rack

Alpen Roof Racks

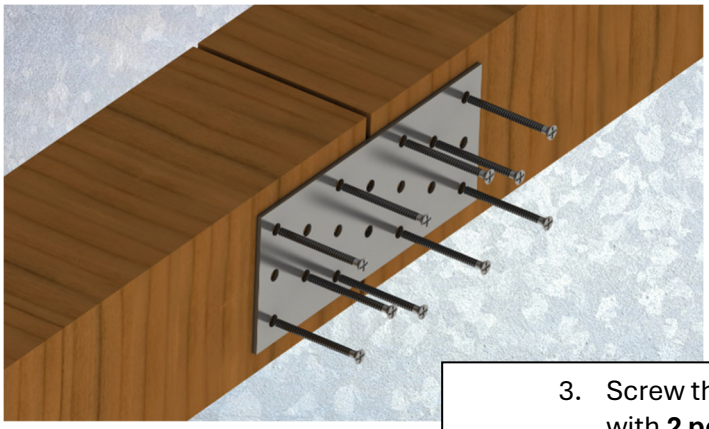
Roof structure

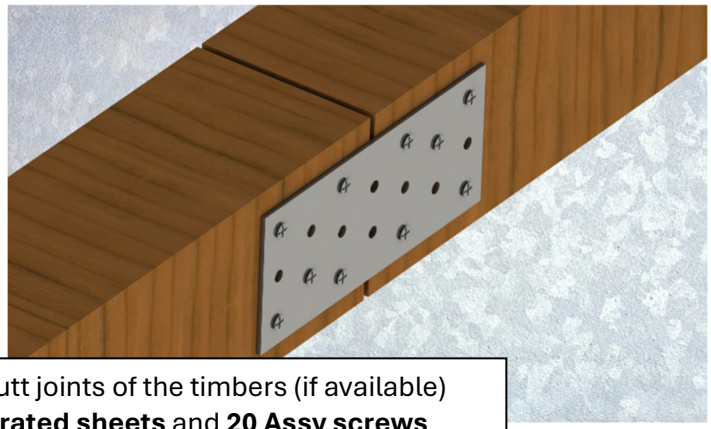


1. Bolt the roof rack **to the shelf stand using the** screws, nuts and washers shown.

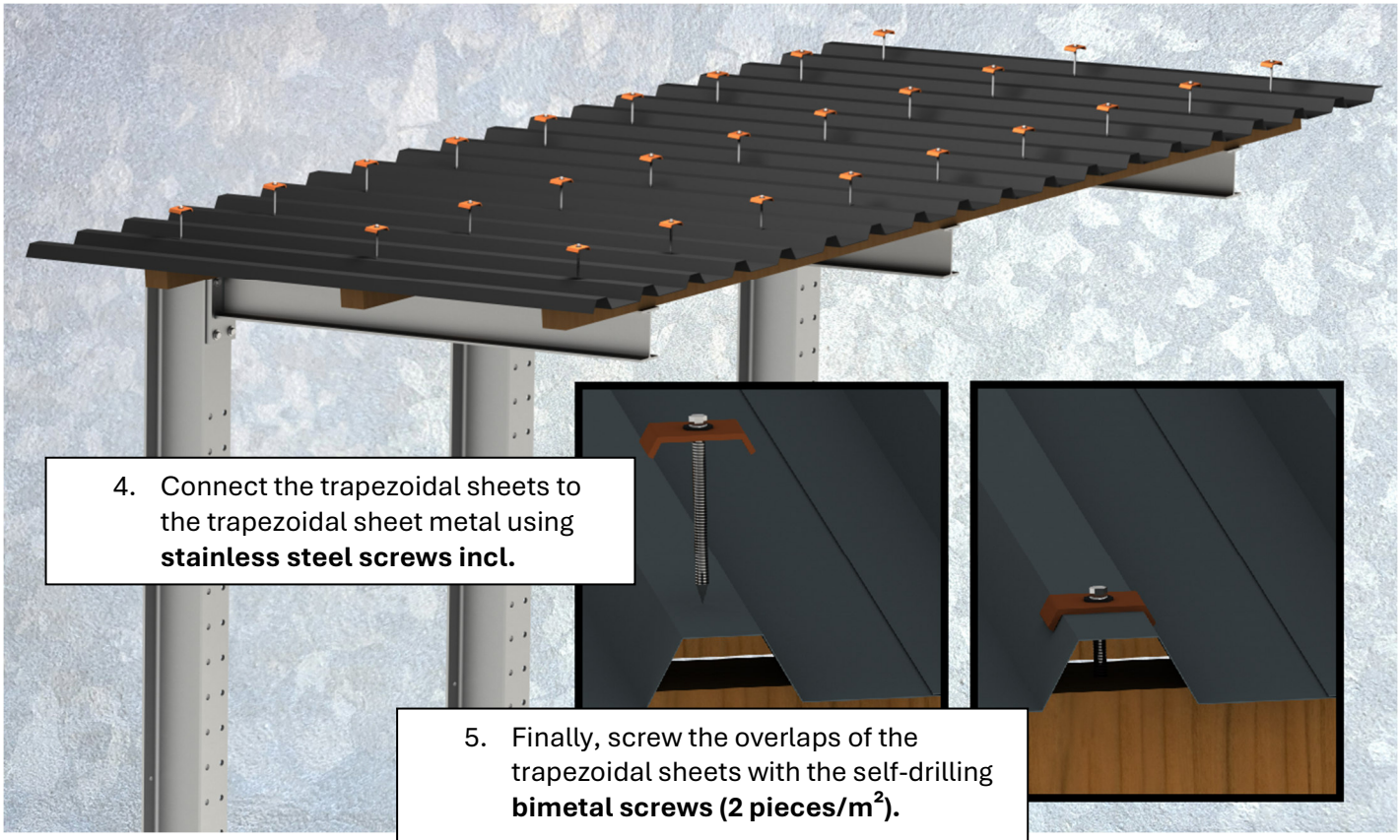


2. The wood is then **attached to the roof racks** using the lock screws.



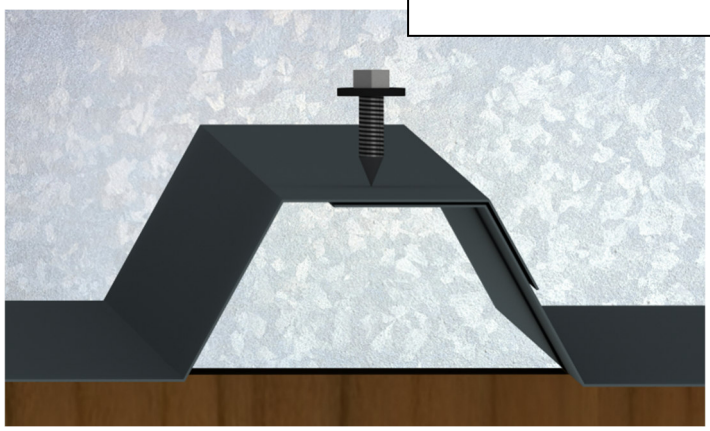


3. Screw the butt joints of the timbers (if available) with **2 perforated sheets** and **20 Assy screws** each, on the opposite sides.



4. Connect the trapezoidal sheets to the trapezoidal sheet metal using **stainless steel screws incl.**

5. Finally, screw the overlaps of the trapezoidal sheets with the self-drilling **bimetal screws (2 pieces/m^2).**



Shelf stand "Light version" Stock goods :

Articel Nr.	Stand height	Profile	Foot Depth	Execution	Load capacity per side
ES-140-214-050	2,14 m	IPE 140	0,50 m	single-sided	3600 kg
ES-140-260-060	2,60 m	IPE 140	0,60 m	single-sided	3000 kg
ES-140-260-080	2,60 m	IPE 140	0,80 m	single-sided	2400 kg
ES/DS-140-260-100	2,60 m	IPE 140	1,00 m	single-sided / double-sided	2000 kg
ES-160-300-120	3,00 m	IPE 160	1,20 m	single-sided	2350 kg
ES/DS-160-350-120	3,50 m	IPE 160	1,20 m	single-sided / double-sided	2300 kg
ES/DS-160-400-120	4,00 m	IPE 160	1,20 m	single-sided / double-sided	2250 kg
ES/DS-160-416-120	4,16 m	IPE160	1,20 m	single-sided / double-sided	2250 kg

Shelf stand "Heavy version" Stock goods:

Articel Nr.	Stand height	Profil	Foot Depth	Execution	Load capacity per side
ES-200-320-180	3,20 m	IPE 200	1,80 m	single-sided	3000 kg
ES-180-370-120	3,70 m	IPE 180	1,20 m	single-sided	3000 kg
ES-200-420-120	4,20 m	IPE 200	1,20 m	single-sided	3850 kg
ES-200-420-150	4,20 m	IPE 200	1,50 m	single-sided	3250 kg
ES/DS-180-426-120	4,26 m	IPE 180	1,20 m	single-sided / double-sided	2800 kg
ES/DS-180-468-120	4,68 m	IPE 180	1,20 m	single-sided / double-sided	2700 kg
ES/DS-180-518-120	5,18 m	IPE 180	1,20 m	single-sided / double-sided	2600 kg
ES-220-630-120	6,30 m	IPE 220	1,20 m	single-sided	4350 kg

Cantilever Stock goods:

Articel Nr.	Length	Profil	Execution	Load capacity
LAW-080-050	0,50 m	IPE 80	with deflector	1200 kg
LAW-080-060	0,60 m	IPE 80	with deflector	1000 kg
080-080	0,80 m	IPE 80	without / with deflector	800 kg
080-100	1,00 m	IPE 80	ohne / mit Abweiser	630 kg
080-120	1,20 m	IPE 80	without / with deflector	500 kg
100-120	1,20 m	IPE 100	without / with deflector	900 kg
120-120	1,20 m	IPE 120	without / with deflector	1200 kg
120-150	1,50 m	IPE 120	without / with deflector	970 kg
LAW-100-180	1,80 m	IPE 100	with deflector	600 kg

Maintenance book

Warehouses and operating equipment

Basic information about the inspection

In accordance with DIN EN 15635 in conjunction with DIN EN 15629, the operator of a racking system is obliged to carry out regular maintenance and inspections of the system. This should be carried out systematically and regularly and follows a hierarchical approach with several levels of inspection:

1. Immediate notification
2. Weekly visual inspections
3. Annual expert inspections

Damage detected by the inspection must be remedied by the operator.

Permanent business establishment: _____

Contact: _____

Manufacturer shelving system: Bruckamp GmbH

Shelf Type: _____

Year of construction: _____

Date	Activity carried out	Remark	Name	Signature