BRAAS®
REGALANLAGEN GMBH

SF cantilever rack

Assembly and operating instructions

EN BAUHAUS edition
English

GENERAL INFORMATION

Dear customer,

with the SF cantilever shelf, you have chosen a high-quality and flexible storage system, designed for simple and safe handling, especially of long goods, plates and other storage goods.

The SF cantilever rack may only be assembled and used in accordance with these assembly and operating instructions. Therefore, your fitters, forklift drivers and warehouse staff must be instructed according to these instructions. We accept no liability whatsoever for any damage or injury resulting from improper assembly or misuse.

The SF cantilever rack

- The SF shelving system is a robust cantilever shelf with extra strong feet. This design allows loading with up to 3,000 kg per side of the stand (double-sided shelves in total). a total of 6,000 kg per stand). With the SF3 shelf, even 4,000 kg per side of the stand (double-sided shelves 8,000 kg) can be loaded.
- The **SF2 indoor shelf** (powder-coated, height 5 m, e.g. for drive-in) and the **SF3 outdoor shelf** (galvanised, height 6 m, with roofing) are designed for long goods. The **SF4 shelf is optimised for the storage of superstructured pallets** (height 5 m, stronger cantilever arms with 125 cm length, shelves; both indoor and outdoor shelving).
- All versions are available as single-sided or double-sided shelves. The width is at least 2 x 1.50 m (2 shelf bays) and can be extended in 1.50 m-increments.
- The cantilever arms can be positioned in the 76-mm plug-in grid. Each cantilever arm is fitted at the end with a screw-on plate on which various accessories can be mounted, e.g. anti-roll locking devices, head protection, etc.

Substrate requirements

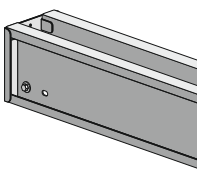
- The warehouse operator must ensure that the floor in the installation location can safely support all loads applied (net weight + load). Concrete substrates must be at least of grade C20/25.
- For static reasons, the shelves must **always be anchored to the floor.** Therefore, installation is only permitted on concrete floors with a sufficient borehole depth; asphalt floors, composite stone paving, gravel floors and similar are **not suitable**. For more information about ground anchoring, see page 7.

Correct use

- Load the shelves where possible from bottom to top. Loads must not be displaced on the cantilevers or set down heavily on them. When loading, make sure that there is sufficient clearance.
- **The max. permissible bearing loads specified must not be exceeded** (page 14).
- **Stepping or climbing on the shelves and leaning on ladders is strictly forbidden!**

Regulations for shelving systems

- DIN EN 15635 and DGUV (German Social Accident Insurance) regulation no. 108-007 (formerly BGR 234) regulate the mounting and handling of shelving units. This includes the requirement for carrying out an **annual shelf inspection** (see page 16).
- **Questions relating to fire protection** should be clarified with your local fire service or a specialist company for operational safety and fire protection (e.g. water-permeable removable shelves when using sprinkler systems).

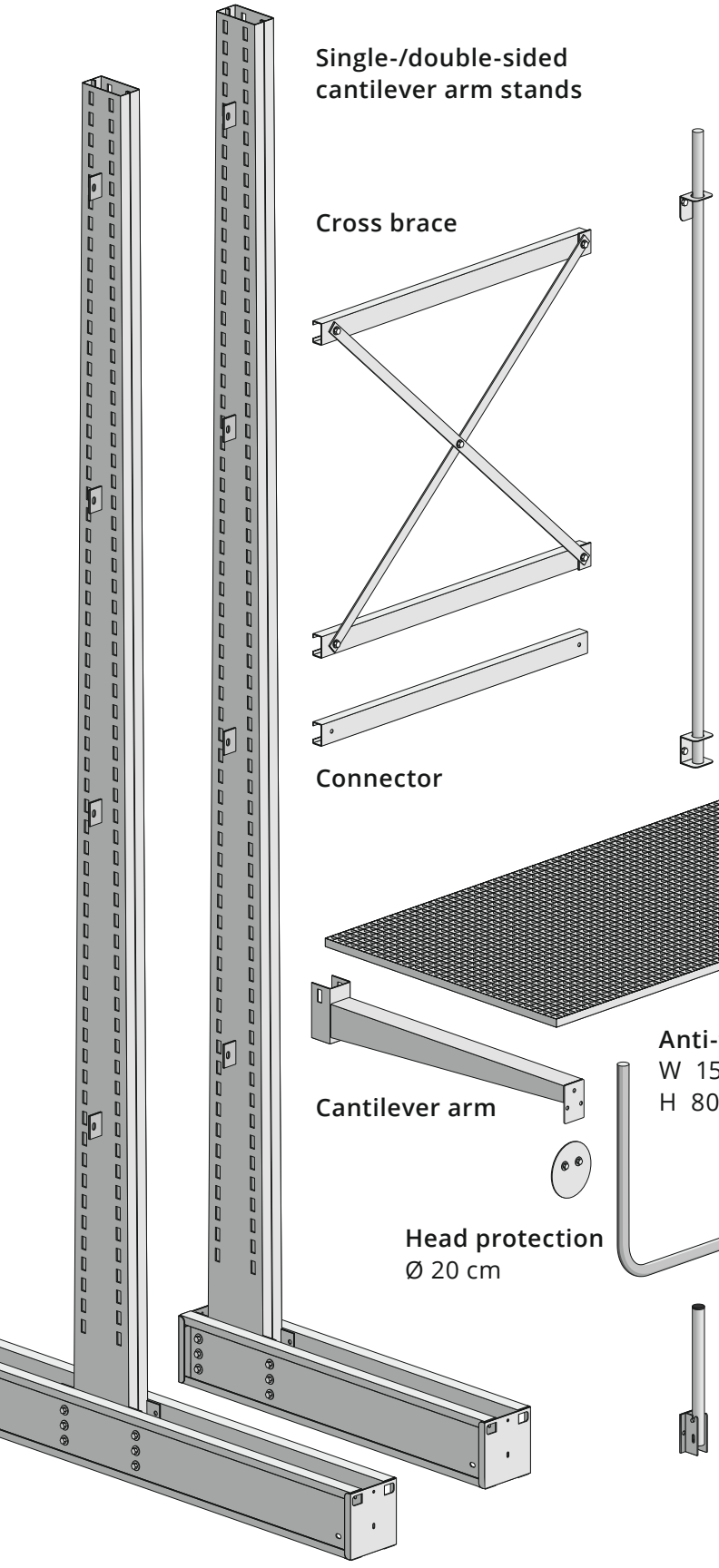


After assembly, keep these instructions for later use

Issued: 01.2023 – We reserve the right to make changes based on technical advances

SHELF ASSEMBLY

Components



Mounting accessories

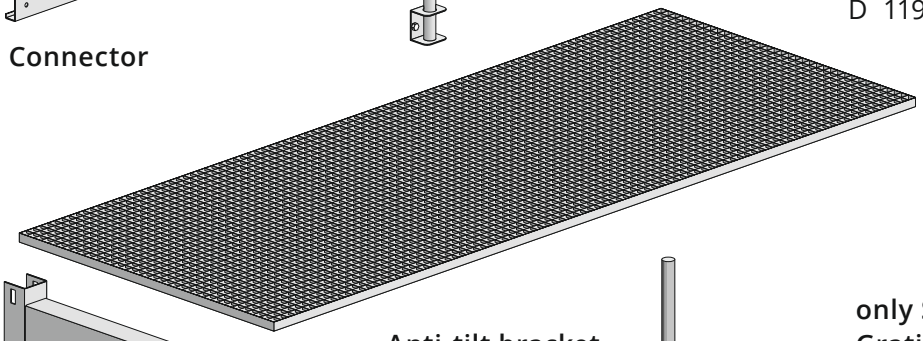
- **16 screw sets per stand** (screw M16x30, nut, 2 washers) for connecting the foot section to the frame supports (supplied)
- **5 screw sets per cross brace or 2 sets per connector,** each with screw M12x30, nut, 2 washers (supplied)
- **2 ground anchors per stand,** galvanised for indoor version, stainless steel for outdoor version (supplied)
- **1 pair of wedge bolts per cantilever arm** for inserting (supplied)
- **Load capacity stickers** (supplied)

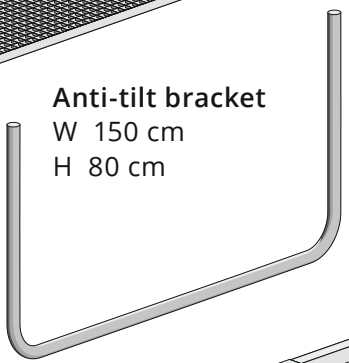
Tools

- **Tape measure and spirit level** for aligning the shelf components
- **Wrenches** sizes 19 and 24
- **Drill Ø 16** for attaching to the floor

Anti-roll rod
L 230 cm

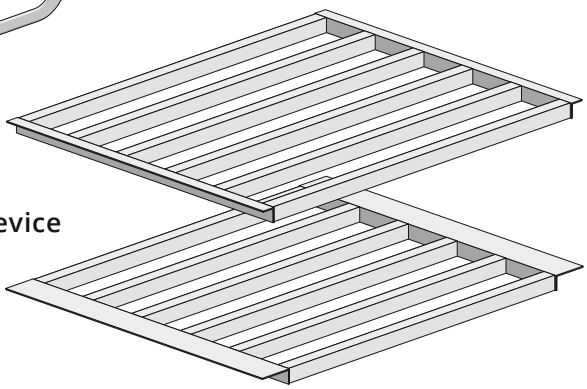
Grid shelves (SF2, SF3)
W 300 cm
D 119 cm





Anti-tilt bracket
W 150 cm
H 80 cm

only SF4:
Grating insert for arms, grating insert for feet
W 150 cm
D 120 cm



Anti-roll locking device
L 50 cm

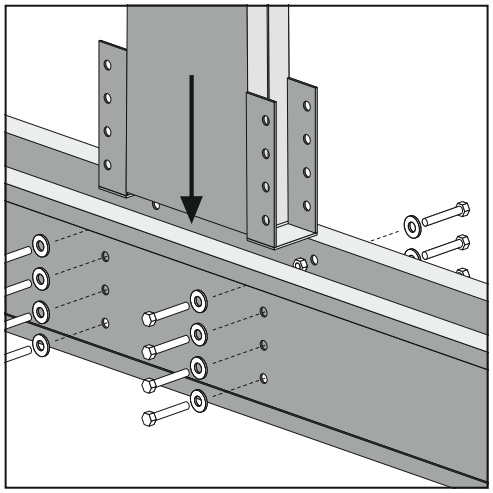
Preparations

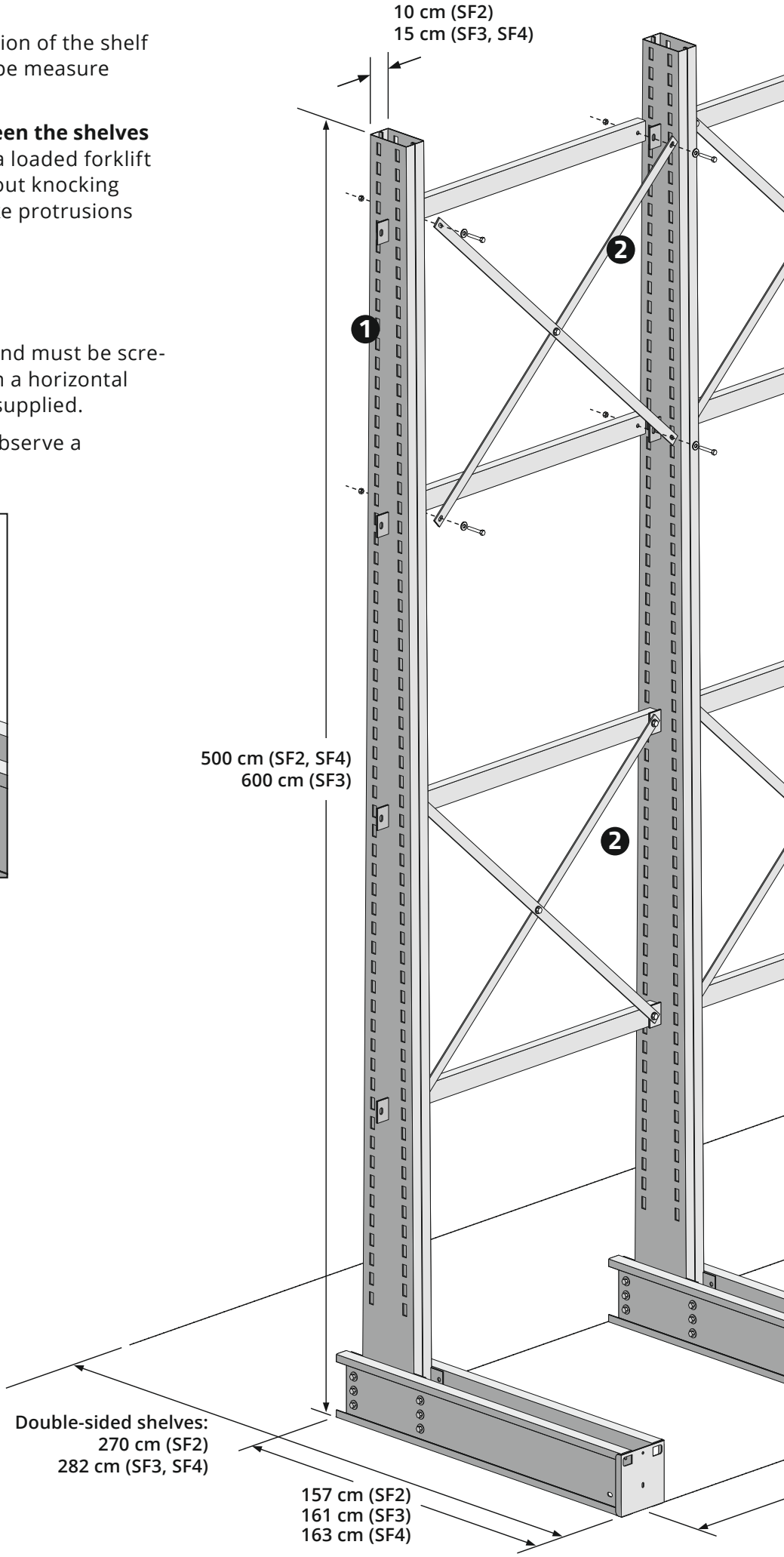
- We recommend marking the position of the shelf on the floor in advance using a tape measure and chalk or pencil.

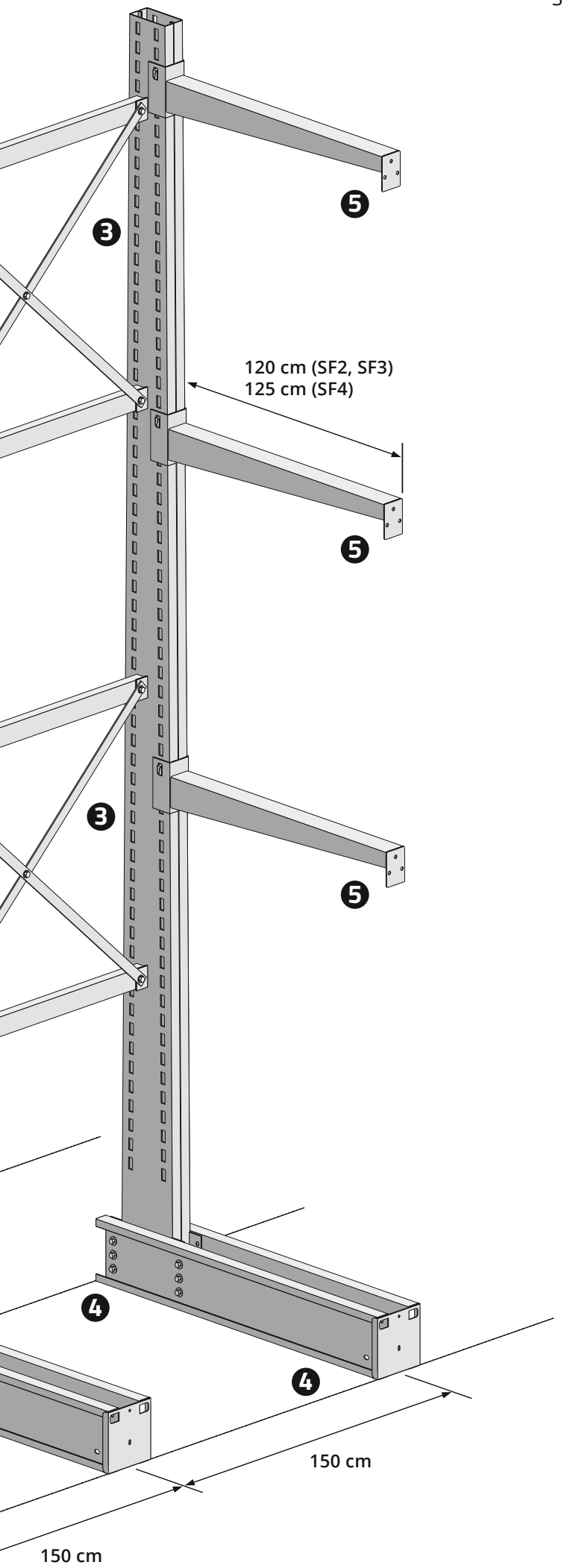
The space in front of or between the shelves must be dimensioned so that a loaded forklift truck can drive and turn safely without knocking against the shelves or their load (take protrusions into account).

- The feet are supplied separately and must be screwed onto the stands, preferably in a horizontal position. Use the M16x30 screws supplied.

When tightening the screws, observe a tightening torque of 240 Nm!







Setting up the shelf

1. Erect the first stand and prevent it from falling over or support it properly.
2. Fasten the second stand to the first stand with two cross braces. **The supplied screws** (M12x30, including washers and stop nuts) **are initially only tightened by hand.**

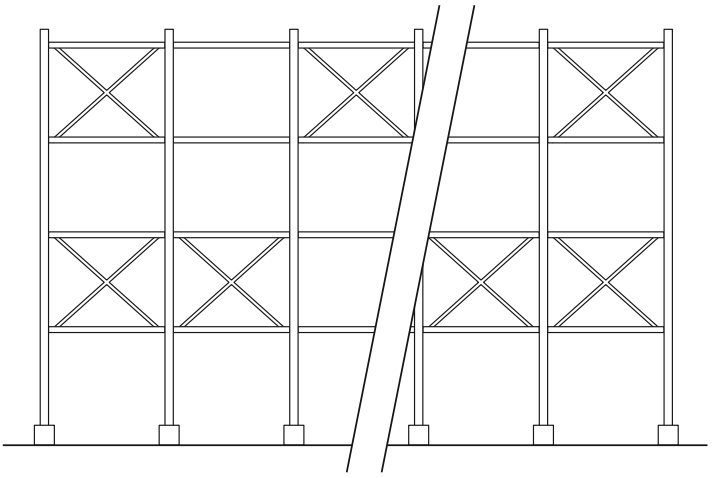
⚠ The first stands should be assembled by 3 people.

3. Now set up the other stands too. Immediately attach the appropriate cross braces and connectors to stabilise the shelf.

ℹ Place the stands as precisely as possible in the required position; this will make it easier to align them afterwards.

4. Once you have completed the basic construction, carry out the final alignment of the shelf and bolt to the floor (pages 6 and 7). Tighten the screw connections of the connectors tightly.
5. The cantilever arms can now be hooked into the required position and secured (page 7).

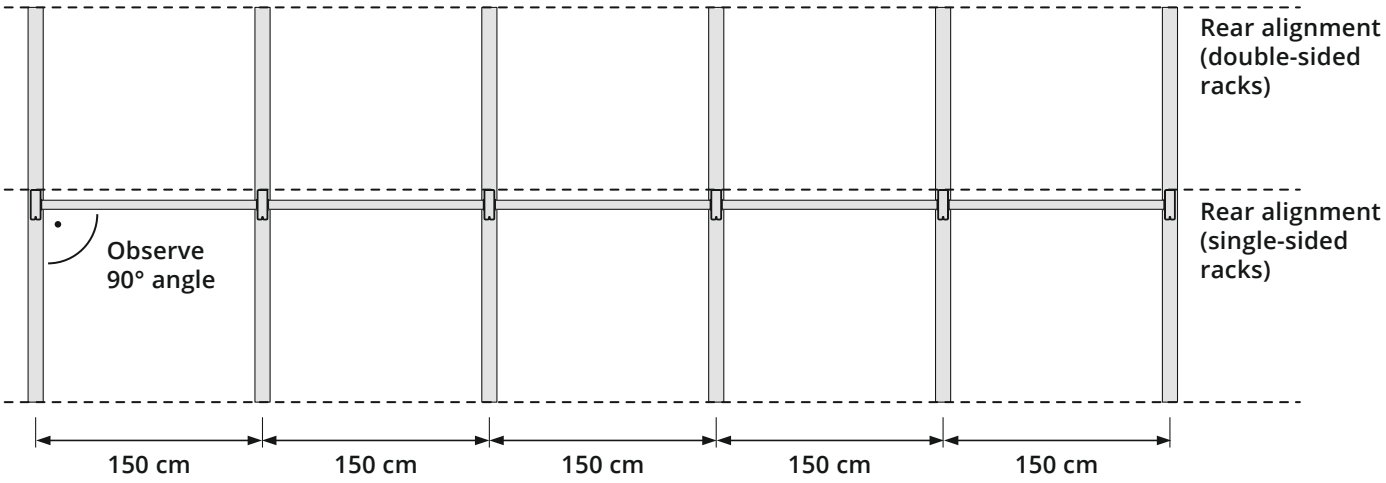
- Do not forget to attach the **load capacity stickers** to the finished shelf (page 14).



Arranging the cross braces

For static reasons, **at least 3 stands and 4 cross braces** must be used. With this minimum construction, 2 cross braces must be attached in both shelf bays (see large diagram).

For longer shelving units, 2 cross braces must also be installed at the beginning and end, with one cross brace each in between, alternately at the top and bottom. The free positions are reinforced with simple connectors (small diagram).



Aligning and bolting

Check the shelf components again and make any necessary corrections:

- The stands must be aligned and at the correct distance from the wall.
- The feet of the stands must be horizontal and at the same height. If necessary, place base plates under the feet.

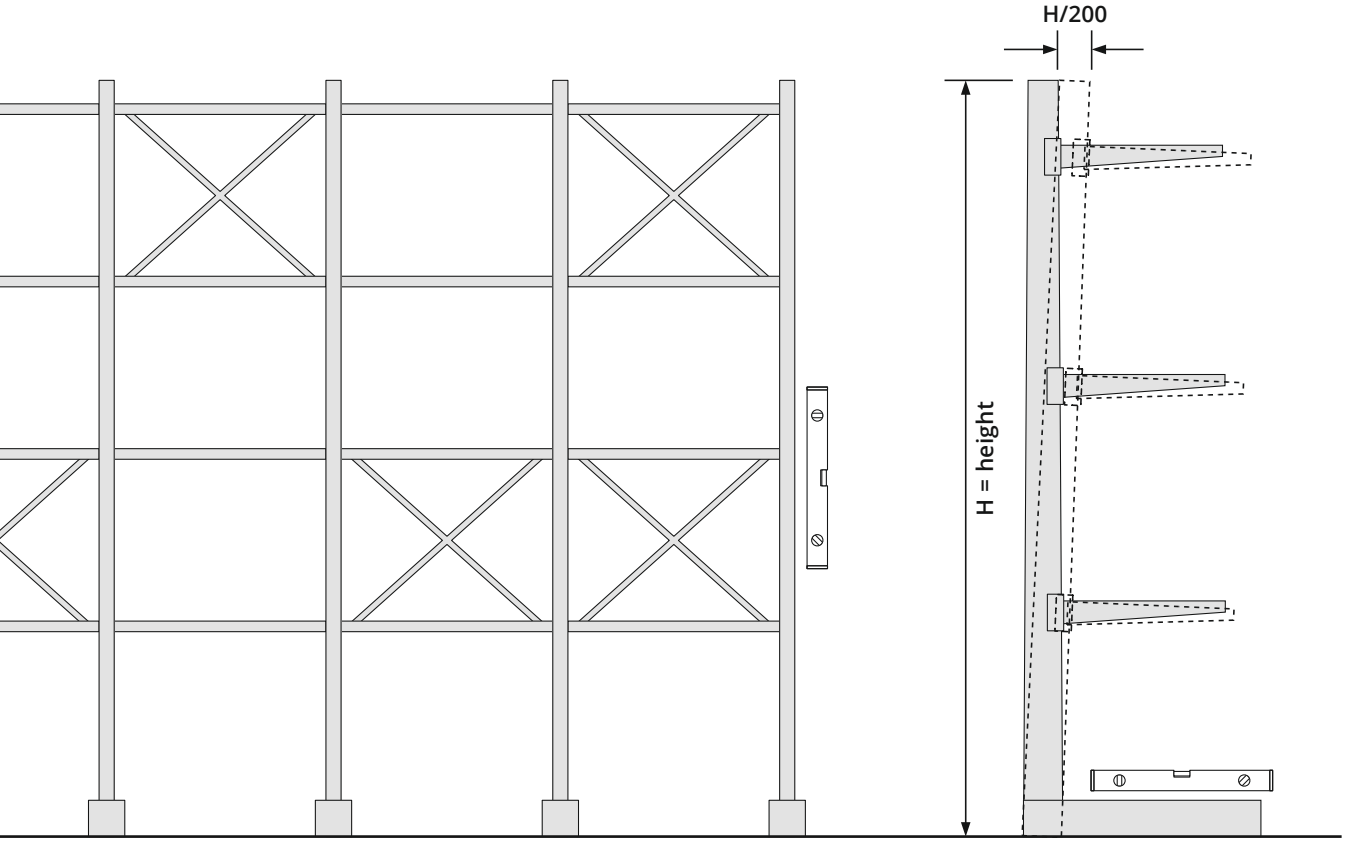
From a difference of 10 mm onwards, the entire surface must be covered or filled (see page 2)

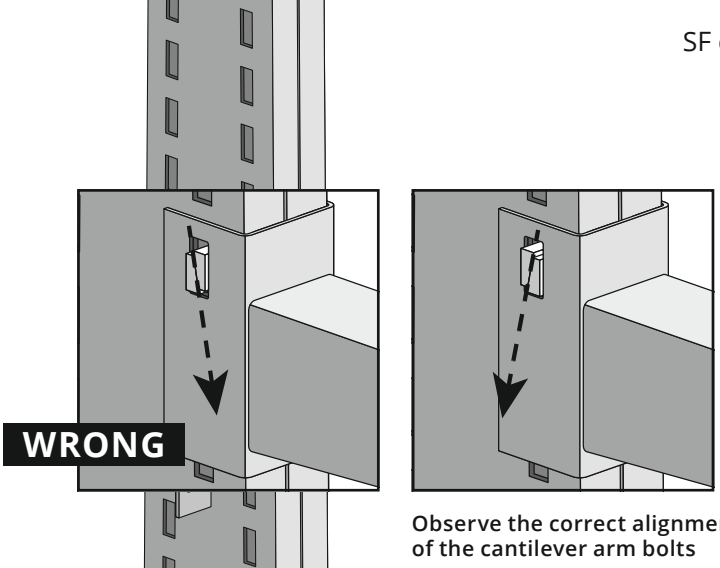
- The shelf stands must be constructed in the vertical position.

Once the shelf is correctly aligned, the connections of the cross braces and connectors can be screwed tightly in place.

When measuring the inclination in the depth direction, only place the spirit level on the base as the stand is conical.

In order to guarantee stability and thus safety, the solder deviation may be max. H/200 including when fully loaded.
E.g.: H 5000 mm / 200 = max. 25 mm deviation





Observe the correct alignment of the cantilever arm bolts

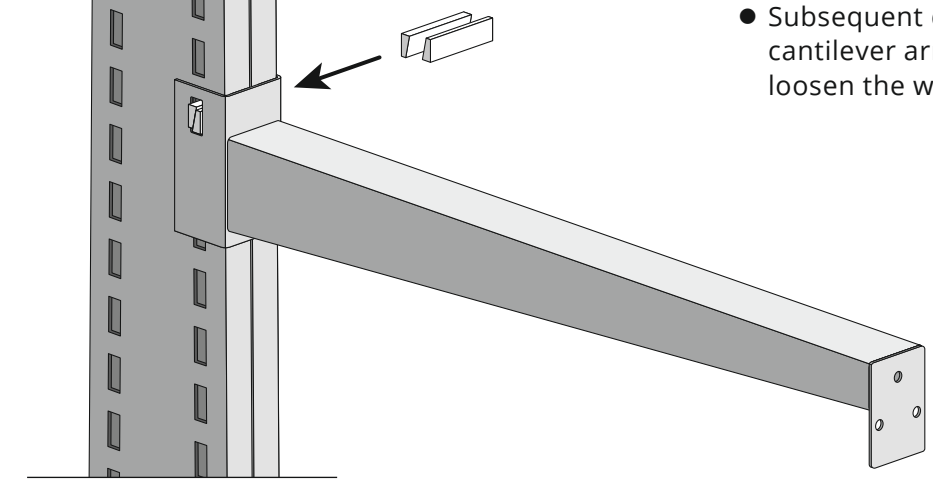
Cantilever arms

- The cantilever arms can be inserted in 76-mm increments into the plug-in grid on the stands. To do so, the wedge bolts supplied must be guided through the holes in the supporting arm and stand.

⚠ Make sure that the wedge bolts protrude evenly on both sides. The inclination between the bolts must point downwards towards the centre of the stand.

⚠ The hole on the cantilever arm suspension must always face upwards as this is the only way to ensure a secure fit.

- Subsequent displacement of the arms: Lift the cantilever arm near the stand slightly, if necessary loosen the wedge bolt with a soft-face hammer.

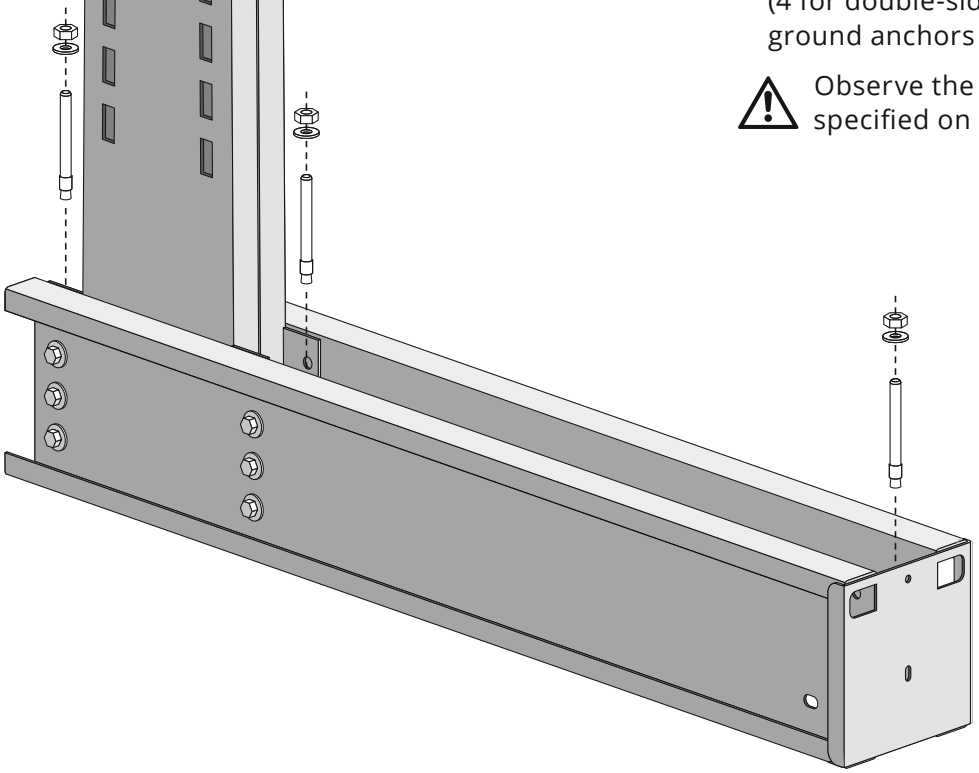


Ground anchoring

The SF cantilever rack must always be anchored to the floor.

- Attach the foot with 3 screw connections (4 for double-sided shelves). To so do, use the ground anchors supplied.

⚠ Observe the **requirements for the floor** specified on page 2.



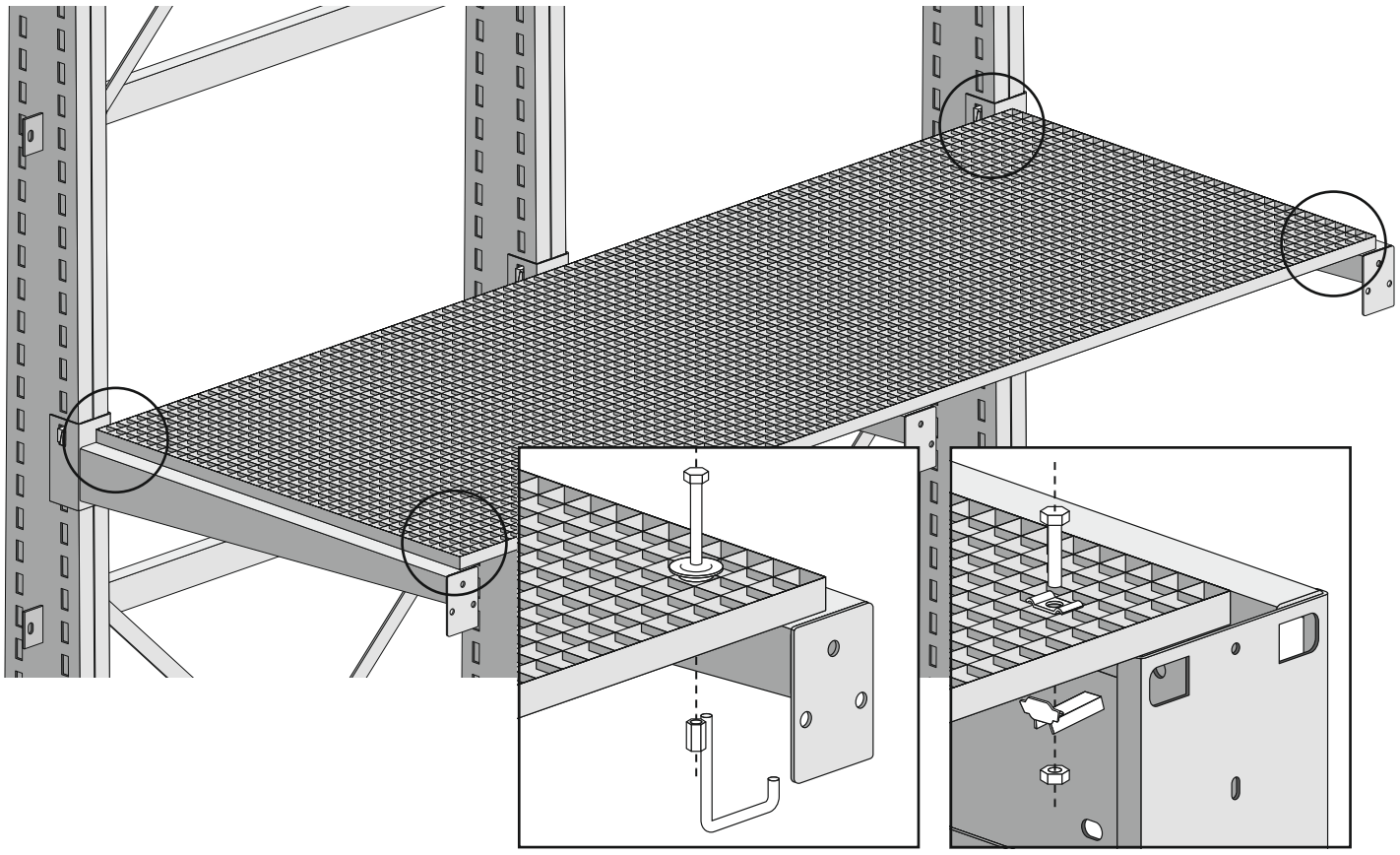
Shelves with steel grating (SF2, SF3)

Galvanised sheet steel gratings are used for the load-bearing shelf panels. They span 2 shelf bays (shorter shelf panels available on request).

- Fix the shelf panels to the cantilever arms using the assembly claws supplied.

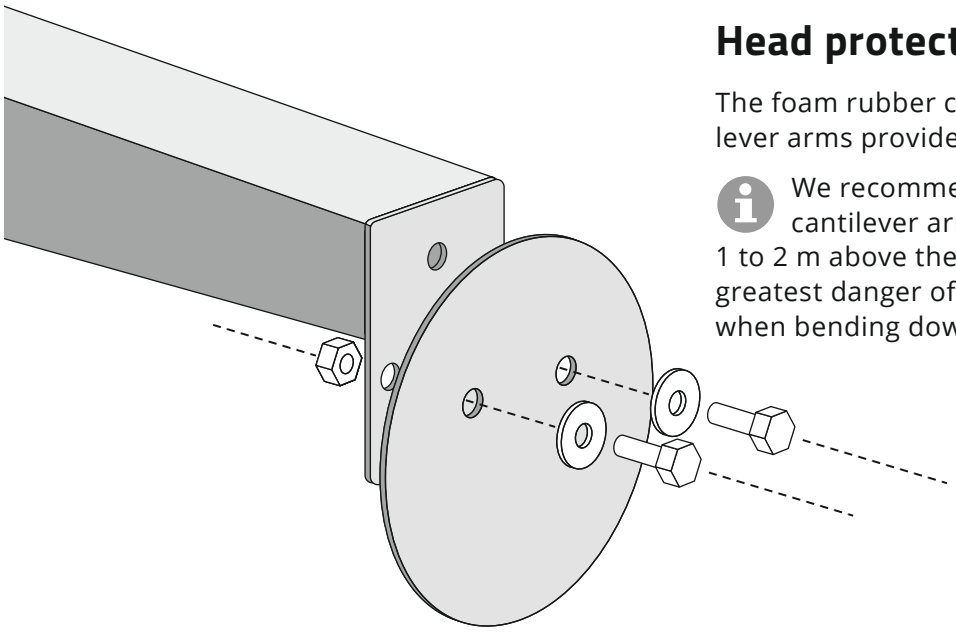
The maximum permissible load is 400 kg/m²

Observe the loading instructions on page 14.



Claws for cantilever arms

Claws for foot mounting



Head protection

The foam rubber cushions on the ends of the cantilever arms provide protection against head injuries.

We recommend installing head protection on cantilever arms which end at a height of 1 to 2 m above the floor – this is where there is the greatest danger of bumping your head when bending down and standing back up.

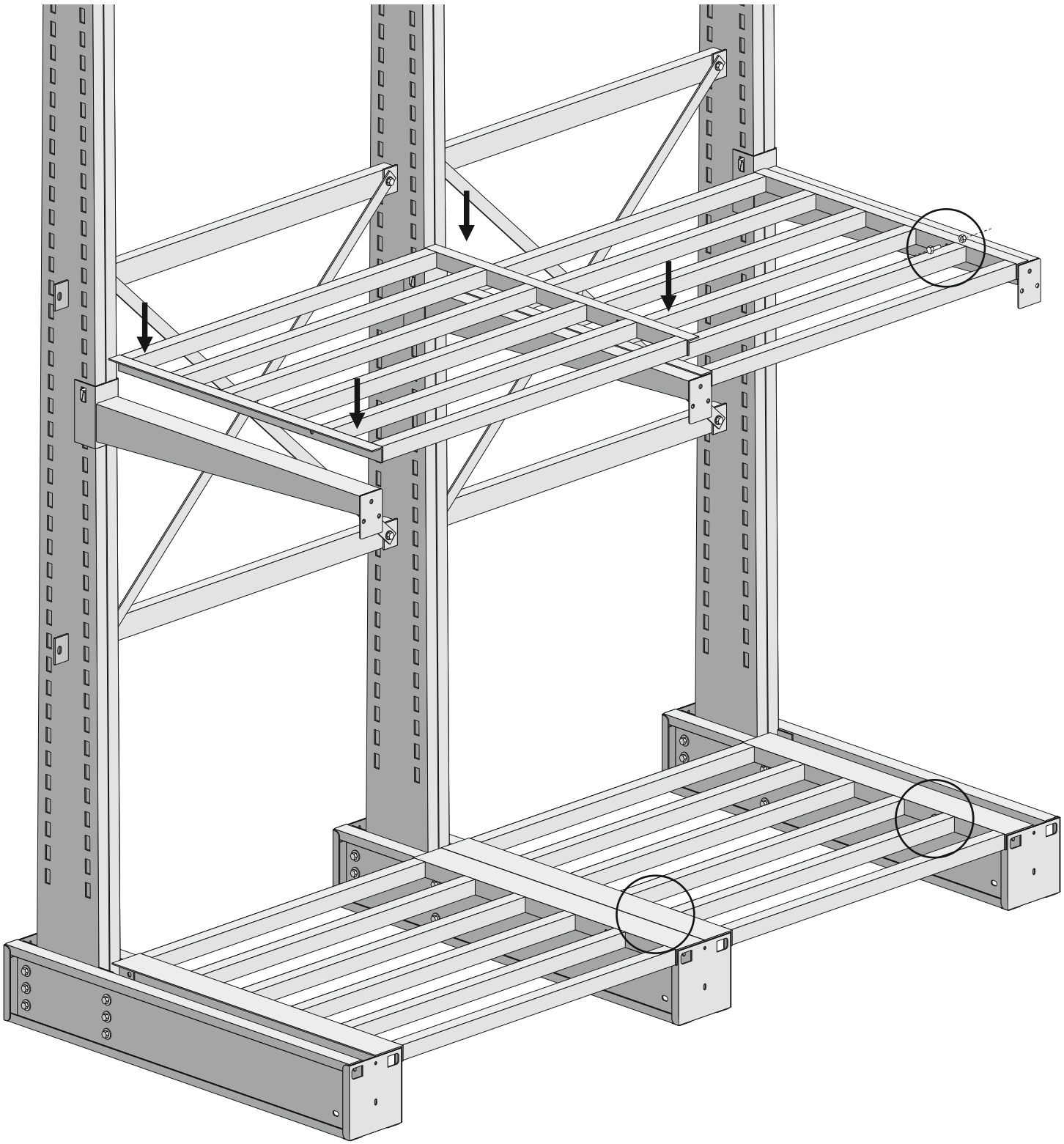
Grating inserts (SF4)

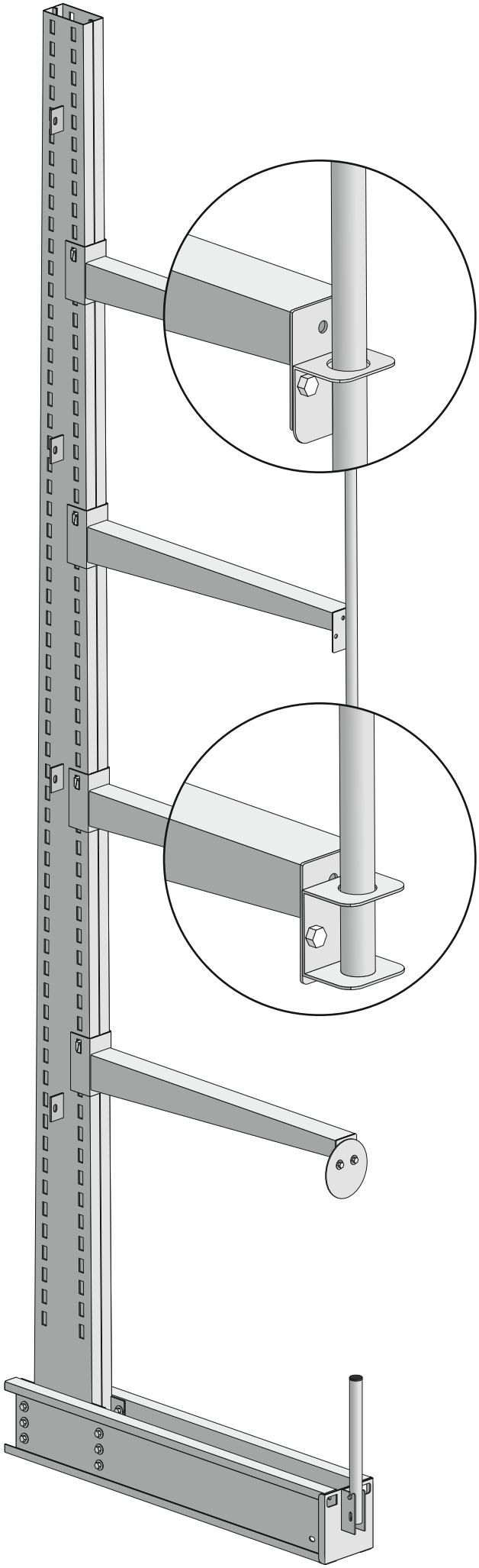
SF4 shelves have longer cantilever arms and feet, along with special grating inserts. These arm and foot grates form a continuous storage surface.

- Fix the front left and right grating with the supplied M10x30 screws + stop nut (see circles).

The maximum permissible load is 800 kg/m^2

Observe the loading instructions on page 14.





Anti-roll rods (SF2, SF3, SF4)

The vertical anti-roll rods secure several shelves over a height of 2.30 m.

- The suspensions are mounted on the ends of the cantilever arms.
- The rods are guided through the top suspension and then set down in the bottom suspension. They can be removed again in the same way in no time at all.

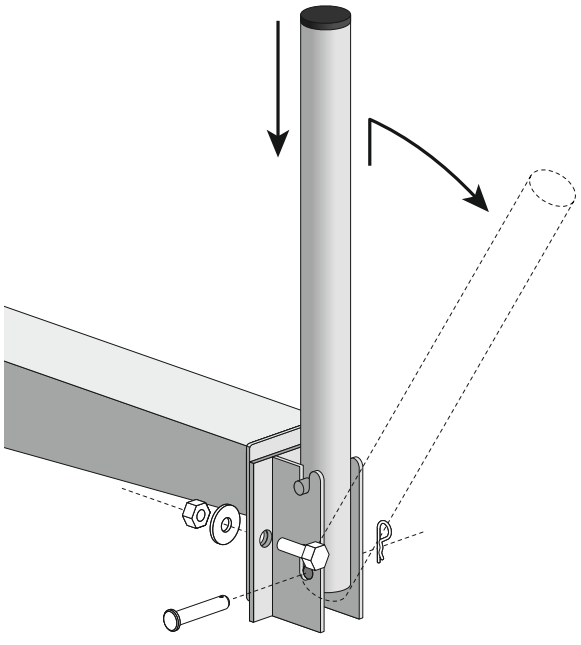
⚠ Make sure that the stored goods do not fall out when removing the rods.

Anti-roll locking device (SF2, SF3, SF4)

Anti-roll locking devices prevent individual rods or pipes from rolling off the shelves.

- Mount the anti-roll locking devices as required on the feet of the stands or on the cantilever arms.
- To load the shelf, the suspended rods can also be folded or even completely removed (remove the spring cotter pins and bolts)

⚠ Make sure that the stored goods do not fall out when folding or removing the anti-roll locking device.



Roof construction (SF3, SF4)

For galvanised outdoor shelving (SF3 as well as SF4 outdoor shelving), we offer a tried and tested roof construction which protects your stored goods from rain and snow. It is statically designed to resist rain, snow and wind loads.

⚠ The maximum permissible snow load is 70 kg/m²

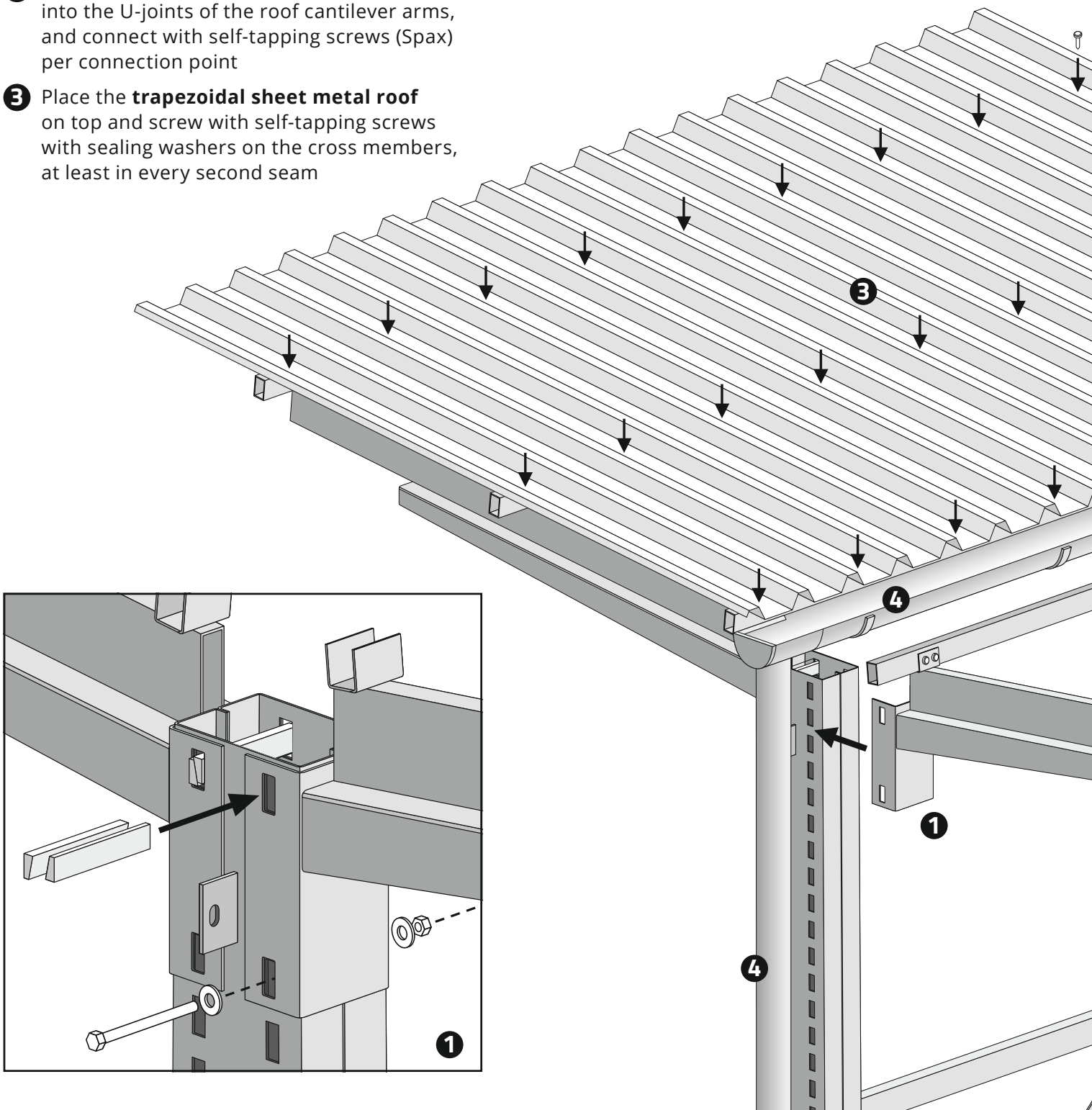
Roof assembly

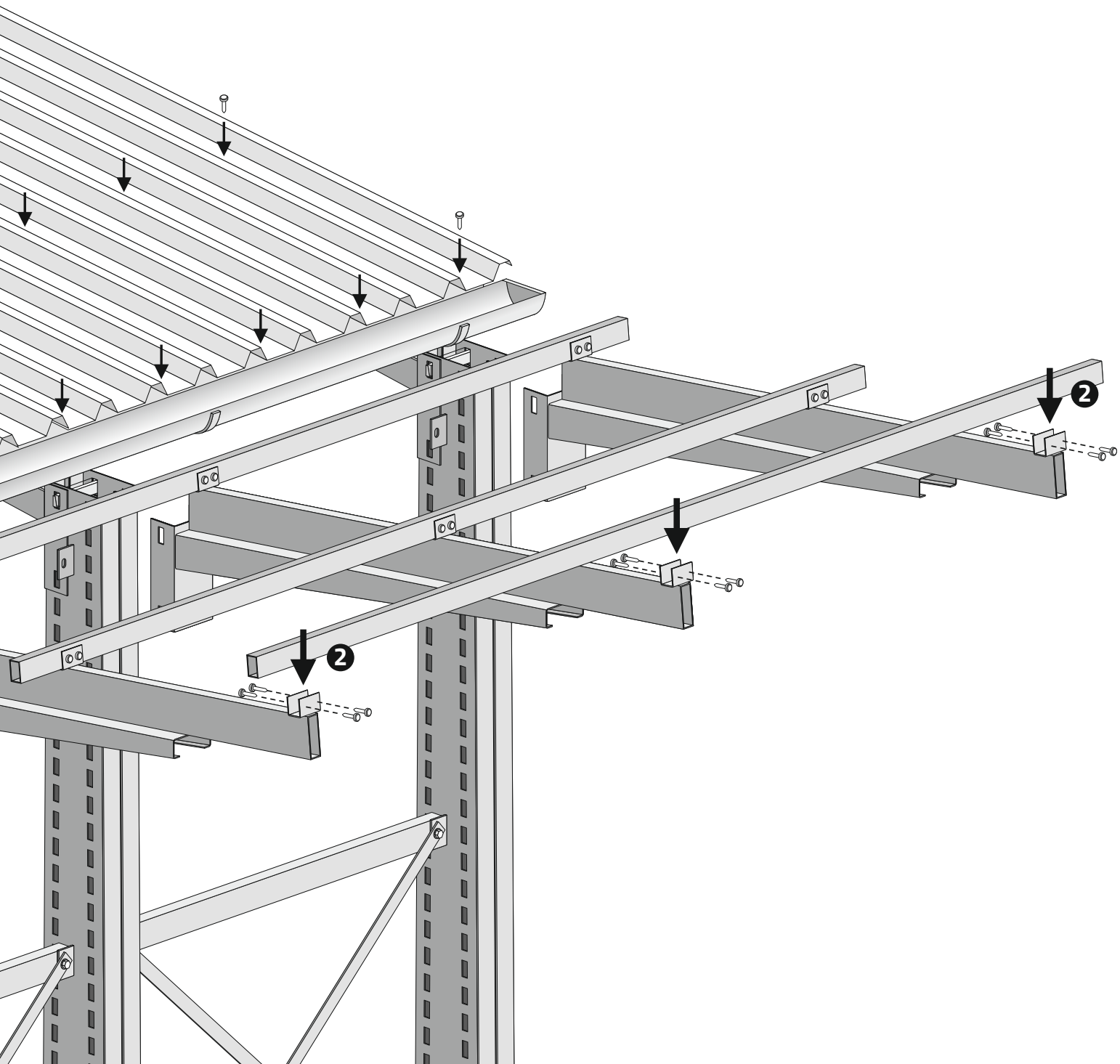
1. Suspend the **roof cantilever arms** with the pair of wedge bolts, insert and tighten the screw M16x180 (supplied including stop nut and 2 washers)
2. Insert the **cross bar** (rectangular pipe RR 60x40) into the U-joints of the roof cantilever arms, and connect with self-tapping screws (Spax) per connection point
3. Place the **trapezoidal sheet metal roof** on top and screw with self-tapping screws with sealing washers on the cross members, at least in every second seam
4. **Rain drain:** Align the gutter bracket with the inclination and screw into the cross bar using self-tapping screws. Insert the gutter and mount the gutter ends and inlet pipes. Lay the downpipe and fasten to the shelf stand with pipe clamps.

This work should be carried out by a specialist company!

Tools

- Drill (with Spax insert), flex
- Hammer, wrench size 24
- Spirit level, measuring tools
- Plate shears, seaming pliers, etc.




2
2

LOADING THE SHELVES

Loading procedure

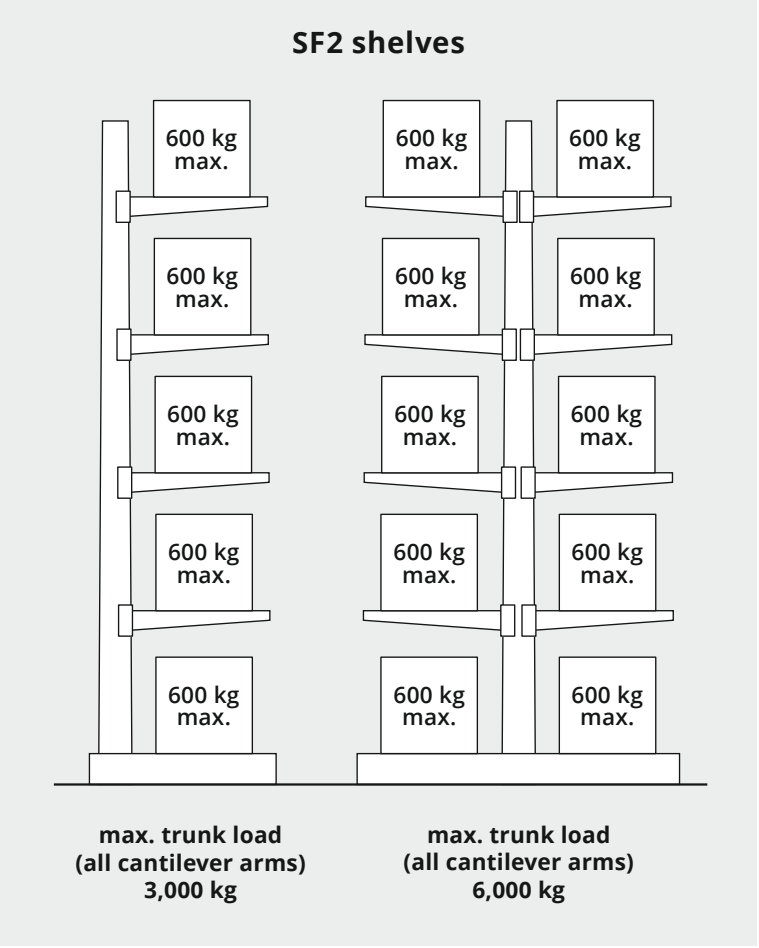
- Load the shelves as evenly as possible, from bottom to top. Store heavy loads as far down as possible.
- **Set down loads and/or lift them again very carefully.** If you wish to correct the position of the loaded goods at a later stage, lift them up beforehand. Do not try to displace the loaded goods when positioned on the cantilever arms!

⚠ The shelf must be manoeuvred with a forklift truck and a suitable lifting device operated by trained warehouse personnel!

max. load capacity

The maximum permissible load for each cantilever arm is 600 kg (arm load), and for the SF4 shelf 1,000 kg.. The upper limit for an entire side of stand is 3,000 kg, and for the SF3 shelf 4,000 kg.

ℹ All information applies to evenly distributed loads.

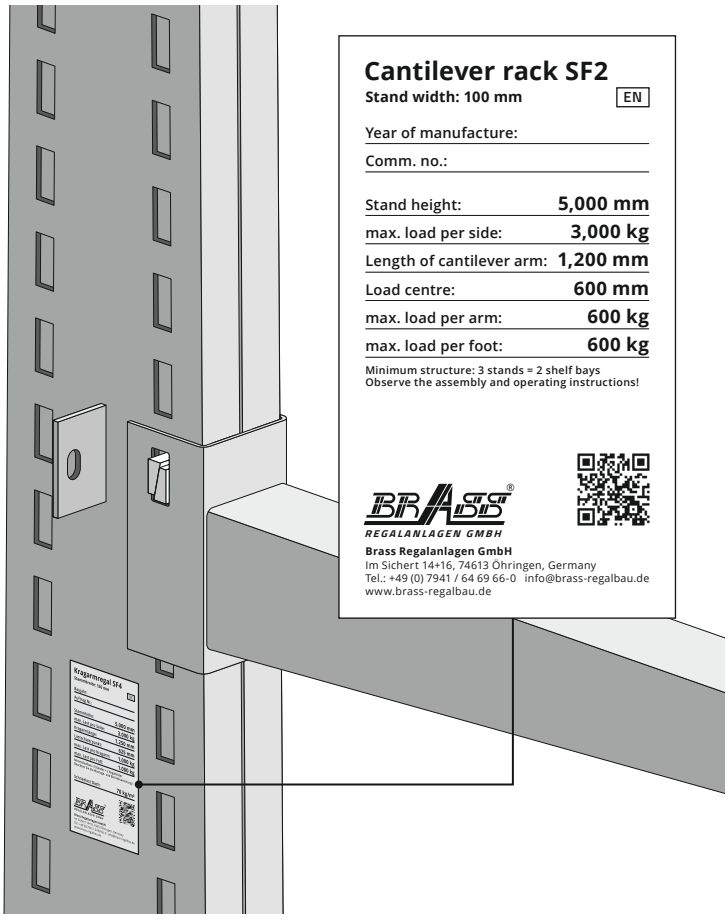


Load capacity stickers

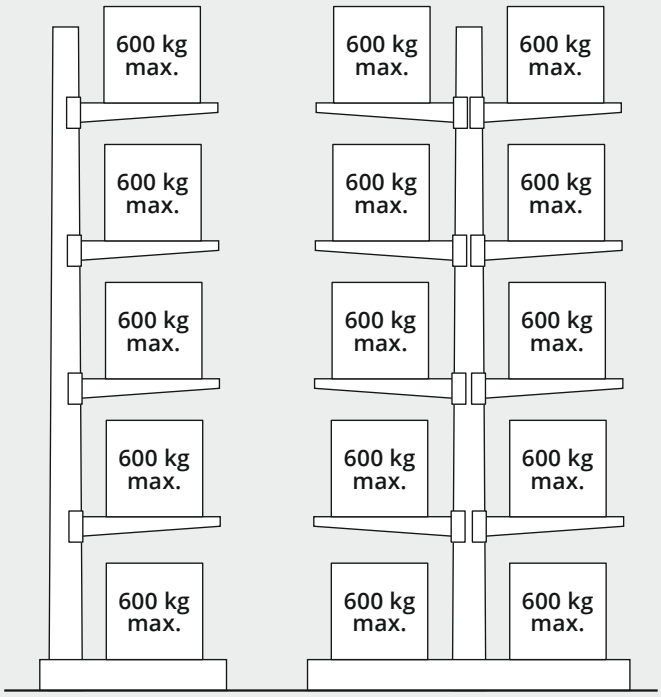
Pursuant to DGUV (German Social Accident Insurance) regulation no. 108-007 (formerly BGR 234), load capacity stickers must be attached to the SF cantilever rack. These capacity load stickers should have been supplied with your shelf delivery. Please let us know if they are missing or if more stickers are needed.

- Load capacity stickers contain the maximum permissible bearing loads for your shelf. Please **specify the commission number** so that all information is available in the event of queries or repeat orders.
- We recommend affixing **one sticker per row of shelves** – preferably at eye level.
- Thoroughly clean the adhesive areas beforehand so that the sticker remains in place for years.

⚠ **Instruct your warehouse staff not to exceed the load specifications stated on the load capacity stickers when using the shelving!**



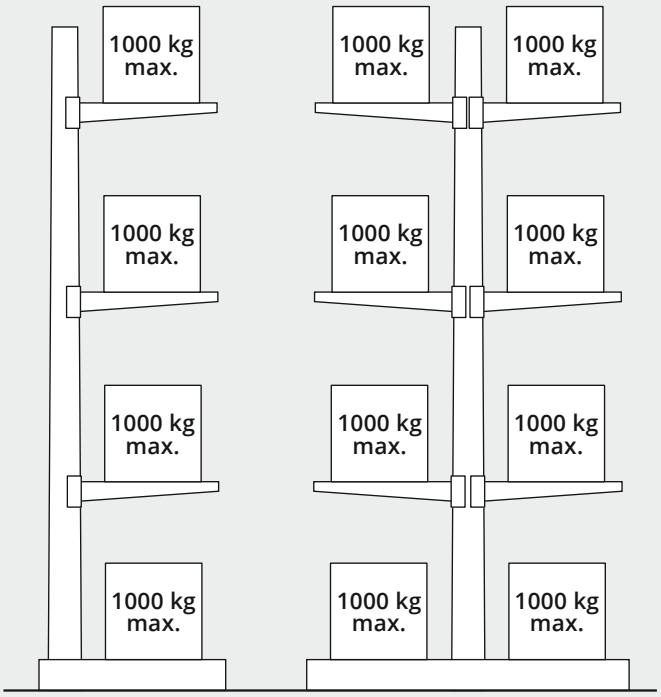
SF3 shelves



max. trunk load (all cantilever arms) 4,000 kg

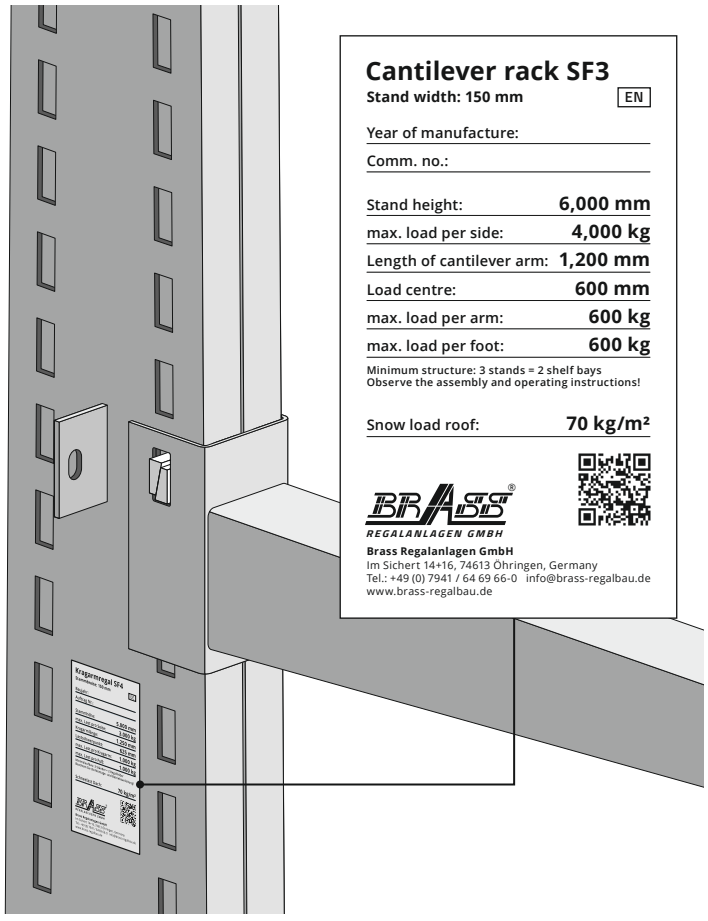
max. trunk load (all cantilever arms) 8,000 kg

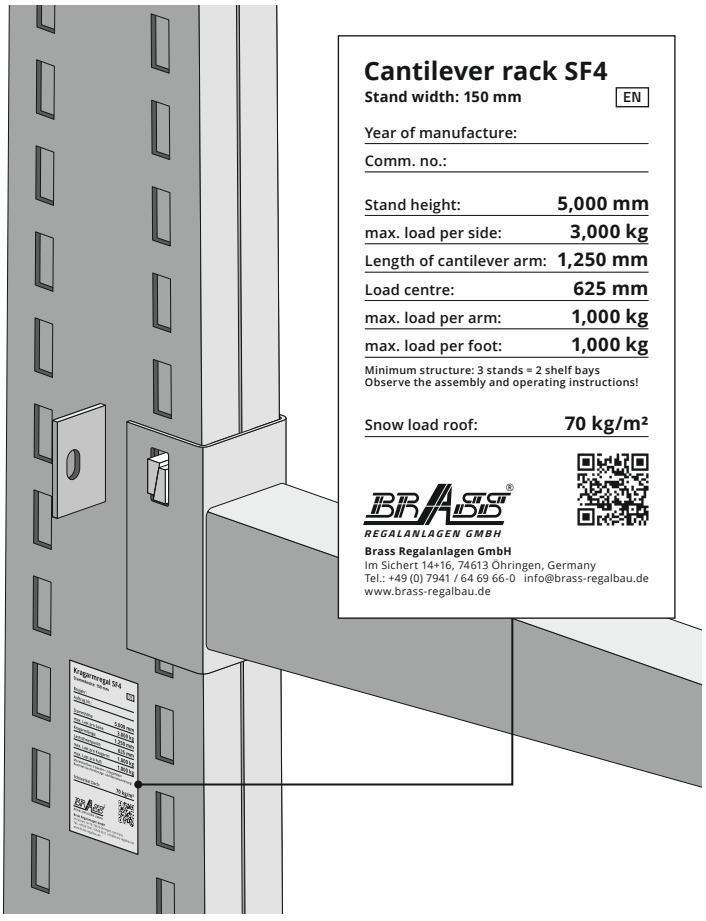
SF4 shelves



max. trunk load (all cantilever arms) 3,000 kg

max. trunk load (all cantilever arms) 6,000 kg





MAINTENANCE

Timely detection of damage can prevent many serious accidents and keep repair costs to a minimum. A detailed analysis of the damage often reveals the causes so that preventive measures can then be taken.

Regular visual inspections

The operator (management) must ensure that the shelving systems are regularly inspected. A formal written report should be kept. The inspections must be carried out by the safety officer or another person entrusted with this task.

Annual shelf inspection

An inspection must be carried out by a competent person at intervals of not more than 12 months. Brass Regalanlagen GmbH offers you this shelf inspection done by certified shelf inspectors.

Legal bases

The European standard DIN EN 15635 and the German Ordinance on Industrial Safety and Health (BetrSichV) require warehouse operators to have their shelving systems regularly inspected by a certified shelf inspector. The BetrSichV applies to the provision of shelves by the employer and to the use of shelves by employees. Paragraph 10 of BetrSichV requires regular inspections of storage facilities. In accordance with §3, the type, scope and time limits for the necessary inspections must be determined for shelving. The scope and procedure for storage facility inspections are regulated in European standard DIN EN 15635.

What is inspected?

- General condition of the shelves
- Stability of the shelves (resistance to tilting)
- Vertical position of the shelves
- Correct assembly
- All shelf components and protective devices are checked for completeness and damage
- Assessment of loading equipment and load for suitability/arrangement
- Correct labelling of the shelves

Test report

After the inspection, the manager or person responsible for the shelving system is handed a written report with observations and suggestions for the necessary actions to be taken.

In the event of accidents

Safe use of your shelving system is only guaranteed within the specified tolerances. If parts of the shelving become deformed in an accident or for another reason, the damage must be assessed and further action must be taken if necessary (see following pages).

⚠ **Instruct your warehouse staff to immediately notify your manager or the person responsible for the shelving systems of any visible damage to the shelving!**

BRASS® REGALANLAGEN GMBH

Brass Regalanlagen GmbH
Im Sichert 14+16, 74613 Öhringen, Germany
Tel.: +49 (0) 7941 / 64 69 66-0 info@brass-regalbau.de
www.brass-regalbau.de

ZDH ZERT DIN EN 1090 REG.-NR. 0114408

BRA 2023-013 | Studio2.de