Operating Instructions
for the
Cantilever Rack *sipag* ® System
Version 2025
0041/79/9465131

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0049/175/9575031
0041/62/398367

1. Description

The cantilever rack generally consists of the support, cantilever arm, plug pin, connection crosses, and connector profiles. The cantilever arms are connected to the support by a plug pin connection. The connecting elements are secured with screws and nuts.

2. Location

The powder-coated and baked-on cantilever rack can be set up indoors.
Exception: If the cantilever rack is to be exposed to cooled rooms or high humidity, consultation is required, and if necessary, the hot-dip galvanized cantilever rack should be set up.
In outdoor areas, the hot-dip galvanized cantilever rack should be set up.

The ground conditions and load-bearing capacity of the concrete floor must be executed according to DIN 1045 (Edition 2008) with a concrete quality of at least C25/30 with a cement content of at least 300kg/m³ and according to DIN 18202, in order to accommodate the loads from the rack supports and anchoring.
For the flatness tolerance, Table 3, Row 3 of DIN 18202 should be applied, with a maximum tolerance field of 15mm over the entire area being considered. Shafts, channels, and similar interruptions must be included in the calculation of the substrate and the floor slab. A minimum distance of 200mm to rack aisles and supports must be planned.

The reinforced concrete floor must have good flatness and a resistance class not less than Rbk=250. The load-bearing capacity of the floor must be checked on-site before the installation of the shelves. It must be ensured that a drilling of at least 150mm into the load-bearing reinforced concrete slab can be carried out.

3.Limit deflection

l/200The following information assumes that the loads on the shelf are evenly distributed over the load area.

4.Calculation bases according to

DIN EN 15512Fixed shelving systems made of steel

Basics of static design

DIN EN 1993-1-3 Design and construction of steel structures;

Supplementary regulations for cold-formed components

DIN EN 1991-1-3 Actions on structures

Snow loadsDIN EN 1991-1-4 Actions on structures – Wind loads

5.Warning and safety instructions

Do not climb on shelves.

All damages must be reported to the person responsible for the safety of the storage facility.

Annual shelf inspections should be carried out by a qualified person.

Conduct regular visual inspections.

Check:a) Correct application and use.

b) Loads are within the permissible safety values.

Do not make any changes to the construction without

a) Checking the effects based on the manufacturer's technical data or

b) Obtaining the approval of the manufacturer or supplier.

See EN 15635 "Fixed shelving systems made of steel

Application and maintenance of storage facilities.“

6. Any earthquake loads as well as any necessary fire protection measures are not taken into account. The building regulations must be checked by the client or operator. In case of doubt, always involve the manufacturer or supplier.

7.

7.Features sipag cantilever rack

Order#:

Installation location:

Type 2F

Cantilever Column:

High:

Usable length

Load capacity:

Load center of gravity:

Cantilever Support Arm:

Usable length:

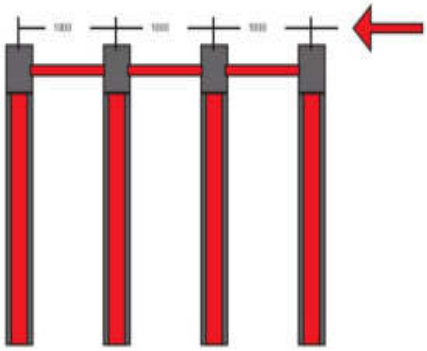
Load capacity:

8.Assembly / Disassembly

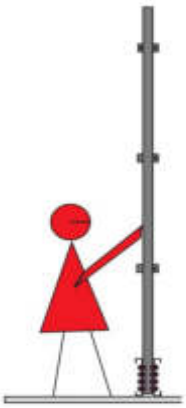
For the execution of the assembly/disassembly of the described cantilever rack, only sufficiently qualified and suitable personnel may be employed. Certainly, our racks can also be assembled by the customer themselves, which, however, is associated with a certain safety and liability risk. Each customer should check in advance whether their insurance coverage is sufficient in the event of accidents involving personal injury. The risk of damage is borne by the customer. During assembly, care must be taken to ensure that all components are installed in the designated positions. Only original parts from sipag may be used. Exceptions are only permitted if they have been discussed in advance with our specialist personnel. The safety regulations of the professional association from the BG rules for storage facilities and equipment DGUV Rule 108-007 must be strictly observed.

9.Assembly Process:

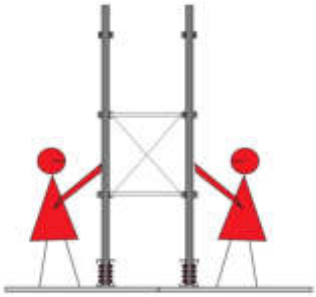
First, mark the exact position on the designated area. The marking is placed where the supports will later be positioned. The axis measurement of the supports is determined from center to center of the supports.



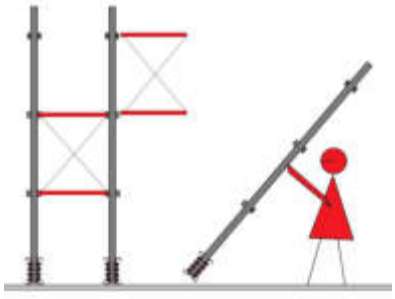
Erect the cantilever supports in the designated place, secure against tipping over or properly brace.



Assembly Process:
Erect the second support, align it at the designated position, and attach the first cross brace. For this, the included screws M12 x 30 with nuts are used. These screws are hand-tightened. The actual fastening occurs only after alignment. For the assembly of the first supports, which is height-dependent, it is advantageous if this task is performed by 3 people. If necessary, the upper crosses should be attached using a work platform. In case of uncertainty about the height or in emergencies, a heavy-duty anchor should be set.

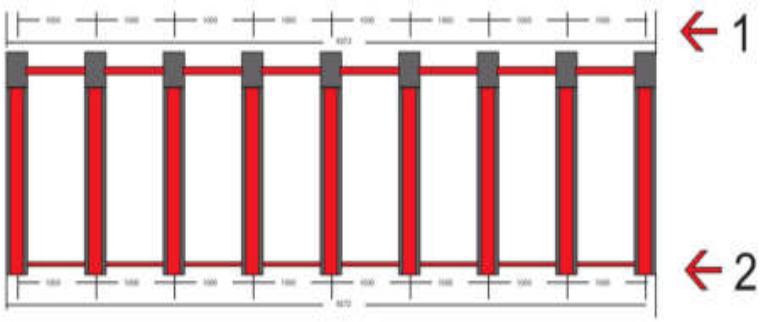


From now on, all subsequent supports will be erected. The arrangement of the cross braces is height-dependent and specified on the following pages. This arrangement must be strictly adhered to, as the cross braces determine the spacing of the individual supports and the lateral forces and buckling lengths have been calculated accordingly.



Assembly Process:

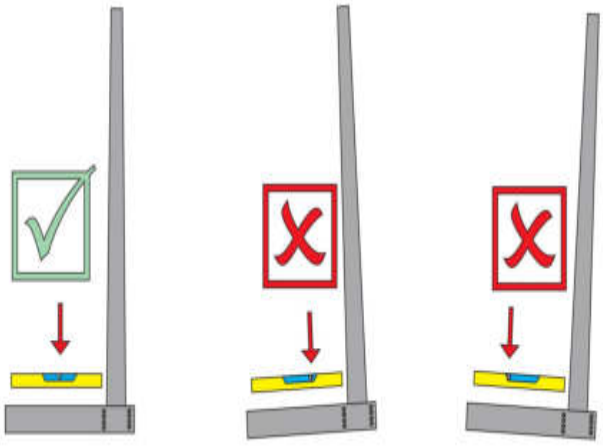
After all supports have been set up in a line,



1 Check if the supports are in the designated positions.

2 Position the first and last support at a distance from the wall, aligning with a string or laser. Ensure that the bases remain parallel or that the front edge and back edge are at the marking.

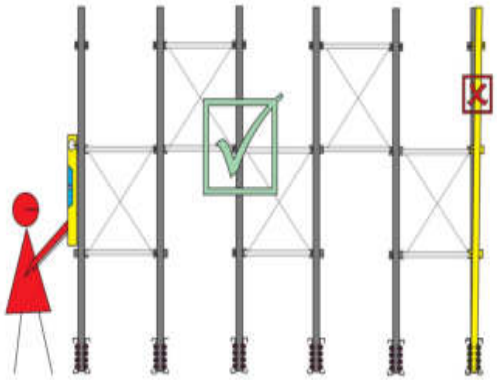
3 Attach the supplied anchors.



4 Underlay the support. It is important to ensure that the base is aligned horizontally.

Assembly Process:

Bring the supports into the vertical position. For this, the level is placed sideways on the support, and the cross braces are gradually tightened with screws.



Note: A maximum vertical deviation in depth and width direction of max. H/200 must be maintained.

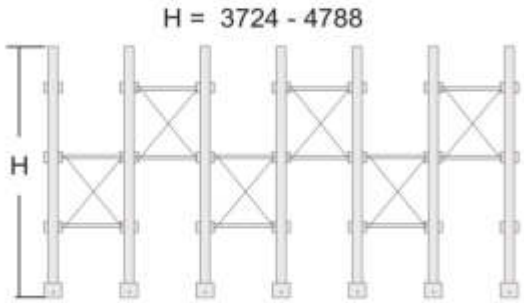
The hanging of the cantilevers is done with a locking pin. Bring the lower edges of the holes of the support and arm to the same height. Two holes on each side. Now push one locking pin after the other through. The arrangement should be as illustrated.

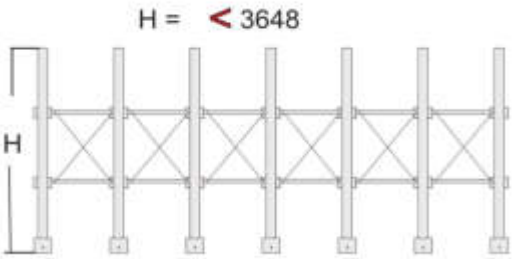
Double Wedge Pin System 2F

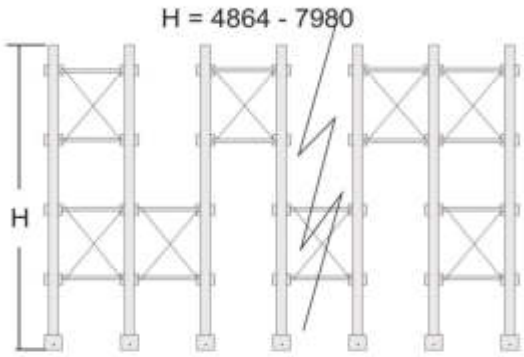
A Locking Pin System S20

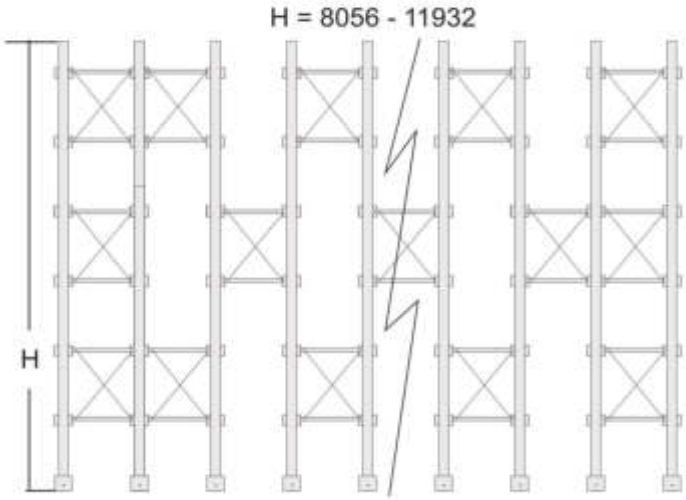
With a soft hammer strike on the arm, the connection is established. By lifting the arm and a soft hammer strike from below on the arm, the connection is released.

10. Arrangement of the cross associations.

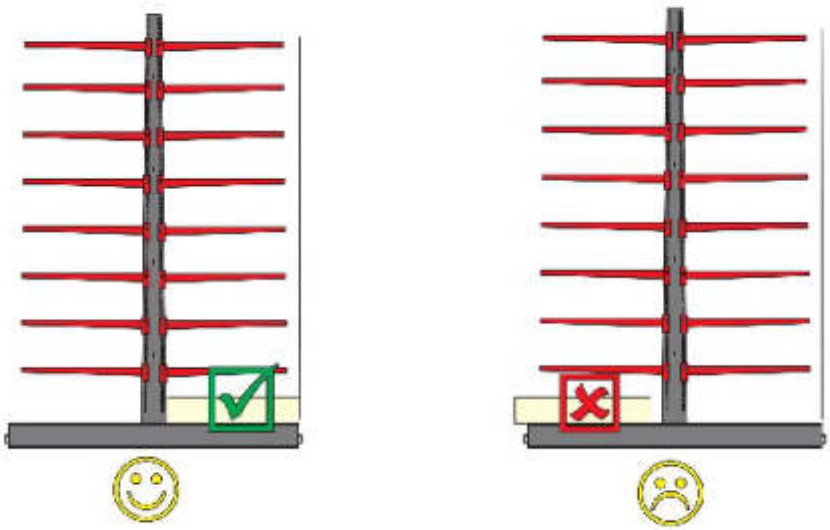




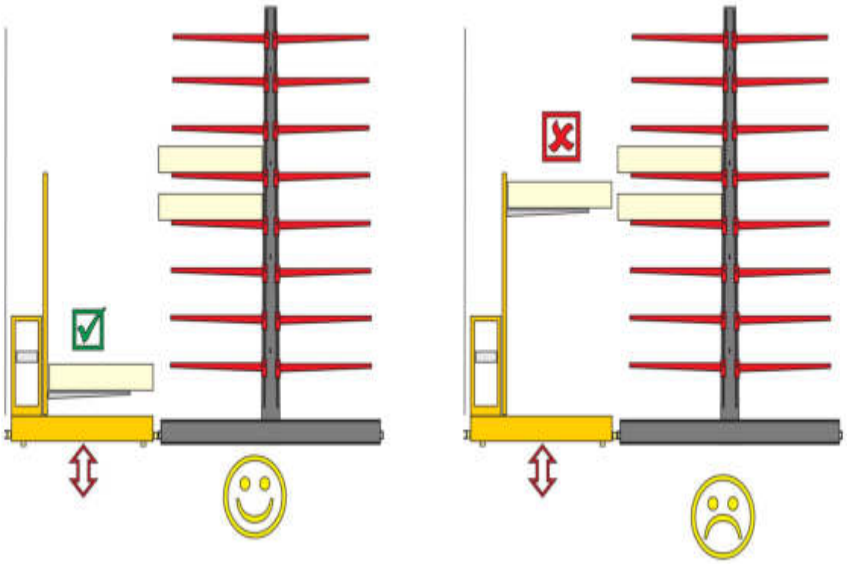




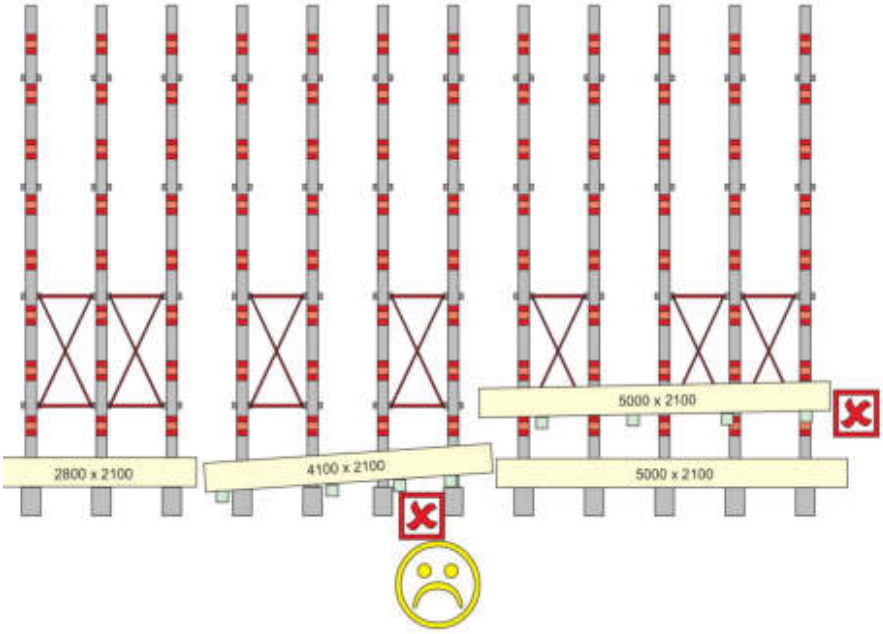
11. Do not let material protrude into the guided aisle.



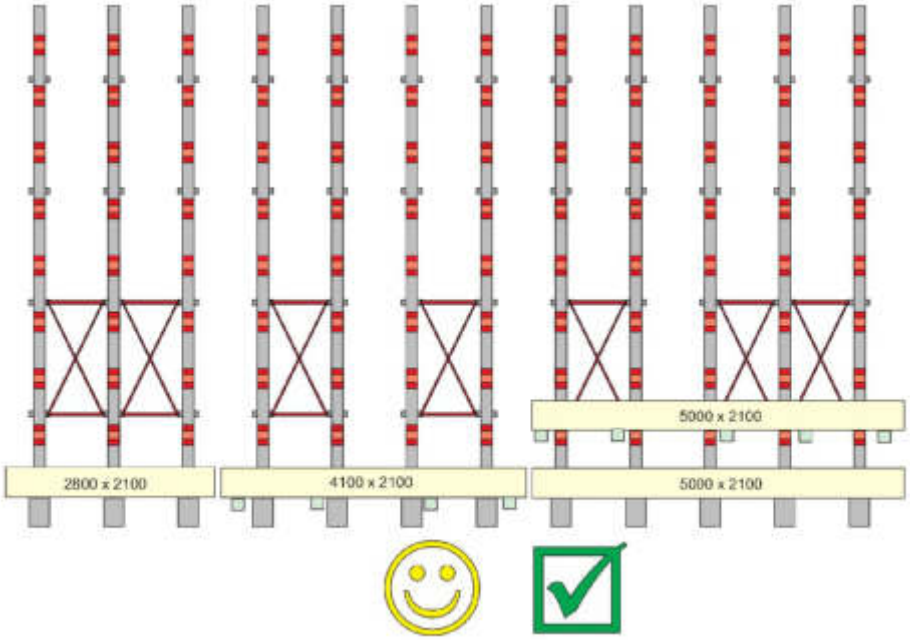
Do not drive in the aisle with raised load.



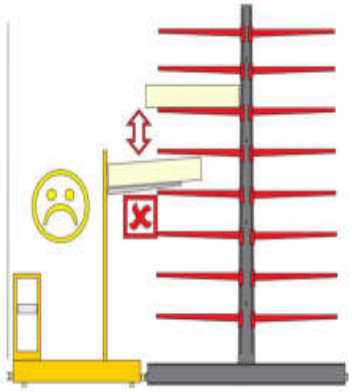
12. Material with substructures – Do not store blocks on the arms.

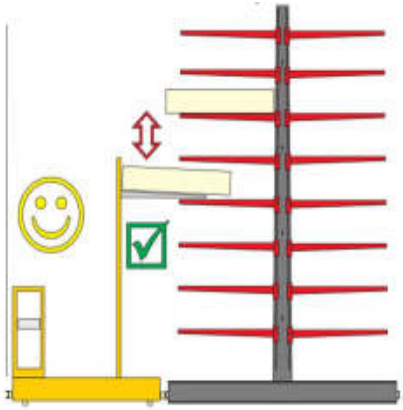


Material with substructures + correct axle measurement or beams / profile grids.

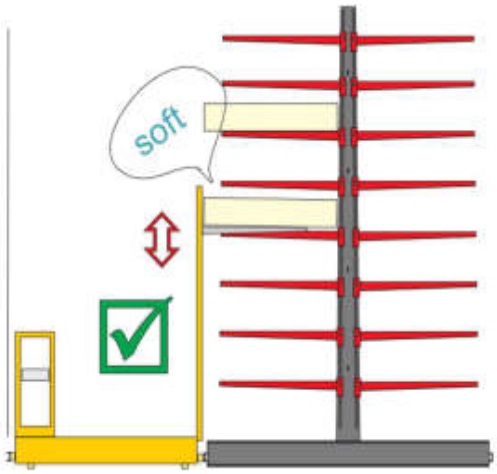


12. Do not place the goods on the tip of the arm and reach for them again.





13. Place the goods down slowly.



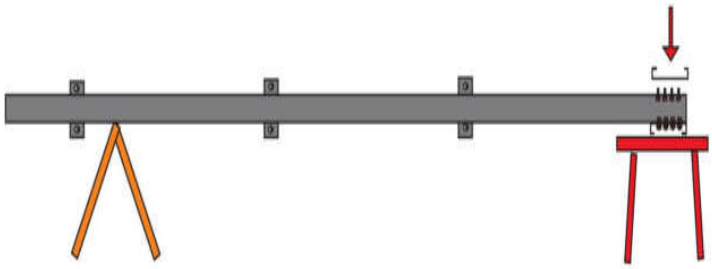
14. For desired screwed support.

Place the shelf support in a horizontal position on square timbers, pallet stacks, or trestles.

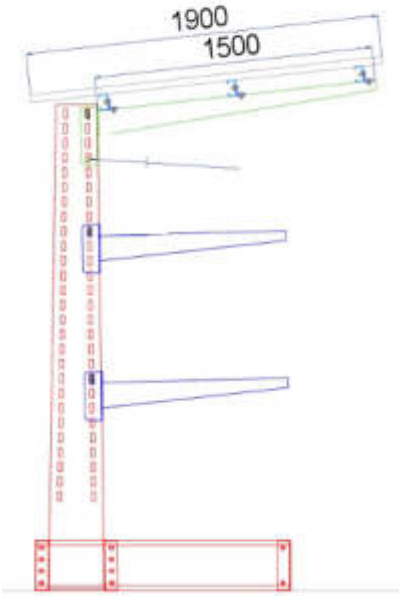
Connect the base shells with the included screws and tighten to 24kg/m.

At the same time, the impact protection plate is mounted on the base tip.

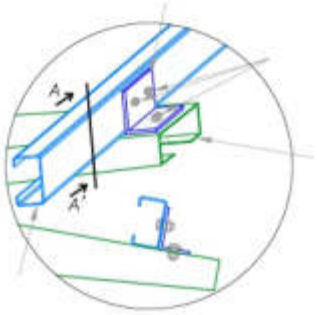
For double-sided supports, three substructures are needed.



17. If you want a shelf with a roof



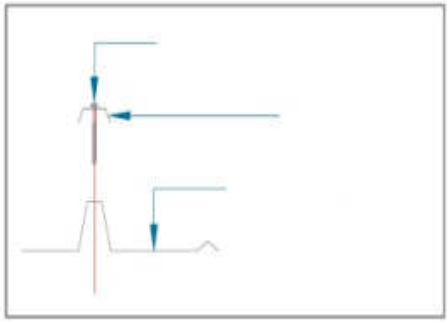
Additionally, secure the windproof roof arm from below with an M16x140mm bolt and nut.



Secure the bracket to the roof arm using M12 x 25 mm screws and nuts.
Screw the 80 x 45 x 15 mm C-profile, long side, to the bracket using M12 x 25 mm screws.

Perform this step on each roof arm and in the required rows for the substructure.

18. If you want a shelf with a roof



The corrugated sheet metal mounting is shown in the diagram on the left.
From above, drill the self-drilling screw with cap through the corrugated sheet metal and the C-profile previously attached underneath.
The long, flat side rests on the surface.