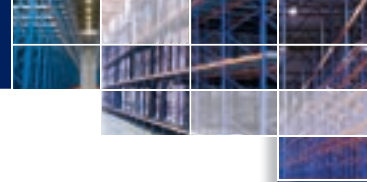




A1. Conventional pallet racking



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The best storage solutions

The Stow Pal Rack® pallet racking system consists of a full range of basic components and accessories to fulfill all of your requirements. The system is designed for the optimised storage of goods of all sizes and weights. All components have been thoroughly tested in specialised laboratories to determine their mechanical properties. These are used to calculate the safe load capacity of each component and ensure that they meet the stringent requirements of the FEM (Fédération Européenne de la Manutention) code for pallet racking.



1. The frame
2. The footplate
3. The levelling plate
4. The beam
5. The pick & deposit station
6. The pallet support
7. The container support
8. The frame protector
9. The upright protector
10. The corner protector
11. Fall through protection

Clear benefits for every application

- Complies with European FEM regulations
- Wide range of basic components for storage of all pallet sizes and weights
- Many standard accessories to meet every storage need you can imagine
- Computer aided design ensuring the best solution for every application, including static calculations
- Modular system allowing optimising space utilisation
- Easy and quick installation
- Quality assured to ISO 9001
- High quality finish by applying an epoxy powder coating
- Fully automated production to a high quality standard and very cost effective.



The Basic Components

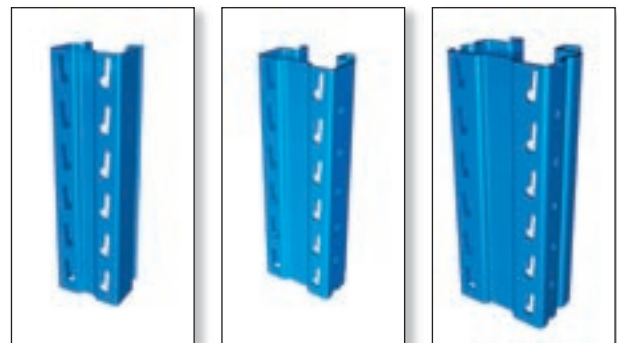
THE FRAMES

The frames are composed of 2 uprights and a number of diagonals. The frames are bolted, resulting in a lower repair cost if they are damaged by lift trucks. Each connection is secured with a lock-nut.

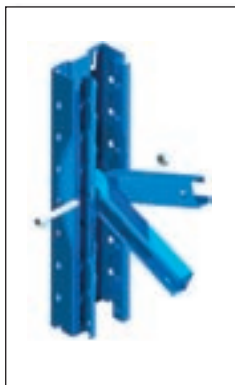
The wide range of types of frames allows the rack construction to be optimised for heights of up to 30 m and bay-loads of up to 45 tonnes.

The uprights are very accurately cold-formed in the fully automated factory. They can be produced in lengths of up to 15 m in painted (RAL 5015, sky blue / RAL 5010, gentian blue) or galvanised finish.

Type	Width	Depth
PNFB 11 PNFB 12 PNFB 13	85	65
PLFB 15 PLFB 16	100	65
PLFB 17 PLFB 18	120	65
PLFB 29 PLFB 30 PLFB 31 PLFB 32	120	92
PLFB 33 PLFB 34 PLFB 35	140	92



THE FRAME BRACING

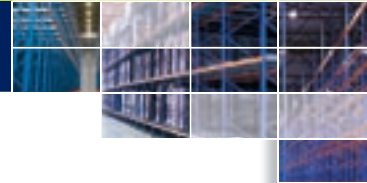


The bracing comprises two horizontal profiles and a number of diagonals, bolted between the uprights to provide structural support of the uprights and to ensure stability of the rack in the depth direction.





A1. Conventional pallet racking

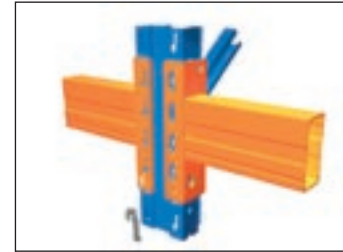


A1

THE BEAMS

THE END-CONNECTOR

The boltless connection allows a quick and efficient assembly. The stability of the unbraced rack is determined by the properties of the connector. The connector is made of high quality micro-alloy steel. The safety pin prevents accidental dislodge of the beam.

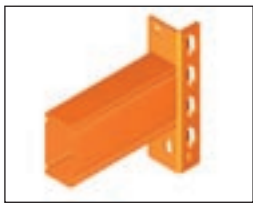


THE BEAM PROFILE

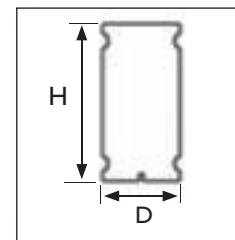
The standard finish of the beams is RAL 2004 (orange).

A. The cold-formed tube beam

This tubular beam section is reinforced at both top and bottom avoiding local damage when loading heavy pallets.



Type	Height	Depth
PNB 0486	60	50
PNB 0488	80	50
PNB 0480	100	50
PNB 0481	110	50
PNB 0482	120	50

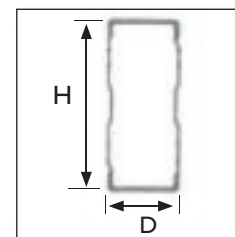


B. The box - beam

The beam is composed of two cold-formed C-profiles. It is very resistant to torsion and provides great stiffness in both horizontal and vertical directions, with a load bearing capacity of up to 4.8 tonnes per beam level.



Type	Height	Depth
PNB 0441	110	50
PNB 0442	120	50
PNB 0443	130	50
PNB 0444	140	50
PNB 0445	145	50
PNB 0436	160	50



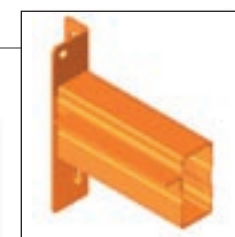
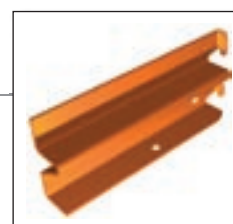
C. The shelf - beam for picking levels

HEAVY LOADS

The box - beam with step-down welded L-profile.
The shelves are flush with the top of the beam.

LIGHT LOADS

The light duty beam with integrated connector
The beam is equipped with a standard edge for shelves or panels of 28 mm thickness.



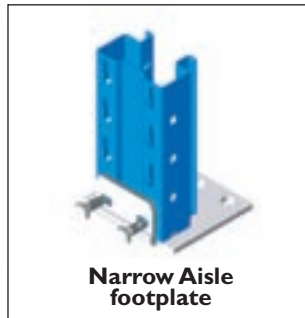


The Accessories

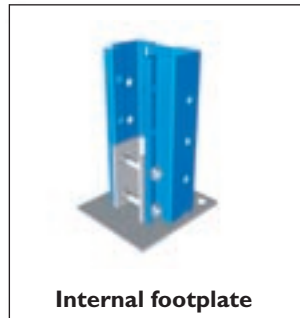
THE FOOTPLATE AND LEVELLING PLATE



External footplate



Narrow Aisle footplate



Internal footplate

A range of dedicated footplates have been designed for specific applications (VNA-applications, High-Bay systems, etc.). The load bearing capacity depends on the effective area of the footplate as well as the type of concrete slab.

The racking is adjusted by means of levelling plates, in accordance with the applied regulations. After levelling, the racking is anchored.

THE ROW SPACER

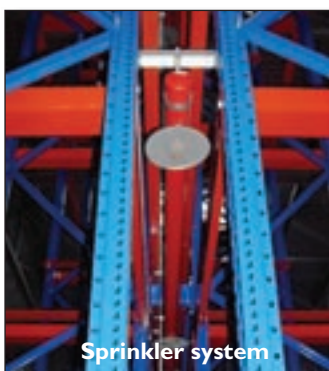


On-on row spacer



In-on row spacer

In double racks row spacers are installed between each pair of frames, these can also be used for fixing the sprinkler fire protection system. For some applications single uprights are used in combination with frames. These are connected with the so-called "in-on" - row spacers.



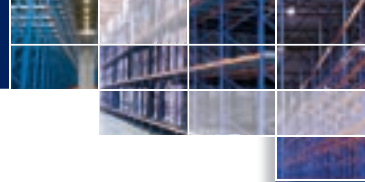
Sprinkler system

The sprinkler system is connected on the row spacers, which link the two frames of the double rack.

The flue between the pallets depends on the local regulations (often 150mm).

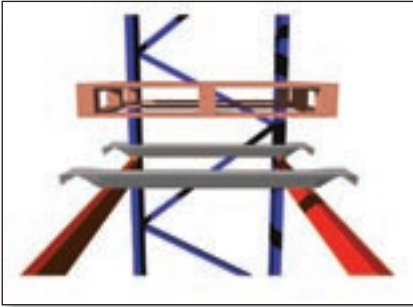


A1. Conventional pallet racking



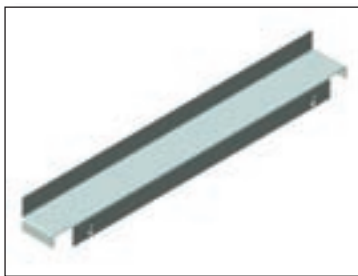
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THE PALLET SUPPORT



The pallet support is used to support pallets of poor quality or when pallets are placed with the 1200mm side facing the aisle. A pair of galvanized cold-rolled pallet supports can take a load of up to 1200kg.

THE CONTAINER SUPPORT

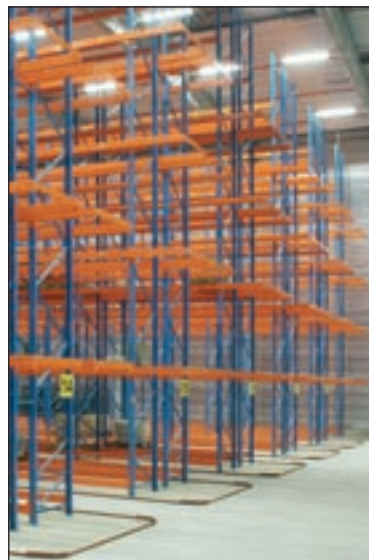


The container support is equipped with a side guidance and optionally with an integrated back-stop. It is recommended for safe storage of containers.

THE PICK & DEPOSIT STATION



The Pick & Deposit Station can be equipped with a centering device for a more accurate positioning of the pallets.

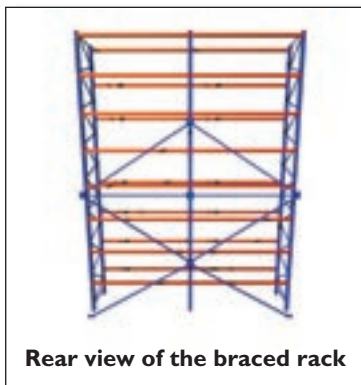


The Pick & Deposit Station is installed at the end of the racking aisles. It serves as an interface between the pallet handling equipment (such as VNA-trucks) and the trucks used for in- or outbound.

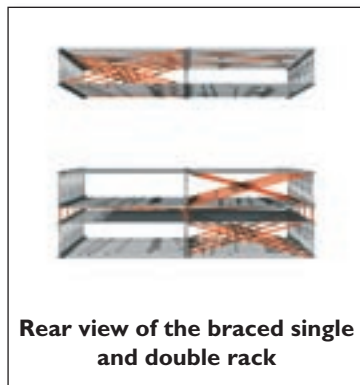


THE BRACED RACKING

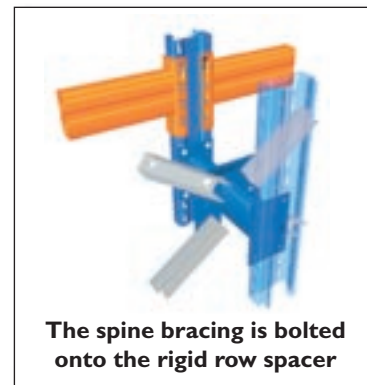
Adding bracing in the down-aisle direction of the racking will increase the load capacity of the frames. For AS/RS-systems the bracing is needed to meet the assembly tolerances. The vertical bracing (called the spine bracing) is located at the back of the rack. It works in the xy-plane. The horizontal bracing (called the plan bracing) is located in between two beams giving stability in the xz-plane.



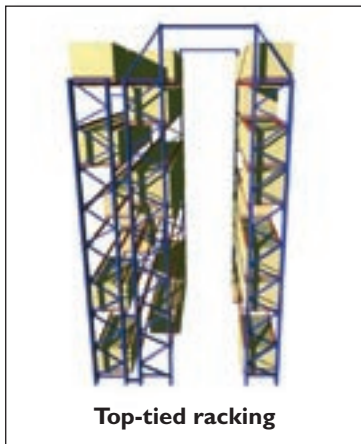
Rear view of the braced rack



Rear view of the braced single and double rack



The spine bracing is bolted onto the rigid row spacer

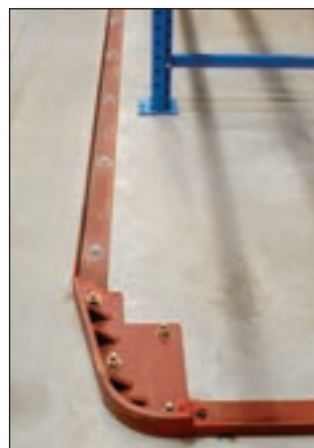


Top-tied racking

TOP-TIED RACKING

When the single rack is too slender it is connected to the adjacent double rack by means of a top-tie. The top-tie is mounted on extended front uprights. For automated racking the top-tie is also used to support the top-rail.

VERY NARROW AISLE RACKING

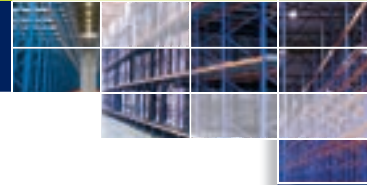


This type of racking is operated with "very narrow aisle" trucks. They are guided through the aisle, allowing faster and easier operation. Inductive guidance often replaces the rail guidance.

The design of the ground guidance depends very much on the type of lift-truck. The low guidance profiles allow placing pallets on the floor; the high guidance profiles require extra bottom beams.



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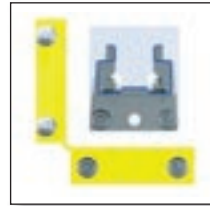
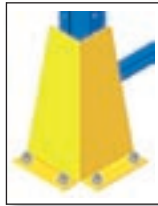
The Protectors

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Protection of the racking against collision from a fork lift truck is important. The expected lifetime will be extended and repairs limited. A number of basic protectors are available.

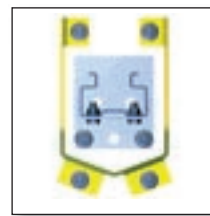
THE CORNER PROTECTOR

The corners of the racking are vulnerable to damage caused by collisions. The corner protectors are anchored on both sides of the upright.



THE UPRIGHT PROTECTOR

The upright protector will reduce the damage caused by impact loads. Especially for installations with fast moving products or heavy products, upright protectors are essential for the safety and lifetime of the racking.

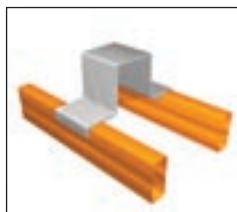


THE FRAME PROTECTOR

Constant traffic around the end-frames or the frames at the cross aisles often causes damage to the racking. The Stow frame protector is built with a sigma main beam, supported by two end protectors. For longer runs intermediate supporting brackets are mounted.



PUSH THROUGH PROTECTORS



Push through protectors can be used in single and double entry racks. They are often used to protect the wall of the building for instance in cold-stores, or to guarantee the space between the pallets in double racks for the sprinkler fire protection system. The stop beam can also be used to fix cladding on the back of the racking. If possible push through protection should be avoided as excessive horizontal forces are applied on the racking.



SPECIFIC CUSTOMISED PROTECTORS

For specific applications dedicated protectors have been developed. Examples:

- Fall through protectors above passages.
- Wheel stops at the front of carpet racks or live storage systems.
- Full length upright protectors, often used for carpet racks and racks with a high risk of collision.

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