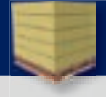
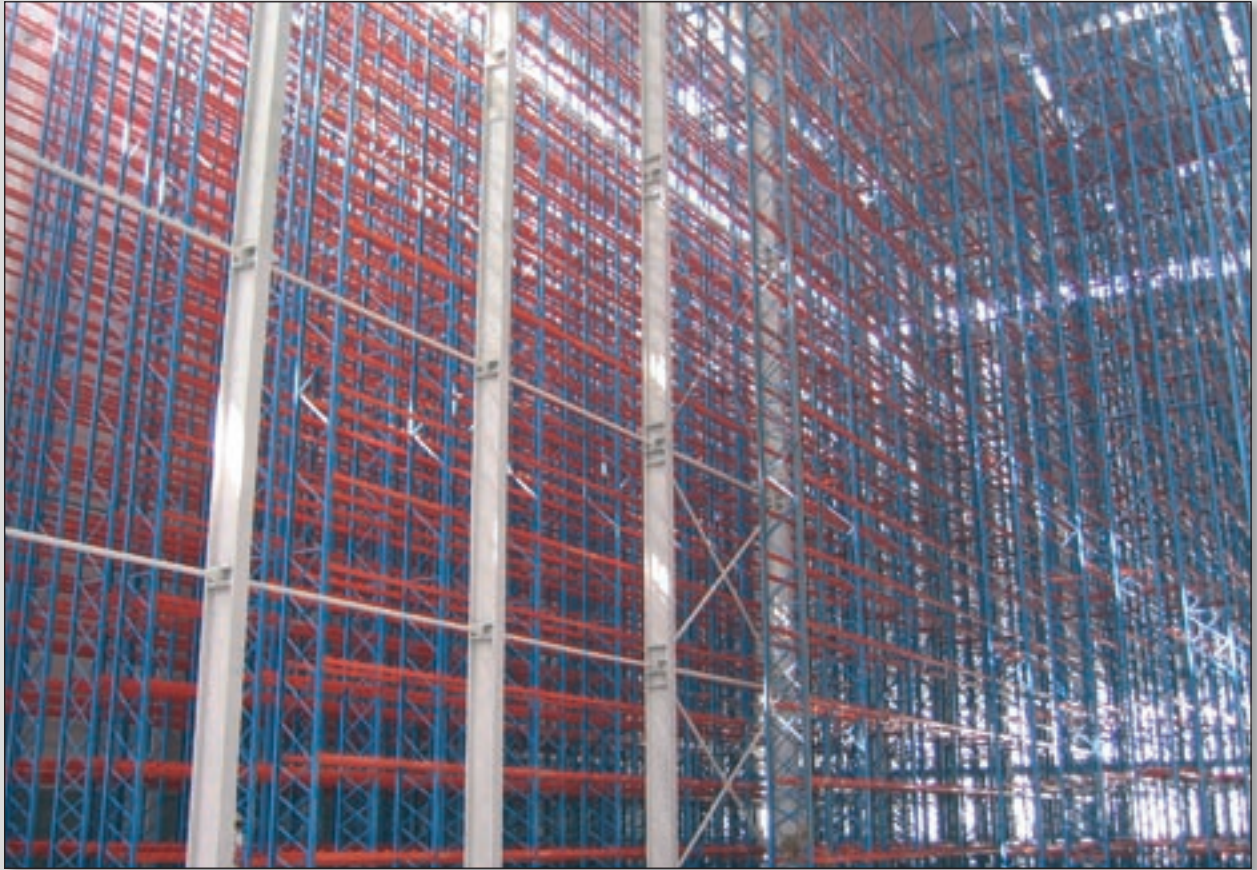


A6. High bay pallet racking

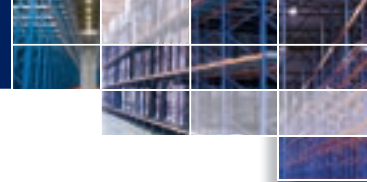


A6





A6. High bay pallet racking



High bay pallet racking

PRODUCT RANGE, COMPETENCE, QUALITY AND PROJECT COORDINATION



- Stow's wide range of products have been developed to provide a cost-effective solution for all types of installations, especially with stacker crane operation.
- The Corporate engineering department with its staff of competent designers and construction engineers has built up international experience with logistics companies and manufacturers of material handling equipment.
- All constructions are calculated according to FEM-regulations, using up-to-date specialised software, and also taking into account local conditions, e.g. seismic design.
- Strict quality control of all products ensures a high quality product. All products are manufactured on computer controlled production lines.
- Especially for High bay pallet racking systems the accuracy of the installation is very important and must comply with the FEM 9.831-regulations.

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BASIC CRANE CHARACTERISTICS

Pallet racking serviced by cranes requires special arrangements for tolerances in manufacturing and erection. Perfect positioning and levelling are vital for such installations. The cranes are running on a floor mounted rail and stabilised at the top of the mast by a top guide rail.

The pallets can be placed "single deep" or "double deep".



- Crane height: distance from highest point of the floor to the top-tie
- Height of the bottom level and the top-level
- Crane aisle width: distance between the front of opposite pallets
- Design of the run-outs at both ends of the aisle
- Type of top rail and its fixation
- Crane horizontal forces in z- and x-directions
- Racking classes:
 - 100: crane operated without fine-positioning system at the unit load
 - 200: crane operated with fine-positioning system at the unit load



SPECIAL ARRANGEMENTS FOR CRANE OPERATED SYSTEMS

STRUCTURAL DESIGN OF THE RACKING

The structural calculation is based on the FEM 10.2.02 – norm.

In particular the permissible frame deformations in x- and z-direction, which take into account the initial out-of-plumb, the horizontal forces imposed by the crane and the pallet loads.

The beam deflection depends on the applied racking class:

Class 100: $L/300$ or max. 10mm // class 200: $L/200$ or max. 15mm.

ERECTION TOLERANCES

The erection tolerances depend on the racking class (FEM 9.831).

- | | |
|-------------|---|
| X-direction | Length of up to 40 m: rack length ± 20 mm
More than 40 m: rack length $\pm 0.05\%$ of overall length |
| Y-direction | Class 100: All beam-levels within ± 5 mm
Class 200: First beam-level within ± 5 mm
Other beam-levels within ± 10 mm |
| Z-direction | The outer extremity of the uprights must lie within ± 15 mm |



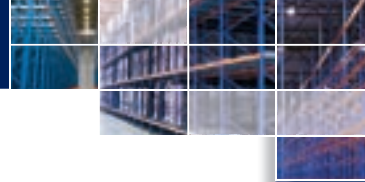
Aisle equipment: top ties, top rail and run-out construction



Special design: levels with decking and integrated roller tracks



A6. High bay pallet racking



ACCESSORIES



Mezzanine construction at the P&D-stations

- The frames are top-tied by a portal beam.
- At both ends run-outs are provided.
- The racking is braced in horizontal and vertical planes.
- The footplates are fine adjusted and supported by a non-shrinkage grouting.
- Safety fencing with interlock-doors and back cladding ensure safe working conditions.
- At the P&D-locations mezzanine constructions are often needed to support the conveyors.

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The modular Mezza-Stow flooring system can be applied in most situations.

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