

Relocateable concept

An economical, relocateable system has been developed for the construction of system floors.

Unlike conventional steel constructions, this system can be easily expanded, moved or simply modified for different load requirements at a later date.

Serial production is possible due to the limited number of components in this system.



The load-bearing components of this system are:

- cold-rolled main and secondary beams, in the shape of Sigma profiles
- special **patented profile connectors** to join main and secondary beams
- columns in a range of sizes
- various types of floor panels

Using these basic elements in different combinations enables a wide variety of span lengths to be achieved, giving permitted loads from 300 to 1,200 kg/m².

Mezzanine floor systems

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Flexibility

Mezzanine floor systems are not only considerably cheaper than structural floors, but also provide more flexibility for cut-outs for stairs, lifts and conveyors. Also, different types of decking are available.

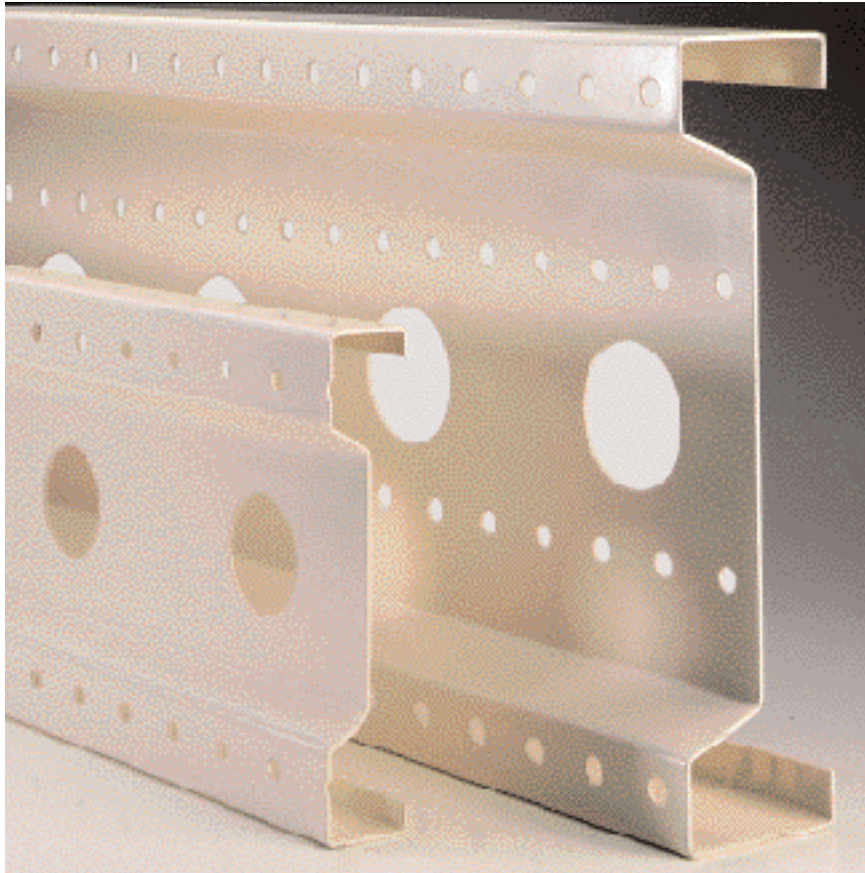


The fitting of air ducts, heating panels, and other systems and accessories is possible without problems.

As well as the system perforations for fittings, large perforations in the neutral line of the profile allow fast and efficient installation for sprinkler pipes and electrical cables.

Mezzanine floor systems

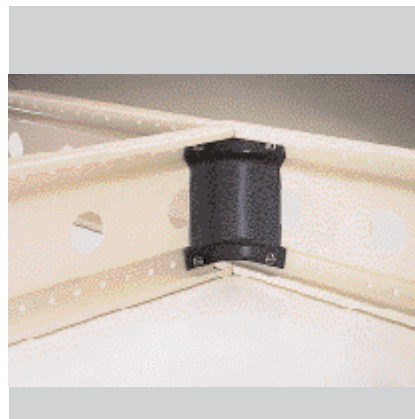
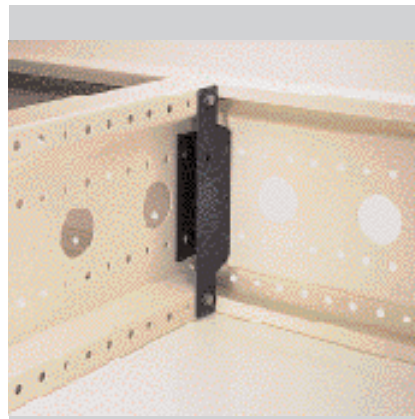
Sigma profiles



The **Sigma profiles** are a development of 'in-house' technology. The size and dimensions of these profiles ensure that they are hardly sensitive to torsion under load, due to the fact that the shear centre coincides with the web of the profile.

Nedcon produces these Sigma profiles in its own factory, in a wide range of dimensions (130 to 410 mm profile height) and with different thicknesses. All types are cold-rolled from high-quality, certified micro-alloy steel, finished with an epoxy-polyester powder coat.

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Profile connectors

The joint between main and deck beams is a very important connection for the stability of the structure. High loads must be transferred from a deck beam to the main beam. Deformation will occur unless all of the vertical forces are transferred through the connecting element. Nedcon has developed a connector element that will transfer very high loads safely, without deformation occurring at the joint.

Patent: EP 0 699 840 B1

Mezzanine floor systems

Sigma profiles

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With very large span lengths, extra heavy-duty, hot-rolled steel profiles can be used as main beams. The main beams can also be installed on concrete building columns. To do this properly Nedcon developed constructionally certified sliding supports.

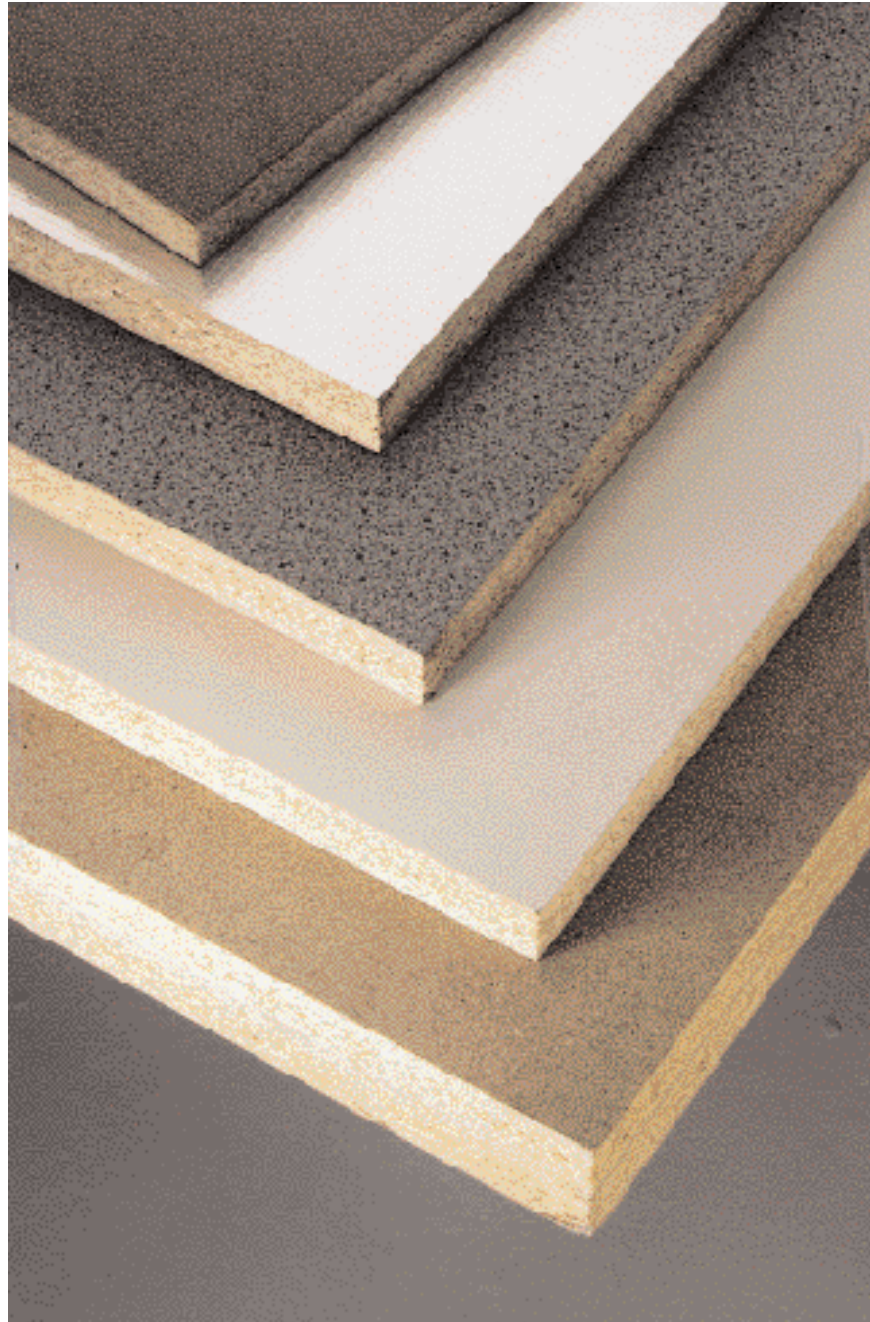
The **mezzanine floor systems** can be made as panel or grating floors.

Panel floors are available in a variety of strength options and a range of thicknesses from 28 to 60 mm, which have considerable differences in bending strength (10 to 22 N/mm²) and modulus of elasticity (1,900 to 3,500 N/mm²). Final choice could be influenced on whether evenly distributed or concentrated wheel loads from electric pallet trucks, for example, are imposed. The floor panels, which are available in large sizes, are usually manufactured in high density particle board. These panels are connected together by means of a tongue-and-groove when not supported by the steel construction.

Steel gratings are used in some areas in an installation to provide air circulation. However, they are usually limited to specific situations, because they can allow debris to fall through, are noisy and could prevent the use of pallet trucks.

Heavy-Duty panels

Nedcon has developed a heavy-duty panel using a sandwich construction from very strong material, 60 mm thick, designed for very high concentrated wheel loads created by heavy electric pallet trucks.



If humidity during construction is high, chipboard panels will shrink as they dry out, creating gaps. It is recommended that the panels are fitted only when the humidity is low or normal.

Mezzanine floor systems

Decking

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Fire Safety

In general, high-compression chipboard panels are designated to Class B2, in accordance with DIN 4102-4. A limited number of models are available in Class B1 (hardly combustible). Nedcon can supply panels with reinforced aluminium foil on the underside that meet the requirements of Class 0 normally required in the UK.

Formaldehyde emission

All panel types conform to Class E1 (ETB guideline) and Class 1 (DIN EN 312-1); below 8 mg/100 g.

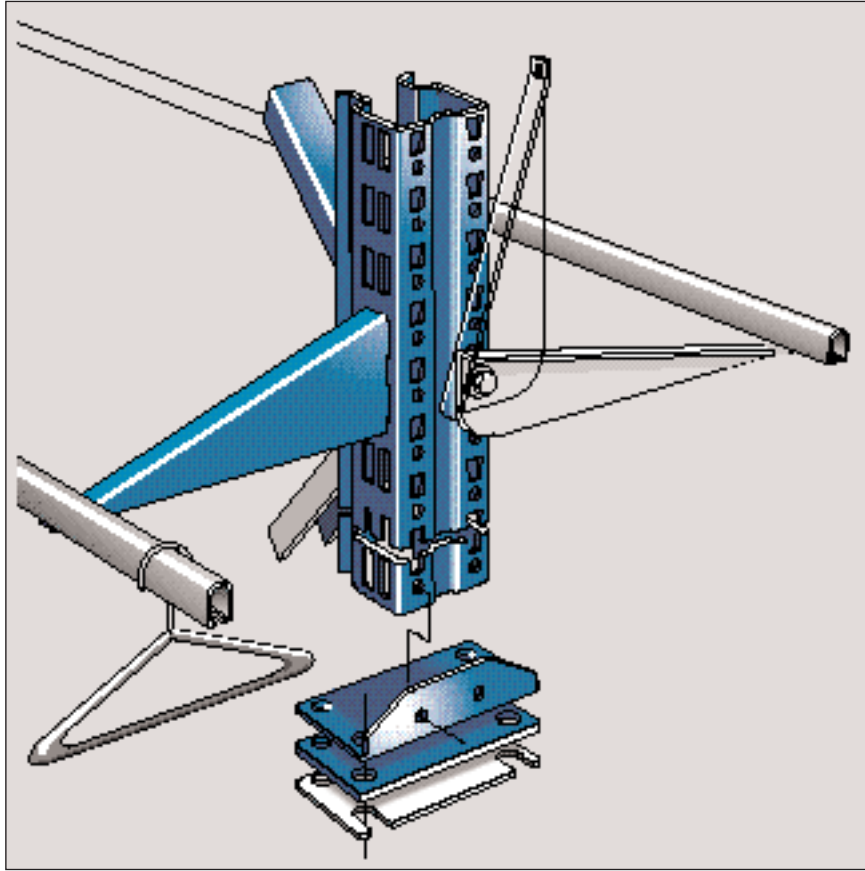


Surface finish

The top of the panels can be finished with a wear-resistant decorative surface. The wear-resistance conforms in full to the most stringent testing in accordance with DIN 68765 (87), class S (more than 650 revolutions). The underside of the panels can be finished with a white melamine surface for good light reflection.



Hanging garment racking



Racks for hanging clothes

With Nedcon system components it is possible to construct complete installations for hanging garment storage.

With a modified perforation pattern in the upright profiles, cantilever arms for clothing rails can be hooked in.

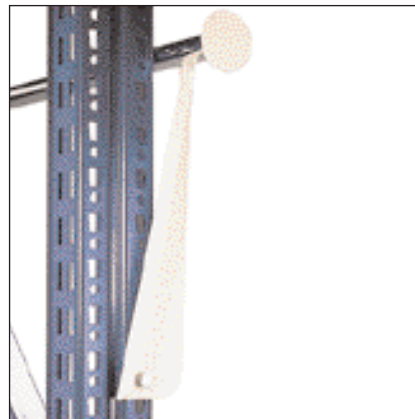
This special clothing rail is profiled in our own factory, sendzimir galvanized or chromed.

This design ensures strength and stiffness in accordance with the superimposed loads of hanging garment and also minimises installation time.

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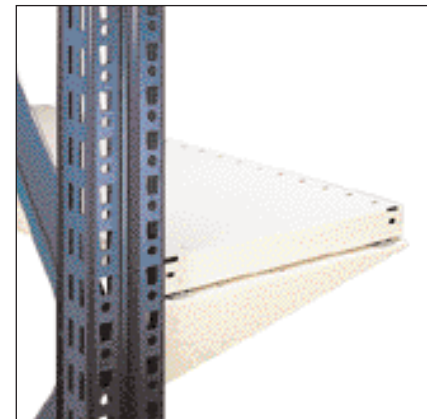


The hook-in cantilever arms are easy to adjust in height, every 50 mm. The design allows clothes hangers to slide along the whole length of the rail. The clothes rail can be fixed to the cantilever arm with a bolted or hook-in connection.



Folding cantilever arms are also available; these allow the racks to be used for long or short clothing, without removal.

Patent: G 94.06517.9



A third type of cantilever arm is available to allow the fitting of shelves in the same rack.

Hanging garment racking

Multi-tier construction can be realised in two ways:

- using high upright frames and hook-in beams at the floor levels;
- with mezzanine floors for large beam spans.

Panel floors are usually fitted in the aisles. Floor gratings can be fitted beyond the aisles for air circulation.

2



Hanginɡ garment racking

Automated hanging garment sorting and storage



The Nedcon **mezzanine floor system** is the ideal load-bearing construction for special transport techniques for hanging garments.

With the wide range of profile dimensions the best possible design for the steel construction over the desired spans can be implemented.

The load-bearing capacity calculations are carried out for every individual construction.

The system perforations are very labour saving and very precise, vital for the assembly of a hanging garment transport system.



Hanginɡ garment storage in high-rise racks is a new development in the domain of automated garment storage. This is a system where one or more loaded garment rails are handled as a unit by a rack-handling crane.

Nedcon has developed unique depth beams and brackets with a special design, which eliminates twist of the depth beams and creates a slot to support the garment rail. The brackets are equipped with blocks for accurate crane positioning. The click system ensures fast assembly of the many brackets.

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Hanging garment racking

Automated hanging garment sorting and storage

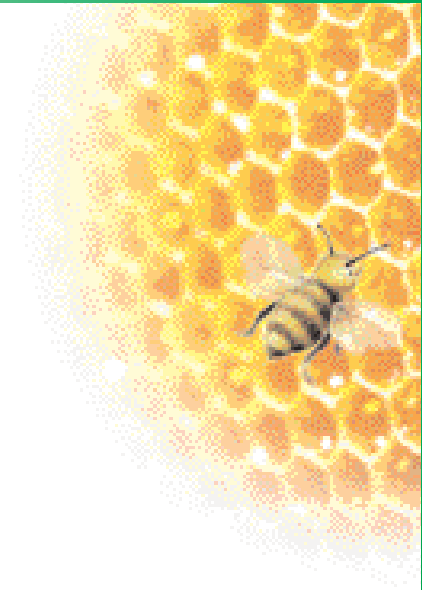
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Solution-focused by nature

Rack protection and safety

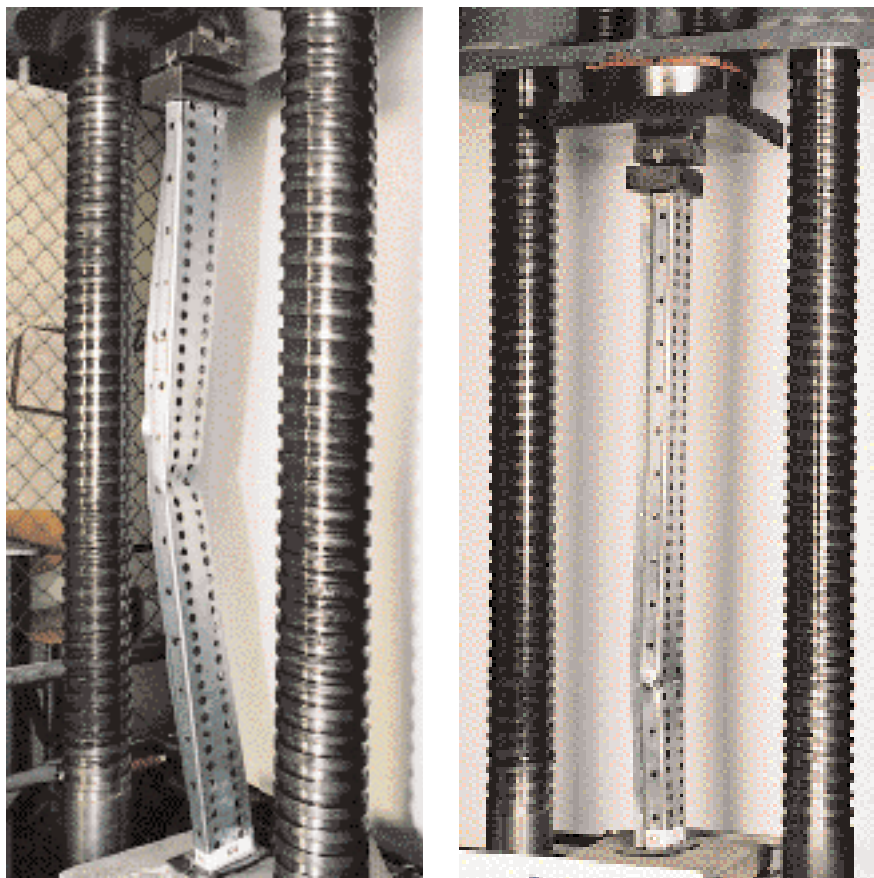


Pallet racking **1**
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A d v a n c e d s t o r a g e t e c h n o l o g y



Pallet racking *Safety accessories*



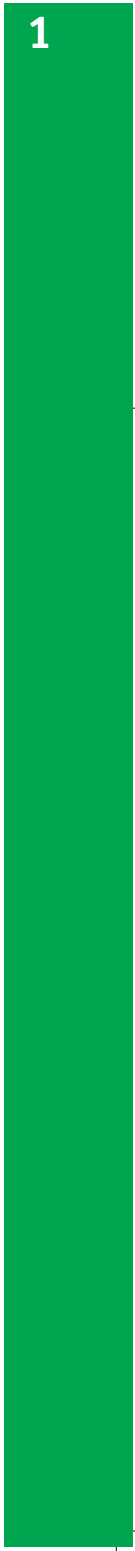
Upright protection

TNO research into load-bearing reduction caused by the impact of collisions has demonstrated the importance of preventing this type of damage. These photos show profiles, which have obviously been damaged. Comparative research on damaged and undamaged profiles shows that load-bearing can be reduced by between 40 to 80 % due to damage caused by collisions. Protective measures are essential for the safety and durability of the whole structure.

Upright protectors with impact deflecting design and wheel deflectors at floor level can assist in preventing.



Rack protection and safety



Pallet racking

Safety accessories

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Corner protection

The corners and sides of a rack block are vulnerable places for damage caused by collisions. Corner protectors accommodate impacts and protect the corner uprights (obligatory in accordance with AI 14, NEN 5051 and ZH 1/428). Energy absorbing rubber anchoring blocks ensure that, even if corner protectors are damaged, the concrete floor remains intact. This allows easy replacement with minimal disruption to the operation. Nedcon also uses two anchor bolts, one on either side of the upright, so that, if struck, torsional damage is greatly reduced.



End protection

A combination of sigma heavy-duty sections and corner protectors provide substantial protection to end frames. In addition, Nedcon can use different frame bracing to eliminate the damage, which usually occurs at the lowest frame diagonals.



Cross aisle protection

Damage caused by constant cross aisle traffic can be eliminated by using single or double sigma sections with intermediate floor supports and energy absorbing corner protectors.



Rack protection and safety

2

NEDCON - F.01.01.01.01