



# PALLET RACKING

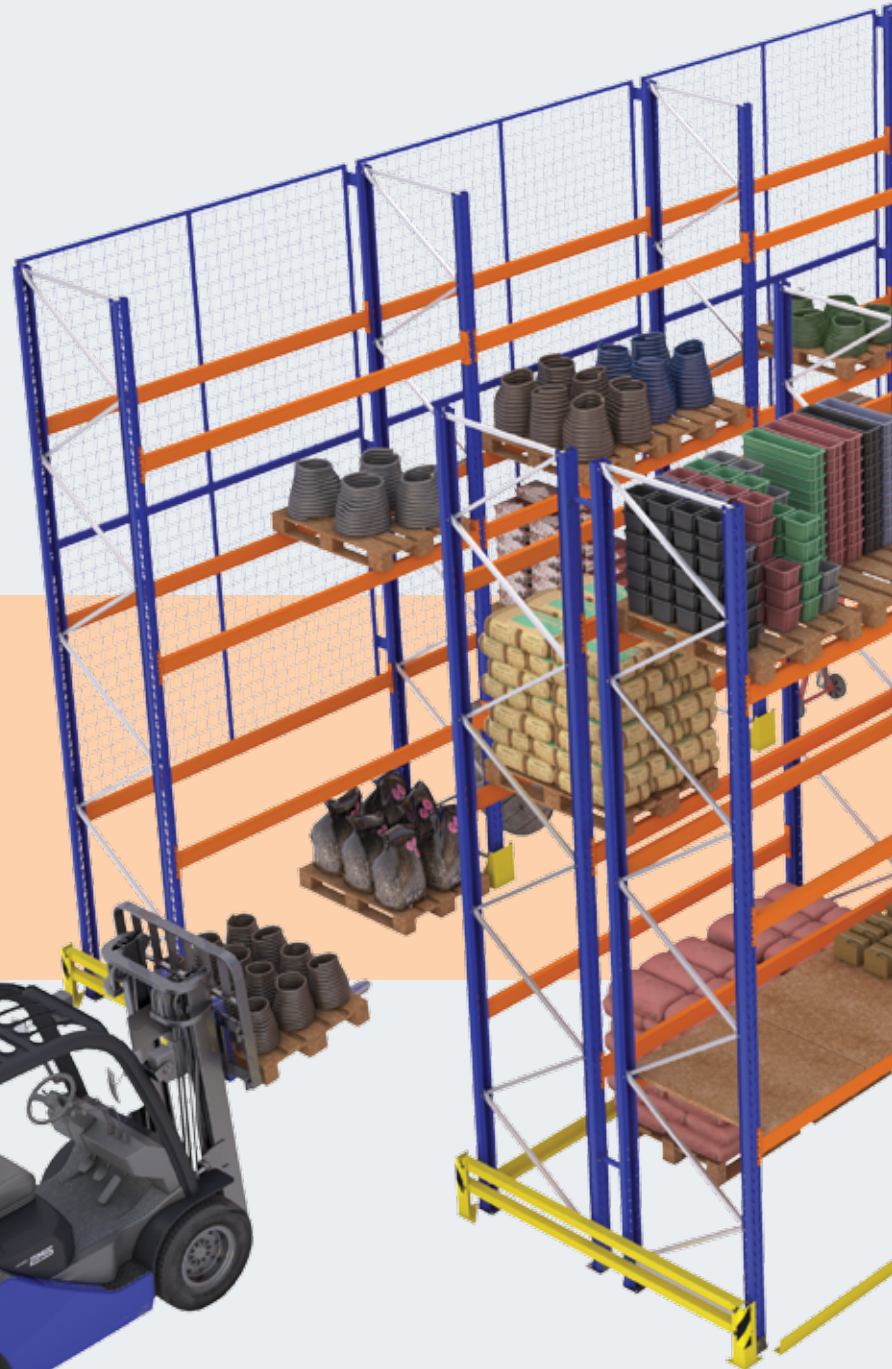


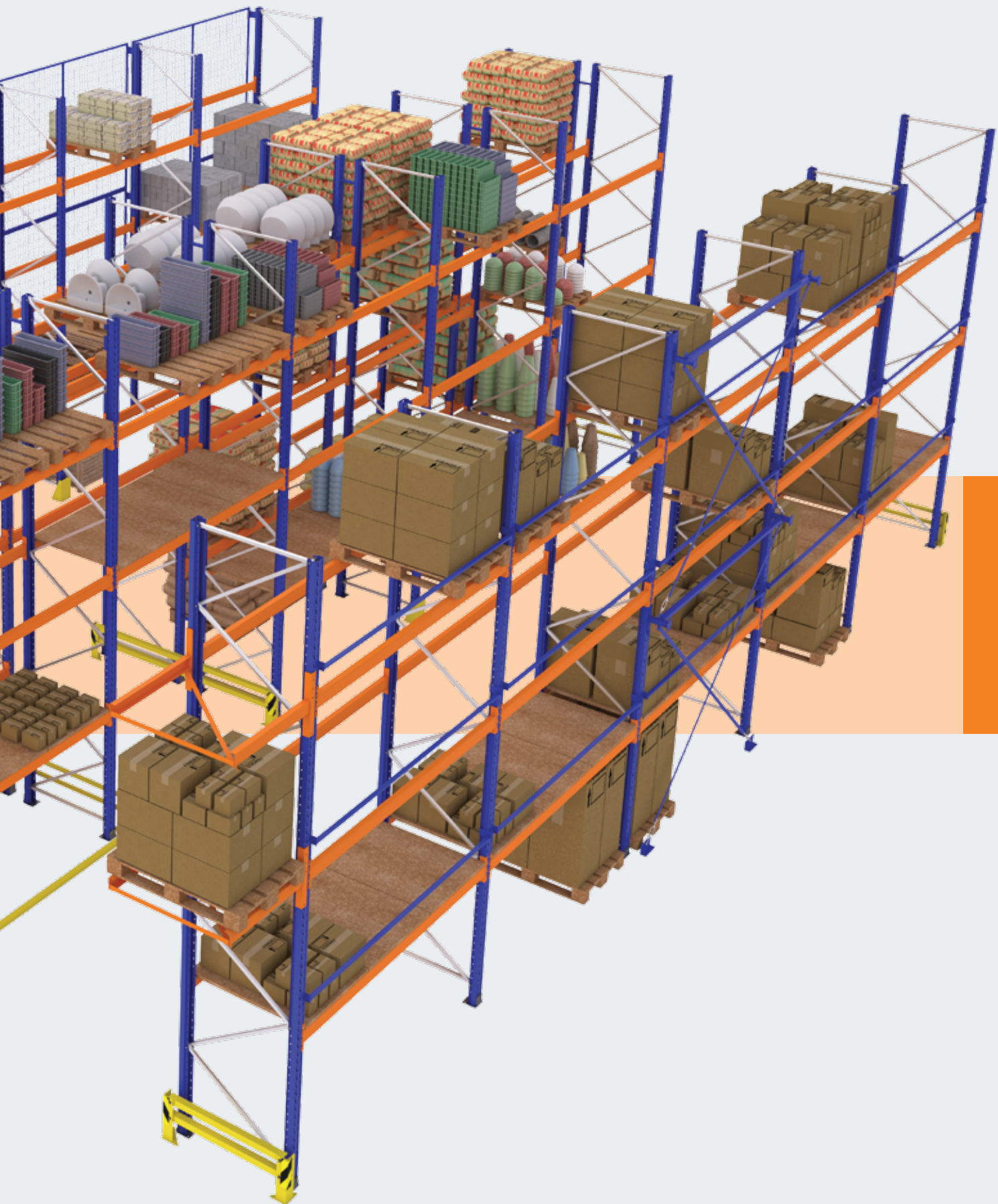
# PALLET RACKING



- ❑ The pallet racking system uses simple modular construction for storing pallets that provides great variability for both small and large storage spaces. Pallet racks are designed with freestanding steel construction.
- ❑ This modular storage system optimizes the use of warehouse space. Assembly and disassembly are fast and simple.
- ❑ The racking system is suitable for all types of pallets – not only for Euro-pallets, which are used most commonly, but also for industrial pallets or metal containers.
- ❑ Pallet racking allows access to each pallet for easy removal of goods and simple storage monitoring.
- ❑ Pallet rack construction is designed to fulfill the strict conditions of EU norms.
- ❑ A quote is provided for free on the basis of technical specifications provided by the customer; projects are always approached on an individual basis.
- ❑ At the customer's request, it is possible to supply the racking with protections for uprights, chipboards and grates, crossbeams, rack labeling, etc.
- ❑ It is possible to install pallet racks in interior and exterior spaces wherever there is high-quality concrete flooring.

The pallet rack is constructed so that it uses the storage space effectively, increases the capacity of warehouse storage areas, and contributes to the transparent arrangement of the material and goods stored. Generally, the pallet rack structure is used for storing pallets with material directly on the rack's beams or on its crossbeams. Barrels, rolls of material, and bundles of sheet metal or boards are stored on specialized crossbeams. Smaller material or boxes are stored on the decking of the pallet rack's bay. The decking can be manufactured of chipboard in various thicknesses, steel grating, panels, etc. The racking quote is made for the customer using their requirements. It is common to have single row pallet racking around the perimeter of the warehouse and double row racking in the middle. The aisle width between the racks is determined by the type of forklift that the customer will be using in the warehouse.



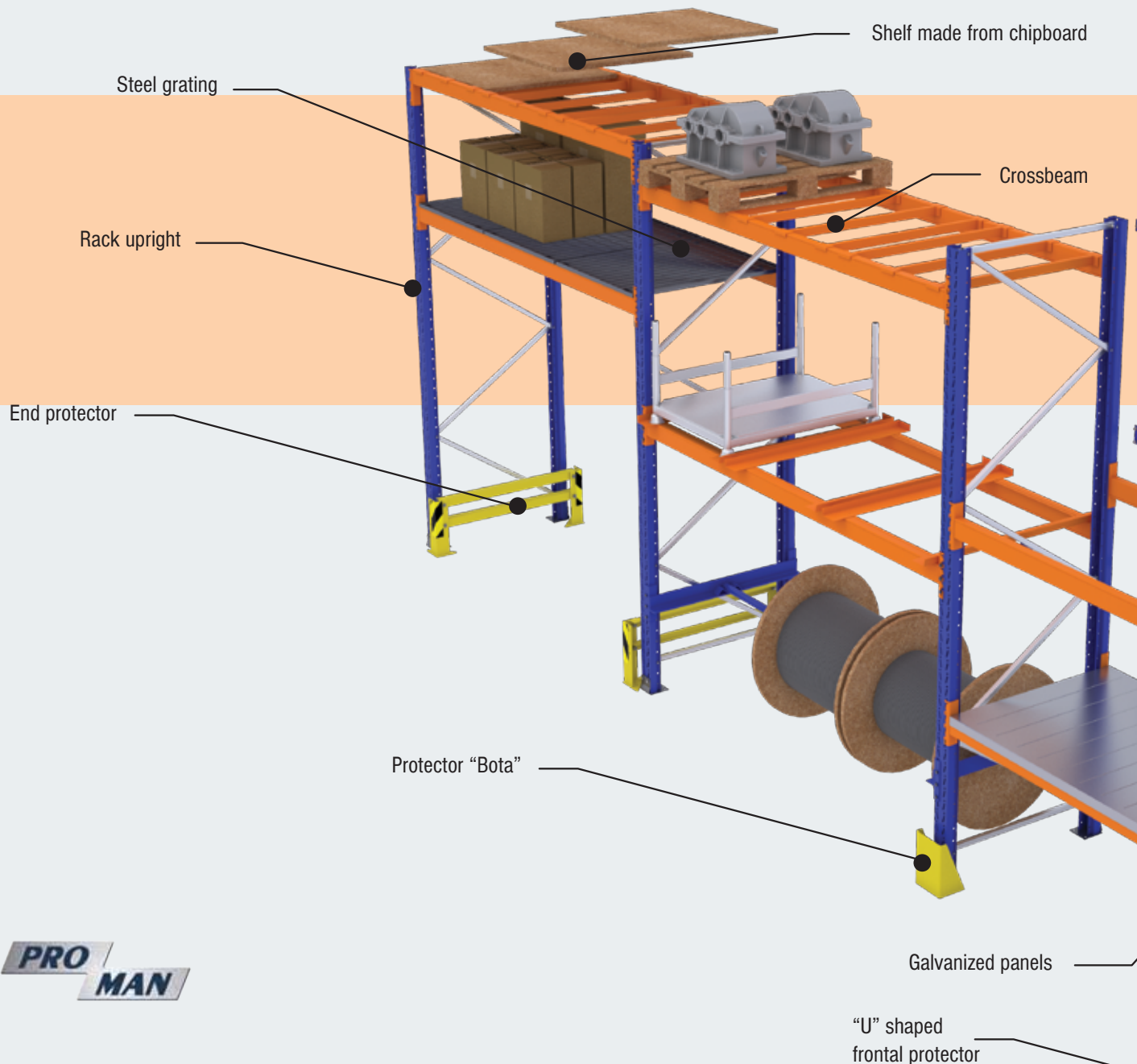


- ❑ The vertical frame is composed of two uprights connected by diagonal and horizontal diagonals. The diagonals are constructed from rolled steel with a C cross-section and are fixed to the uprights with bolts. The racking depth is determined by the length of the diagonals.
- ❑ The frame uprights are manufactured from cold rolled steel section. The upright's profile comes 100 and 120 mm wide, and they are made from sheet metal that is 1.5, 2.0, 2.5, and 3 mm thick according to the required load bearing capacity. We make the frames in standard heights.
- ❑ The frame is perforated with holes 70 mm apart.
- ❑ The upright is equipped with a metal footplate that serves to distribute stress and anchor the rack to the floor.
- ❑ The uprights are either provided in

standard blue (RAL 5010) or alternatively, galvanized.

- ❑ The racks are made to be installed on high-quality concrete flooring any irregularities are compensated for by shims under the frame footplates. After being adjusted, the rack is anchored to the floor using bolts.
- ❑ Racks are usually labeled with safety charts for load capacity.
- ❑ The depth of the frame is determined by the size of the pallets used; standard sizes are 1100, 900, and 750 mm.
- ❑ Double row racking is connected by a spacer to provide the racking with greater stability.
- ❑ Passageways for people or vehicles are equipped with decking from chipboard or grating to protect against goods falling from the pallets.

6

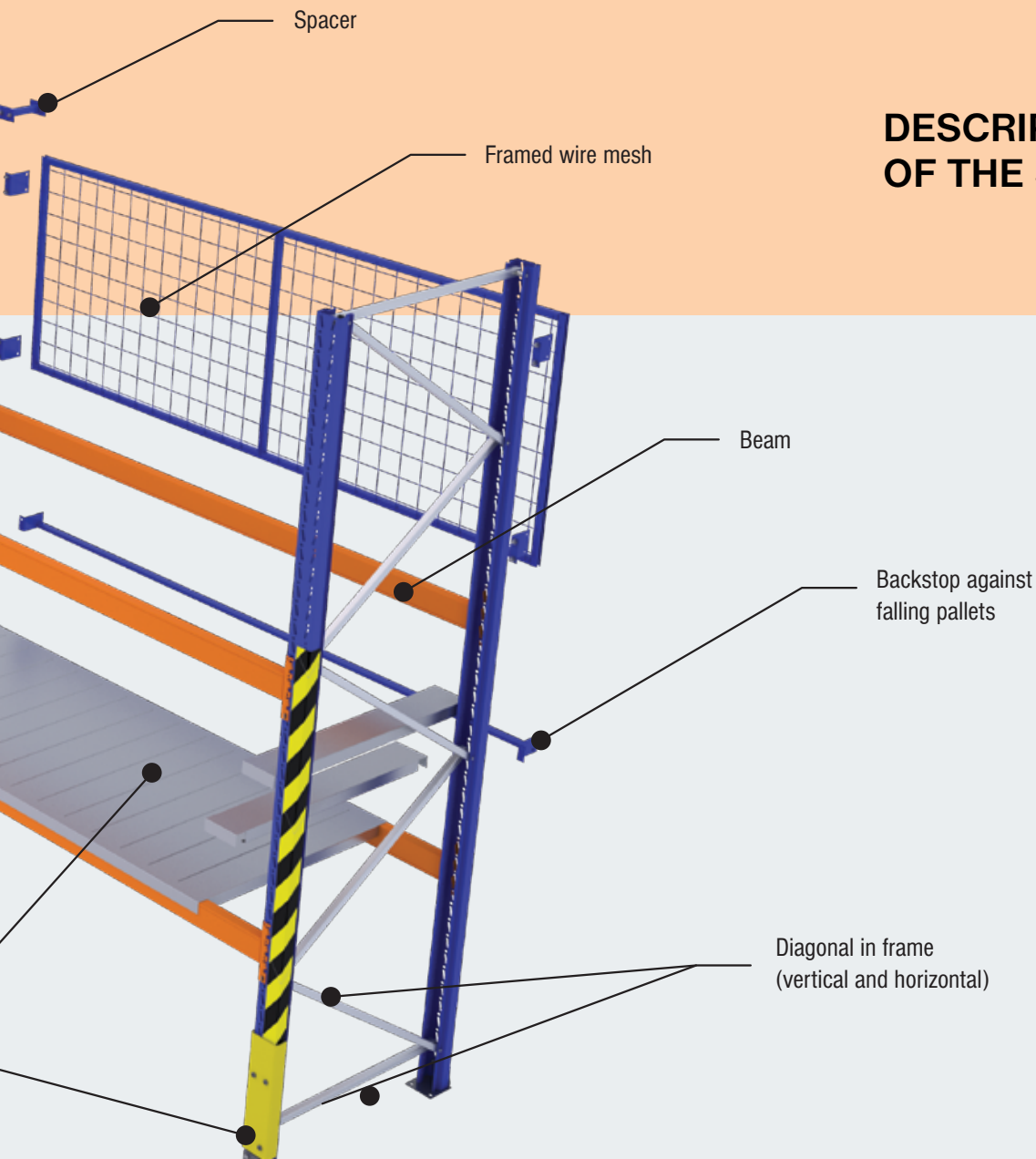


**PRO  
MAN**

- ❑ The rack's beams are manufactured from C section that has been hot rolled together to create a hollow profile with a rectangular cross-section. Special L-shaped steel brackets (left and right) are welded on to both ends. The brackets have angled rectangular pins, which are used to hang the beams onto the vertical frame. The beam is always secured by one specially shaped safety catch inside each bracket that protects the beam from falling during pallet handling. Attachment without bolts allows for fast and easy installation.
- ❑ The size of the beam section is given by the bay's required load bearing capacity and the length of the beam. Standard beam lengths are divided into two series: 1800, 2700, and 3600 mm for Euro-pallets and 2200 and 3300 mm for industrial pallets

(i.e. the actual storage length of the beam). The permitted load capacity of the beams is listed in the load capacity chart (see Technical Specifications).

- ❑ The pallet is loaded onto the beams at a depth of 1200 mm (Euro-pallets). Other types of loading are resolved on an individual basis using various supports for the pallets.
- ❑ The standard color for the beams is orange (RAL 2004).
- ❑ The beam height can be adjusted along the frame at 70 mm increments.
- ❑ According to the client's needs, it is possible to supplement the racking with shelving – from chipboard, steel grating, or sheet metal panels, for example.
- ❑ The pallet rack also offers the option of storing reels and rolls on an axle set onto the rack using special crossbars.



## DESCRIPTION OF THE SYSTEM



### Racking Protectors

The rack's frontside, corners, and uprights are all exposed to damage during forklift manipulation. Therefore, we recommend equipping them with protective elements such as upright, end, and frontal protectors.



### Crossbars

Various types of crossbeams are used as pallet braces when loading box pallets, atypical pallets, or barrels.

## PALLET RACK ACCESSORIES



### Backstops - Protection Against Falling Pallets

We recommend supplementing single row racking with a backstop on the back side. It is also possible to cover the whole back side with wire mesh.



### Preparation Stations

It is possible to add preparation stations to the face of the racking where they can be used to prepare the pallet for storage.



## Forklift Guides

With the customer's agreement, it is possible to supplement the racking with forklift guides for the type of forklift used to make the racking faster and easier to use.



## Decking

It is possible to equip the racking with decking from chipboard, grating, or sheet metal panels according to the customer's needs.

# PALLET RACK ACCESSORIES

9



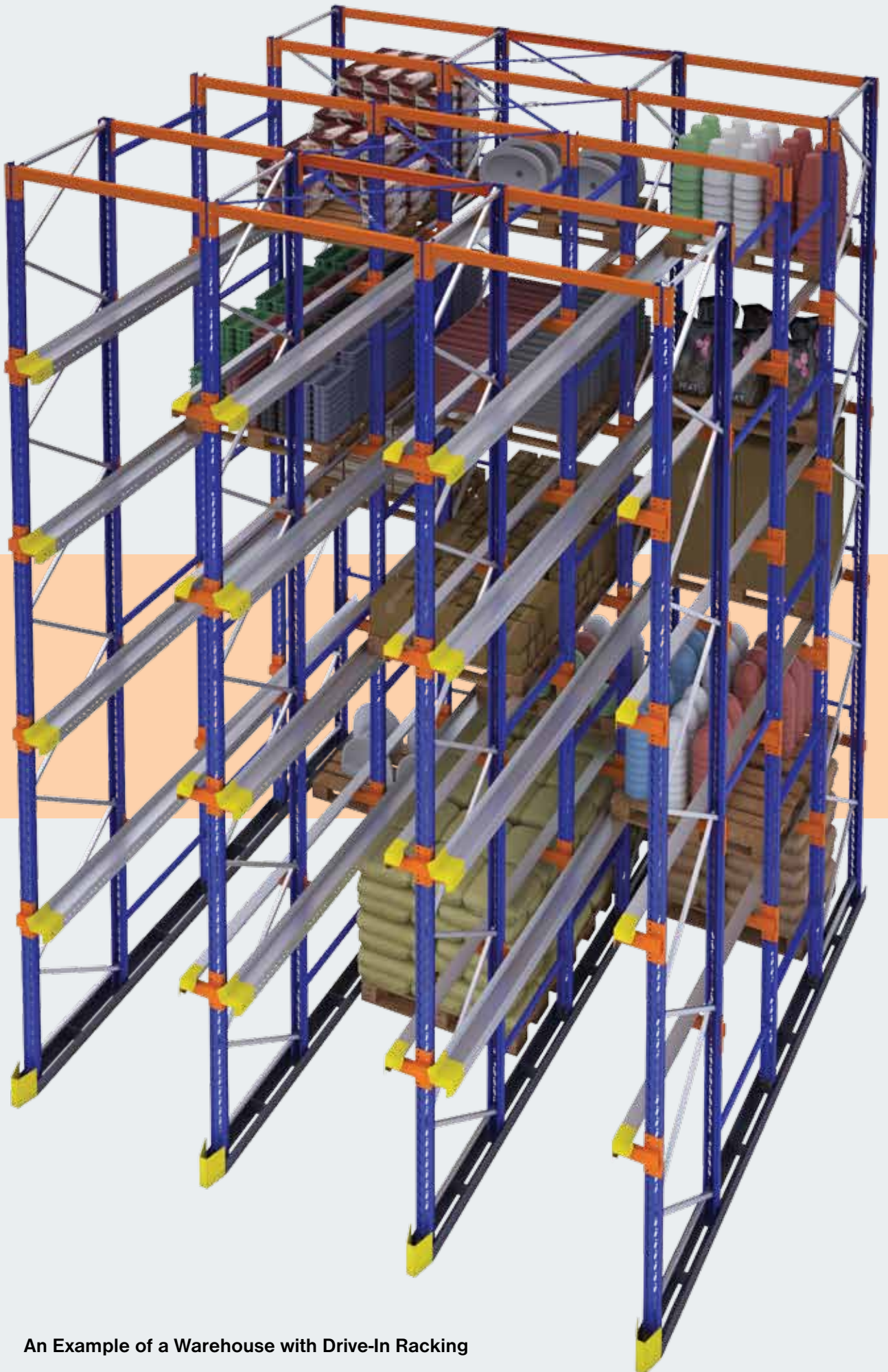
## Load Capacity Labels

At the end of each row, each rack is labeled with a tag showing the number of storage levels, load capacity of the storage level, and the load capacity of the entire rack.



## Bracing

Bracing is used for pallet racking in order to increase the racks' load bearing capacity and to ensure stability in seismically unstable areas.



An Example of a Warehouse with Drive-In Racking



Drive-in pallet racks are used for storing pallets holding the same type of goods. They are made for storing items with low turnover or longer shelf life. The pallets are stored in front of each other in a line (storage lanes) in individual rows with multiple storage levels.



These racks can be designed either as drive-in or drive-through systems, i.e., where goods are put in storage from one side and removed from storage on the other. Pallets are loaded on special rails. These rails, i.e., loading beams, are made from bent galvanized steel sheeting.

## DRIVE-IN & DRIVE-THROUGH RACKS

11



The steel rails are either single- or double-sided and are bolted to the upright frames using a bracket. Drive-in racks also contain a portal support beam located at the top of the upright frame for guaranteeing the frames' rigidity. There are vertical and horizontal bracing rods to ensure the stability of the drive-in rack.



When designing the configuration of a drive-in rack, it is important to know the type of forklift used. It is possible to supplement the setup of the drive-in rack with racking accessories, e.g., forklift guides, upright protectors, pallet backstops for the far end of the lane, etc.



## Flow pallet racking

- ❑ Flow pallet racking is used where there are multiple pallets with one type of product.
- ❑ Flow pallet racking works on the FIFO (first-in, first-out) and LIFO (last-in, first-out) principles.
- ❑ They save space and time when handling pallets.
- ❑ Flow pallet racks are composed of pallet racking construction and a rail system with rollers, along which the pallets travel due to the slight slope.
- ❑ It is possible to load the pallets onto the rack in both directions (side and front) - the rail is also designed according to the required load capacity. It is important to use only high-quality and undamaged pallets on the rail.
- ❑ Flow pallet racks are installed with a 3–5% slope.
- ❑ The rails can be supplemented with a pallet separator, entry guides, etc.
- ❑ The push-back nesting system is another technical alternative for flow racking on the LIFO (last-in, first-out) principle that is used when the pallet is loaded onto the rack sideways.
- ❑ This is a nesting system of carts/frames installed in the rack at a slight slope so that the pallet at the back slides to the front. When loading the second pallet, the forklift pushes the pallet that was loaded first towards the back.
- ❑ At the same time, this loading system conserves the racking construction and does not damage it.
- ❑ The loading and unloading area is the same place



## Mobile pallet racking

- ❑ The mobile racking system provides access to each pallet from a single working aisle.
- ❑ Using mobile pallet racks increases warehouse capacity by up to 100 % in comparison with the traditional solution while retaining access to each pallet.
- ❑ The system also provides savings on operational costs for the overall space (energy, lighting).
- ❑ The system is especially suitable for refrigeration and freezer storage.
- ❑ The aisle is opened when necessary by using a command given by the attending staff via remote control or by pressing a switch.
- ❑ The pallet racks are located on moving carriages that run along tracks on rolling wheels. The tracks are inset into the concrete floor.
- ❑ Motors are used to move the carriages. The whole system is equipped with safety features.
- ❑ The carriage movement is controlled electronically.



## Pallet Rack Mezzanines

- ❑ This racking system is used primarily when it is necessary to raise capacity for hand removal of goods from the racks. It uses the height of the warehouse when there is limited usable space.
- ❑ Each example of this construction is unique, designed according to the client's instructions.
- ❑ The mezzanine can be manufactured with one or more levels.
- ❑ The floor of the mezzanine is usually made from chipboards or floor panels.
- ❑ Stairs are located between individual levels.

## OTHER USES FOR PALLET RACKING



### Racking for Cable Drums

For storing cable reels, etc., racking systems are designed according to the customer's individual requirements (according to the required reel depth and width, load capacity, number of levels, etc.).



### Flow racking

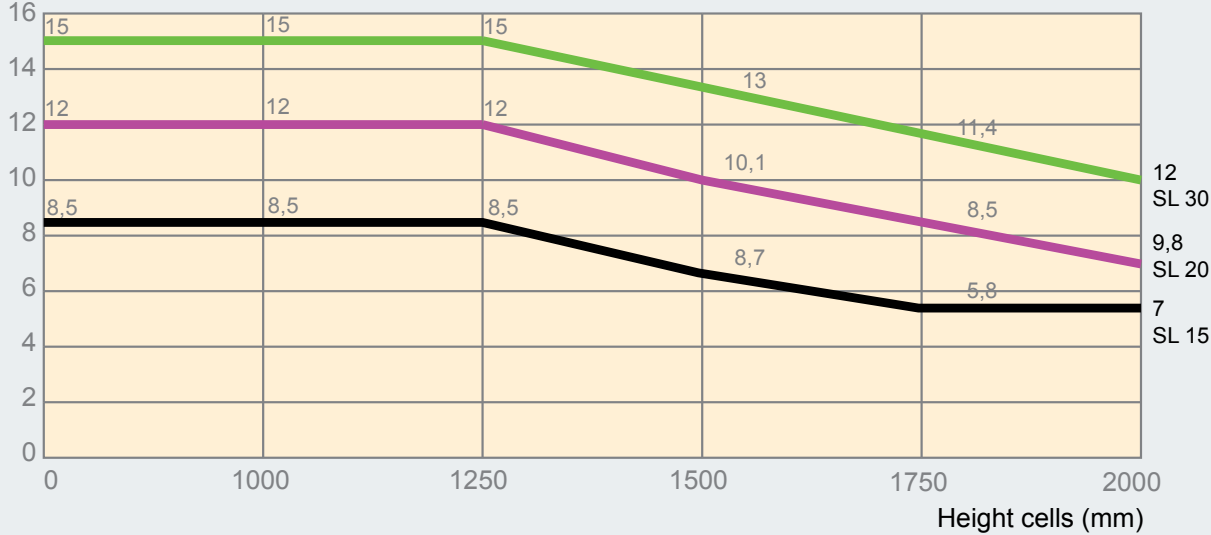
It is possible to place the flow racking in the bottom level of the pallet rack for the manual service and manipulation with material.

# TECHNICAL SPECIFICATIONS

PERMITTED BAY LOAD CAPACITY (kg)					
Beam lenght (mm)	1800	2200	2700	3300	3600
PROFIL					
RTS 80	2600	2100	1650	1200	1040
RTS 90	3000	2560	2120	1500	1280
RTS 100	3800	3180	2600	1940	1660
RTS 110	4200	3560	3000	2260	1900
RTS 125	4450	3960	3300	2760	2400
RTS 140	4500	4400	3900	3260	2960
RTS 160	4500	4500	4500	4300	3900

## Design of a column

Load column (t)





Solution for you. **PROMAN.**

**PROMAN, s.r.o.**  
Za Pivovarem 830  
537 01 Chrudim  
Czech Republic

tel.: +420 469 622 279  
e-mail: [proman@proman.cz](mailto:proman@proman.cz)  
[www.proman.cz](http://www.proman.cz)



EUROPEAN UNION  
European Regional Development Fund  
Operational Programme Enterprise  
and Innovations for Competitiveness