



# METALCOOP

The right place of Quality

## MEDIUM DUTY RACKING SYSTEM ST60

Adjustable racking system ST60 has been certificated by Italian Association of Steel Manufacturers with the product quality mark 'Quality & Safety'-ACAI CISI since 1996.



### ST60 FRAME

It consists of two uprights, two galvanized footplates and a number of cross-braces and diagonal cross-braces depending on upright's height and load capacity.

Standard depths are 600-800-1000mm, while standard heights are at every 500mm from 2000 to 9000mm.

Frames are available in galvanized or painted steel sheet.

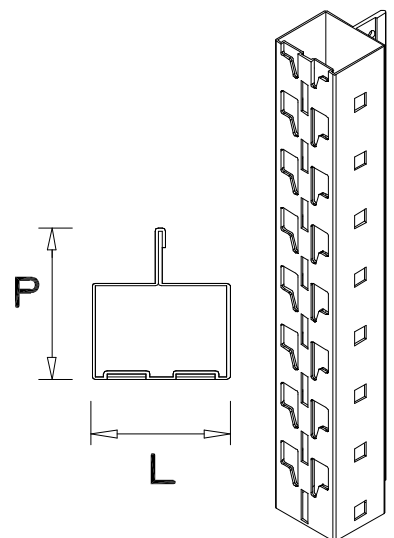
Here is a detailed description of the single parts:

**UPRIGHT:** it has a square shaped closed profile, stiffened with 90° folds -60x50mm working section.

It is made with a semi-automatic line by cold roll-forming a structural steel coils, punched by a 50mm pitch.

Standard thickness of this profile is 1.5mm.

On demand it is possible to change thickness; first quality structural steel sheet is used to make this upright, according to the EN 10204 norm.





**CROSS-BRACES AND DIAGONAL CROSS-BRACES:** made of cold-formed profile in galvanized structural steel, they are pre-engineered with holes to be fixed to the uprights.

**GALVANIZED FOOTPLATE:** it is made with a specific automatic equipment by forming a 3mm thick steel strip; it is to be inserted into the lower end of the upright with a M8x75 bolt and to be fixed to the floor with an anchor that is included. It is strongly recommended to fix the unit to the floor, especially when the unit height is over than 2500mm.

The load-carrying capacity of the frame must be defined on the diagram published in our ST60 catalogue. Load capacity of the frames decreases when the distance between the ground and the first level of beams increases.

Please specify the maximal loading capacity and the maximal weight of the loading unit requested by the customer for any offer enquiry.

## ST60 BEAMS

They consist of a tubular profile welded to two L-shaped squares that allow connection to the uprights.

**TUBULAR PROFILES:** they are made with a specific line by cold roll-forming a steel strip. They are square shaped, with a back step that closes the profile with a flat-folded seam. This patented profiles allow a very large surface for supporting pallets and give the Customer the chance to put zinc plated panels in, obtaining continuous surfaces without any further cost. Because of the flexibility of this production line, it is possible to offer standard profiles in different thicknesses, in order to optimize the use of the racks.

S235JR steel sheet is used to make these profiles. Steel sheet is certified according to the EN 10204 norm.

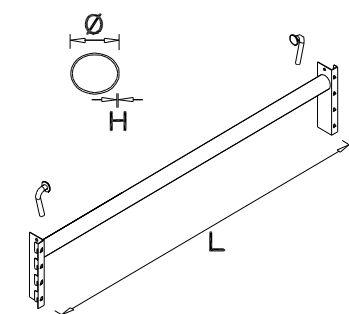
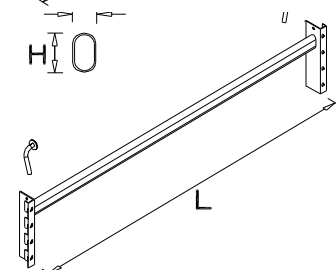
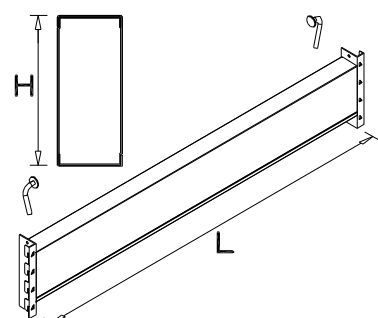
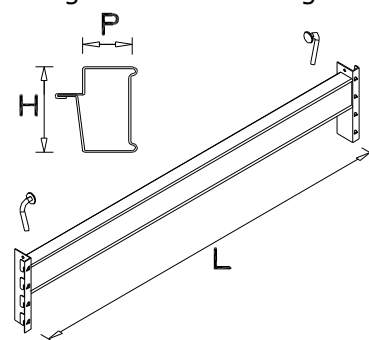
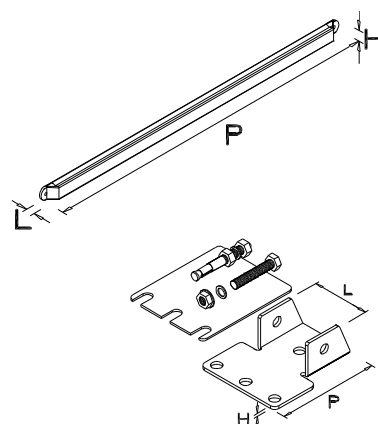
**L-SHAPED SQUARES:** L-shaped squares, welded at the ends, are obtained by blanking and folding a 2 mm thick steel sheet; they have 4+4 hooks that secure the connection of beams and uprights. Owing to their wedged shape these squares give stability that increases with the increase of the load.

First quality S235JR steel sheet is used to make these squares. Steel sheet is certified according to the EN 10204 norm.

## BEAMS FOR SPECIFIC USES:

Beams with particular section are also available: 20x40x2mm oval beam for hanging clothes and  $\varnothing$ 42mm circular beam for tyre storage are available.

Safety pins on each connector avoid the accidental dismounting of the beams. A special double lip on their body make their accidental exit impossible.





## **ACCESSORIES**


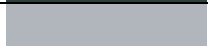
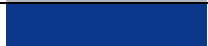



Full range of accessories have been developed in order to increase the functionality of the warehouse:

- wire mesh panels with 50x50 mm mesh and 4 mm diam. wire,
- horizontal tubular pallet-stops,
- front-to-back supports.

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*All elements described above -unless otherwise indicated- are protected against corrosion by a phospho-degreasing and epoxi-polyester coating process.*

Our standard colours are listed below:

Dark Grey (GS)		± RAL 7043	in stock
Light Grey (GC)		± RAL 7040	in stock
Gentian Blue		RAL 5010	available on demand
Green		RAL 6011	available on demand
Fire Red		RAL 3000	available on demand
Chrome Yellow		RAL 1007	available on demand

For any other colour, please refer to RAL Standard Catalogue.

*You will find further details in the dedicated section of these notes.*





## How to read the load capacity of the frame

### Ex. 1 – How to decide if the frame is right.

We get the following informations from the customer who is specifying to us what he needs for his warehouse.

Racks with 3 loading levels (+pallet on the ground).

Distance between loading levels = **1200mm**

Loading unit = Europallet.

Weight of each pallet = **500kg**

3 positions on every couple of beams.

Total weight on each loading level = **kg. 1500.**

The total weight on the frame is:

3 loading levels x kg. 1500 = **kg. 4500**

We move along the horizontal axis up to the distance between loading levels (=1200mm).

Then we move in vertical up to the curve. Back in horizontal, we read the value on the Y-axis.

This is the max. loading capacity available by the frame when first level of beams is fixed at 1200mm.

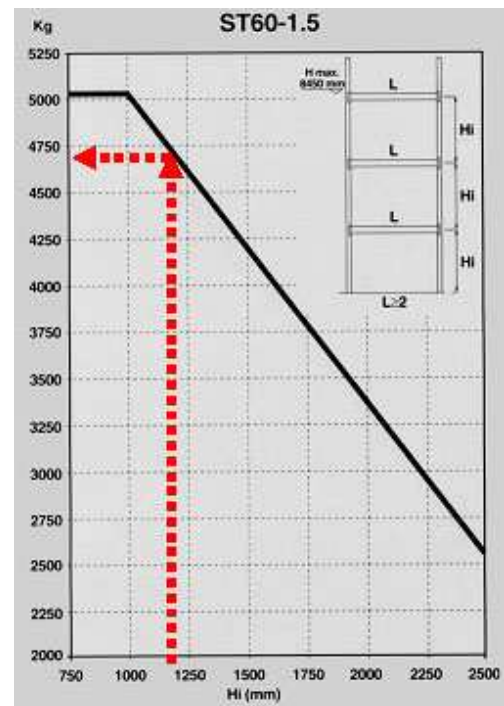
Moving the first level up, we get a reduction of load capacity.

The loading capacity of this frame is between 4500 and 4750mm.

Finally, we can state that **such frame is suitable for the requested loading requirements.**

In case of the pallet weight was requested to be 600kg (only 100kg more), the total load on the frame would have been kg. 5400 and this kind of frame would be not suitable.

Contact Metalcoop to get the solution.



### Ex.2 How to verify a change of the loading levels.

Taking in front of us the rack above, the customer is now requesting to take the first loading level out.

Data are changing as indicated here below:

Racks with 2 loading levels (+pallet on the ground))

Distance between ground and 1st loading level= **2400mm**

All the rest is the same.

In this case the total weight on the frame is:

2 loading levels x kg. 1500 = **kg. 3000**

We move horizontally along the x-axis, up to the distance between ground and 1st level (= 2400mm).

Then we move in vertical up to the curve.

Back in horizontal, we read the value on the Y-axis.

This is the max. loading capacity available by the frame when first level of beams is fixed at 2400mm.

The loading capacity of the frame is now less than kg. 2750.

**Such frame is now suitable only if pallets weight is 450kg.**

The customer must be informed and aware about this important consequence of the change of the loading level's position.

In case pallets weight is 450kg each, then the total weight acting on the frame is 2700kg and the frame is again capable to support these weight fully respecting all the safety standards.

Do not hesitate to contact Metalcoop Tech. Dept. for any further doubt or question.

