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ROLLFORMING

Sections used in Shelving and Racking Systems

In this Eighteenth series of articles on Rollforming we will discuss about Rollforming of Sections used in Shelving and Racking Systems. With rapid urbanization all over the world storage space is going to be a premium commodity and the cost of space is skyrocketing. The only way we could get more space is store vertically to higher heights. This is the trend all over the world and India is not going to be an exception. In the advanced countries for most of the mass produced products the warehousing and distribution costs are much more than the manufacturing cost of the same product.

To improve productivity and cost structures warehousing, materials handling and retrieval systems are getting fast revolutionised. With the introduction of novel racking and shelving systems around 75% or more storage space has been achieved, better overview of inventory, time spent on distribution points slashed and improved cost structure has been achieved.

Another area of usage of these sections is mezzanines and mezzanine storage. Mezzanines are the economical way to create a second or even a third level using your existing unproductive space. Various types of modular mezzanines are getting introduced in a big way all over the world. The other areas are- do-it yourself boltless shelving systems, light duty pallet racks etc.

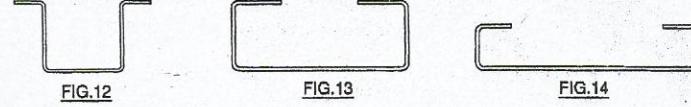
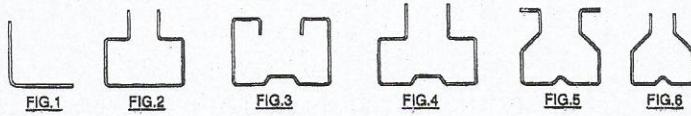
The earliest pre-fabricated racking system introduced in India was slotted angle system. Later when demand increased some companies have started rollforming slotted angle sections also. The Sections also have to be slotted or pre-punched in order to make them pre-fabricated type. Press braked slotted angles have limitations of height as normally press braked length does not go beyond 3 Mtr. Some industries, to make the sections longer resort to joining the sections by welding. The welded joint is always a weak area as compared to the unwelded section.

Also the load carrying capacity of slotted angles is less as compared to higher strength rollformed sections. In recent times in India the idea of storing material vertically has picked up and thereby saving costly factory and godown space. The requirement of storing to higher and higher vertical heights necessitated development of higher load carrying capacity high strength to weight ratio powder-coated rollformed sections.

Especially in the USA and Europe there are multitude of companies specializing in supplying racking and shelving systems. A typical metal shelving system consists of 3 basic elements: a) Sturdy Upright section 35mm wide, 8 bends rollformed T section b) Crossbar Sections with two hooks to support shelves and for various upright frame depths c) Metal shelf in 100 and 200 mm sections, three bends at the front and at the rear. The capacity of the upright frame depends on the vertical height between the shelves.

Stability is increased by more shelves, uniformly distributed. The uprights are perforated all 25mm allowing a comfortable shelf partition. By changing needs the system can also be adjusted in depth, height and load. As it is a modular design it is very easy to install.

The carrying capacity of the upright frame can go upto 3000Kg. at a uniformly vertical spacing of 500mm. The other elements as options provided are Back cladding, side wall and diagonal bracing for extra rigidity.



Typical installations include distribution centers, warehouses, maintenance facilities, record storage, archives, large service operations and expanding parts- departments. Traditional pallet rack is a great solution for many warehouses, but if there is a lot of inventory that shifts on regular basis, drive in or drive thru rack is a storage solution which could be considered.

While traditional static rack storage allows for many rows of pallet racking with aisles between the individual rows, drive in and drive thru racking allows for a much denser arrangement of your stored goods.

From Fig.1 to Fig.14 are some of the typical rollformed sections used in shelving and storage racking systems. Out of these several sections have been developed by Sedvik Industries, Bangalore. Fig.1 shows the traditional slotted angle section in different thicknesses and sizes. Fig.2 to Fig.14 are the latest sections developed for higher capacity and higher height racking

systems. Fig.2 to Fig.6 are called Upright sections. These are vertically placed usually on four corners of the racks. Slots and holes are pre-pierced at regular intervals on to them so that beam sections and shelving sections could be easily fixed on to them. Fig.7 to Fig.11 are Beam sections which are fixed horizontally to the Upright sections. Fig.12 to Fig.14 are bracing and shelving sections. There are still several variations of these sections and newer designs are constantly being introduced all over the world.

There is going to be an unlimited scope for growth in the area of prefabricated/modular type shelving and storage racking systems in the coming years all over the world as well as in India.

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