



**Top: Concast Metal Products stores bulk products in stanchion racks. Inset: Concast places individual items in pans in cantilever racks. Bottom: At Concast's operation, material is picked from the pans at a bar order filling station.**

## It's out with the old and in with the new as companies discover the benefits of stacking inventory

BY LAUREN DUENSING

**M**etal Center Systems, Mississauga, Ontario, offers custom storage that accommodates a company's specific material handling needs. For Ryerson Tull Canada and Concast Metal Products installation of these racking systems saved time and money by reducing product damages and improving order filling speed.

Cantilever racks used for bar and sheet simplify inventory control by making loads more visible and accessible. The racks can be combined with other products such as bar order filling stations, which can include bar packaging, over/under, direct-pick and pan-pick stations.

Bar packaging stations allow ergonomic packaging of products when the average order size is small and individual items are light enough to be flipped.

Over/under stations are for high-volume production, in which individual items and full pans are brought up to the station. The operator does item selection, either through use of stripper arms or overhead stand-alone cranes.

Direct-pick stations accept products that are removed straight from the racks by siders or items that are

pan flipped or crane lifted. Orders are then placed on receiving chains, which convey bar products to the order-filling operator. Manual handling is eliminated, and banding is done with overhead supported tools. Pan-pick stations are a variation on direct-pick, but in pan-pick, the operator uses hydraulic stripper plates for lifting.

For companies that choose a sheet handling system, a bundle splitter allows sheet order filling without any lifting or material damage. When used for order filling in a warehouse, inventory skids are brought to a pick station, and the bundle splitter operator uses a hand-held remote control to separate sheet orders of up to 6,000 pounds, regardless of sheet count. Sheets are then transferred to skids.

The bundle splitter system also can be used to split large stacks from a cut-to-length line into smaller customer orders or inventory skids. Typically a 20,000-pound master skid can be split into four 5,000-pound skids.

### From floor to ceiling

Ryerson Tull Canada's Mississauga warehouse installed one of the sheet rack systems with a sheet order filling station. The company has cantilever racks with more than 2,000 locations that store sheet sizes up to 72 inches wide by 192 inches long and are serviced by siders storing up to 24 feet



high with 10,000-pound loads. The cantilever racks have adjustable arms to vary the opening size for both aluminum and steel sheets.

The products are brought in on skids, and most of them are put into the racking system for storage with sideloaders, says Terry Gibb, quality and special projects manager for Ryerson Tull. A sideloader operator pulls the skids out for orders to be filled and puts them in the staging area where they are handled by forklift trucks. Then orders travel to the bundle splitting station where operators fill the orders, take the stock off the skids, put it on a shipping skid and apply packaging.

The bundle splitter portion of Ryerson's system is a prototype, built specifically for the company. "We worked out the bugs and kinks with them," notes Gibb. "It's turned out to be the cat's meow as far as handling sheet products is concerned."

In the company's old system "everything was floor-piled," he says. "You had to dig through the pile to get the skid you needed, which was often on the bottom." This process resulted in considerable material handling and product damage from the forklift trucks. Eliminating damage was one of the principal benefits of the new installation.

The second was speed. "When we put the racking system in, with the crew we had, we were able to fill about 60 line items per day," notes Gibb. "And now, although we have two more people working on the line, we've hit as high as 250 items per day." In addition, "about 80 percent of every line item that we take in a day is shipped next day. Our on-time delivery performance during the last 2½ years is more than 99 percent."

Concast Metal Products, Birmingham, Ohio, which manufactures continuous-cast bar stock and copper alloys, also uses the racking systems, even though the company is not in the distribution business.

"We bought several systems from them," says Al Barbour, president of Concast. "We bought cantilever racks as well as stanchion racks, and they custom-made a pick station for us. We can bring our material over and de-pan it or take it off a fork truck and make bundles."

### Eliminate bottlenecks

The company's inventory is stored in a combination of stanchion racks and pans in 24-foot-high cantilever racks for individual item storage. Stock is pulled from the cantilever racks with a four-direction sideloader and transported to the bar order filling station.

The order filling station has hydraulic stripper plates that move material out of the inventory pans and on to accumulation chains feeding the packaging station. The sideloader operator can control the stripper plates and chains remotely.

Material then moves to hydraulic bundling yokes, which shape the order into a round bundle for strapping with overhead pneumatic strappers. Heavy-duty load cells are incorporated into the packaging station to show actual weights



**Top: Ryerson Tull stores stock sheets in 24-foot-high cantilever racks. Right: Stock is delivered to a sheet order filling station in Ryerson's warehouse.**



on a digital readout; a printer records the weight on a self-adhesive label. When orders are completed, they're removed by fork truck and placed into cantilever shipping accumulation racks.

"Our previous system was homemade," says Barbour. "This was a big upgrade for us." Now the company has "room for all of our inventory, and it is well organized." He also notes that he has seen an increase of 25 percent to 30 percent in the speed of order processing. "We have some labor savings in it, but we didn't approach it from a labor-savings standpoint as much as our warehousing and shipping department was previously a bottleneck in our whole operation," he says.

### Logistical challenges

Going from a homemade system to 24-foot-high racks seems like a huge undertaking, especially when there's still an operation working around the installation, but both companies seem satisfied with the results of their projects.

"The big challenge was logistics," says Gibb. "You are always bound by the walls of the building. And you have to move stuff around to give them enough room to put the racks up."

"They knew what the layout was going to have to be, and they brought a crew to set up the racks," notes Barbour. "We really depended on them to guide us, because we're not in the warehousing business."

Both executives commented specifically on the increase in speed as a result of the installation. "The benefits are multiple times what we thought [they] would be," says Gibb. "To be able to fill four times as many line items in a day—that's huge." ■

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