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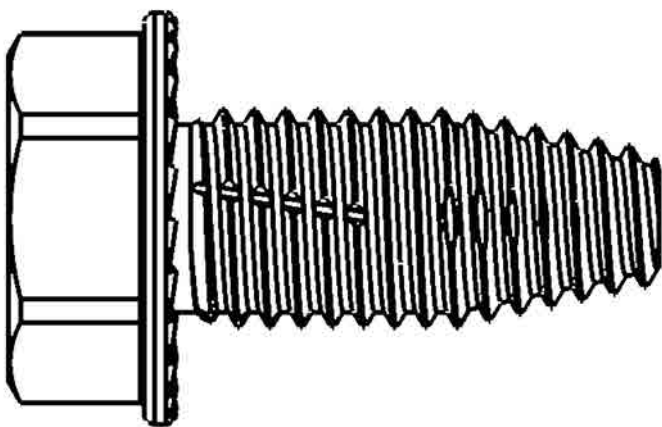
Newly developed shelf design provides for a durable connection and secure operation

■ Stefan Rick, Kraft Curing Systems GmbH, Germany

Investing in a curing rack means relying on years and years of uninterrupted service in order to achieve the necessary return-on-investment. Every breakdown, any damage requires repair and a stoppage that jeopardizes the economical success of the production process. Most racks on the market are similar in terms of design and share similar shortcomings. Kraft Curing Systems has followed a different path and improved three important details of the shelf construction: One, the connection between the shelf profile and the column, two, the durability of the profile and three, the missing board guide.

One: Reliable, secured Shelf Connection

While the load-carrying ability of the rack column is not an issue in any rack system, a weak and unreliable connection between column and pallet shelf causes failure. Typically, shelf profiles are simply inserted in little notches cut out of the columns. This connection may fail under high loads with the result that the production boards collapse on one another. The pancaking effect increases the damage: falling boards also destroy shelf connections of the boards below. Because of the torn tab connection the column itself is destroyed, the complete load-bearing structure must be replaced.



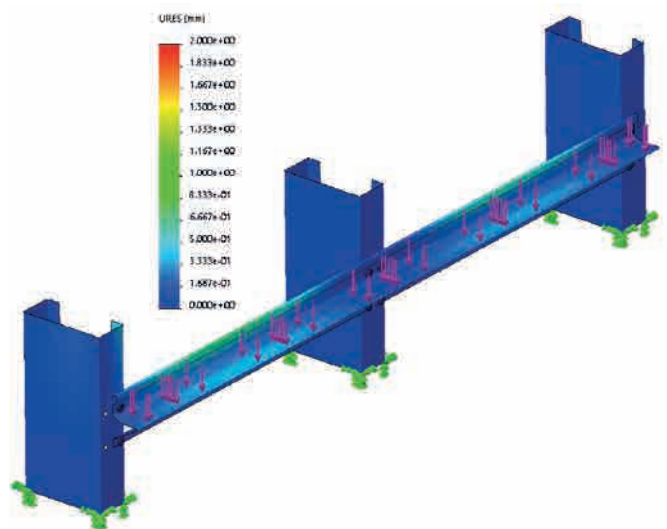
Kraft board shelves are attached with self-securing fasteners specially designed for high loads. The thread-forming screw does not damage the galvanization of the board shelf or the column.

Shelves of the new Kraft Rack are attached with fasteners with high load capacity, specially designed for the requirements of heavy duty storage racks. The self-forming thread guarantees highest strength without damaging the galvanization. A maximum load/failure test with a load of more than 2 tons of concrete product per production board conducted at the Kraft premises showed no fastener failure.

Two: Highest Load Capacity and Resistance against Stress and Torque

Traditional systems are often designed on a very economical basis. Higher loads can overextend the material and cause irreparable damage to the complete construction. Board shelves can deflect under higher loads. The overextended material fails and compromises the production process. Columns have to be positioned at shorter distance to support shelf profiles.

The computer optimized shelves of the new Kraft Rack (FEA method) have been designed to absorb very high loads, allowing for larger column spacing and more economical and faster construction.



The Kraft Rack shelf profile was designed to withstand stress and torque. Computer analysis (Finite Elements Analysis - stress comparison) shows that profile is capable of absorbing high loads (simulation shows a deformation of less than 1mm at a load of 750kg per board shelf).



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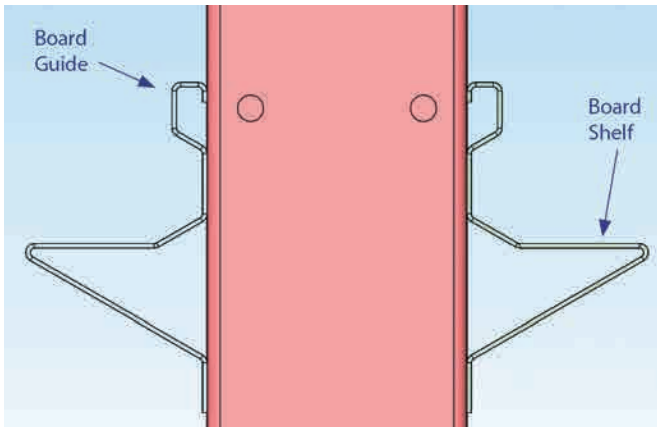
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Drawing of the Kraft Shelf Profile. Board shelf and board guide are connected in one piece. Production boards are precisely and securely guided over the full depth of the rack.

Three: Integrated Board Guide

In traditional systems, the board guide is a separate piece of metal which has to be attached to the column in addition to the board shelf. For economical reasons these board guides are typically used only in the first three locations at the beginning of each rack passage. However, even if they are used in the complete rack, they can get lost because they are held in place only by their own weight.

Missing board guides can lead to misaligned production boards. These misaligned boards can shift out of line and get jammed. Following boards push them against a column, cause heavy damage to the rack construction.

The Kraft Rack board shelves have an integrated board guide which can not get disconnected or lost. The integrated board guide reliably aligns the production boards in all areas of the rack. ■

FURTHER INFORMATION



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Design of the Kraft Curing Rack shelf: the connection is secured against failure, the profile is highly torque resistant and the integrated board guide provides for secure alignment of production boards in all areas.