

Inland pleased with startup of 100% recycle mill in Maysville, KY

Containerboard mill exceeds expectations in first few months of operation.

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About an hour southeast of Cincinnati, on a 240-acre site along the Ohio River, production has begun at Inland Container Corporation's newest 100% recycle containerboard mill.

Groundbreaking for the greenfield mill was held April 10, 1991, a few miles northwest of Maysville, KY. Design and construction crews from Brown & Root completed the US\$ 176 million project on schedule. The mill was able to begin production of a saleable product within one day of its Oct. 8, 1992, startup.

The Maysville mill was designed to initially produce 600 tons/day of linerboard and corrugating medium using 100% old corrugated containers (OCC). By early November its best run was 796 tons/day of 42-lb linerboard, the goal the mill hoped to reach at the end of 12 months.

Because the mill uses 100% recycle and is located right next to East Kentucky Power Cooperative's Spurlock generating station, it was built without a recovery or power boiler. Steam and electricity come directly from next door. The mill has no smokestacks and virtually no air emissions. Up to 2.8 million gal/day of effluent can be handled through a system of primary clarification, anaerobic/aerobic pond treatment, and secondary clarification. Sludge is thickened and landfilled.

This is the third greenfield mill built by Inland to use 100% recycle. The first was built in Newport, IN, in 1975, the second in Ontario, CA, in 1985. The company also acquired a 100% recycle mill in Newark, CA, in 1973.

The mill will use about 240,000 tons of OCC per year, drawn from areas throughout Kentucky, Ohio, Indiana, West Virginia, and Pennsylvania. Most of the raw material is being trucked in at present, but the mill can also be served by rail lines.



Stock preparation

The mill uses two separate recycling lines, one to produce top stock, the other for base stock. The processing system was designed to minimize fiber damage from mechanical action. Defibering is allowed to take place over time. Large contaminants, as well as waxes and plastics, are removed and discarded.

Bales of OCC are conveyed from an indoor storage area to two 20-ft-diameter pulpers equipped with junk towers, ragers, and ragger tail cutters. Stock is continuously extracted from perforated plates at the bottom of the pulpers, below the rotors, and pumped to stock dump chests. Scavengers and cantilevered drum screens help remove contaminants.

Stock is fed through high-consistency cyclones and primary hole screens; rejects go to secondary hole screens, accepts move on to medium-consistency cleaners. Accepts from those cleaners go on to primary slotted screens, rejects to secondary slotted screens.

Recycling

Preceding Page: The new Maysville, KY, mill, with the Spurlock power plant in the background. **This page, top:** A forklift transports bales of OCC to one of two pulper feed conveyors. **Bottom:** Maysville's Valmet-Tampella paper machine. **Opposite page:** A finished roll is loaded onto a rail car for shipment.

Base stock consists of accepts from the primary and secondary slotted screens that have been forwarded through centrifugal cleaners and thickened in base deckers. Likewise for top stock, except that it also passes through a thermal dispersion system on its way to high-density storage.

Stock moves next to tile top and base low density chests. It's consistency controlled, then pumped through parallel disc refiners and dumped into refined stock chests. Broke is added to the base stock and pumped into the machine chests. Stock is consistency controlled, pumped to the stuff boxes, passed through basis weight control valves, then on to fan pump suction.

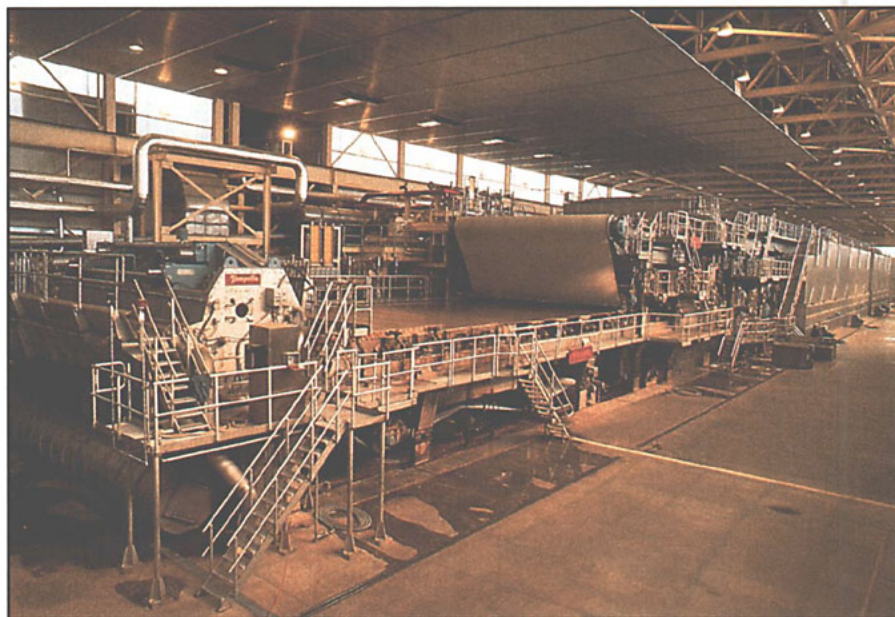
The paper machine

The paper machine, manufactured by Tampella (now Valmet-Tampella), has a wire width of 306 in. Trim off the winder is 280 in. The machine has a design speed of 2500 ft/min. It can produce linerboard with basis weights of 26–56 lb/1000 ft² and ring crush of L55 through L120 or corrugating medium of 26–40 lb/1000 ft².

Cantilever design fourdriniers are used to form the top and base sheets. The press sections consist of two double-felted, straight-through presses with no open draws.

The dryer section is totally enclosed. It consists of one 60-in.-diameter drum and 54 dryers, 72-in. in diameter, divided into seven sections. A two-roll size press is located between the fourth and fifth sections. A two-roll calender stack completes the line. A radio-controlled bridge crane with a spreader bar is used to transport rolls to a two-drum winder with a horizontal slitter section located on the ground level down from the paper machine.

Finished rolls are bar-coded and labeled, then held for shipment by truck or by rail.



A modern mill

As in any modern mill, process control is highly computerized. The mill uses a combination of Honeywell and Measurex equipment. The system is also equipped with the latest in machine- and cross-direction basis weight and moisture control monitors.

The mill employs 115 people—about 85 of them recruited from the Maysville area—plus roughly 45 full-time Brown & Root contract maintenance people. The mill operates 24 hours per day, with crews divided into four shifts. Each shift works 12 hours on, 12 hours off, for four days, explained Bob Schidle, engineering and maintenance manager for the mill. David L. Kosboth, who had been production manager at Inland's Rome, GA, mill, was named manager of the Maysville mill in October 1990.



About US\$ 2.7 million was budgeted for training, said Ted A. Owens, group vice president of Inland's containerboard division. Part of the training was at other Inland mills with similar equipment. Production and management teams also were involved in the entire checkout process. **[1]**

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