

HARDWOOD PLYWOOD MILL BENEFITS FROM ABRASIVE BELT CLEANING SYSTEM

Jeff Bricco is the Line 2-Flexline Dept. Head at Columbia Forest Products' (CFP) hardwood plywood facility in Trumann, Ark. Like most other production managers, Bricco has four central objectives: Production Safety, Lowering Costs, Increasing Production/Productivity, and Improving Product Quality. So when he was recently asked to evaluate a new line application manufactured by CryoKinetics, which claimed to significantly improve all four, he didn't waste time checking it out. He arranged to visit a Bruce Hardwood Flooring plant, which was reporting positive results with the CryoKinetics abrasive belt cleaning system.



Bricco, a transplant from CFP's operation in the Pacific Northwest, comments, "At first I was skeptical. We've seen a lot of attempts at cleaning abrasive belts in the past that failed, but after I visited Bruce Hardwood and observed their system, I knew this could work for us."

Bricco decided to give the CryoKinetics system a try. In fact Bricco was so impressed with the Bruce demonstration and with CryoKinetics' potential, CFP postponed a purchase of budgeted forklifts and chose instead to purchase two of the CryoKinetics' systems.

Trumann's Line 2 uses two 3-head Heeseman sanders. In April 2004, CFP purchased and installed CryoKinetics' new Windows-based ABCAM1.0 systems on both Heeseman units. The CryoKinetics abrasive belt cleaning system is a patented cleaning process utilizing dry ice particles, which are directed at high velocity onto the surface of abrasive sanding belts. The force and the thermal effect of the dry ice stream removes virtually all deposits and loading from the belts without damaging the abrasive surface and without any moisture. As the dry ice cleans the belts, the particles of dry ice sublime, converting from solid into gaseous CO₂, leaving no secondary waste related to the cleaning process. Belt cleaning takes place right on the sander head at regular intervals, even while the operator continues to sand product.



What makes this system even more functional and user-friendly is that operators never have to record belt changes or cleanings on manual sander logs, because the CryoKinetics system has been designed to store this data. The CryoKinetics' ABCAM1.0 series records every event in the life of each abrasive belt for each sanding head. This logging system allows sander operators to know exactly how long each belt has been utilized and electronically stores each time the belt was cleaned or changed. With computerized data, managers have the ability to review the system's operation and design belt cleaning and belt replacement programs, which are based on much more accurate real-time information.

Bricco states the CryoKinetics' technology has saved CFP money by substantially reducing abrasive costs. Line 2's abrasive costs have been reduced, on average, from a high of \$33,000 per period, down to \$11,000 per period. "This savings in abrasive cost alone allowed us to recover our investment in just a little over a two and one-half month payback period," Bricco explains.

In addition to being able to clean belts while sanding, CFP is able to avoid at least an average of three out of four belt changes they previously made on this line. A complete belt change on these combined six heads requires lock-out/tag-out safety procedure and normally takes 15 minutes of downtime for each occurrence. "This benefit has allowed us to decrease downtime and increase production uptime by about an hour each 24 hour day of production," Bricco adds.

A further benefit is the more consistent finish on CFP plywood. Dry ice costs amount to only \$1 to clean each 65 in. wide abrasive belt, so operators clean the belts every two hours while they continue to sand. The result is a finishing operation that

is sanding with a more consistent abrasive surface on the belts; hence, a more consistent sanded finish.

The operation of CryoKinetics' automated belt-cleaning systems also enhances safety. The operators on this sanding line are able to reduce direct interaction with the high rpm sanding heads inside the sanding cavity and with the abrasive paper by eliminating an average of three out of four belt changes.

Rice-sized dry ice particles are delivered to the facility in insulated containers once a week. The supplier picks up the old containers when they deliver the new ones. Bricco says, "We were shown how to order, handle, and care for the dry ice in order to minimize the dry ice cost. As a result, the entire process is simple and the dry ice cost is negligible. The cleaning process consists merely of filling the hopper of the dry ice blaster and initiating the cleaning sequence."

At Columbia Forest Products, the common belief is that by focusing on both safety and quality issues, production gains are the result. At this plant, where Line 2 produces 8,000 hardwood plywood panels per day, maintaining the scheduled daily production is critical. Serious consideration was given before allowing the installation of these abrasive cleaning systems on the company's production sanders, which quite often are a production bottleneck area.



The installation, which was completed entirely on the sander's scheduled downtime, caused no reduction in CFP's production schedule. "CryoKinetics provided previews of the installation process, complete with photos and superimposed CAD drawings of the equipment and its placement on the sanders," Bricco says. "This gave us a high degree of confidence the installation process would go smoothly and not interfere with production. We didn't lose an hour of production time from the installation."

Further, Bricco discovered that his personnel's involvement in the installation of the systems was actually very limited. "After the purchase order process was completed, we just had to provide a compressed air line, an electrical plug in, and access for CryoKinetics' installation crew." The abrasive belt cleaning systems utilize the plant's 110volt service and its common compressed air stream, requiring a minimum of 90 PSI to be most efficient and effective.

Bricco's conclusion: "We're very pleased with the equipment and the ongoing service. CryoKinetics has been very proactive. We had extreme savings and made great gains. I don't think that anyone could install and utilize this system and fail to obtain at least a 50% improvement in the life of their belts. We've had upwards of 75 to 78% of abrasive savings on our line, so I would recommend it to anyone."

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