Comparison of cleaning abrasive belts using our dry ice cleaning system to belt cleaning with a high–pressure water blaster.

At a recent tradeshow, several potential clients asked for a comparison of cleaning their belts with our system to cleaning their belts by washing them with high-pressure water. I explained this to their satisfaction, but this is a comparison worth reviewing thoroughly.

One company sands softwood, has several 2 top-head sanders, and uses poly-backed belts that are 52" wide and cost $65.00/each. This now, new client reported getting 6 full belt lifetimes from this five-time water blast cleaning process.

To waterblast their belts takes the following steps and includes these factors:

-Shut down the sanders; remove the belts; install belts that were previously cleaned on the sanders. This occurs frequently due to the load build-up from sanding softwoods. Labor is expended.
-Transport the loaded belts to a devoted storage area and hang them on belt racks to prevent creasing or damage while they await cleaning. Labor and space are expended.
-Clean the belts, several at a time, while on the floor (or a home-made rack) by blasting with high pressure water in a devoted cleaning area by a drain. These belts can be cleaned in about 5-6 minutes each by two employees, each making about $14.00/hr. Labor, water, and space is expended.
-The average water/sewer costs are about $.02/gallon nationwide. Cleaning a belt uses about 12-15 gallons per cleaning.
-The load removed from the belt becomes an effluent that goes into the sewer, causing a higher BOD or COD (biological or chemical oxygen demand). These are factors regarding increased levels of chemicals or oxygenation, which are required to clean this effluent from the water in the treatment facility. Water and sewer rates are increased due to both this water use and the extra effluent into the sewer.
-The belts are then hung on drying racks to dry in a devoted drying area. Labor and space are expended.
-The belts dry; unfortunately they shrink and stretch unevenly.
-After drying, the belts are transported back to the sanders when needed and installed. Labor is expended.
Unfortunately, every step of this process requires either plant labor, production downtime, requirements for extra floor space, or increased water and sewage costs. In addition, employee safety is reduced by inserting hands into the sander and frequently handling the abrasive belts.

To blast belts with our dry ice cleaning system:

-Paper belts can be cleaned with our system. Paper belts this size cost less, about $35.00/each.
-The operator cleans whenever it is needed, right on the sander.
-The operator scoops dry ice particles into the hopper of the dry ice blaster. (15 seconds)
-Stop production for less than two minutes while both heads are cleaned by pushing one button on the control panel.
-The dry ice cost to clean two 52" wide-belts is approximately $1.52.
-No moisture is added during the process. The dry ice disintegrates and accompanies the dust into the ventilation system. No effluent.
-Start sanding again two seconds after the belts are cleaned.
- With paper belts, softwood sanders are reporting between 15 and 200 full belt lifetimes from dry ice belt cleaning, depending on the depth of their cut and grit used.
-With poly-backed belts, softwood sanders are reporting between 50 and 400 full belt lifetimes from dry ice belt cleaning, depending on the depth of their cut and grit used, even more with ceramic belts.

Conclusions:

-Comparing the **minimum** results for poly-backed belts cleaned with dry ice blasting to the **maximum** results from water blasting, you should get a minimum of 44 additional belt lives from dry ice blasting for each belt.

-In that time period, you would have replaced the belts cleaned by water blasting at least 7 additional times. 7 belts x $65= $455.00 per sanding head, a lot more if you compare maximum benefits to maximum benefits.

-Production uptime is enhanced by dry ice blasting, with a significant number of reduced belt changes.

-Costs associated with cleanings are reduced significantly with dry ice blasting.

-You can choose to run less expensive paper belts or opt for even more belt life with poly-backed belts.

-Employee safety is enhanced by not having to change belts and handle the abrasive belts.

-Quality is enhanced by using belts that have not shrunk and stretched during cleaning and drying.

-Invest in the dry ice belt cleaning system.

Depending on your belt loading and belt change rate, return on investment on the dry ice cleaning system can happen in a matter of a few weeks or months for softwood manufacturers. It takes a bit longer for hardwood sanders, but cleaning belts used for hardwood sanding with our dry ice system can still be a very good economic move.

Please contact us with questions or request a demo or a quotation.

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