



ROTATING DRUM BLOW-OFF SYSTEM

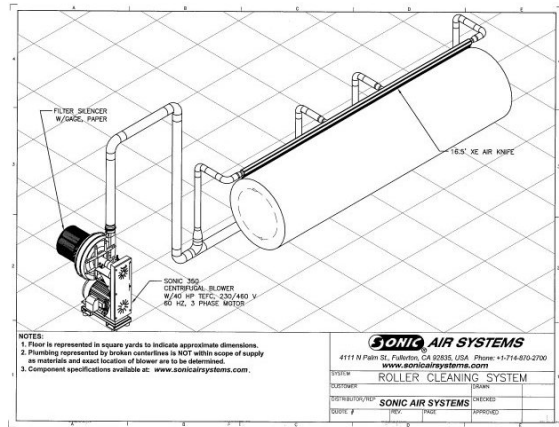
Customer:

Major U.S.A. building products manufacturer (Proprietary)

Application:

Continuous Removal of Cement Slurry from Rotating Drum

With today's composite product weights comparable to natural wood, yet impervious to moisture and insects, these new generation materials can be molded into a wide range of shapes and the life expectancy is almost infinite. The manufacturing of cement bonded wood composite building materials (boards, planks and round tubes) first requires the forming of a continuous slab made of a cement, organic fibers and water mixture (slurry) which ultimately becomes planks, boards and tube products for residential and commercial building. In this particular factory, a maximum 16.5 foot wide x up to 2" thick continuous composite slab passes over perforated de-watering drums while force is applied to squeeze out water and help finalize the shape, size and texture of finished products. As water, cement and fibers are expelled from the slab, the rotating drum receives a layer of slurry which must be continuously cleaned from the drum, before reaching the 12 o'clock position, to ensure the ongoing de-watering consistency. The finished product thickness and surface finish are directly related to the cleanliness of the rotating perforated drum rollers in each line.



Previous methods and associated problems:

Large volumes of re-circulated water / Compressed air. Each 4 foot diameter x 16.5 foot long rotating drum had the cement slurry washed off at the 10 o'clock position with a 2" diameter spray header feeding large volumes of water through multiple spray nozzles across the 16.5' length. Although some percentage of the slurry materials were able to be recycled to the slurry mixture, there was also a lot of waste when the slurry formula became out of balance and water disposal costs were also on the rise. An experiment by the customer with compressed air was successful in stripping the slurry from the rotating drum, but the total compressor electric demand for each drum blow-off was nearly 200 HP !!!

The Sonic Engineered Solution:

(1) SONIC 350 Blower w/40 HP motor & 16 ft long Sonic XE Air Knife. This composite board manufacturer was not convinced, despite Sonic's confidence in the system sizing, that a Sonic blower/air knife system with only 1.75 PSI (49" H2O) was powerful enough to do the work of a compressed air header with multiple flat comb nozzles. In order to provide our performance guarantee, we offered to supply a small test system with a 24" long air knife with blower to prove the equipment selection on a small scale. However, the customer could only run under full scale conditions. To solve the problem, Sonic provided the complete SONIC 350 w/40Hp and 16.5' air knife on a 60 day rental basis with 50% of the rental fee to be applied to the purchase price when the final design was ordered within 90 days of the completion of the test period. The results were completely successful and the 160 Hp savings, which the customer realized versus the compressed air requirements, made Sonic the only logical choice to replace the 150 GPM water cleaning method and all of it's associated filtration and disposal costs.

The system drawing shows (1) SONIC 350 w/40 Hp feeding air equally to the (4) inlets across the 16.5 ft' long Sonic XE air knife. With the 30" square footprint of the SONIC 350, the blower was installed less than 10 feet from the line and can barely be heard over the operating noise of the rest of the production line itself. Due to the harsh operating conditions within the air knife zone, the customer purchased a spare 16.5' Sonic air knife so that they might simply swap it out with a clean one during each routine production line maintenance cycle. With a quick changeover, they can clean the dirty knife when convenient before the next maintenance cycle without any unexpected line down time.

