



Sonic Blower/Air Knife System removing Shot in Steel Industry

Customer:

Bethlehem Steel Lukens Plate

Application:

The application can be summarized as removing residual shot (similar to small steel ball bearings) from the surface of steel plate. Due to manufacturing reasons, the finishing process at some plate mills involves blasting the surface with various size shot material, often referred to as descaling.

This plant rolls plate steel used for building oil rigs and other specialized structures. One of the finishing processes is using a shot blast media to "clean" the plate. After this media is blasted on, it's scrubbed and the remaining grit needs to be completely blown off.

Background:

Bethlehem Steel's Lukens Plate mill in Conshohocken, PA in conjunction with ABE Berkleigh, a compressor distributor serving Southeast PA. Ultimately our customer was ABE, but the final destination was the Lukens plate mill.

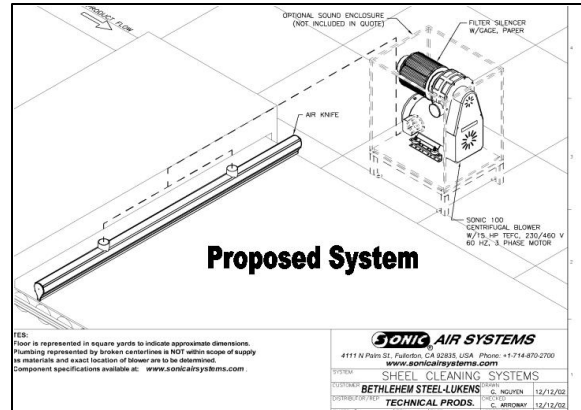
In addition to compressor sales, ABE does efficiency audits for their customers. They came across a real compressed air resource hog and suggested to Bethlehem Steel that they use a blower for this application instead. They then contacted the local Rep, Technical Products and Services, as they had worked with them previously on other applications.

Problem:

After the blasting process, the shot is removed with steel brushes and the shot is reclaimed and reused. In this particular case there was residual shot bypassing the cleaning brush. The next process was using a magnetic crane to stack the plate for storage. The residual shot fouled the large electromagnet and made transfer of the plate less safe. It also contributed to increased maintenance.



The Sonic Engineered Solution: Sonic sized (1) 96" air knife with dual inlets, to be mounted within 1/2" of the product, powered by a Sonic 100 w/ a 15hp motor.



These long plates of steel will travel under the knife at a rate of 4 to 10 feet per minute. They are anywhere from 48" to 96" wide, with the average typically 70-96" widths. They'll usually run this line for two turns/day for a few days in a row and then stay offline for a few days, etc... Basically consider it a continuous operation without several starts/stops in a given shift.

The unit was put into action and the customer has been pleased ever since. The idea of using knives prior to the final dry in order to knock off the bulk of the residual water, resulting in better drying than expected.



GDC is now experimenting with a new coating for their screens and Sonic has been assisting with the testing and setup and hope to have another system in place soon.

The SAS successfully removes the residual shot. Due to its' success, they are now considering increasing the blower system in an attempt to eliminate the brush roll, a very costly item to maintain.