



Low Pressure Blowers

Save Money by Substituting
Low Pressure for High Pressure

Toll Free: (800) 333-6650

.Azek Deck Lowers Their Energy Costs



Hal White, Azek Project Manager

It is well known that a visit to Alabama's beautiful beaches will lower the pressure and stress of everyday life. Azek Deck, a Division of Azek Building Products, located near the beach in Foley, Alabama has found a way to lower the pressure on open blowing applications and save money.

Azek Deck produces a full line of PVC Ultra Low Maintenance Decking for use on decks, patios, porches, walkways and other applications that use traditional decking materials. Azek Deck's products are known for superior stain and scratch resistance. The Foley plant began operations in 2003 with one production line producing the ProCell line of decking with a basic assortment of 4 colors. In the days since, the facility has expanded multiple times and has doubled in physical size. There are now a total of 19 production lines turning out a variety of new multi-color decking.

The production process starts with an extrusion of raw materials in powder and pellet form. This creates a continuous deck board. As product exits the extruder, it enters a water bath that cools the board and sets the shape. A saw then cuts the board into 20 foot lengths for packaging and shipping. The production process created some quality issues. Upon exiting the water bath, there was residual water on the surface of the board. Efforts to wipe this moisture off were only marginally effective. As a result, particulate collected on finished products. This contamination had an effect on the overall quality of the finished product.

Azek experimented with several methods of moisture and particulate removal including the use of high pressure compressed air to blow off boards. One solution was to drill holes in a small pipe and install it over the boards on each production line. This was effective at removing most of the particulate, however as the plant grew, so did compressed air consumption. Drilled pipes were replaced with engineered "air knives" on production lines, and while this was more efficient, compressed air consumption from multiple air knives on production lines caused problems in the compressor room. What had been an acceptable situation with four production lines in 2004 quickly became unmanageable with the increase to 19 production lines. During each expansion, Azek partnered with Blake & Pendleton to supply the appropriate compressed air system and to try and stay ahead of the growing air demand. Unfortunately, the excessive air demand consumed all compressed air system capacity resulting in all compressors running at full capacity.

Recognizing a better solution, Blake & Pendleton proposed a low pressure blower system to perform moisture and particulate removal from product. Low pressure, high volume blowers can operate at one half to one tenth the energy input of high pressure compressed air nozzles or air knives. In addition, low pressure blower systems with the use of specific low pressure nozzles or air knives are capable of providing more effective results than high pressure nozzles. For example, it was estimated that the overall compressor horsepower could be reduced by over 100 horsepower with the installation of a 25 horsepower low pressure blower. Hal White, Azek's Project Manager, evaluated the project cost versus the quick payback period and chose to implement the project.



Low pressure nozzles blow moisture off boards from above and below.

A 25 horsepower low pressure blower was installed, along with a new 10 inch diameter low pressure supply header that spans the entire production floor. Each of the 19 production lines is now supplied with 2 inch diameter low pressure feeds that branch to a variety of high efficiency, adjustable nozzles. Nozzles are used in two locations on each line. One bank removes moisture as boards leave the water bath. As a result, the board is dry when it reaches the cutting saw. A second bank of nozzles removes the dry dust and particulate before the board reaches final finishing.

Before the low pressure system was installed, Azek had one 125 horsepower and two 75 horsepower compressors all running at maximum capacity and plant pressure was not sufficient to adequately support production.

After implementation of the project, the 125 horsepower compressor is base loaded (full capacity) and one 75 horsepower compressor provides trim supply as needed. System pressure is now in the safe zone and the second 75 horsepower compressor is off. Estimated annual savings are over \$40,000, system supply pressure is excellent and maintenance costs are reduced with one compressor off-line.

After the system was installed, Hal and his team at Azek performed adjustments on nozzle types and nozzle locations to maximize their efficiency. After several months of use, the system is performing spectacularly. The end result is that the site realizes higher product quality and a significant reduction in on-line horsepower.



Particulate is blown from the product with fan shaped low pressure nozzles.

Many facilities have similar applications that use high pressure compressed air for open blowing applications. In nearly every case, removing these applications from the high pressure (70 PSIG to 100 PSIG) plant air system and replacing them with low pressure, high volume blower systems will result in significant energy savings and increased effectiveness.

Finding opportunities to achieve similar savings in your facility may exist by just looking around production areas.

Note that it takes application expertise and sound engineering practice to install the correct blower/air knife combination in a production or process application. We welcome the opportunity to help you determine how the installation of a low pressure blower system will provide for maximum effectiveness and an attractive return on investment.

The Blake & Pendleton Team - [Contact Us!](#)

Need Help Replacing High Pressure Open Blowing Nozzles?

Get Help Now

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