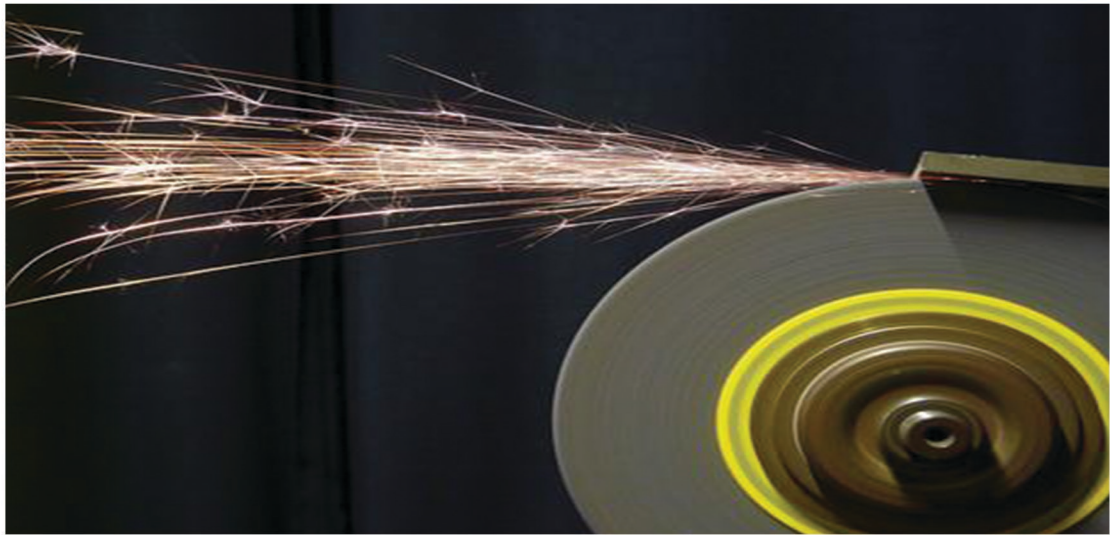


# Case Study

## Grindwell Norton Ltd.(a Saint-Gobain company)



### Grindwell Norton installs DuCool for improved composition, strength and uniformity of their abrasive wheels.

Grindwell Norton, India's leading manufacturer of abrasives needed a simple and cost-effective solution to manage its humidity. Ducool Systems provided that solution with its liquid desiccant dehumidification systems. As a result, the company has been able to control humidity, reduce energy consumption, and save money on operating expenses.

## Background

Grindwell Norton, based in India, Uran, is India's leading manufacturer of abrasives. It was acquired by Saint Gobain in year 1990. To manufacture grinding wheels that have high mechanical strength and reliability, they had to maintain stringent temperature of 23°C and humidity levels of 45-50 %RH. However, due to its close proximity to the sea Norton failed to maintain these levels with its conventional low temperature glycol cooling system.

## Challenge

To prepare the grinding wheel different abrasive grains are mixed together. This mixture is later transferred to a second mixture containing bonding materials and all the ingredients are tumbled together. Finally, the ingredient mix is poured into the mold and compacted by a hydraulic press (Hot Press). These processes require precise control of humidity as it would affect the quality of the final product. If the mixture is too wet or too dry it leads to formation of bubbles, bubbles are voids that lead to internal weakness, which acts as seeds for cracks in the final product. Changes in temperature and humidity also affect the mix ratio which will ultimately lead to weak and brittle grinding wheels.

However, Grindwell Norton failed to maintain steady temperature and humidity levels with their existing conventional cooling systems. They faced frequent break downs and maintenance issues. This declined their productivity and deteriorated the quality of the grinding wheels.

The existing conventional heating & cooling system being used at Grindwell Norton proved to be inefficient, due to its high operating costs. This led them to take a decision to install a cost effective solution for maintaining constant humidity level and temperature.

## DuCool Advantage

DuCool was successful in delivering Grindwell Norton a steady and controlled environment for their bonding process and hot press. We installed 6 DT large units treating 20,000 cfm of air to handle huge latent load. Our revolutionary liquid desiccant technology led to free flowing of the abrasive mixture and even grain distribution throughout the structure of the grinding wheel.

This assured the wheel retained its shape until the bond is solidified in hot press. As our units were integrated with their existing conventional HVAC systems, the load on their conventional units decreased significantly thereby reducing their energy bills around 40%.

Moreover, our units helped Grindwell Norton to maintain the consistency of their mixture thus eliminating formation of bubbles. This improved the composition, strength and uniformity of the wheels and prevented the wheels from exploding due to high stresses produced during rotation. Additionally, our systems supply cleaner air (80% removal of particulates and 91 % of air-borne micro-organism), eradicating bacterial and mould growth in their areas and improving worker and employee comfort.