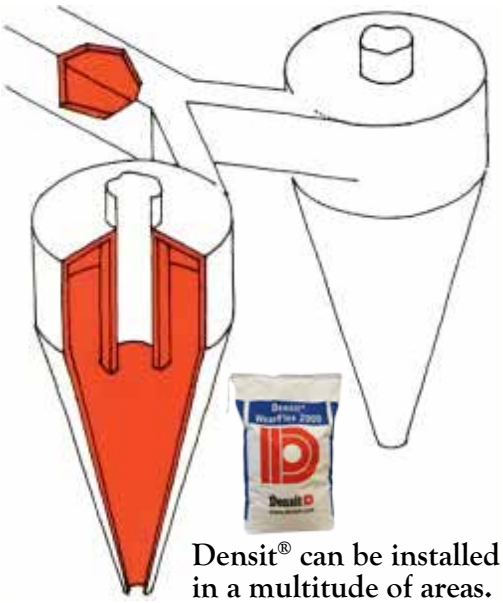
Applications

Innovative Solution

Conical Salvation

By James Huey, Jim Daum & Mike Sexton

Cyclones are used in so many industries—from grain processing to cement to coal burning power plants to everything in between. Cyclones come in a lot of different sizes and shapes and can be found performing a variety of tasks. Regardless of the industry, they all have one thing in common...wear.



Densit® can be installed in a multitude of areas.

Problem

While walking through a Barite plant in southwestern United States, **Wear-Con Wear Specialist**, Jim Daum, noticed a cyclone that was in ill-repair. He inquired as to the fate of this perforated cone. The Operations Superintendent informed him that the cone was too far-gone and that it would have to be replaced with a new one. This would entail removing a section of the roof from the building; disconnecting all kinds of pipes, ducts, and wiring; and then uninstalling the cyclone. A crane would have to be rented to remove the old cyclone and drop in the new one. This would not only come at an incredible cost of at least $100,000 but also considerable downtime.

Solution

Jim informed the Operations Superintendent that the cyclone was not only salvageable but could be rebuilt to a better-than-new condition at a fraction of the cost. How? With **Densit®**! Now he had their attention. **Wear-Con Densit® WearFlex™** is a chemically bonded, Corundum-Ceramic, wear-resistant lining. It is a trowelable, one-component, ready-mix, wear compound that is combined with wear-resistant aggregates to provide a tough and long-lasting wear solution. **WearFlex™** is applied directly to an anchoring mesh in thicknesses from 1/2" to 2", (even overhead) providing seamless graduation in lining thicknesses on almost any shape without vulnerable joints. Providing excellent protection against severe erosive wear at temperatures up to 750°F, **WearFlex™** can be used after just 24 hours of installation.

Results

Three months later, the **Wear-Con Field Services Crew** was busy repairing the cyclone and lining it with **Densit® WearFlex™**. The job only took 8 days and cost about 1/3 of what the total cost of installing a new cone would have. Minimal down time, minimal expense, and best of all...no more maintenance for a long, long time. And how has it held up so far? There is absolutely no noticeable sign of wear at all. It's better than new!

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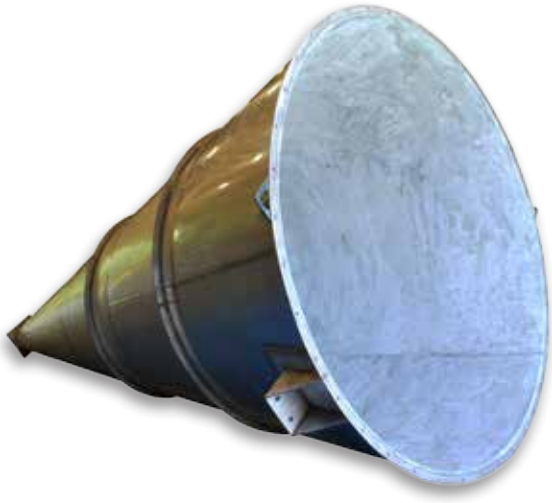

Another industry that uses cyclones in its production is grain. Soybeans are especially hard, and abrasion by these beans in the grain processing industry is a huge problem.

Problem

A large grain processing plant in the Midwest installed a new de-hulling cyclone many years ago. Within 6 months of service, the customer began patching it on a regular basis because of wear. Slowly but surely this cyclone was disappearing. Considerable maintenance and downtime was beginning to add up, and eventually, the cyclone would have to be replaced with a new one—only to start the whole process all over again.

Solution

In seeking a more permanent solution to these sliding wear issues, they decided to take an unconventional step (for the grain industry) towards fixing their problem for good. James Huey, a **Wear Specialist** with **Wear-Concepts**, suggested that they take a cue from the cement industry. Cement plants crush limestone into a powder, mix it with other ingredients, and then bake it into what is called a clinker. Clinkers are super hard nuggets that are crushed into a powder turning it into cement. Cyclones are used throughout the entire cement manufacturing process. Cyclones literally get eaten alive by limestone and clinkers. So, what do they line their cyclones with that is the most cost effective? **Densit®**!

Facing the prospect of continual patching and the inevitable replacement of the cyclone, this Midwest soybean processing plant decided to go with James' advice. **Wear-Con's Field Service Crew** installed **Densit® WearFlex™** chemically bonded, Corundum-Ceramic, wear-resistant lining to the interior of the cyclone. (The same **Densit® WearFlex™** that has been installed in cement plants and mining operations for years.) This came at considerable savings over the prospect of having to remove and install a new cone.

Results

The customer has checked the lining regularly for the last four years, and there is no noticeable wear at all. None! It's better than new. They have been so happy with the success of this installation, they have had **Densit® WearFlex™** installed in a variety of other locations of the plant including the primary aspiration lines and transitions. Again, with no noticeable wear. They have also had **Densit® WearFlex™** lined **WearBack™ T's** and **WearBack™ Elbows** fabricated for the plant with great success. The **WearBack™ T's** and **WearBack™ Elbows** are lasting 12 to 14 times longer than the sch40 A36 pipe and only cost about 2 ½ times more.

When the news of the success of the linings at this location spread to another large grain processor in the Midwest, **Wear-Concepts** was contracted to install **Densit® WearFlex™** in their five cyclones.

Wear-Concepts goes through over 1900 tons of **Densit®** every year. Why? Because when it's been lined with **Densit®**, it's better than new!

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