

Increasing Coal Mill Production in Brazil's Cement Industry While Avoiding Costly Equipment Upgrades

CHALLENGE

Our team was contacted by a Brazilian cement manufacturer to present various available options to eliminate the existing operational bottlenecks in their coal milling process. The mill was limited by high pressure drop across the pulse-jet baghouse. Recent optimizations to the production process by the owner resulted in an overload on the filtration system.

After the optimizations, the system was operating with higher actual conditions than the project's original design parameters. The air-to-cloth ratio was above 1.8:1 (metric) or 5.9:1 (imperial), which pressurized the mill and created unsafe conditions. In addition to the ongoing operational challenges, the short service life of the conventional filter bags reduced the reliability and readiness of the baghouse equipment.

SOLUTION

Our team developed a technical proposal to eliminate the existing plant bottleneck, recommending an increase in the filter area by the replacement of the conventional round filter bags with SOLAFT® StarBag™. With this approach, it would be possible to reduce the pressure differential, reduce energy consumption, and allow the mill production to achieve its optimized baghouse capacity.



SOLUTION

Baghouse Operation BEFORE Proposed SOLAFT® StarBag™ Upgrade:

- Conventional Filter Bag Life was 3 months.
- Mill production original design was 5 ton/hour; optimized design realized 7 ton/hour.
- Baghouse pressure differential reached 260 mm WC (10.23" WC) in two months of operation.

Baghouse Operation AFTER Upgrading to SOLAFT® StarBag™:

- Increased filter area by 115% by replacing 672 filter bags with an equal number of SOLAFT® StarBag™.
- Reduction of air-to-cloth ratio from 1.8:1 to 0.85:1 metric (5.9:1 to 2.8:1 imperial), a 53% reduction.
- Reduction of differential pressure of 225% at 80 mm WC (3.15" WC) in the first three months, only reaching 180 mm WC (7.08" WC) after twelve months of operation.
- Production rate of mill improved from 5 to 10 ton/hour, generating an additional 3 ton/hour above the project expectations.



In this cement baghouse application, the SOLAFT® StarBag™ technology was a success, providing the needed performance benefits without the need for costly investments in baghouse equipment structural upgrades.

You can rely on the Micronics Engineered Filtration Group to be your proven single source for cost-effectively solving complex baghouse challenges around the globe.

For over 20 years - through our trusted filtration brands SOLAFT® and AFT® - we have been helping the global Cement industry with engineered filtration solutions and are proud to work with some of the largest operators around the world. Micronics manufactures a broad portfolio of dependable, durable, and cost-effective baghouse solutions for the tough demands of the global cement industry, ensuring compliance and performance.

We understand the environmental, health, safety, productivity, and performance challenges that exist in the global Cement industry's baghouses and have significant experience in helping solve their emissions and air pollution control challenges. The Micronics Engineered Filtration Group prides itself on working in partnership with on-site engineers and technical staff, to better understand and assist them in achieving results.