GORE® Filtration Products

Cement Industry

Case History 1

Finish Mill

Optimization Potential

Design capacity of the mill was 100 tons/hr, but when the load increased to higher than 93 tons/hr, the differential pressure increased, causing the gas flow rate to decrease. Decrease of the flow rate caused the total productivity of the mill to decrease.

Solution

After system evaluation, current filters were replaced with GORE® High Flow Polyester filter bags and all baghouse settings were optimized.

Results

After installation of GORE® High Flow Polyester Filters and system optimization in April of 2005, emission levels were reduced to less than 1 mg/m3 and full design capacity levels were re-established. Reduction in the compressed air was 90% and the reduction in the differential pressure was 70 mm w.g.
In addition:

- Compressed air pressure was reduced from 6 to 4 bar, resulting in a savings of $6,244 US /year
- Pulse intervals were changed from 10 secs to 46 secs and total pressured air consumption was 20% of the previous value for a savings of 25,500 KWH
- Differential Pressure was reduced from 110 mm w.g. to 40 mm w.g.
- Savings from fan energy equalled $25,895 US/year
- Savings from mill energy equalled $65,943 US/year

Finally, when the cleaning system stopped due to an electronic failure no permanent blinding occured. When the cleaning system was restarted, the GORE® High Flow Polyester Filters worked at their previous performance levels.

Process Description:	Mill
Collector Manufacturer:	CETA
Design Airflow Rate:	169,349 m^3/h (99,916 acfm)
Design Temperature:	90°C (194°F)
No. Bags/Collector:	2,304
Cleaning System:	Pulse Jet
Air-to-Cloth Ratio:	0.70 $m^3/m^2/min$ (2.29 $ft^3/ft^2/min$)
Bag Material:	GORE® High Flow Polyester Felt (543 g/m^2, 16 oz/yd^2)

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