

Case Study

GORE® LOW DRAG Filter Bags help achieve maximum kiln feed rate

Cement Producer, Mexico

Challenge

A producer of cement in Mexico was looking to consistently meet maximum kiln feed. One challenge was fan capacity. With the existing filtration solution, fans only reached speeds of 725–730 rpm. This lag resulted in inadequate kiln feed peaks of 100.9 ton/hr, leading the producer to seek a new filtration solution.

Solution

The plant selected GORE LOW DRAG Filter Bags to replace its existing membrane filters. The bags' new membrane promotes increased airflow through the baghouse with persistently low differential pressure. GORE LOW DRAG Filter Bags are used in cement kilns to increase fan speed and efficiency, increase the use of alternative fuels, and ultimately help to increase clinker production rates. Gore installed over 2,850 filter bags in the pulse-jet baghouse and supervised start-up.

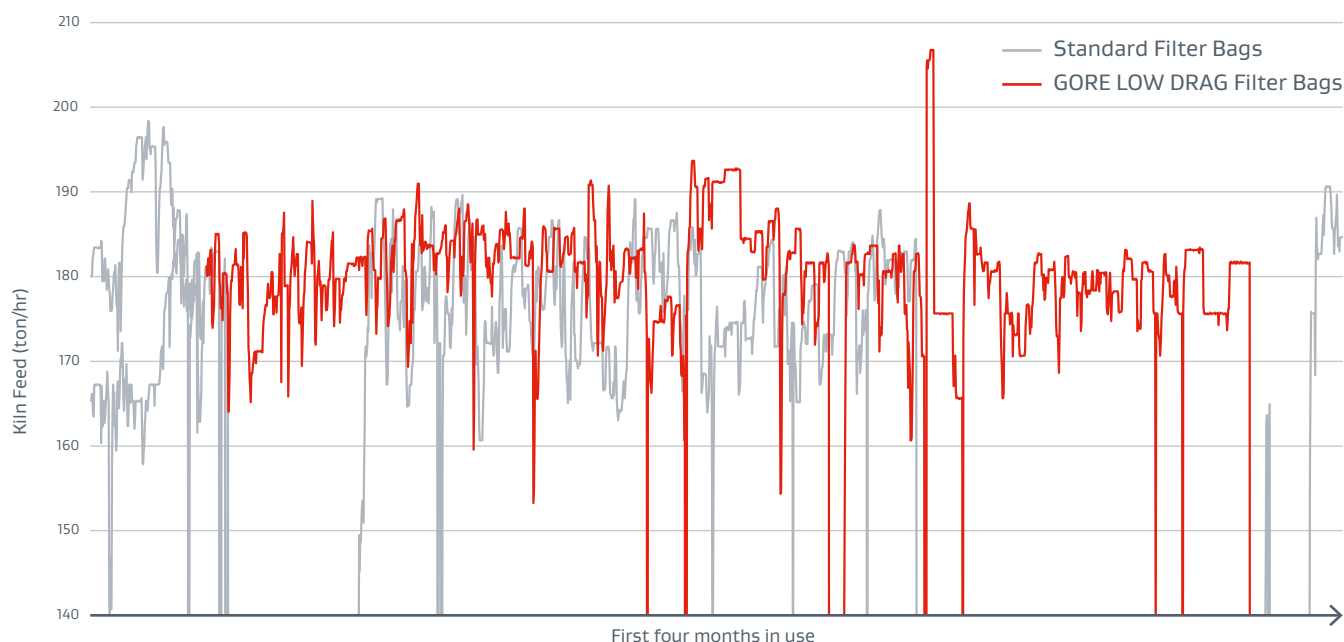
Results

Following installation in 2018, the plant increased its fan speed to 745–750 rpm and saw a steady increase in kiln feed rate by 0.80% from 2016 to 2018 — with a 3.5% increase at peak times over that period — and a 29.1% increase in AFR (alternative fuels and raw materials). Additionally, the new filters allowed for a 20x reduction in particulate emissions under 1 mg. Says the control room operator, "After the filter bag replacement, this allowed to increase the main fan speed [and] improved control and stability has been detected including a change on the cleaning parameters. There is an improved control on the differential pressure tendency." With these results, the plant can see a significant increase in profitability.



Application:	Cement kiln, pulse-jet baghouse
Filter material	GORE LOW DRAG Filter Bags (22 oz, fiberglass)
Gas flow rate	267,000 acfm (452,542 am ³ /hr)
Operating temperature	392 °F (200 °C)
No. bags/collector	2,856
Air-to-cloth ratio	2.95:1 ft/min (0.9 m/min)
Differential pressure	Less than 5.5 in wg flange to flange

Cement Plant in Mexico – Increased Kiln Feed Rate



In the past, the plant reached peaks of 190 ton/hr for Kiln Feed. With GORE LOW DRAG Filter Bags they see an 8% increase (peaks of 206.1 ton/hr).

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