



GORE® Filtration Products

Metals Industry

Case History 6

Electric Arc Furnace

OPTIMIZATION POTENTIAL

As furnace productivity increased spark damage began to occur and the baghouse inlet temperature often reached or exceeded the allowable temperature for the polyester media being used. The plant added an evaporative cooling tower to stop the sparks and keep the temperature down. While the evaporative cooler kept the temperature down, spark damage persisted. In addition, the conventional polyester bags weakened due to hydrolysis. The bags also stretched requiring frequent re-tensioning.

SOLUTION

Replaced the existing woven polyester bags with GORE® ePTFE membrane filter bags with 10 oz/yd² acid resistant fiberglass backing and optimized system settings.

RESULT

Bag failures stopped since the GORE™ ePTFE membrane and the fiberglass backing material are not subject to hydrolysis and resist spark damage. The bags have not required tensioning since start up. Furnace suction and shop evacuation have improved due to the more consistent operation of the baghouse.



Application: Steel - Electric Arc Furnace

Baghouse: Reverse Air Cleaning
526,000 acfm (894,000 Am³/h)

Number of bags: 5568

Filter area: 212,000 ft² (19,700 m²)

Temperature: 275°F (135°C)

Filter material: GORE® membrane filter bags with 339 g/m² (10 oz/yd²) acid resistant fiberglass backing material.

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