GORE® Filtration Products

Metals Industry

Case History 9

Ferroalloy

Optimization Potential

The baghouse differential pressure was very high while operating with non membrane woven fiberglass filter bags. The reverse air cleaning had to be assisted by sonic horns causing disturbance to the neighboring community. This restricted gas flow limited furnace power input and alloy production. Bag life was only one to two years.

Solution

Optimize system settings and replaced the existing non membrane woven fiberglass bags with GORE® ePTFE membrane bags with 10 oz/yd² acid resistant fiberglass backing.

Result

Eliminated the need for sonic horns and dramatically decreased baghouse pressure drop. Gas flow increased significantly, even with fewer filter bags than had originally been used in the non membrane sytem.

With the increased furnace draft furnace power increased by 11% with 75% FeSi, and 14% with 50% FeSi, allowing increased alloy production. Bag life exceeded eight years with the first set of GORE® membrane fiter bags.

Application:	Ferroalloy –Submerged Arc Furnace 50% and 75% FeSi
Baghouse:	Reverse Air Cleaning 608,000 Am³/h (358,000 acfm)
Number of bags:	5568
Filter area:	14,700 m² (158,000 ft²)
Temperature:	218°C (425°F)
Filter material:	GORE® membrane filter bags with 339 g/m² (10 oz/yd²) acid resistant fiberglass backing material

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