

Membrane Filtration Conversion for Dust Collection

Full Scale Implementation OR Pilot Scale/Study

1. Description of the project: What is the issue and how did you fix it?

Upgraded main dust collection from older style singed polyester filter bags (cake filtration) to modern, high efficiency expanded polytetrafluoroethylene (Teflon) coated bags (membrane filtration)

2. Environmental Benefits: Conservation of raw materials or energy, reduction or elimination of emissions, wastes, toxics, water discharges, etc.

Greater stability in controlling air emissions – differential pressure does not rise and fall as much with dust cake evolution. Less frequent and more complete pulse cleaning yields lower operation cost and lower compressed air consumption. Also, there was an incredible 75% reduction in compressed air needed for collector operation.

3. Other Benefits: Productivity, health and safety, employee morale, etc.

4. Cost Savings: Capital cost, operating cost, ROI or other pertinent cost information.

Capital Cost was \$35,000. Savings not calculated.

5. Applicability to other foundries and additional Comments

Yes

6. Applicable Environmental Categories and Foundry Processes. Select all that apply.

Environmental Categories

- Carbon (GHG) Emissions Measurement and Reduction
- Air Quality Water Use and Discharge Waste Management
- Beneficial Use Stormwater Material and Resource Conservation
- Community Engagement

Foundry Process(es) Impacted

- Melt Pour Mold Core sand system/reclaim
- Shakeout Heat Treat Quench Finishing Shipping
- Maintenance Pattern Shop Casting Design
- Management Systems and Metrics
- Other, explain:

7. Add photos to enhance your application, if applicable.