

# Steel

*Leading electric arc & blast furnace producers exceed EPA requirements and cut costs with B-PAC™.*

*"We put three sensors to the test, Auburn blew the competition away".*

## Challenge

In the US, the EPA has established strict emission regulations, detailed in the National Emission Standards for Hazardous Air Pollutants (NESHAP) for the Steel & Iron Industries. In order to comply, steel producers are required to install particulate monitors on the exhaust stack of all fabric filters (i.e., baghouses), but provides little guidance as to which technology is best-suited for use in the harsh, hot, and varying processes of steel manufacturing. Maximum Achievable Control Technology (MACT) cited in the rule includes all charge-based and optical particulate measurement devices, which vary greatly in price and performance – so which technology maintains compliance while optimizing production for steel producers?

Auburn's product line is trusted by steel producers across the globe to reduce emissions and improve operations in the furnace, coke, desulf, casting, and grinding processes. Auburn's Particulate Monitoring Technology has proven its reliability and superior performance in steel plants around the globe, where FilterSense solutions are designed to do more than just maintain compliance, they holistically improve plant operations and reduce operating costs.

*"We only shut down once a year; we need a reliable technology with minimal maintenance."*

## Solution

### Auburn's Particulate Monitoring Technology

A fully-isolated sensor combined with advanced digital signal processing provides the most reliable measurement in steel applications, where the build-up of conductive material causes false alarms and late response to filter failure from other sensors.

A test comparing three brands at a US steel plant proves that the Auburn PM 100 is more accurate during normal operations, when particulate levels are low, making it the most reliable technology for the early detection fabric filter leaks for the steel industry (Figure 1).

Figure 1 - Sensor Comparison: Leak Test

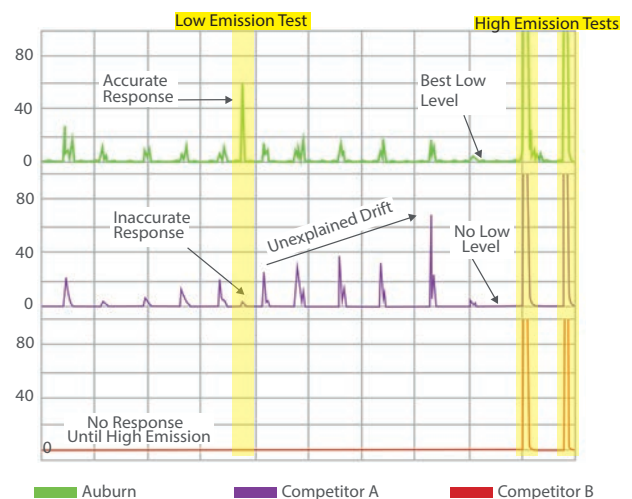


Figure 1: Comparison of Auburn and 2 competing particulate sensors installed at a steel mill.

**“B-PAC™ eliminates over-pulsing and maintains a tight DP, increasing our production rate”**

## Benefits

### B-PAC™ Baghouse Performance Analyzer & Controller

Auburn’s B-PAC intelligent baghouse controls provide complete insight into the filtration process, allowing steel plants the ability to control DP (differential pressure) within  $\pm 0.1$  InWC and to monitor total emissions, filter integrity, solenoid and pulse valve health, hopper levels, and more. Available FilterWARE™ HMI/SCADA software allows for remote monitoring, advanced data logging, and automated EPA reporting.

Many steel mill operators employ B-PAC intelligent DP control in coke baghouses to guarantee proper airflow off of the upstream coke ovens. Other plants tackle issues such as the over-pulsing of filters and excessive compressed air consumption with cleaning control, solenoid, and pulse valve diagnostics.



“Desulf” baghouse at a US steel mill. Leak analysis, pulse cleaning, DP, solenoids, valves, airflow, and temperature are monitored by an engineered B-PAC™ System (shown right).

### Auburn Continuous Particulate Monitoring

Auburn particulate sensing technology has been adopted as the most reliable and value-added MACT solution in the steel industry. Auburn has been helping steel mills do much more than meet US-EPA NESHAP for the Steel & Iron Industries and provides plants with benefits.

### Reliability

Proven in the steel industry, end users experience no false alarms and are provided with preventive diagnostics that allow for proactive maintenance planning. Steel producers avoid tens of thousands of dollars in emergency outages, prevent downstream equipment damage, and optimize production by supporting efficient filtration. Auburn recommends a 12 month maintenance interval, 3-10x longer than the competition!

### Locate Filter Leaks by Row

With the ability to locate leaks by filter row, monitor solenoid and pulse valve health, minimize pulsing, and maintain baghouse DP within 0.1 InWC, operators at steel mills minimize downtime and maintenance costs, while areducing and often eliminating exposure of plant



Engineered B-PAC System monitors and controls a network of multi-compartment Coke, Desulf and Casting Baghouses at a steel mill (shown left). Screenshot (lower right): shows particulate levels and damper control.



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