

BHA[®] PulsePleat[®] filter elements

US foundry venting multiple processes with a shaker baghouse solved high differential pressure, short bag life, costly maintenance and reduced furnace airflow problems.

Challenge

The 3-compartment Bahnson Hawley/Norblo shaker baghouse did not provide adequate airflow to the four induction furnaces, a scrap pre-heater system, and a mag inoculation station it vented. The filters were blinding with fine particulate, and the resulting high pressure drop across the collector reduced the original design airflow of 40,000 CFM to 28,000 CFM.

System analysis by CLARCOR Industrial Air determined that adequate ventilation would require a design air volume of 55,000–60,000 CFM, well beyond the capabilities of the old shaker-style baghouse.

Solution

CLARCOR Industrial Air engineered a pulse-jet cleaning conversion to the existing housing that was designed around the high efficiency of BHA PulsePleat filter elements. The housing was stripped of the high-maintenance shaker mechanisms and tubesheet with thimbles, and retrofitted with a flat tubesheet for installing the top-loading pleated filters from inside a walk-in clean air plenum. Only 336 BHA PulsePleat filter elements were needed to meet the design air volume at a 4:1 air-to-cloth ratio.

Results

- The baghouse consistently operated at the design air volume with differential pressure between 4”–5” w.c.
- Compressed air for pulse-jet cleaning of the filter elements ran at 60 PSI, 40% below normal pulse-jet collectors.
- Based on this system’s performance improvements, the foundry upgraded other baghouse systems with BHA PulsePleat filter elements.



Top-loading BHA PulsePleat filter elements provided more surface area to substantially increase the collector air volume capacity.

The reduced air-to-cloth ratio and ability to efficiently collect fine particulate without blinding provided the plant with the production ventilation required along with extended filter life and reduced maintenance costs.