



Multi-Stage Mist Collector for Zinc Strip Rolling Mill Upgrade

CHALLENGE

A zinc strip rolling mill was having repeated issues with its existing fume/mist collection system – short filter life and frequent maintenance events – which added up to too much \$\$ being spent.

The plant wanted new equipment to be designed to fit within the footprint of an existing platform and connect to the existing duct work with minimal modifications – without cutting corners on total media square-footage, airflow, or maintenance access. And of course, it had to meet their air permit requirements. This was a tough job!

SOLUTION

Monroe Environmental® visited the site to see the existing layout, review ductwork design, and evaluate the best approach for a new system.

After thorough review, Monroe was confident it could satisfy all of the owner's requirements with a 30,000 CFM Multi-Stage Mist Collector. This high-efficiency collector included a first stage expansion/dropout chamber, second stage coalescing screen filter (washable and re-usable), third stage mist eliminator screen filter, and fourth stage ASHRAE fiberglass filter.

An additional fifth stage HEPA filter was built in so the plant had capability to meet future emission limit requirements if needed without re-doing the collector. All they would need to do is add the HEPA filters to the existing support racks.

Provisions for a CO₂ fire suppression system were also provided on the collector, improving safety and lowering risk for the plant.

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Monroe also worked with the site to coordinate ductwork modifications and fit the unit onto the existing platform.

RESULT

The new Monroe Mist Collector dramatically improved mist and fume collection and successfully met air permit requirements, as well as all of the plant's additional objectives: re-using the existing mezzanine, minimal duct modifications, extending filter life, and of course, decreased maintenance/downtime.

Monroe field service technicians provided start-up assistance and duct balancing during installation, as well as training for first and second shift operators.

The plant now has a high-efficiency collector properly sized to evacuate the mill and protect workers.