



turbosonic

Clean Air for Industry

SoniCool™

Evaporative Gas Cooling
and Conditioning



- *Improve Baghouse Performance*
- *Enhance ESP Performance*
- *Protect Process and APC Equipment*



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WHAT IS EVAPORATIVE GAS COOLING & CONDITIONING?

Finely atomized water droplets evaporate in exhaust gases to lower temperature and adjust particulate moisture for optimum removal.

As the water droplets absorb heat, they evaporate completely, resulting in dry operation.

THE SONICOOOL™ ADVANTAGE

Accurate Temperature and Humidity Control

SoniCool™ cools gas streams from as high as 2,400°F (1,315°C) to as low as 194°F (90°C). SoniCool™ can adjust the moisture content of a gas stream to a specific humidity.

Lower Pressure Drop, Energy Costs

Lower gas volumes minimize pressure drop, resulting in a reduction in cooling vessel size, fan horsepower and air pollution control equipment size and cost requirements.

Reduce Dioxin and Furan Formation

By quickly cooling below the critical reformation temperature zone, Sonicool reduces dioxin and furans in the offgas. Lowering gas temperatures quickly, SoniCool™ reduces dioxin and furan formation.

Dry Operation

SoniCool™ uses Turbotak Atomizing Nozzles which produce the smallest droplets for complete evaporation even in low temperature situations.



SoniCool™ ensures dry operation with no corrosion or material deposition in ducts, towers or hoppers.

Increased Plant Production Due to Reduced Gas Volumes and Velocity

By cooling the gas stream, gas volumes are reduced. As a result, production can often be increased without additional baghouse or ESP capacity.



Manual or Automated Controls

SoniCool™ control systems range from manual to advanced PLC controls that can interface with customer DCS computer systems.

Minimal Nozzle Maintenance

The Turbotak Nozzle's straight-through liquid flowpath minimizes pluggage and wear.

Retrofits and Upgrades

SoniCool™ components can be designed for installation in vertical (up or downflow) and horizontal ductwork.

Existing systems can be upgraded with minimal capital cost to reduce operating temperatures without downstream wetting or deposits.

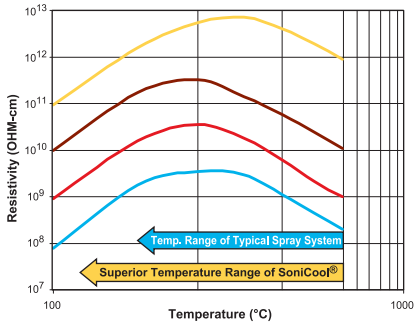
Payback of less than one year is possible through reduced maintenance, energy savings and performance enhancements.

Retrofits range from a simple nozzle and lance installation to complete systems, including towers, controls, pump skids, nozzles, lances and in-duct arrangements.



IMPROVE ELECTROSTATIC PRECIPITATOR PERFORMANCE

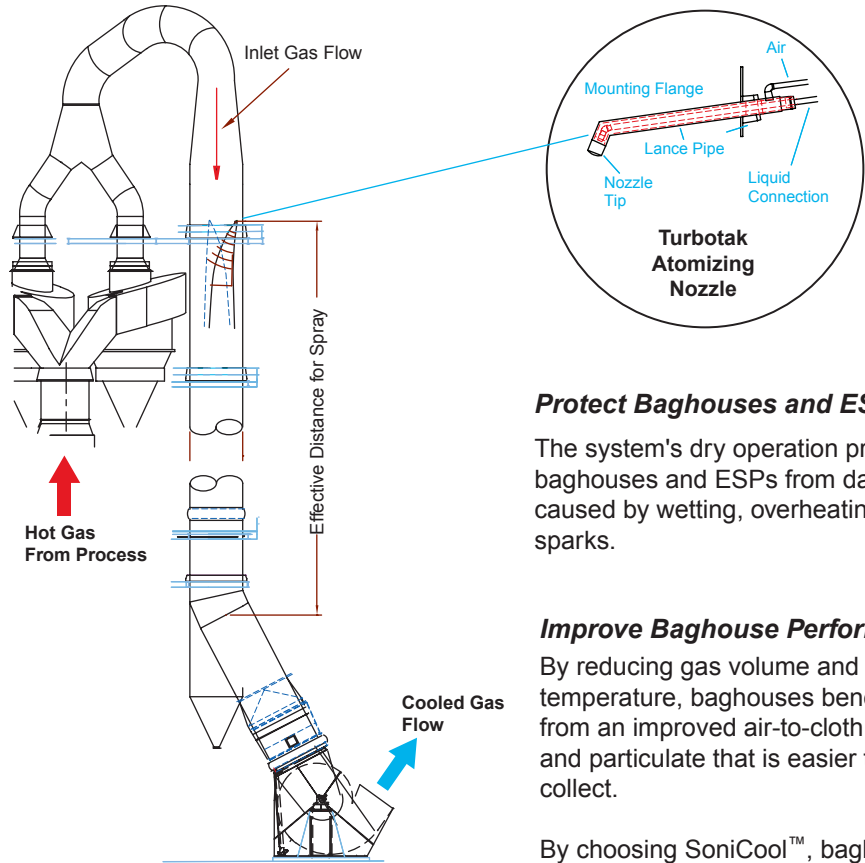
Dust Resistivity vs. Temperature



By adding humidity, SoniCool™ raises particulate surface conduction and increases inter-particle bonding – causing particle agglomeration and improving the particulate removal efficiency of electrostatic precipitators (ESPs).

The lower gas temperature and higher moisture content provided by SoniCool™ optimizes dust resistivity, improving efficiency in the ESP.

Cement Plant Downcomer



Protect Baghouses and ESPs

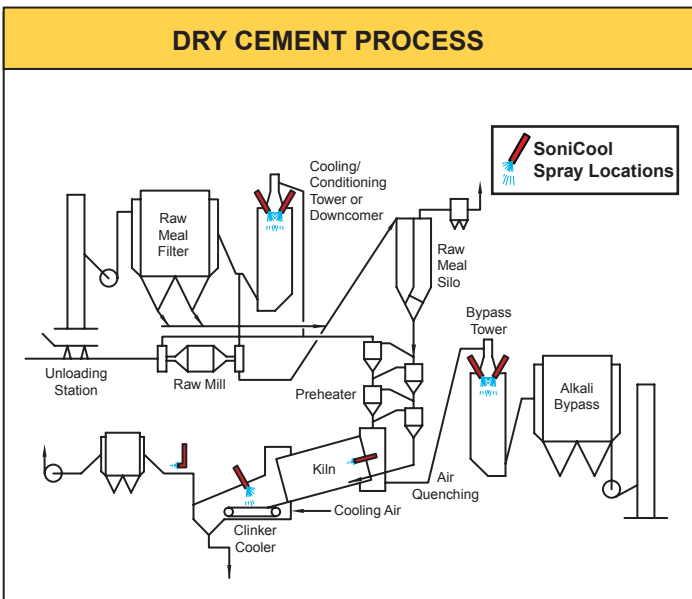
The system's dry operation protects baghouses and ESPs from damage caused by wetting, overheating and sparks.

Improve Baghouse Performance

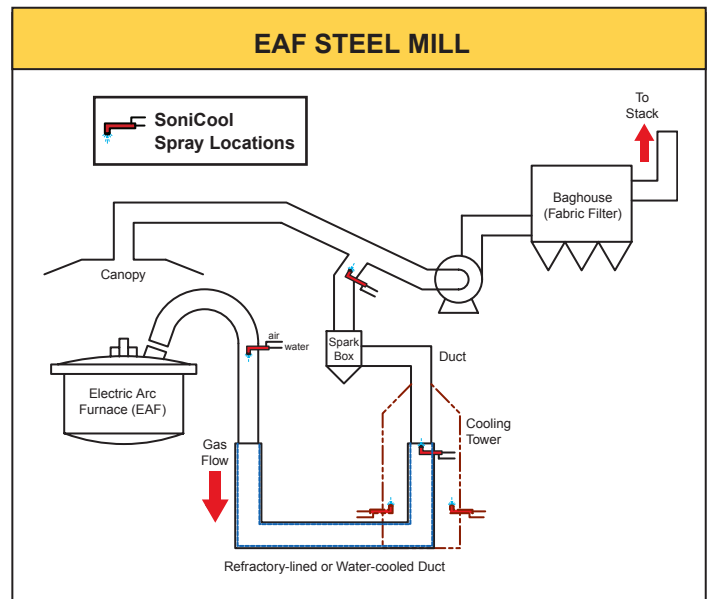
By reducing gas volume and temperature, baghouses benefit from an improved air-to-cloth ratio and particulate that is easier to collect.

By choosing SoniCool™, baghouse operators can avoid expensive high-temperature filter bags.

DRY CEMENT PROCESS



EAF STEEL MILL



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ABOUT TURBOSONIC

For over forty years, industry has relied on TurboSonic for cost effective air pollution control solutions.

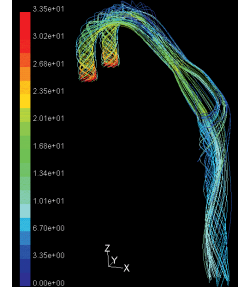
Attention to quality ensures reliable performance for your investment. From project management to spare parts and aftermarket service, you can depend on TurboSonic.

APPLICATIONS: HOT GAS COOLING, PARTICULATE CONDITIONING

- **Steel Mills:** EAF/BOF Off-gas Cooling, Castor Sprays, Spark Arrest, Particulate Control
- **Cement Plants:** Kiln/Calciner Off-gas Cooling, In-kiln Sprays, Clinker Off-gas Cooling, Humidification
- **Glass Plants:**
- **Incineration:** Hospital, MSW or Hazardous Waste Incinerators
- **Non-Ferrous Metal Convertors & Furnaces:** Aluminum, Copper, Nickel
- **Chemical Plants:** Steam Desuperheating and Process Gas Cooling
- **Utility Boilers & Turbines** Cooling before the ESP or of turbine exhaust gasses

Gas Flow Modeling

Existing installations may have gas flow distribution irregularities that impede temperature control and reduce particulate conditioning. This can result in problems, such as material deposition.



TurboSonic offers sophisticated computer and physical scale modeling to confirm existing patterns and determine corrective measures to optimize process efficiencies.



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