

Evaporative Gas Cooling and Emissions Control Solutions

for the Iron and Steel Industry



Dürr Megtec Solutions for the Iron & Steel Industry

Dürr Megtec is a long-recognized world-class supplier of liquid atomization technologies and air-pollution control systems. Through our strong heritage of technological development and innovative solutions, we provide reliable and energy-saving systems for new or upgrade, simple or complex, large or small projects.

Our extensive emissions control solutions include mechanical collectors, particulate wet scrubbers, wet and dry electrostatic precipitators (ESPs), as well as pulse jet fabric filters (baghouses) for fine particulate, acid mist and filterable particulate control.

During the last three decades, Dürr Megtec has served the iron and steel industry with our reliable evaporative gas cooling and conditioning systems, utilizing our proven Turbotak™ dual-fluid nozzles.

These systems condition the exhaust gases ahead of dry ESPs and pulse jet fabric filters to keep them operating reliably at optimum performance for particulate control.



Gas cooling tower

Evaporative Gas Cooling and Conditioning

Electric arc furnace off-gas cooling

The Dürr Megtec evaporative gas cooling and conditioning system helps to protect your downstream equipment, enhance air pollution control performance, reduce gas volumes and increase production capacity. For effective ESP performance, it also optimizes humidity levels.

Dürr Megtec's Turbotak atomizing nozzles introduce a controlled amount of finely atomized water into the hot gas stream to reduce and/or maintain gas temperature. The water evaporates, while absorbing heat from the gases, for free-flowing dust, zero liquid discharge, and minimal or no wall buildup. The Turbotak nozzles used in these systems are ideally suited to the harsh conditions in the steel-making process, while still producing ultra-fine sprays with precise drop size control and spray coverage.

This system can be applied to electric arc furnace or basic oxygen furnace off-gas cooling, castor sprays, spark arrest, sintering, and hot rolling applications, and can be installed in the hot quench tower or riser duct.



Turbotak atomizing nozzle

Our proven design has been used in hundreds of installations. Incinerator, kiln or furnace exhaust gases are cooled prior to baghouse filtration, reducing the volume of exhaust gas to be filtered and thereby protecting the baghouse.

The Dürr Megtec systems condition high resistivity dust particulates (glass, cement, etc.) by raising humidity, enhancing the collection efficiency of baghouses or electrostatic precipitators.

Dürr Megtec can provide new installations or retrofits and upgrades to existing systems, as well as other components and services such as spray nozzles, controls, pumps and cooling tower fabrication.

Waste fuel combustion systems, sintering sprays

Waste fuel combustion systems atomize almost any liquid fuel, from heavy tars to engine oil. Ideal for burning waste oil from coke processing as a byproduct fuel in sinter plants, the system uses the rugged, plug-resistant Turbotak atomizing nozzles to provide excellent atomization for efficient and clean combustion.



Evaporative gas cooling quench tower

Air Pollution Control Systems

Wet particulate scrubber

Dürr Megtec provides particulate control solutions for your sintering, blast furnace, rolling, scarfing and coking operations. A variety of scrubber designs are available to suit a wide range of applications, including hot or corrosive gases and abrasive or sticky dust.

Wet electrostatic precipitators

Wet electrostatic precipitators are a proven polishing filter for the reduction of fine particulates, especially where a wet solution is preferred to maximize condensable particulate capture. We offer all-steel and all-alloy designs with materials chosen based on specific applications. Our rigid discharge electrodes (RDE) are designed based on years of research and commercial experience to match the specific application. Our modular designs are shop fabricated, allowing for easy transport and simpler installation of wet ESP modules.



Wet scrubber for SO₂ control



Rolling mill wet ESP

A mobile gas cleaning pilot system is available for on-site performance demonstrations and data collection. It is designed to analyze outlet emissions at various operating conditions. The wet ESP pilot includes advanced switch mode power supply (SMPS) technology, variable frequency drive and fully automated PLC and HMI controls.

Dry electrostatic precipitators

Our dry ESP technology combines the advantages of maximum particulate collection efficiency with low operating and maintenance costs. In addition to a proven record of performance and reliability, our dry ESP offers many distinct advantages, including high collection efficiency (often greater than 99%), high temperature tolerability, a wide capacity range, and low maintenance.

Our aftermarket experience includes upgrades and improvements of dry ESPs of various commercial designs. Reliable rapper systems, collector plates and discharge electrodes are designed to provide optimum collection efficiency.

Pulse jet fabric filters for cost-effective particulate emissions control

Dürr Megtec provides cost-effective control of particulate emissions with our proven pulse jet fabric filter technology.

Long-bag technology has been in commercial operation for more than 10 years, with bags often reaching a length of 10 meters.

Integrating fabric filters with our sorbent injection and flue gas desulfurization (FGD) technologies also provides low HAP emissions in a variety of applications.

Treatment of industrial process gas streams for the removal of particulate and acid gases

Dürr Megtec offers spray dryer absorber (SDA) technology for SO_x, HCl and HF removal, with applications in the iron and steel industry. When integrated with our pulse jet fabric filter and dry sorbent injection (DSI) technologies, our SDA is part of an integrated approach to high-performance particulate and acid gas emissions control.

Our SDAs provide effective control of SO_x and HCl by the injection of calcium, potassium or sodium-based slurries. Unlike wet scrubbers, all water is evaporated, with no liquid waste stream generated. The dry materials often can be recycled back into the system, avoiding the generation of a waste stream.

Dry sorbent injection (DSI)

Dürr Megtec offers DSI systems in combination with a downstream fabric filter or dry ESP to support a multi-pollutant control strategy.

Dürr Systems, Inc.

830 Prosper Street
De Pere, Wisconsin, 54115 USA
Phone: +1 920.336.5715

www.durr-megtec.com

Subject to change. The information in this brochure contains only general descriptions or performance characteristics which may vary in actual cases. The requested performance parameters shall be binding only if they are explicitly agreed to within the sales contract. © Dürr 2020

