

Wet Electrostatic Precipitator

High-Efficiency Removal of Fine Particulate, Acid Mists and Aerosols



Wet Electrostatic Precipitator (ESP)

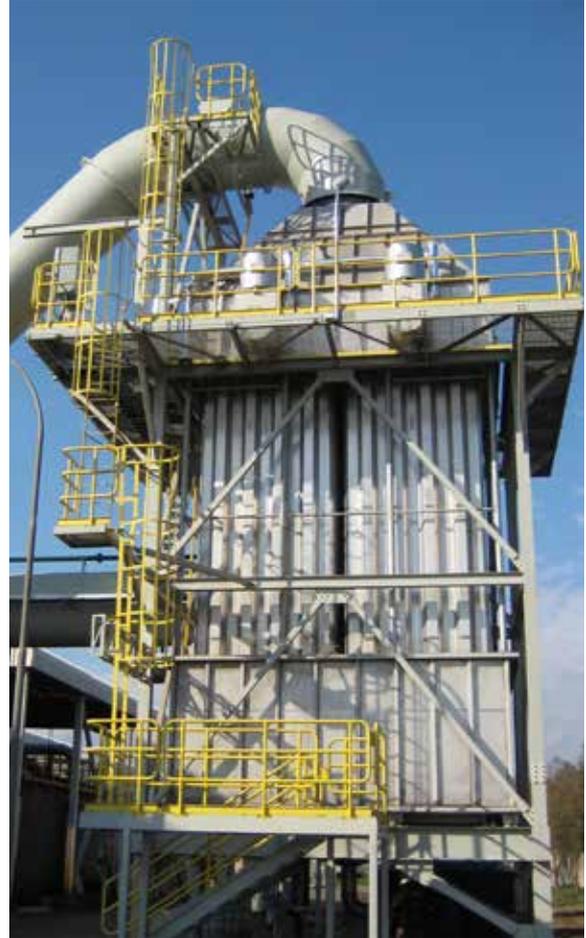
Our Wet ESP Experience

The wet electrostatic precipitator (ESP) provided by Dürr Megtec offers highly efficient control of submicron particulate, heavy metals, acid mists and condensed metal fumes and organics. Our experience includes installations in the wood products and pelletizing industries, regenerative and metallurgical sulfuric acid plants, petroleum refineries and waste-to-energy applications.

Why a Wet ESP?

Many of our customers have operated their plants for years with wet particulate scrubbers, like our venturi-type designs. Following stricter regulations for opacity, filterable and condensable emissions, the industry relied more on the polishing downstream by wet ESPs for compliance.

Adding wet ESPs to existing wet scrubbers reduced the net total pressure drops, which helped to achieve the new emissions limits.



Wet electrostatic precipitator—fiberglass production



Acid mist wet electrostatic precipitator—petrochemical



Wet electrostatic precipitator—wood products

Wet ESP Design Advantages

We can offer all steel and all-alloy material wet ESP designs, with materials chosen based on specific applications. We also offer both downflow and upflow designs, based on project scope and site conditions.

Reliable Rigid Discharge Electrode Designs

Our rigid discharge electrode designs have been carefully chosen through years of research and commercial experience to match the particular application. For example, our discharge electrodes for the wood products industry will be different from that for an acid plant application. While both will utilize our proven hexagonal-shaped collector electrode design, our experience allows us to combine our upflow and downflow wet ESP experience to provide the most competitive solutions for your equipment requirements.

Gas Flow Distribution to Assure Flow Quality

Perforated plates are used to distribute the flue gas evenly across the collection tubes to maximize performance. We utilize scale modeling to optimize the design to assure uniform flow distribution.

High-Voltage Frame

The high-voltage system consists of a rigid frame suspended on insulators. The insulators are located in compartments removed from the flue gas stream thus avoiding contamination due to wetting and particle deposition.

Low Maintenance Insulators

High-strength insulators are mounted in easily accessible compartments. The insulator compartments are designed to keep the insulators warm and dry and away from exposure to the process gas stream and contamination. Typically, insulator compartments are purged with cleaned, dry heated air for this purpose.

Effective Water Usage

The self-forming water film on downflow designs minimizes clean water usage by minimizing flushing requirements. Wet ESP effluent can be re-circulated to the pre-scrubber or saturation system.

Accurate Voltage and Current Control

Each wet ESP features its own microprocessor-based voltage controller and transformer/rectifier (T/R) set. Complete instrumentation and diagnostics for voltage and current control are provided. Dürr Megtec offers only high-performance, well-proven, quality power supply technology.

Small Footprint, High Structural Strength

The hexagonal, common-wall tubes provide high structural strength and minimize materials of construction. With a lower overall weight and a smaller footprint, our design is more economical to construct and install, which is advantageous in crowded plant locations, where real estate is at a premium.

Wet ESP Pilot Plant

A mobile gas cleaning pilot system is available for on-site performance demonstrations and data collection.



Dürr alloy WESP retrofit



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