

Wet Cyclone Scrubbers

For removing liquid droplets

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ARMATEC

PRODUCT DESCRIPTION

For efficient removal of mists and dusts from airstreams. Units can include a series of liquid sprays in the gas inlet manifold. Manufactured under licence to Ceilcote Air Pollution Control of the USA.

WET SCRUBBING PRINCIPLES

The basic process involved in wet scrubbing is the contacting of a polluted gas stream with a scrubbing liquid to transfer sufficient of the pollutants into the liquid stream to allow discharge to atmosphere of the cleaned gas. The transfer of the pollutants from the gas stream into the liquid stream is by one or more of the following mechanisms:

- Absorption of pollutant vapours into scrubbing liquid
- Chemical reaction in scrubbing liquid.
- Condensation of odorous vapours
- Capture of particulates by inertial impaction.

The wet cyclone scrubber uses predominantly the last of these mechanisms plus centrifugal action.

WET CYCLONE SCRUBBERS

Wet cyclone scrubbers achieve higher throughputs than void towers and other separation devices by forcing the gas flow into a spiral flow pattern. Centrifugal force amounting to several hundred gravities acts on entrained particles forcing them against the wall of the cyclone and thus collecting them.

Wet cyclone scrubbers are often used as the mist elimination device following a venturi scrubber.

FEATURES

- High pressure spray nozzles produce extremely small liquid droplets. This enhances collection efficiency.
- Cyclone is designed to remove dust along with mist particles by centrifugal force and interception.
- Pressure drop ranges from 50 to 100 mm WC.
- Larger entrained particles are forced to scrubber wall.
- More efficient than spray towers in removing mist and dusts from airstreams.
- Units can be built of corrosion resistant FRP (fibreglass) for chemically aggressive environments or stainless steel for food grade applications.

USES

- Mist elimination for venturi scrubbers.
- Particulate collection in fertiliser applications.
- Particulate collection from driers.
- Conditioning of air stream for biofilter



Outline of wet cyclone scrubber showing bottom entry and top exit.



Wet cyclone scrubber at fertiliser works.

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