

WE HAVE THE TECHNOLOGY TO MEET NESHAP COMPLIANCE REQUIREMENTS

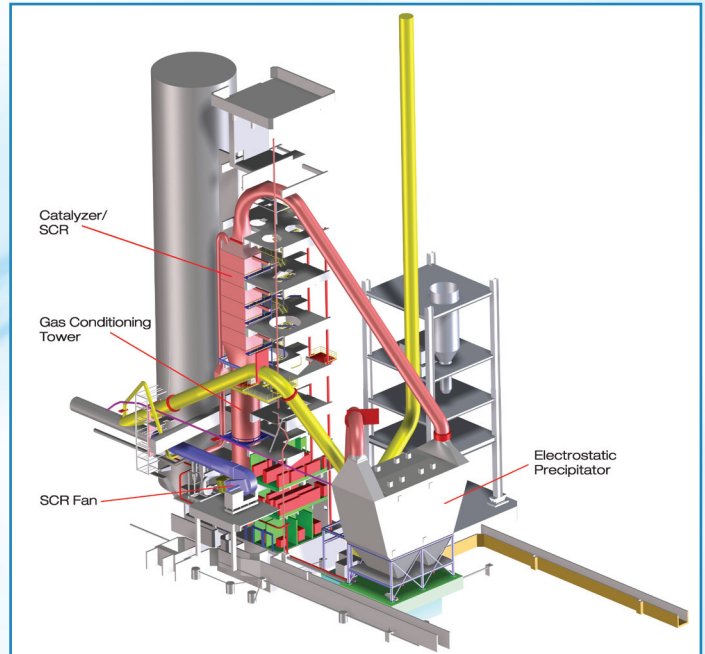
The EPA's proposed NESHAP regulation requires cement plants in the USA to limit emissions of Hg, THC, HCl, NO_x, SO_x and Particulate Matter to very stringent standards. SCHEUCH has successfully developed technology and equipment to comply with these standards. Since cement plants experience a wide range of pollutant concentrations, depending on raw material and available fuels, the challenge is to find tailor-made concepts for efficient and affordable technologies.

SCR SYSTEMS FOR NO_x REMOVAL

For reduction of Nitrogen Oxides, SCHEUCH has optimized the SCR technology and made it applicable for the cement industry. Depending on the plant configuration, either a "low-dust" or "semi-dust" SCR System can be offered to achieve very low NO_x emissions.

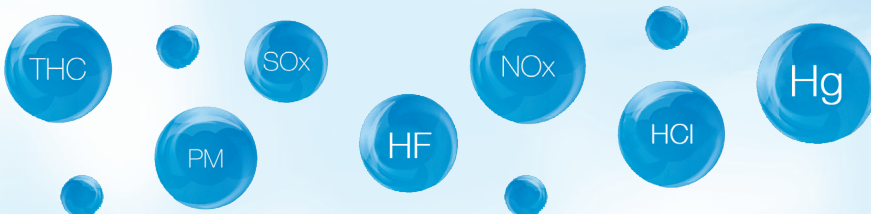
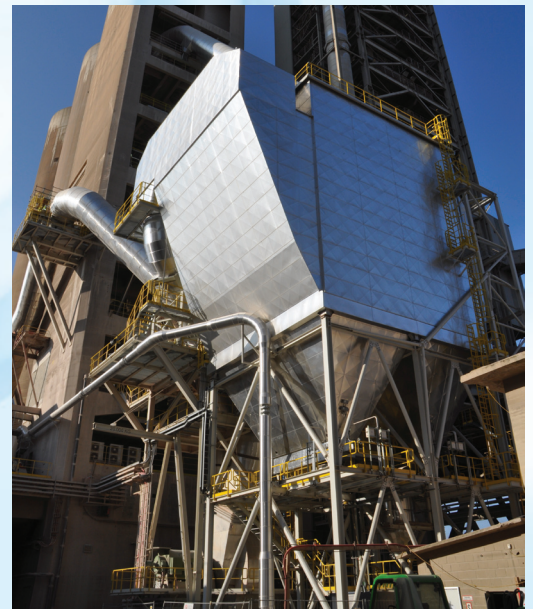
LOW-DUST ARRANGEMENT:

In this configuration, exhaust gases are dedusted prior to NO_x removal, and this allows the system to operate in a relatively dust-free environment eliminating the potential for fouling and plugging of the catalyst channels. The elements of the catalytic converter have a significantly longer life time in comparison to operating in a higher dust load. The disadvantage is that the cooled exhaust gases must be reheated to the temperature required for NO_x removal after dedusting, resulting in higher investment and operating costs due to pressure losses and preheating.



SEMI-DUST ARRANGEMENT:

The "semi-dust" variant is derived from our experience and insights gained during pilot plant studies. Meanwhile, we were awarded by Lafarge to supply the first large-scale SCR Semi-Dust system to remove NO_x at their plant in Mannersdorf, Austria. In this process variant, a pre-separation system with an Electrostatic Precipitator and a Catalytic Converter are placed between the Preheater Tower and the Gas Conditioning Tower. The Gas Conditioning Tower is integrated in the Catalytic Converter System to ensure the gas temperatures don't exceed the maximum filter inlet temperature for the Bag Filter. The commissioning of this first large scale new SCR system was done beginning of 2012. NO_x emissions are now limited to maximum of 200 mg/m³.



FOR Hg & THC REMOVAL

Depending on the current emission levels, Powdered Activated Carbon (PAC) is injected in the flue gas stream either upstream of the existing Primary Filter when only a small reduction is required, or downstream of the existing Primary Filter in tandem with a Polishing Filter for higher removal rates. With a Polishing Filter, the adsorption efficiency of PAC is much higher due to its low contamination with cement dust and this allows re-injection of the PAC for more complete utilization. As a result, less virgin PAC is required and the amount of spent PAC for disposal is also reduced.

FOR HCl, HF & SO_x REMOVAL

Hydrated Lime [Ca(OH)₂] is injected in the kiln exhaust gas upstream of the Primary Filter to remove more than 99% of HCl, over 95% of HF and more than 95% of SO₂. A neutralization reaction will take place and allows capture of these acid gases in the Primary Filter as solids. The Primary Filter can be an existing ESP or a Bag Filter.

PM (PARTICULATE MATTER) REMOVAL

In the last ten years, SCHEUCH's EMC filter technology has revolutionized the dedusting process in the cement industry. The technology was able to set new standards with respect to bag length, pressure loss, cleaning pressure, emission levels and the service life of filter bags.

EMC FILTER TECHNOLOGY NOW WITH BAG LENGTHS UP TO 40 FEET!

The use of 26 foot long filter bags (EMC 8M) has since become the industry standard and 33 foot long filter bags (EMC 10M) are already in use with filtration systems with rated capacities of more than 300,000 ACFM.

A SCHEUCH EMC filter with 33 foot long bags installed at Holcim's plant in Lägerdorf, Germany on their kiln line measured a clean gas dust content of less than 1 mg/Nm³ after few months of operation. The differential pressure is stable below 10 mbar.

Based on these results and long-term tests with 33 and 40 foot long bags in a full-scale EMC pilot plant, SCHEUCH now offers the 40 foot long filter bag technology for use in practical applications. This long bag technology allows better utilization of the casing for ESP retrofits.



EMC
ENERGY MINIMIZING CONCEPT

scheuch
TECHNOLOGY FOR CLEAN AIR

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