

SPLITTED PREHEATER SYSTEM

AUSTRIAN COOPERATION WILL HELP TO REDUCE MERCURY EMISSIONS

Due to the health effects of mercury exposure, industrial and commercial uses are regulated in many countries worldwide. Mercury is treated as an occupational hazard: A challenge the cement industry is facing every single day – after all mercury is present in raw materials and/or in the fuel released in the combustion process.

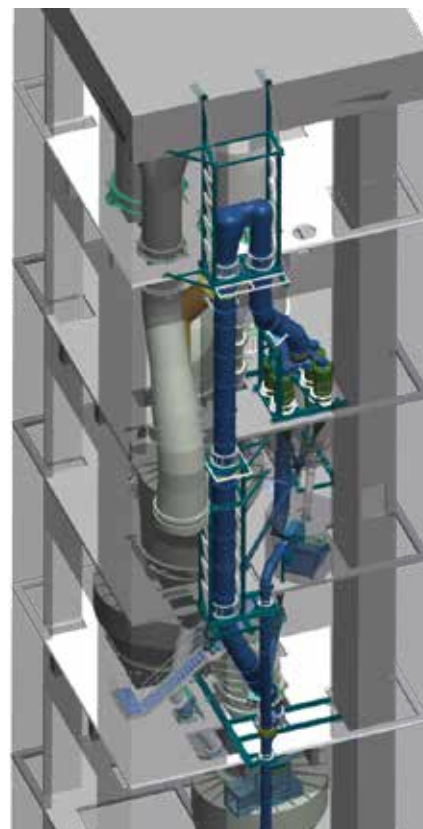
According to the United Nations Environment Programm, the cement industry contributes an estimated 10 % or about 190 metric tons per year of all global mercury emissions.

Time for a change:

The objective of the industry is to minimize mercury releases to the environment from cement manufacturing as some cement kilns are facing mercury emissions close to actual limits.

In order to reduce mercury emissions, the Austrian companies A TEC Production & Services GmbH as well as SCHEUCH GmbH developed a new technical innovation: the eXmercury splitted preheater system.

The system is still under development but the expected project results are promising.



RECENT PROJECTS:

In a joint project of A TEC and SCHEUCH, the first preheater system for the reduction of mercury emissions will be erected at Wietersdorfer's production plant Werk 1 (Klein St. Paul, AT). Project target is to reduce mercury emissions up to 80 % by the treatment of only 3-5 % of the total gas volume.

IT'S WAY OF FUNCTIONING IS SIMPLE:

Hot gases (~800°C) are extracted from the lower part of the preheater. In the splitted preheater, the filter dust (which is very high in mercury) will be mixed with hot gases in order to reach a suspension temperature of ~350°C. The dust of the suspension will be separated with high efficiency cyclones and a ceramic filter.

The dust – free of mercury – returns to the preheater. Afterwards the gases are cooled down and reagents – which absorb mercury – are dosed to the gases. In a further dedusting step with a fabric filter, the mercury will be separated from the gas stream.

BENEFITS:

- up to 80 % emissions reduction
- no additional thermal losses for treatment
- low additive consumption – low costs for additives
- low gas quantities to be treated (3-10 %)
- system includes high efficiency cyclones
- **low life-cycle costs**
- no raw meal separation necessary
- low disposal costs

