

**INDUSTRY:** Cement Mixing

**CHALLENGE:** The transport and producing of mixed products generates environmental unfriendly, sticky, adhesive cement and lime dusts.

**SOLUTION:** PowerCore® Dust Collector with PowerCore® Filter Packs

### Easy to service, compact and clean

With 47.000 employees and an annual turnover of more than 14 billion US-\$, the CEMEX enterprise is one of the world's largest producers of cement and aggregates. Furthermore, the company is the leading supplier of ready-mix concrete. CEMEX produces, distributes and sells these building materials in more than fifty countries around the globe.

### A small and specialized Business

The head office of CEMEX is located in Malmö and there are cement terminals in Landskrona, Göteborg (Surte) and Västerås (near Stockholm). The main CEMEX product in Sweden is cement that is imported from a German plant. As a special product, the Surte plant offers several mixtures of lime and cement that are used for ground stabilisation in clay for the infrastructure market.

For that purpose, there is a mixing line with three storage silos that is fed by the main cement silo. The blowing system sends an average of 80 tonnes of cement to that line each day. The products are mixed, stored and individually filled to transport trucks. In total around 320 tons of different types of mixed products are handled each day.

During the transport processes from the main silo to a mixing line and from the storage silo to the truck, it is inevitable that dust is produced. CEMEX is committed to an environmentally-friendly production and therefore avoids any impact on the environment if possible.

### PowerCore®: A new Dust Collection Technology

For that reason, the company searched for a reliable and efficient dust collection system and found it in PowerCore® which was developed with the aim of offering a high-performance, reliable, compact and easy-to-service dust collection technology. In the development process of this new system, the Donaldson engineers were able to transfer technologies which are used in intake filters for heavy duty vehicles and turbo-machines. In this application, a compact design, a minimum of differential pressure and a very easy maintenance are the main criteria.



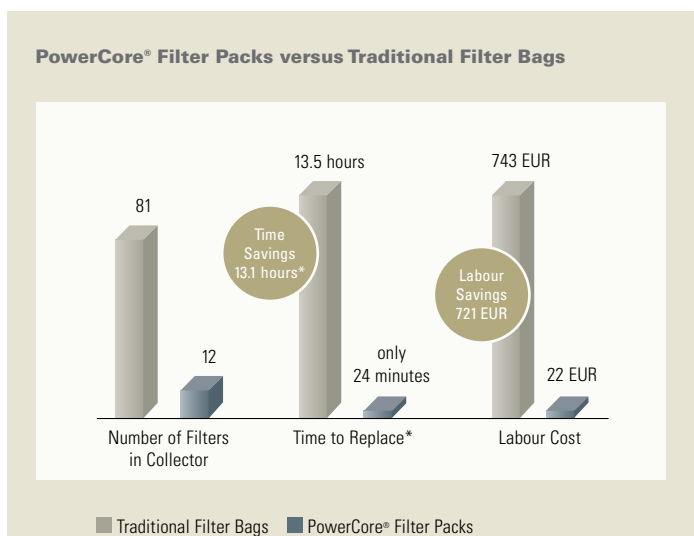
PowerCore® CPV Dust Collector on top of the Silo

# PowerCore® Technology proves its Efficiency

## Easy Service saves Time and Money

The result is impressive: In comparison to conventional dust collectors, the Donaldson units using the new PowerCore® technology are up to 70 % smaller. In addition servicing and maintenance are significantly simplified. Replacing one filter packs just takes about two minutes which is a reduction of 80 % compared to ten minutes, which can be assumed to replace a conventional bag filter. This saves time – downtime, to be precise – and costs.

Both factors – compact size and easy maintenance – are of high importance for CEMEX. Rolf Thulin, Marketing Manager at CEMEX: “But we would not have been willing to sacrifice efficiency and emissions reduction in order to achieve a cost-effective service, so these parameters had to convince us as well.” With respect to the performance-related data, the competitiveness of the Power Core® technology is beyond doubt: The new filter packs provide 78 % fewer emissions than standard polyester bags. This has been confirmed by independent lab tests.



\* Savings are based on one changeout. Calculations assume bags and PowerCore filter packs show equal life time; one person replacing one traditional filter bag in 10 minutes; one person changing PowerCore in only 2 minutes; labour rates equal 55 EUR/h.

For more information on dust collectors,  
visit [www.emea.donaldson.com/powercore/](http://www.emea.donaldson.com/powercore/)

## The Core of PowerCore®: Nanofibre Filter

These results are based on flow optimised shape of the filter packs and the high-efficiency Ultra-Web® nano fibre filter. It is able to collect a higher dust load on the surface of the media flutes, as would be possible with conventional fibre filters with a depth loading of 540 g/m<sup>2</sup>. The high surface performance combined with an innovative pulse cleaning technology leads to the significant performance increase at the lowest pressure drop and a minimised energy input.

All in all, the PowerCore® dust collection systems are superior to conventional bag filter units in decisive performance criteria – and they lead to substantial reductions in operating costs. Lennart Nielsen, representative of Donaldson Sweden: “We proposed a PowerCore CPV 3 system with three filter packs, and we installed the unit on top of one of the silos.”

## Designed for critical Dusts

There was no need to test if the PowerCore® system was working under the rough circumstances of cement processing and with the sticky, adhesive cement and lime dusts: The new technology was developed exactly for critical materials like these. Rolf Thulin (Cemex): “Since we started to use the new filter system, we have not had any dust problems at all. The filters fulfil the legal requirements for dust emissions which are very high. And the maintenance is very time-saving too. All in all, the system really exceeded our expectations.”

## Constant monitoring shows: Long intervals for Filter Exchange

Another critical data with respect to cost is the lifetime of the filter packs. Rolf Thulin (Cemex): „We commissioned Donaldson to monitor the filter data. According to these data, it seems that we need to change filter only once a year after handling around 70.000 tonnes of mixed products (cement).” To make sure that the filter system is working with utmost efficiency and the least possible downtime, it is regularly serviced by the staff of Donaldson Sweden.



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