

FCP Cerea Italy

Granular fertilisers



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FCP Cerea

Bonavicina di S. Pietro di Morubio, Italy



FCP, based near Verona in the heart of the Po Valley, is located in one of the most important agricultural areas of Italy.

FCP Cerea, located in one of Italy's most important agricultural areas, produces complex granular fertilisers. The company's mission is to deliver highly efficient products while maintaining superior standards of quality. This company commitment has been rewarded with an endorsement from the Italian association of fertiliser producers: Assofertilizzanti. In addition to FCP's dedication to ensuring quality goods and services, the company has an environmental spirit. FCP is always looking for innovative ways to improve its energy consumption and utilise more efficient manufacturing processes.

Poor ambient air quality affecting health and products

Renato Sacchetto, chief of FCP's Prevention and Protection Service, was behind the decision to install an air cleaning system: "Our production processes are based on the recipe the customer requests. We use excavators to mash various ingredients such as dust, nitrates and phosphates. After that, these mashes are poured into a hopper inside a granulator to be transformed into 'crumbles', or granules", explains Sacchetto. "The concentration of exhaust fumes from the excavators and dust in the air should not be underestimated, especially during peak fertiliser production periods. In particular, the quantity of dust

that accumulates when unloading the raw material from lorries creates an obvious problem for goods, workers and visitors. The consequences are potentially serious: deterioration of the goods, or worse, poor health conditions for workers". In fact, the employees of FCP complained about heavy breathing problems. The bad air quality on site was also visible on their tissues and clothes after a long working day.

The risk of dust explosions

In addition to these health issues, there was a safety problem as well. "The high dust levels put us at risk of an explosion", admits Sacchetto. "In this specific sector, the most dangerous emission is the layer of dust that is created. It must be kept below



Exhaust fumes from excavators and dust generated by the unloading of raw materials from lorries put FCP's employees, visitors and products at risk. Since the installation of the air purification system, these risks have been reduced considerably.



FCP, producer of complex granular fertilisers, attach great attention to the delivery of highly efficient products and strive to maintain their outstanding quality standards.



For Renato Sacchetto (left) Zehnder Clean Air Solutions is not only a plus in terms of cost savings. It also paves the way to obtain important environmental certifications.

a certain minimum explosion value. If not, concentrations of dust are created in the air, creating all the conditions necessary for an explosion. Ignition can occur for a variety of reasons, including friction or sources of heat, for example sparks from electric engines. However, the dust in some buildings would fortunately pass into the exhaust systems, and prevent an immediately explosive atmosphere".

Economic assessment of technical alternatives

The presence of particles transported by the air (large and fine dust particles, gases, microorganisms) is unavoidable in these types of industries. To prevent the risks associated with the high levels of dust,

the company decided to install a system that aims to provide a permanent solution to the problem. "We considered different technologies", says Sacchetto, "weighing up technical feasibility, installation costs and future operational and maintenance costs. We compared force extraction systems and fan blades connected either inside or outside of the building with the industrial air cleaning systems from Zehnder."

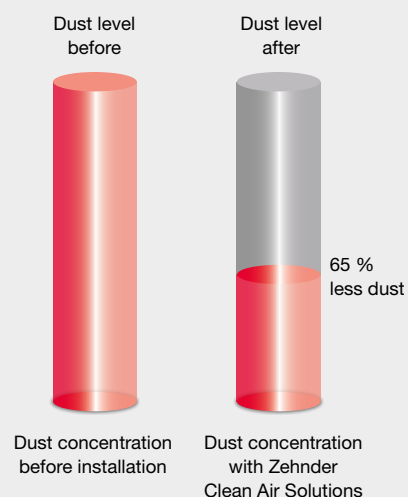
"In addition to the substantial initial investment of €400,000, a central extraction system would require a complex and time-consuming installation. Maintenance costs for this system would also be high – around €25,000 a year. But what was even more problematic was the

high levels of power consumption and the need to change our electricity supply contract. This was absolutely not in line with our energy savings goal," remarks Sacchetto.

"The solution of installing large fan blades on the outside of the building also left us puzzled," adds Sacchetto. "We would have had to cut around ten holes with a diameter of two metres each in our building structure. The fan blade installation would have cost around €200,000. Plus, the costs of a stability study of the building and any building expenses to make the necessary reinforcement improvements. In terms of energy usage, this solution did have a few advantages compared to extraction, but there was still the problem of the

FACTS

Company:	Fabbrica Cooperativa Perfosfati Cerea (FCP)
Interview partner:	Renato Sacchetto, chief of Prevention and Protection Service
Industry:	Granular fertilisers
Location:	Bonavicina di S. Pietro di Morubio, Italy
Dust source:	Dust generated by unloading raw materials from lorries, exhaust fumes from excavators
Dust reduction after installation:	65 %
Benefits:	Cost savings compared to alternatives, healthy employees, Certiquality certification obtained



environmental impact assessment and the authorising procedures".

Zehnder Clean Air Solutions leads the league

Compared to the alternatives, according to Sacchetto, "Zehnder Clean Air Solutions is unquestionably convenient as well as flexible for FCP. One major reason for this is the eliminated need for initial investment. What's more, installation was quick – Zehnder's team of specialists took less than two days to fit the machines and we only had to bring a power supply cable. The Zehnder units also have a very low electricity impact, as the single-phase power machines and all 20 of the installed units only absorb 10 kW of power, one tenth of what an extraction system would have used. Plus, they are flexible: these machines can be fitted anywhere inside the buildings based on changing production needs. No maintenance or changing of filters has to be done by our staff during

working hours as the tasks are performed by specialists from Zehnder. Because the work is performed in stages, all we have to do is ensure that we are not working in that area, so that we don't hinder the maintenance workers for safety reasons".

Following the installation of Zehnder Clean Air Solutions, workers at FCP immediately noticed a significant improvement in air quality. All at once, breathing was comfortable and employees noticed that their working clothes were a lot cleaner at the end of their day. There was a drastic reduction in the materials dispersed into the air, and a 65 % reduction in particulate matter. "We verified with our own readings that Zehnder's solution worked efficiently on indoor air quality and we really liked the success fee sales model – a monthly fee contract with guaranteed performance," notes Sacchetto. "From an economic standpoint, we verified that this fee-based solution has a payback equivalent to installing an extraction system, but with

three tangible advantages: there's no high initial financial commitment, you only pay for effectively achieved results and, most importantly, you can decommission the system in accordance with changing production needs at no considerable cost"

The adoption of Zehnder's air cleaning systems was also fundamental to FCP's environmental improvement plans. The company's main goal was to significantly lower the percentage of air particulates inside buildings. This achievement led to FCP obtaining the Certiquality BS OHSAS 18001 certification.

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