IDEALLY EQUIPPED FOR AUDITS THANKS TO EFFECTIVE AIR CLEANING

CUSTOMER	LOCATION	SECTOR	DUST REDUCTION
Frigosuisse AG	Moehlin (CH)	Deep-freeze logistics	78.6%

AT A GLANCE

“Thanks to the air cleaning devices from Zehnder Clean Air Solutions, our cleaning processes have been greatly reduced – in some cases by over 50%. Cleanliness is also a key factor when it comes to food inspections, as we now actually exceed the general requirements”

Christian Schneider, Technical Director

CHALLENGES

High dust levels are simply par for the course in logistics, for reasons including severe floor abrasion or handling dirty cardboard boxes. In order to keep these particles in check, cleaning the halls at Frigosuisse AG involved considerable costs and a great deal of work. In addition, the high particle concentration affected the appearance and quality of the goods, the well-being of the employees, and the functionality and service life of the machines. The managers set out to find effective air cleaning devices for logistics.

BENEFITS

Frigosuisse AG has reduced the level of dust by up to 78% by using air cleaning devices from Zehnder Clean Air Solutions, allowing it to create a clean working environment. This has not only increased employee satisfaction, but also significantly minimised the amount of cleaning required – with a reduction of over 50% in the sorting facility alone. In addition, thanks to the low-particle ambient air, the logistics company is always well prepared for customer audits and inspections from the authorities. What’s more, this "new" level of cleanliness has inspired a positive image for the company, both as an employer and a service provider.

ABOUT FRIGOSUISSE AG

The Swiss company Frigosuisse AG, which has over 80 years of experience in the field of storage, handling and distribution of frozen goods, operates a state-of-the-art service centre for deep-freeze logistics in Möhlin, Canton of Aargau. Staff carry out order picking and processing for up to 40,000 units per day utilising 34,400 temperature controlled pallet spaces.

High amounts of cleaning required in order to ensure the quality of goods and machines

Due to the high levels of dust generation through goods movement and order picking, as well as the dust being introduced through the delivery of goods and pallets and the soot from the docking lorries, the company was searching for an effective solution to keep its logistics centre clean, as the temperatures around freezing point did not allow for wet cleaning.

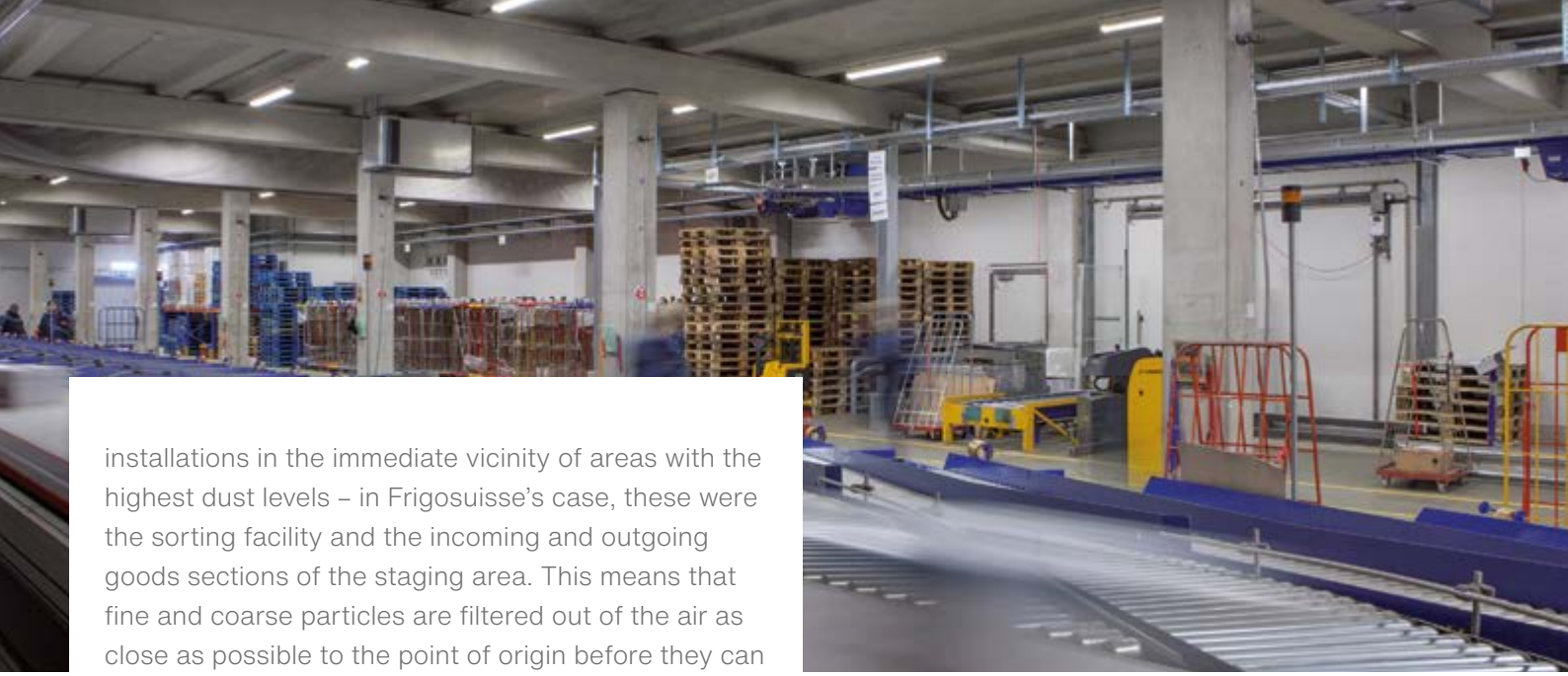
Fine and coarse particulate can be found in all commercial and industrial working environments and, particularly in the logistics sector, can lead to air pollution which not only results in high levels of cleaning work, but can also affect the appearance and quality of goods, the well-being of employees, and not least the functionality and service life of machines. Frigosuisse AG, with core skills in the logistics handling of frozen food products, including order picking down to single item level, was therefore looking for a solution to its dust problem. **The root causes for the high levels of fine and coarse particulate were severe floor abrasion, work with cardboard and pallets, which are often delivered with dust and dirt deposits, as well as the introduction of soot and fine dust particles from the outside, e.g. through docking lorries.** "We have installed anti-dust door systems and sealing curtains, but dust still gets into the indoor space," says Christian Schneider, Technical Director at Frigosuisse. "Of course there will be dust in every warehouse, but deep-freeze logistics face a particular challenge when it comes to cleanliness, since we cannot use wet cleaning methods in our deep-freeze warehouses where temperatures can reach minus 26°C. Furthermore, we had a high level of dust throughout the warehouse – the packaging conveyor belts were always getting dirty quickly as well."

Frigosuisse systems and infrastructures were cleaned every two to three months, which led to **high costs and heavy workloads**. Many areas are difficult to access, and employees regularly had to stop carrying out their own work in order to clean the conveyors, for example. The heat exchanger in the cooling units also attracted dust and had to be cleaned thoroughly, since the melt water which ran off the units whenever the regular automated defrosting occurred took the dust deposits with it. This dust gathered in the collecting tray, which resulted in the drains becoming dirty and sometimes completely clogged. In addition, the cooling unit fans resulted in dust dispersal. As the fans always operate in intervals of approximately three to four hours, dust gathered on the long fabric hoses during the rest periods and was then dispersed throughout the room when the fans were back in operation, which also led to a great deal of cleaning work. Furthermore, the company also wanted to improve its image: "After all, we work with food products," explains Technical Director Schneider. "It also simply makes a good impression when you have clean facilities."

Filtering dust and dirt directly out of the air

Due to the presence of so many problems, Frigosuisse was searching for a way to significantly reduce the amounts of dust in all areas for the benefit of employees, goods and machines. "Since our employees are already being exposed to very low temperatures, we wanted to enhance the working environment by significantly improving the air quality and reducing the amount of cleaning required. **Cleanliness is a part of that, and we want people to feel comfortable here.** Furthermore, we want to satisfy not only the authorities, but also the customer audits with particularly strict quality requirements, such as those from the pharmaceutical industry. We have had many internal discussions regarding the search for a solution to our dust problem. For example, we had considered increasing the amount of wet cleaning, but that can have critical repercussions in frozen goods operations. We have also bought machines which disperse less dust, but this didn't lead to satisfying results either," says Schneider. "When we heard about the concept of the Zehnder air cleaning systems, we were initially sceptical because we hadn't heard of the possibility of filtering dust and dirt directly out of the air before they have a chance to gather. However, the possibility of reducing dust by up to 80% convinced us."

To begin with, Zehnder used the latest measuring technology to record the amount of dust generated at Frigosuisse over the course of several days. Zehnder subsequently developed a solution to ensure optimum cleaning of the air in accordance with the particular requirements stipulated by Frigosuisse. The air cleaning systems were installed as ceiling



installations in the immediate vicinity of areas with the highest dust levels – in Frigosuisse's case, these were the sorting facility and the incoming and outgoing goods sections of the staging area. This means that fine and coarse particles are filtered out of the air as close as possible to the point of origin before they can settle. In addition to the professional installation of the air cleaning systems, the service cooperation with Zehnder includes any filter replacements, maintenance and any necessary repairs, thus guaranteeing the functionality of the system at all times. "The installation was carried out quickly and flawlessly without affecting our operations," says Schneider. **"We really like the service package. We don't have to worry about anything – the maintenance, filter replacement, everything happens automatically. That is absolutely fantastic."**

Significantly more efficiency and more than satisfied food inspectors

A dust level reading was completed one month after the installation of the systems, which recorded a **significant reduction of the particles in the air of up to 76.6%**.

These measurement results have really made a difference at Frigosuisse: "By installing these systems, we have achieved the goals we had set: significantly fewer dust deposits on our infrastructure, the cooling units and heat exchangers – even the ammonia pipes are gleaming. We also no longer have problems with dust dispersal due to build-ups in the fans and cooling hoses," says Schneider. "The amount of cleaning required has been reduced significantly. **In the sorting facility alone, our cleaning workload is now less than 50% of what it was before,** and our employees can focus on their actual jobs. We haven't had to clean the sorting facility, conveyor belts or general infrastructure for the last six months, and everything still looks great. These are real process advantages. Cleanliness is of course a key area for the food inspectors, so the professional air cleaning will also go down well with them, since we're actually surpassing the general requirements. The employees have also said that the air is much more pleasant now. Naturally, cleanliness also ensures the company's reputation, and the system has also had a very positive response from visitors and new employees. We have already recommended the air cleaning systems to others and are considering extending our cooperation with Zehnder. **The overall service package and the tangible results of the dust reduction have won us over,** and we plan to equip further areas with the air cleaning systems."