

## New Study for Dry Filtration Systems

# Filter Replacement without Downtime

In a recent study, a complete and fully automatic filter replacement system for coating lines with dry filtration was presented. It allows the standardised filters to be replaced during the ongoing coating process without the need to interrupt operation.

**D**ry filtration systems have become an essential component of large finishing lines, such as those found in the automotive industry. They make it possible to work with continuous circulation in the finishing lines, thus significantly reducing energy costs.

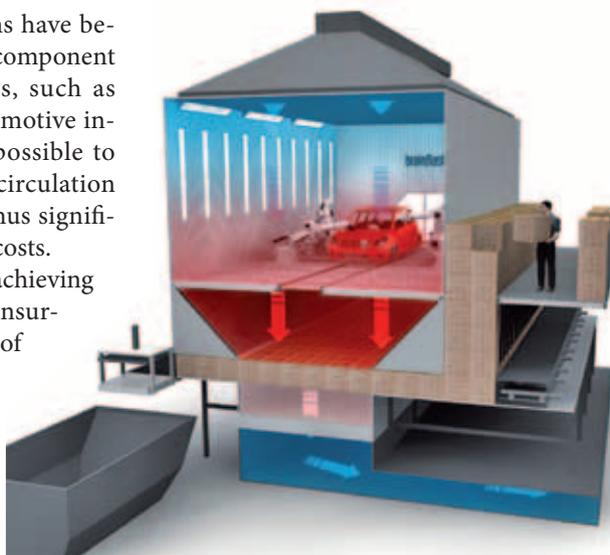
However, not only achieving dry filtration but also ensuring efficient separation of the overspray requires various conditions to be fulfilled. In the case of tacky particles in particular, the soiling of the system up to the actual filter unit is a major problem, and can often be dealt with only by extensive and time-consuming cleaning.

For this reason, all the dry filtration systems currently available on the market demand a high level of technical complexity in order to provide the level of availability required.

For automotive finishing in particular, simple systems such as normal dry filters as a substitute for water separation cannot be used, simply due to the fact that filter lifetimes are too short and frequent filter changes are required. The company Brainflash now offers an innovative solution to the problem.

### Buffering in a palletizing system

The new solution is aimed at plant engineers and users who are looking for a simple alternative to their existing system. The study presents a fully automatic filter replacement that allows the filters to be changed during ongoing coat-



The filter cubes are pushed into the spray booth in rows from a buffer storage. Saturated cubes fall onto a conveyor belt which transfers them to a cardboard press. The compressed cubes are collected in a container before being disposed of as waste.

ing operations. It is based on the Edrizzi cube-shaped corrugated cardboard filter boxes. This standardised cube shape is the prerequisite for operation in a palletizing system.

Palletizing systems are mainly used for buffering in automation technology. In this case too, the buffer storage is used to feed the filter into the system during ongoing operation and without downtime.

### Replacement signal from a sensor

Depending on the design, a supply of filters can be made available for several weeks. The buffer is located at the side of the booth and filters are removed and inserted as required by a lifting and cross-pusher unit. This takes place when the filter cubes in the underfloor area of the spray booth become saturated and

the low-pressure sensor gives a signal to replace the filters.

According to the width and design of the spray booth, filter cubes are introduced in rows until the entire surface area is covered with new filter cubes. The soiled cubes are pushed onto a conveyor belt that carries them to a cardboard press that compresses them to the smallest possible volume. The compressed cubes then fall into a container. This waste product can be disposed of in a waste incinerator.

### Filter replacement after seven to ten days

Experience gained in the automotive industry has shown that, due to the extremely high uptake capacity of the Edrizzi overspray filters of up to 100 kg/m<sup>2</sup>, replacement is necessary only every seven to ten days. Additional components such as side airbox systems that introduce air from the side at low pressure and folding gratings prevent the deposition of overspray and make a major contribution towards the cost-effectiveness of the system.

A short video at [www.edrizzi.com](http://www.edrizzi.com) shows how the system works and may motivate new customers to test this innovative solution. ■

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