

Filtration Group application example – Chemical Industry

Color filtration with the automatic filter AF 133



Factory Equipment

Initial situation

The **production process of paint manufacturing** is subjected to strict regulations. The working conditions are comparable to the **conditions of a chemical company**, which means that there are different **ATEX zones**. These conditions have to be considered in the selection of machines and components. Due to the **toxic gases** the maintenance staff has to wear breathing masks when they change the mechanical filter bag. Because of the costly exchange of components, the customer was searching for a filter system which is automatically and self-cleaning without the expenditure of a filter aid and the loss of filter media.

Solution statement

After a comprehensive **requirements analysis** and a one-year test run, the customer opted for an **AF 133 automatic filter** with filter coil and segment cleaning system with external pressure on the recommendation of the Filtration Group employees. This made it possible to replace the previous bag filter system, which could only be maintained at great cost and effort. The modular design of the automatic filter made it possible to develop a tailor-made solution for the customer. In addition, **the requirements of the various ATEX zones** could be met without any problems, so that nothing stood in the way of use. For the future it is planned to use 8 additional automatic filters in the customer's factory.



Challenge

The focus is on the removal of metal particles and gel plugs from solvent-based resin varnishes. The separation limit was set at $<60\mu\text{m} - 80\mu\text{m}$. In addition, there were the following requirements:

- Reduction of paint losses and manpower
- Use in ATEX zone 1 possible
- Completely made of stainless steel (V4A)
- Shortening of batch processing times
- Use of filter aids

Product information

- semi-finished product
- Highly filled with titanium dioxide
- On nitrocellulose basis
- Flow rate: $\sim 5\text{m}^3/\text{h}$
- Operating temperature: 50°C
- Viscosity: approx. 335mPa/s at shear rate $10001/\text{s}$



Customer value

- **Lead time has increased four times** in comparison to bag filters
- **Process reliability** thanks to the efficient filter cleaning
- **Effective segmentally cleaning process of the filter** with a high backflush pulse
- Protection of the maintenance workers because of the **elimination of toxic gases**
- **No expensive process downtimes** due to maintenance works
- **Protection of the environment**, thanks to the avoidance of waste



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