Case study
Cleaning up paint at a leading wheel manufacturer

Leadership in Filtration

MANN+HUMMEL

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MANN+HUMMEL was asked to help solve problems with paint emissions at a leading wheel production plant in Italy.

PROBLEM
Pollution in the discharge area of the paint application booth.

SITE
World leader in the production of wheels for commercial vehicles.

OUTCOME
Removal of all visible paint residues, reduced procurement and inventory costs.

A leading wheel manufacturer in the commercial vehicle sector was suffering with excessive paint emissions in the discharge environment of its facility.

The customer was operating with a three-stage filtration system consisting of a paint collector, a glass fiber stage and a final G4 synthetic mat. Even with this set-up, paint emissions were still unacceptably high, with deposits forming into stalactites on the inside of the discharge chimney.

The MANN+HUMMEL Intelligent Air Solutions team was asked to investigate the root cause and design a solution. After analyzing the operating environment, we proposed a new two-stage filtration system with G4 final stage for most areas and a higher efficiency M5 final filter for a more demanding application. The first stage across the site was a NoGlass filter mat – a new synthetic filter media that provides high levels of protection without the problems of glass fiber [see panel].

This universal first stage, as well as reducing the total number of stages from three to two, simplified procurement for the customer and reduced the amount of inventory to stock. This was further improved by monthly instead of quarterly deliveries.

After installation, air quality was vastly improved with all visible paint residues eliminated from the discharge chimney.

TECHNICAL NOTE: GLASS FIBER

When handling glass fiber, workers must take a range of safety measures. Gloves cover the hands, safety glasses protect the eyes, and a face mask stops irritation of the respiratory system.

These steps are necessary because when you move or bend glass fiber, it can shed tiny fragments of the material into the immediate atmosphere.

And the same is true for glass fiber air filters. This not only means that filters with a glass fiber media are more labor intensive to install and remove, it also causes a risk for the resulting air quality.

While some glass fiber filters have an additional protective layer integrated into the media, those without this protection can shed glass fibers into the downstream air flow – exposing the application and people in that environment to tiny fragments of irritant material.

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