viledon®
filterCair

WE OPTIMIZE YOUR PROCESS!

VISUALIZATION AND OPTIMIZATION OF AIR FLOW IN PAINT LINES

FREUDENBERG
FILTRATION TECHNOLOGIES

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VILEDON FILTERCAIR: FLOW PATTERNS VISUALIZATION

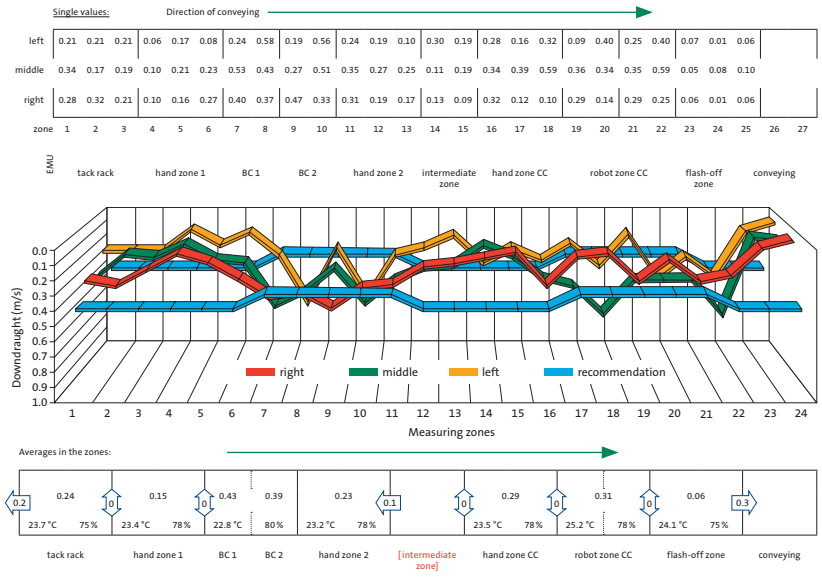
OPTIMIZING PAINT CONSUMPTION AND CLEANING OUTLAY

Crucial process parameters

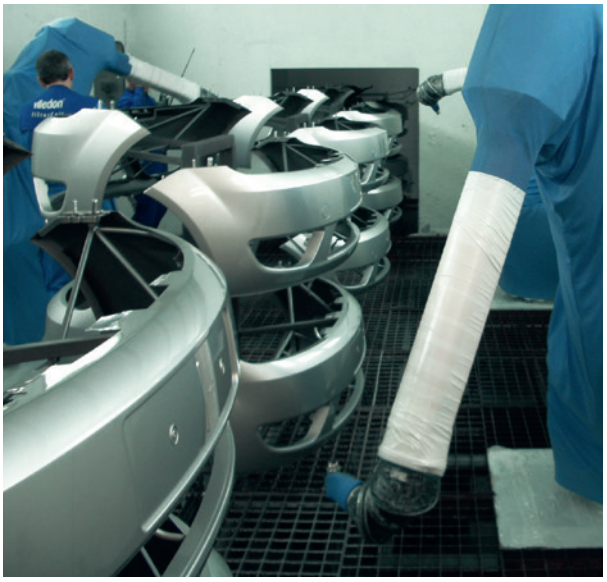
The air downdraughts and the booth balancing in paint-spray booths are important process parameters in every painting process. Adjusting these is not an easy task, demanding as it does from the operating staff in-depth knowledge of the equipment, lengthy experience and a high degree of intuitive sensitivity.

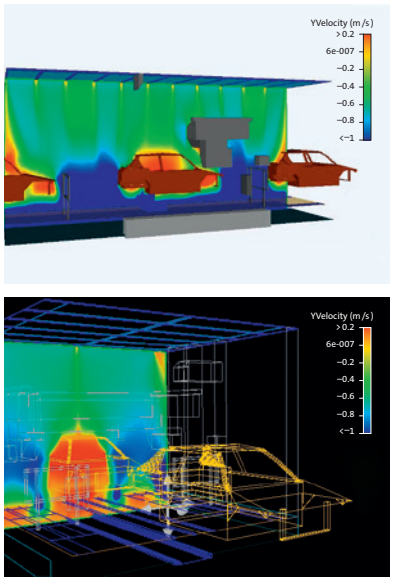
Due to statutory stipulations and altered customer specifications, changes and modifications are frequently required in painting operations in regard to the application process or the paint system involved. In many cases, these changes in existing lines are made without modifying the actual setup of the facilities.

In actual practice, problems like entrainment of overspray frequently occur due to cross-flows, which means the flow patterns have to be modified to suit the “new” system. In order to identify the flow situation, Freudenberg Filtration Technologies utilize a variety of procedures and measuring methods, such has hot-wire anemometers or fog generators so as to visualize the air flows involved.



Downdraught distribution and booth balance in a paint-spray booth





CFD visualization of the simulated flow distribution

Helpful flow pattern simulation

Prior to line modification projects or fundamental revamps of ventilation and painting systems, computer-aided flow simulation (CFD) provides invaluable assistance. All flow situations in the various operating conditions can be numerically simulated and optimized at a PC. The production risk at commissioning and change-over is thus substantially reduced. All analyses are conducted and documented in line with standardized procedures.

Stringently certified quality

Quality management is massively prioritized in our company, from the first step in the development process, all the way through manufacture and delivery of the products concerned, and continuing with can-do service support. Our quality and management systems have been certified in conformity with all the regulatory specifications laid down in DIN EN ISO 9001, DIN EN ISO 14001 and OHSAS 18001. In addition Viledon® FilterCair has won Ford's Quality Prize for the automotive sector, the Q1 Award.

The Viledon® filterCair service capabilities for you:

- Determining air downdraughts, their distribution, booth balancing and ventilation balancing by means of various hot-wire and rotating-vane anemometers. The goal is to optimize paint consumption, paintwork result and cleaning routines in filler and topcoat lines, and in repair jobs.
- Visualization by means of a fog generator Use of fog generators for visualizing the air flows. Following a successful paint compatibility test on the materials being used, the fog generator is placed in the filter plenum, for example, and then the air flows are rendered visible by a fine, white fog, and documented on digital video.
- Computer-aided flow pattern analysis – CFD (computational fluid dynamics) Experienced engineers utilize the firm's own licences to model and simulate air-conducting systems and painting areas in the run-up to modification jobs, newly conceived systems or readjustment work. The simulation results for the stationary air flows are presented in the form of 2D and 3D animations.

Managementsystem
ISO 9001 ISO 14001

We would be happy to tell you more in a personal consultation. Just get in touch with us!

02-ST-468-March-2016-EN

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