Cost-Effective Overspray Separation

Low-Maintenance Spray Wall with Dry Separation

Modern separation systems allow large volumes of paint with an unavoidable level of overspray to be processed cost-effectively. A low-maintenance spray wall with dry separation reduces costs and set-up times when compared with conventional systems.

Dry systems for overspray separation demonstrate their strengths in practice, in particular when relatively large quantities of paint have to be processed and the proportion of overspray cannot be reduced any further.

Spray walls with dry separation are usually fitted with disposable filters or manually regenerated filters. The replacement filters, maintenance and disposal give rise to additional costs. Furthermore, the operation of the paint shop has to be interrupted in order to replace the filters. The RTS rotation system was developed by Rippert in order to reduce these costs and set-up times. The new brush pre-filtration system has resulted in extended maintenance intervals and a much longer service life for the filters, when compared with conventional systems.

Easier disposal

In the RTS rotation system, the overspray is separated out using a pre-filter and a fine filter. The pre-filter stage consists of vertical, slowly rotating brush rollers. The bristles have a very large overall surface area and absorb the adhesive particles from the overspray. While the rollers slowly rotate, the paint particles dry on the tips of the bristles. This results in a slow build-up of dried paint on the bristles. Scrapers are fitted in the area behind the brush rollers that continuously remove this build-up from the bristles. The hardened material that is dislodged by the scrapers falls into the drawers under

the brushes and can easily be removed.

The dry paint dust can often be disposed of as normal commercial waste. The brushes require very little maintenance and do not need to be exchanged or renewed. The fine filter stage consists of a special fleece filter, which is mounted above the brush rollers and must be maintained or replaced manually in the standard version of the system. The maintenance intervals depend on the paint used. An automatic cleaning function and an external fine filter with automatic cleaning are also possible as options. More than 10 years' experience of the use of the system shows that around 75% to 95% of the overspray is separated out at the pre-filter stage and the rest during the fine filter stage. The level of separation depends heavily on the type of paint and the drying reactivity during the airborne phase. The system can be used with the following paint types:

- Single-component and two-component solvent-based paints
- Single-component and two-component water-based paints
- Water-based UV paints
- Aqueous dispersion adhesives
- Primer for rubber materials

The separator is not suitable for stove enamels and 100% UV paint systems. It is also possible to use the system as

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a horizontal underfloor extraction system. This version is used, for example, by a manufacturer of large machinery parts. A drag conveyor with a gulley extraction system automatically removes from the pit the particles that have been dislodged from the brushes.

Conclusion

The RTS Rotation system is particularly useful when relatively large quantities of paint are being processed and a high level of overspray is unavoidable. If a conventional system were used in these cases, a large amount of waste would be produced. The RTS Rotation system pays for itself more quickly than water-sprinkled spray walls and normal dry spray booths, often in less than two years. ■

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