



WHITE PAPER: Exploring wet scrub vs. dry scrub options in the painting shop

Having options usually means weighing positives vs. negatives, benefits vs. costs. When it comes to paint shop management for large-scale operations, we provide two unique and comprehensive cleaning and maintenance options. Original equipment manufacturers (OEMs) encounter two common issues during their automotive production: paint overspray and the waste removal of that overspray.

Wet scrub and dry scrub techniques use different approaches to accomplish the same goal. Wet scrub systems are the favored method of most OEMs at a rate of almost 90 percent, but an increasing number of OEMs who use MPW's services have moved to dry scrub technology for a 25 percent (dry) to 75 percent (wet) divide. In fact, we speculate that 40 percent of our clients will be using dry scrub within the next 10 years.

What has changed?

Advances in dry-scrub technology have made that particular cleaning process more efficient, more environmentally beneficial and more cost effective than its water-based counterpart. Those factors play a role in why one major automobile manufacturer included what is purported to be the largest dry scrub overspray removal system in North America in its latest plant expansion. The carmaker cited a greater commitment to environmental responsibility and quality products.

A sampling of environmental improvements that accompany switching from wet scrub to dry scrub include:

- Elimination of more than 255 tons of sludge per year
- Reduction of CO2 emissions by 18 percent (12,000 metric tons)
- Decreased water use by 2 million gallons per year

But is dry scrub the right solution for every OEM or does wet scrub still provide the necessary treatment?

Benefits of Wet Scrub

Wet scrub systems feature a chemically treated water curtain that captures contaminants that occur from paint overspray. Air is then drawn through a curtain of continuously moving water, scrubbing out suspended paint particles where they are then directed into a collection pan. Chemicals, waste and sludge are collected by vacuum trucks.

This process has been adopted by a large majority of OEMs and can be performed by a relatively small group of team members. However, wet scrub systems can result in greater waste disposal costs because of the contaminants the systems produce, as well as the subsequent effect the disposal of those elements might have on the environment.

Benefits of Dry Scrub

Dry scrub systems recirculate spray booth air by directing it into scrubber chambers that are draped in plastic, calcium carbonate filters. Those filters collect the wet paint particles on contact, producing far less waste since the contaminants are not saturated with water and can be recycled into cement. This cuts down on chemical and waste disposal costs and arguably decreases the adverse effects on the environment. While the dry scrub process is still developing and requires approximately 25 percent more manpower to conduct, OEMs are beginning to see the practice as a viable alternative to the more traditional wet scrub method.

Another foreign auto manufacturer

with an enormous American facility announced in 2014 that it was moving to the dry scrub method as part of its sizable plant expansion plans. It cited advancements in production that make a goal of 40 percent fewer emissions while using 30 percent less energy possible in its two paint shops.

This dry scrub innovation in comprehensive cleaning and maintenance has the potential to yield marked savings to corporations' bottom lines while reducing the environmental footprint. As OEMs decide which method works better for their needs today and in the future, we will continue to manage and help maintain both systems based on the requirements set forth by our customers.