

“In this column, various blasting related topics are featured and explained. The purpose is to share blasting knowledge with the readers.”

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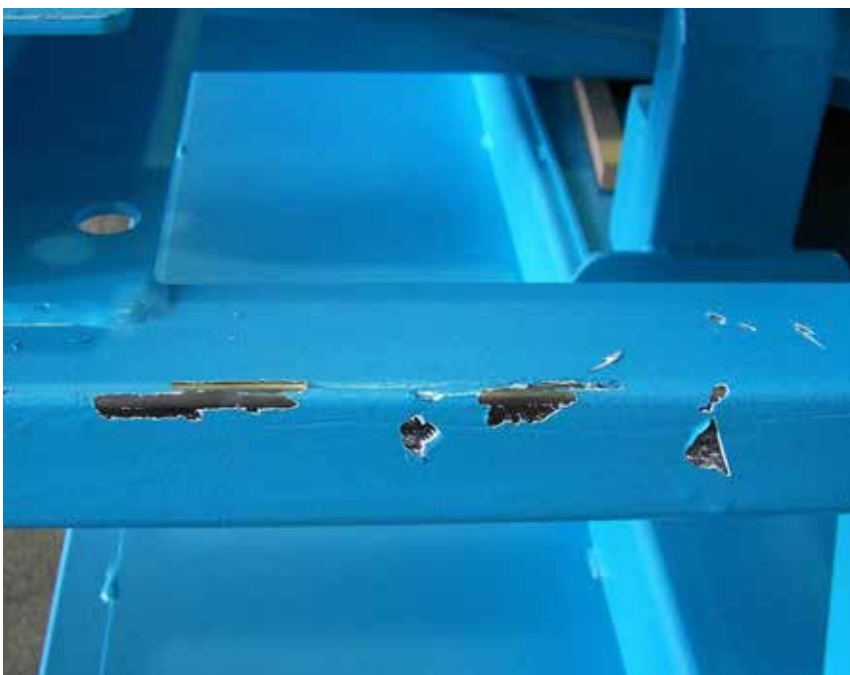
Tackling Sticky Dust in Abrasive Blasting

It is common knowledge in the abrasive blasting industry, that dust and fines left in abrasive, increases the wear of the wheel components and the machine itself. We also know that an unbalanced operating mix with dust and fines decreases the cleaning of parts. The air wash separator, set properly, is designed to remove these fines and dust into the discharge or the dust collection system and keep the operating mix at a balanced the provides optimal energy transfer and coverage. But what if the fines and dust cannot be removed,

no matter how efficient the separation and dust collection is working? How can this happen, you ask? When the dust and fines are “stuck” to larger particles of abrasive, they ride through the air wash and end up going back through the blast machine. This “sticky” dust is caused by oily residues in the abrasive that coat the abrasive and cause small particles to stick to larger particles, making them too heavy to be removed.

Oil and grease can get into the abrasive blast system several ways. It could enter from a

pressing or forging operation where oil and lubricants are used in the operation prior to blasting. It could enter from grease and oil used around and on the machine. Regardless of how it enters, oil can disrupt the blast system, leaving behind dust and oily residues on blasted parts. This will lead to adhesion issues with coating. Even if you do not coat blasted parts, the dust and fines left if your operating mix will greatly increase the wear of your machine components. In fact, based on industry observations, even a slight increase in dust by 2% can lead to as much as a 50% increase in component wear. This “sticky” dust will also clog your dust collection filtration system faster and increase the potential for fire.



Coating Failure By Oil Contamination

So how do you remove this residue and keep the operating mix clean and balanced? Even with the best process controls prior to blasting, preventing the ingress of oily residue is near impossible. Adding an additive, designed to bind to the oily residue and remove it from the system, is an ideal prophylactic. These additives mechanically bind to the oil, removing it from the abrasive and surfaces, and then are removed through the air wash system, leaving behind oil free abrasive, and preventing the dust and fines from sticking to the larger particles of abrasive. What is left is a clean, dust free

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Water Penetration Test

abrasive mix that along with a balanced separation system, provides optimal cleaning, and coating ready parts.

Other benefits of these additives include an overall lower cost of surface preparation. By having coating ready parts straight from the blast operation, you eliminate the need for costly chemical wash systems prior to paint. Additionally, maintenance cost, energy consumption, and downtime are all reduced. Production increases are possible due to these lowered factors. And perhaps the greatest benefit of all, fire risk is decreased through the inerting characteristics of the additive.

In conclusion, keeping the abrasive clean and oil free does not just benefit the surface prep and coating industry. Even other users of abrasive blasting can benefit from oil free abrasive. Remember, an ounce of prevention is worth a pound of cure.

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