STEPing toward safety compliance!

ABRASIVE BLASTING

When performing abrasive blasting operations, from a safety standpoint, there are numerous hazards that must be addressed.

First and foremost are respiratory hazards. Dust hazards are created as the abrasive materials and the surface coatings are shattered and pulverized during blasting operations to particles of respirable size. The composition and toxicity of the abrasive as well as the coating must be known to determine the health hazard as well as respiratory selection.

The many types of abrasive materials have varying degrees of hazard with silica sand being perhaps the most hazardous mineral abrasive used. Whenever possible, silica sand use should be limited and, if possible, a substitute material used. Other types of abrasives include: synthetic or natural mineral grains; metallic shot or hard grit (made of steel or chilled cast iron); and organic abrasives such as ground corncobs and walnut shells.

The hazards of steel or cast iron dust are relatively minimal; however, combustible organic abrasives may be pulverized fine enough to be capable of forming explosive mixtures with air.

The coatings that are being blasted may, for example, contain lead (in paints); arsenic (in furnaces); cadmium (plating); and even silica sand (embedded in the surface of castings). These hazards require specific respiratory protection and are serious health hazards.

Some specific information regarding abrasive blasting can be found in the OSHA 29 CFR 1910.94. Additionally, each hazard must be dealt with in accordance with specific OSHA standards.

In addition to respiratory hazards, the following safety concerns, depending on the job, may need to be addressed:

A. Appropriate PPE for eye, hand, skin, foot, head hazards.

B. Fall protection.

C. Scaffold & ladder safety.

D. Release of toxic dust (Environmental (EPA) concern).

E. Correct pressure hoses and couplings.

F. Securing the work area to deny unauthorized entry.

G. Working in a permit-required confined space.

H. Hazard communication -- understanding the materials you are working with (lead, arsenic, cadmium, etc.).