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Weekly Safety Meeting

Safety in Abrasive Blasting

Abrasive blasting may have several hazards associated with it at any given time. Abrasive blasting is more commonly known as sandblasting since silica sand has been a commonly used material as the abrasive, although not the only one always used.

Abrasive blasting entails accelerating a grit of sand- sized particles with compressed air to provide a stream of high velocity particles used to clean metal objects such as steel structures or provide a texture to poured concrete. This process typically produces a large amount of dust from the abrasive, anything on the substrate being abraded, and/or the substrate itself.

Abrasive blasting uses compressed air or water to direct a high velocity stream of an abrasive material to clean an object or surface, remove burrs, apply a texture, or prepare a surface for the application of paint or other type of coating.

Employers must protect workers from hazardous dust levels and toxic metals that may be generated from both the blasting material and the underlying substrate and coatings being blasted.

The decision to use a certain type of abrasive material can depend on factors such as cost, job specifications, environment, and worker health.

Commonly Used Abrasive Materials:

- Silica sand (crystalline);
- Coal slag;
- Garnet sand;
- Nickel slag;
- Copper slag;
- Glass (beads or crushed);
- Steel shot;
- Steel grit; and
- Specular hematite (iron ore).
- Alternative, Less Toxic Blasting Materials Include:
- Dry ice;
- Plastic bead media;
- Sponge;
- Sodium bicarbonate (baking soda);
- Ground walnut shells, ground corn cob, and other biodegradable materials; and

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2139 Tapo Street, Suite 228, Simi Valley, CA 93063-3478

- High pressure water.

Health Hazards:

Abrasive blasting operations can create high levels of dust and noise. Abrasive material and the surface being blasted may contain toxic materials (e.g., lead paint, silica) that are hazardous to workers.

Silica sand (crystalline) can cause silicosis, lung cancer, and breathing problems in exposed workers.

Coal slag and garnet sand may cause lung damage similar to silica sand (based on preliminary animal testing).

Copper slag, nickel slag, and glass (crushed or beads) also have the potential to cause lung damage.

Steel grit and shot have less potential to cause lung damage. Slags can contain trace amounts of toxic metals such as arsenic, beryllium, and cadmium.

Engineering Controls:

1. Substitution

Use a less toxic abrasive blasting material.

Use abrasives that can be delivered with water (slurry) to reduce dust.

2. Isolation and Containment

Use barriers and curtain walls to isolate the blasting operation from other workers.

Use blast rooms or blast cabinets for smaller operations.

Use restricted areas for non-enclosed blasting operations.

Keep coworkers away from the blaster.

3. Ventilation

Use exhaust ventilation systems in containment structures to capture dust.

Protecting Workers from Exposure:

Each abrasive blasting operation is unique, involving different surfaces, coatings, blast material, and working conditions.

Before beginning work, employers should identify the hazards and assign a knowledgeable person trained to recognize hazards and with the authority to quickly take corrective action to eliminate them.

Use engineering controls and personal protective equipment (PPE), including respiratory protection, and training to protect workers involved in abrasive blasting activities.

Remember:

Abrasive blasting operations can be overlooked when preparing safety plans because they are generally a small part of a larger project such as cleaning and refinishing or painting. As a result, many workers are exposed to the hazards of abrasive blasting without adequate protection. Even if all abrasive blasting equipment is properly designed and regularly inspected, users must always be alert to the hazards of these operations and take precautions against harmful exposures.

MAKE SAFETY A REALITY…DON'T BE A FATALITY!!

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Safety Meeting Sign-In Sheet

Supervisor:	Subject:
Location:	Date:
Conducted By:	Trainer Signature:

Name (print clearly)	Signature	Comments / Safety Concerns / Training Requests