Combustible Dust is No Ordinary Dust

Safety Talk

What’s at Stake?

A combustible dust is any fine material that can catch fire and explode when mixed with air. The force from combustible dust explosions can cause multiple deaths, horrific injuries, and massive destruction of property.

What’s the Danger?

Any combustible material can burn rapidly when in a finely divided form. Combustible dusts can come from: sugar, spice, starch, and flour; grain, feed, and tobacco; plastics and rubber; wood, paper, and pulp; pesticides, pharmaceuticals, dyes, and coal, and metals.

If such a dust is suspended in air in the right concentration, under certain conditions, it has the potential to explode. These conditions are known as the “Dust Pentagon”

1. Fuel to burn
2. Oxygen?
3. Ignition source (heat, spark, etc.)
4. Dispersion, or suspension of dust particles in the right concentration in the air, and
5. Confinement of the dust cloud. Confinement means the dust is in an enclosed or limited space. This restriction allows pressure to build up, increasing the likelihood of an explosion.

How to Protect Yourself

Your employer should conduct a risk assessment and look for combustible dust hazards. You can help by voicing your concerns if you see a potentially hazardous area or process. Other protective measures:

- Control dust by using ventilation and dust collection systems properly.
- Be aware of hidden areas where dust may accumulate, such as behind false ceilings, on beams, and inside equipment. If you notice a buildup report it to your supervisor or safety manager immediately.
- Do your part to control ignition sources and follow hot-work procedures.
- Only use vacuums approved for dust collection – never use brooms or compressed air to clean dust off surfaces.

Final Word

Combustible dust presents a serious workplace hazard. You can help prevent a catastrophic explosion by helping to identify potentially hazardous processes and work areas and following safe work practices and housekeeping policies.