

Everyday Safety

Tailgate Talks

Combustible Dust Safety

This information for this Everyday Safety Tailgate Talk was sourced from information provided by the Occupational Safety and Health Administration

Combustible dusts are fine particles that present an explosion hazard when suspended in air in certain conditions. A dust explosion can be catastrophic and cause employee deaths, injuries and the destruction of entire buildings. In many combustible dust incidents, employers and employees were unaware that a hazard even existed. It is important to determine if your organization has this hazard, and if you do, you must take action now to prevent tragic consequences.

Capture dust before it escapes into a work area by using properly designed, installed, approved and maintained dust collection systems.

Contain dust within equipment, systems or rooms that are built and operated to safely handle combustible dust.

Clean work areas, overhead surfaces and concealed spaces frequently and thoroughly using safe housekeeping methods to remove combustible dusts not captured or contained.

Dust Control Recommendations

- Implement a hazardous dust inspection, testing, housekeeping, and control program;
- Use proper dust collection systems and filters;
- Minimize the escape of dust from process equipment or ventilation systems;
- Use surfaces that minimize dust accumulation and facilitate cleaning;
- Inspect for dust residues in open and hidden areas at regular intervals;
- If ignition sources are present, use cleaning methods that do not generate dust clouds;
- Use only vacuum cleaners approved for dust collection; and
- Locate relief valves away from dust deposits.



Hanover Testing Labs



Ignition Control Recommendations

- Use appropriate electrical equipment and wiring methods;
- Control static electricity, including bonding of equipment to ground;
- Control smoking, open flames, and sparks;
- Control mechanical sparks and friction;
- Use separator devices to remove foreign materials capable of igniting combustibles from process materials;
- Separate heated surfaces from dusts;
- Separate heating systems from dusts;
- Select and use industrial trucks properly;
- Use cartridge-activated tools properly; and
- Use an equipment preventive maintenance program.

Injury and Damage Control Methods

- Separation of the hazard (isolate with distance);
- Segregation of the hazard (isolate with a barrier);
- Deflagration isolation/venting;
- Pressure relief venting for equipment;
- Direct vents away from work areas;
- Specialized fire suppression systems;
- Explosion protection systems.

Action Item:

To identify factors that may contribute to a explosion, OSHA recommends a thorough hazard assessment of:

- All materials handled;
- All operations conducted, including by-products;
- All spaces (including hidden ones); and
- All potential ignition sources.

Related Topics:

- Fire Safety

Resources and References:

Firefighting Precautions at Facilities with Combustible Dust OSHA Publication 3644-04-2013 (April 2013).

https://www.osha.gov/Publications/OSHA_3674.pdf

Hazard Alert: Combustible Dust Explosions OSHA Fact Sheet, (March 2008), 2 pages.

https://www.osha.gov/Publications/OSHA_3644.pdf

Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosion OSHA Safety and Health Information Bulletin (SHIB) 07-31-2005, (July 31, 2005).

<https://www.osha.gov/dts/shib/shib073105.html>

Hazard Communication Guidance for Combustible Dusts OSHA Publication 3371-08, (2009)

<https://www.osha.gov/Publications/3371combustible-dust.html>

Combustible Dust. Safety and Health material produced through OSHA Susan Harwood Training Grant Program.

https://www.osha.gov/dte/grant_materials/material_listing_topic.html#c

