

Understanding and Managing Your Dust Hazard Risks

Take steps to ensure a safe and compliant workplace



The National Fire Protection Association adopted the NFPA 652 in 2015 to define combustible dust and provide a standard framework to help companies assess their dust hazard risk. This is one of the most important changes to NFPA standards in recent years. Companies are required to complete a Dust Hazard Analysis (DHA) by October 2018. Companies who have not completed this requirement are at significant risk of incurring fines and losing their insurance coverage, in addition to endangering their employees.

Here are frequently asked questions about dust hazards:

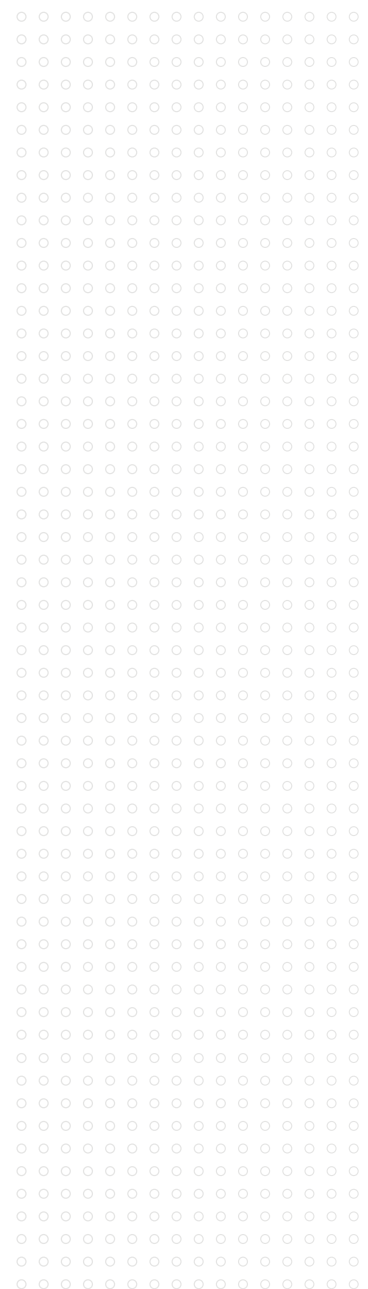
SO, WHAT'S THE BIG DEAL ABOUT DUST?

Dust is often a byproduct of many industrial processes. It can be found in food processing, agriculture, metal working, chemical production, and plastic manufacturing. Dust can collect on surfaces such as rafters, roofs, suspended ceilings, ducts, crevices, dust collectors, and other equipment. Most facilities control dust through general or local ventilation systems or capture devices such as baghouses, as well as housekeeping procedures—or a combination of all three.

WHAT ARE THE RISKS ASSOCIATED WITH DUST?

When the dust is disturbed and under certain circumstances, there is the potential for an explosion to occur. Combustible dust accumulation of greater than 1/32 inch on horizontal surfaces indicates poor housekeeping and exceeds OSHA's limit for surface dust.

Workplace dust can also present a long-term health risk to employees who are exposed to the particles. The Occupational Safety and Health Agency (OSHA) has multiple legally enforceable exposure standards for generic 'non-descript' total dust, for specific dust compounds, and for the near invisible respirable-sized dust particles. If you're uncertain about whether your workplace dust air concentrations can affect your employees, we recommend you conduct a comprehensive industrial hygiene assessment. It's much better to have pro-actively assessed and determined your employees' personal exposure than to risk an OSHA citation and fine.





HOW DO I KNOW IF I HAVE A POTENTIALLY COMBUSTIBLE DUST?

A combustible dust is any fine material that has the ability to catch fire and explode when mixed with air. A key factor is if the particles are in the right 'size' and are suspended in air at the right concentration.

Combustible dusts can come from:

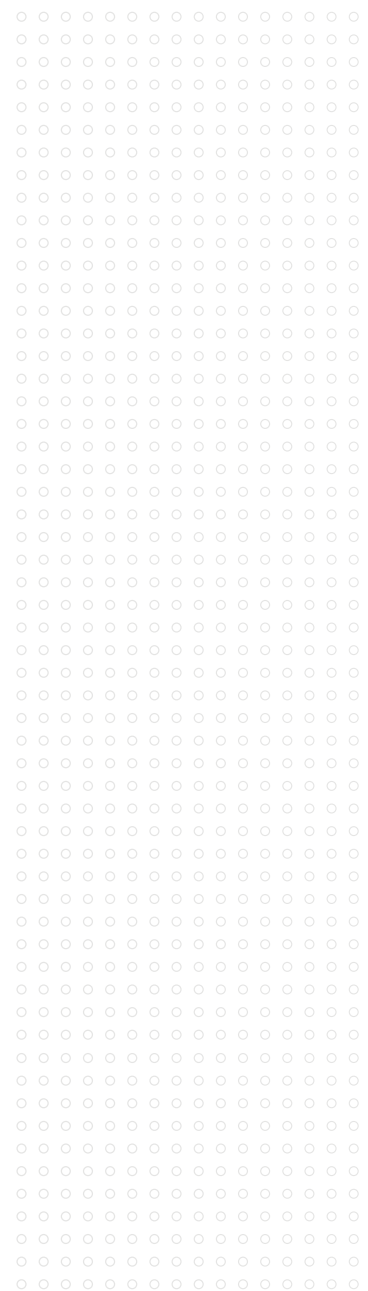
- most solid organic materials such as sugar, flour, grain, or wood;
- many metals, and
- some non-metallic inorganic materials, such as plastics and other polymers

Approximately 70% of all dusts can be combustible – if you're uncertain, this OSHA poster summarizes many of the most common combustible dusts: <https://www.osha.gov/Publications/combustibledustposter.pdf>

WHAT ARE MY RESPONSIBILITIES?

It is your responsibility to understand your workplace risks, and implement processes to control dust. These may include reducing airborne dust from source machinery through engineering improvements, installing and maintaining dust collection systems, and conducting frequent housekeeping measures to safely clean up dust in accordance with OSHA's allowed methods. It is important to educate your staff on the hazards of combustible dust and the reasons for its stringent control. OSHA offers Combustible Dust hazard training and compliance assistance online: <https://www.osha.gov/dsg/combustibledust/guidance.html>

You can be held accountable for poor control of combustible dust by any or all of the following Authorities Having Jurisdiction (AHJs): local fire marshal, building code inspector, OSHA, and your insurance company. Your company's reputation can be irrevocably damaged if a catastrophic dust explosion occurs. Public perception is formed by images and interviews on TV as well as posted comments on social media platforms – and that commentary is likely to blame the company for failure to follow proper safety procedures.



CHECKLIST:

Combustible Dust Risk Assessment

- Use an accredited laboratory to test and verify if your dust is combustible. Costs for the multi-step analysis can run from approximately \$1,000 to \$3,000, depending on the dust complexities.
- Access the National Fire Protection Association (NFPA) Code 70 and identify your facility's National Electric Code (NEC) Classification per Article 500.
- Conduct an NFPA 652 compliant Dust Hazard Assessment (DHA). The focus should be on past and current processes resulting in dust generation, equipment operating in the space, facility ventilation, potential sources of ignition (electrical, gas, heating, mechanical, etc.) and housekeeping. Chapter 7 of NFPA 652 contains an explanation of a comprehensive DHA and key descriptions. Additionally, Annex B of NFPA 652 provides a step-by-step example of how to create a site-specific DHA.

A Cautionary Tale

A HUB client in the agribusiness industry had not yet completed the Dust Hazard Analysis (DHA) specified in NFPA 652, when their insurance company loss control representative stopped by for a visit a few months prior to the renewal of the property insurance. During this visit, the loss control specialist noted a large accumulation of combustible dust near the milling machinery. The client could not produce a completed DHA and did not have a timeline to complete it by the October 2018 due date.

As a result, the insurance carrier issued a non-renewal notice on the policy just 60 days prior to renewal. At the eleventh hour, HUB pursued and persuaded an alternative insurance provider to cover this challenging risk, but the client had to pay two times more than the prior annual premium of \$230,000.

Rising insurance costs are not the only consequence that companies face when they fail to complete the required Dust Hazard Analysis. OSHA can write citations and fines under 29 CFR 1910, Section 5(a)(1), commonly called the general duty clause. Additionally, Authorities Having Jurisdiction (AHJ) may also cite and fine companies for NFPA violations in an inspection report.

Failure to control dust presents significant risks for your business and employees.

Contact your HUB Risk Services specialist for help in assessing your risks and complying with OSHA regulations.

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