COMBUSTIBLE DUST

EVALUATION

NFPA 652: Standard on the Fundamentals of Combustible Dust applies to all facilities that manufacture, process, blend, convey, repackage, generate or handle combustible dusts or combustible particulate solids.

Any combustible material (and some materials normally considered noncombustible) can burn rapidly when in a finely divided form. If such a dust is suspended in air in the right concentration, it can become explosive. The force from such an explosion can cause employee deaths, injuries, and destruction of entire facilities. Such incidents have killed scores of employees and injured hundreds over the past few decades.

OSHA Requirements for Combustible Dust

OSHA has provided a publication that provides hazard communication guidance for combustible dust: OSHA 3371-08 2009. This document assists manufacturers and importers of chemicals in recognizing the potential for dust fires and explosions, identifying appropriate protective measures and the requirements for disseminating this information on material safety data sheets and labels. OSHA's combustible dust October 2009 status report further details their efforts.

What are the main points?

- **Assess your current requirements:** Each state has different regulations that may exceed the requirements of OSHA. You must determine your needs.
- **Proceed with a dust hazard analysis:** Based on your state and OSHA's requirements, you must evaluate your hazards and update documentation and your procedures on a regular basis.
- **A management of change** procedure must be developed to manage change to the process materials, technology, equipment, procedures, and facilities.
- **Standards are retroactive.**

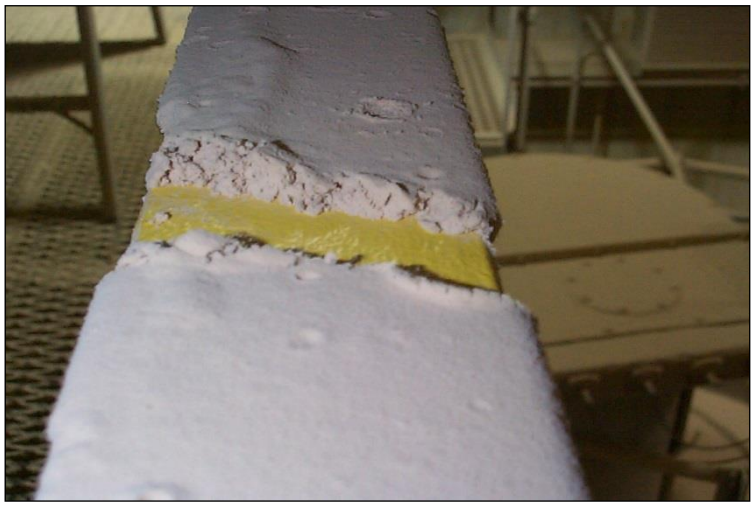
Examples for which OSHA imposes fines

The following summarizes some General Duty Clause citations issued by OSHA under the Combustible Dust NEP published October 2009:

- Dust collectors were located inside buildings without proper explosion protection systems, such as explosion venting or explosion suppression systems.
- Rooms with excessive dust accumulations were not equipped with explosion relief venting distributed over the exterior walls and roofs of the buildings.

(continued on back)

- Equipment such as grinders, shakers, mixers, and ductwork were not maintained to minimize escape of dust into the surrounding work area. Employer did not prevent the escape of dust from the packaging equipment, creating a dust cloud in the work area.
- Exhaust ventilation systems were not installed to control dust clouds escaping from blending and other processing machinery.
- Explosion vents on dust collectors and bucket elevators were directed into work areas and not vented to a safe, outside location away from platforms, means of egress, or other potentially occupied areas.
- Collection points used for manual cleanup of wood dust and other foreign material including metal were not provided with magnetic separators, grates, or other types of screening to prevent foreign material from entering into the dust collection system.
- Dust Hazard Analysis was not conducted to determine whether the process hazards necessitated the installation of approved devices such as explosion protection systems, interlocked rotary valves, deflagration vents, and flame front diverters.



- Company had not developed and implemented written Management of Change procedures for ensuring that potential changes to production equipment and dust control equipment do not result in fires, deflagrations, and dust explosions.

- Screw conveyors or screw augers were not provided with deflagration isolation devices, such as, but not limited to, deflagration/explosion relief venting, containment, or isolation to prevent continued propagation flame front and over pressure into adjacent building/structures or equipment.

How can Evergreen Engineering® help you with compliance?

Assessment
Evergreen will help you identify what is required for your plant based on the local, state, OSHA, and NFPA requirements. We will assess your current procedures, documentation, labeling, and processes to help you understand the requirements.

Identify solutions
Evergreen will help you conduct a Dust Hazard Analysis and identify solutions for being compliant.

Engineering controls
Evergreen will evaluate the least costly options and provide project management along with engineering to implement process changes.