The 12 Questions OHS Inspectors Ask During Combustible Dust Inspections

Because dust appears harmless and accumulates slowly, companies often treat combustible dust as a housekeeping nuisance rather than a time bomb ready to detonate. The 1992 Westray Mine explosion which claimed the lives of 26 Nova Scotia miners is a vivid reminder of why overlooking combustible dust hazards is a terrible idea. Another thing that gets underestimated is how systematically and strictly government inspectors enforce Occupational Health and Safety (OHS) combustible dusts requirements. These are the 12 questions inspectors would likely ask when inspecting your workplace.

1. "What Combustible Dust Hazards Exist in this Facility?"

Inspectors will start by verifying whether you've identified dust hazards from grinding, milling, wood cutting or sanding, metals processing, handling powders, and other processes. If management can't clearly identify where dust hazards exist, inspectors will see a bright red flag.

2. “Have You Conducted a Dust Hazard Assessment?”

Inspectors will request documentation that a competent person has conducted a formal dust hazard assessment that’s in line with National Fire Protection Association (NFPA) standards, including written hazard assessment reports and facility diagrams marking the location of dust-generating areas and potential ignition sources.

3. “Have You Tested Identified Dust for Explosibility?”

Inspectors will next want proof that you collected samples of any dusts you identified in significant concentrations and sent them to a lab for explosibility testing to measure minimum ignition energy, dust explosibility (Kst value), and minimum explosion concentration, among other properties.

4. “Where Does Dust Accumulate in Your Facility?”

In touring the facility, inspectors will carefully examine areas and surfaces where dust tends to accumulate, including structural beams, lighting fixtures, ductwork, cable trays, conveyors, and equipment tops.

5. “What Housekeeping Measures Do You Take to Prevent Dust Buildup?”

Inspectors may ask to review your written cleaning procedures, cleaning schedules, housekeeping logs, corrective action records, and other documentation that you implement rigorous housekeeping measures and safety policies to prevent

potentially hazardous dust accumulations, including:

- Scheduled cleaning of floors, beams, and equipment.
- Removal of dust layers before they reach dangerous concentrations.
- Use of explosion-safe vacuum systems instead of compressed air.
- Use of cleaning methods that produce minimum amounts of heat and friction.

6. "How Do You Prevent Dust from Becoming Airborne?"

Dust explosions occur when dust clouds form in the air. Accordingly, inspectors will likely ask about engineering and work controls to prevent dusts from becoming airborne or dispersed like:

- Local exhaust ventilation.
- Enclosure of dust-producing equipment.
- Centralized dust collection systems.
- Explosion-vented dust collectors that are properly rated for use with combustible dusts.
- Isolation devices to prevent explosion propagation.
- Proper cleaning equipment and methods, such as not using compressed air to blow dusts.

7. "Have You Identified Potential Ignition Sources in Combustible Dust Areas?"

For an explosion to occur, the combustible dust cloud must be exposed to a source of ignition such as sparks, static electricity, electrical equipment faults, friction, open flames, welding or cutting operations, or hot surfaces. So,

inspectors will focus on the company's ignition source control measures, which may include use of:

- Grounding and bonding systems.
- Restrictions on types of powered mobile equipment that can be used in high-risk areas.
- Mandatory permits for welding and hot work operations.
- Spark detection and suppression systems.
- Use of tools and equipment that don't generate sparks or heat.
- No smoking bans.

8. "Are Dust Collection Systems Properly Designed and Maintained?"

While dust collectors are critical safety systems, they may also pose explosion hazards. Consequently, inspectors touring facilities where such systems are in use typically look at maintenance records, filter condition, ductwork integrity, and other indicators of how safely collectors are maintained.

9. "What Explosion Protection Measures Are Installed?"

In addition to prevention, inspectors will focus on whether measures are in place to minimize the hazards of any combustible dust explosions that do occur, especially in high-risk workplaces. Examples:

- Explosion vent panels.
- Explosion suppression systems.
- Isolation valves.
- Deflagration barriers.

10. “Are Workers Properly Trained to Recognize Dust Hazards?”

Expect inspectors to talk directly to workers and ask them questions to determine how well they’ve been trained on dust hazards such as about:

- What combustible dust is.
- How dust explosions occur.
- How to clean dusts safely.
- What the company does to control dust hazards.
- How dust hazards should be reported.
- What to do if a dust explosion occurs.

11. “What Inspection and Maintenance Programs Exist?”

Inspectors expect companies to have ongoing inspection systems and may ask for records of:

- Dust hazard inspections.
- Housekeeping audits.
- Equipment maintenance.
- Dust collector inspections.

12. “Can You Document Your Combustible Dust Safety Program?”

If OHS inspectors show up at your site after a dust explosion, they’ll demand records documenting that you took all the measures required by OHS laws to control combustible dust hazards. Such records, which will also be key to making out a due diligence defence in case you’re prosecuted, include:

- Dust testing results.
- Hazard assessments.

- Housekeeping logs.
- Training provided and steps taken to verify that workers understood it.
- Inspections.
- Incident reports, including investigation findings.
- Monitoring performed.
- Corrective actions implemented.

Takeaway

Taken together, the 12 questions OHS inspectors ask are aimed at verifying that the company implemented and can document its implementation of a systematic combustible dust safety program containing three essential elements:

1. Thorough identification of the hazards.
2. Implementation of appropriate controls to manage those hazards.
3. Proper training of workers in the hazards and how to guard against them.