

Wood Dust Fire and Explosion Risks

The woodworking industry has many obvious dangers, such as powerful machines with razor-sharp cutters. Less obvious, but no less dangerous, are the risks of fire and explosions due to wood dust.

Wood dust is a by-product of several different woodworking processes; dust particles vary in size and amount depending on the hardness of the wood and the sharpness of the cutter. Without proper education and infrastructure to contain this treacherous hazard, you risk endangering the lives of your employees and the success of your business. Keep reading for insight into reining in your business' risks of wood dust fire and explosions.

Wood Dust Risks

Wood dust is an insidious risk. Although dust particles are barely detectable by the naked eye, wood dust still presents substantial health, safety, fire and explosion risks to your employees.

Wood dust can be so explosive that igniting only one small portion of a wood dust cloud can cause the entire thing to erupt into flames, possibly setting fire to every single piece of loose wood dust floating in the air. If this cloud is confined to an enclosed area, the pressure from the ignition can mount, reach critical mass and cause a disastrous explosion. Any unswept dust resting on machines or workspace floors is just as flammable, and can ignite on its own or catch fire from a dust cloud fire. The fire can spread from the air to the ground and vice versa, quickly overtaking an entire space with flames.

In addition to the serious risks of fire and explosions, woodworking employees can develop several long-

term, irreversible health problems through exposure to wood dust, including skin disorders, rhinitis, asthma and a rare type of nasal cancer.

Wood dust is an insidious risk—not as obvious as the woodworking industry's other risks, but no less dangerous. Rein in your business' fire and explosion wood dust risks.

What Causes Wood Dust?

The risks stemming from wood dust exposure can be controlled with the right information and infrastructure. To design an effective dust-reduction plan, you must first be aware which actions of your employees cause the most dust exposure. The following list contains the woodworking activities that generate the most amount of wood dust:

- Machining operations, especially sawing, routing and turning
- Sanding by machine and by hand
- Using compressed airlines to blow dust
- Assembling machined or sanded parts by hand
- Collecting dust from dust extraction systems
- Housekeeping

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Controlling Wood Dust Risks

As the owner or manager of a woodworking business, you are legally obligated to address any activities that produce wood dust, since wood dust is classified as a substance hazardous to health under the Control of Substances Hazardous to Health Regulations (COSHH).

Address these risky activities by commissioning a suitable and sufficient risk assessment of your business, and then use your findings to prevent or adequately control your employees' wood dust exposure.

According to the COSHH, if it is not reasonably practicable to prevent exposure to a hazardous substance like wood dust, control of that exposure should only be treated as adequate if you:

- **Apply the principles of good practice to control exposure.** These principles include providing suitable personal protective equipment, among other precautions. The full list is included in the COSHH, which you can download for free at www.hse.gov.uk/pubns/books/l5.htm.
- **Do not exceed any workplace exposure limit (WEL).** This means ensuring there is no more than an average of 5 mg/m³ of wood dust in the air during an eight-hour day.
- **Reduce the exposure level of substances that can cause cancer or occupational asthma to as low a level as reasonably practicable (ALARP).** Even if your workplace improvements have reduced wood dust exposure to below the WEL, you must continue to implement improvements that lower the exposure level if it is reasonably practicable to do so.

Collecting Wood Dust and Waste

The nature of wood dust fires and explosions—which can be ignited by anything from naked flames to faulty electronics to impact sparks—necessitate dust collection systems that physically remove the wood dust from the machines that produce it. This helps lower the fire risk and any potential damage. These

dust collection systems are called local exhaust ventilation (LEV). The three main types of LEV are:

- An isolated LEV that funnels wood waste from one or several machines and stores it in a nearby collection unit within the workshop.
- An LEV connected to most, if not all, of the woodworking machines that sends wood waste to a distant collection unit located inside or outside the workshop.
- A 'through flow' system that ventilates wood waste from one or more woodworking machines to nearby collection units which then send the waste to a larger collection unit, usually located outside the workshop.

The individual units that collect wood waste as part of a larger LEV are called 'collection units'. They should ideally be sited outside, away from the workshop. If this is not possible, when planning your LEV infrastructure you must take several precautions that depend on the collector's size, the number of people nearby, the presence of combustible materials and more. Collection units come in all shapes and sizes, but the following six types are the most popular:

- Unenclosed fabric filter sock collector
- Unenclosed fabric multi-sock collector
- Enclosed fabric single-sock collector
- Enclosed fabric multi-sock collector
- Cyclone
- Bin or hopper

Details about each collection unit can be found at www.hse.gov.uk/pubns/wis32.pdf.

We understand the risks you face in the woodworking industry. Rely on the insurance professionals at Crendon Insurance Brokers Ltd to help you navigate these risks and plan for a safe, successful future.