



PENNSYLVANIA LUMBERMENS MUTUAL
INSURANCE COMPANY

FIRE PROTECTION FOR DUST COLLECTION SYSTEMS

A cause of loss that seems to be occurring with all too much frequency is fire originating in dust collection systems. At PLM, we believe that this may have become our number one most frequent cause of property loss, surpassing welding and electrical fires.

The control of sawdust is an ongoing challenge for all woodworking operations. The method used most often is a pneumatic duct conveying and collection system. This type of system involves sawdust, chips, shavings or other finely divided particles being exhausted through an overhead piping system to an outside collector or storage bin.

A severe hazard that arises involves a spark being generated and picked up by the pneumatic system. Sparks are easily generated in the normal operation of many production machines. The material being collected by the system is highly combustible. A spark that reaches the collector or storage bin will almost certainly result in a fire or explosion.

A spark detection and extinguishing system is the most effective protection against fires and explosions resulting from sparks making their way into a collection system. A detection/extinguishing system works by using infrared detectors to detect sparks inside the ductwork. The system then automatically activates a downstream water flow nozzle that extinguishes the spark prior to the spark reaching the filter or collection bin. The detection and extinguishing sequence is timely (less than 3/10 of a second) and highly effective. A wall mounted control panel tracks the number of times that a spark is detected. System features may also include an audible alarm, a visual alarm and the automatic shutdown of plant equipment.

The National Fire Protection Association (NFPA) recognizes the fire hazards of dust collection systems. NFPA 664 Section 8.2.1.4 states, "A fire hazard shall be deemed to exist in the system wherever dry wood particulate is collected or conveyed..."

The most effective solution is the installation of a listed spark detection and extinguishing system that is installed downstream from the last material entry point and upstream of any collection equipment.

If your business includes the use of pneumatic conveying and air filtration systems, there is a significant risk for a dust fire or explosion. One such event can result in damages including costly repairs, business interruption/down time, and loss of equipment/facilities or worse. PLM highly recommends the installation of a spark detection and extinguishing system to minimize this potential hazard, while providing peace of mind.

For more information on spark detection and extinguishing systems, contact the Loss Control at 1.800.752.1895 or via email at CustServ@plmins.com.