HOW DO I DETERMINE IF MY METAL DUST IS FLAMMABLE OR EXPLOSIVE?

There is no quick and easy way to know if your dust is explosive because every operation is different. Getting your dust tested is the only way to know for sure. These metal dusts are the most hazardous: aluminum, magnesium, carbon steel, stainless steel, niobium, tantalum, titanium, zirconium, and hafnium. Most ground metals create dust with active carbons that are combustible. In addition, rust inhibitors, coolants, paints and/or other fugitive materials can combine into an explosive mixture in the dust collector. Under OSHA’s General Duty Clause, Section 5(a)(1), it’s an employer’s responsibility to identify and abate hazards in the workplace. We recommend that dusts generated during metalworking processes be lab tested to determine your dusts’ physical properties and explosibility tested to determine if it has explosive properties. OSHA requires employers to have records identifying the dust generated in your application.

WHAT NFPA REQUIREMENTS DO I NEED TO COMPLY WITH?

NFPA 652: Standard on the Fundamentals of Combustible Dust is the starting point for defining a combustible dust and its hazards. It provides all the steps for assessing and mitigating combustible dust risks. NFPA 652 requires that metalworkers perform a Dust Hazard Analysis (DHA) for existing processes by October 2018, which means that is the date that OSHA can start citing facilities that don’t have a DHA. You can also refer to NFPA
484: Standard for Combustible Metals for the specific requirements for wet and dry dust collectors. It covers all metals and alloys and outlines the procedures to determine whether a metal is in a combustible form.

HOW CAN A DUST COLLECTOR BE ADAPTED TO MY SPECIFIC APPLICATION?

Dust collectors that safely capture welding, plasma and laser fumes/smoke at their source can have many configurations to fit an application. The dust collector size and configuration, cartridge size and type, ducting, and explosion protection equipment should be evaluated for each unique application. The dust collector representative should work closely with you to select and arrangement to best suit your application. Camfil APC personnel help customize a system following a site visit to thoroughly understand the application. The Farr Gold Series collectors are built modularly so that the basic components can be assembled quickly per your needed solution. Camfil APC often helps customers with dust analysis and explosibility testing, allowing you to properly set the system configurations the first time.

HOW CAN A DUST COLLECTOR BE ADAPTED TO HANDLE FUTURE GROWTH OR CHANGING APPLICATIONS?

Traditionally, when dust collection needs changed, you would have to replace the entire dust collector because it was one large welded assembly. But if the dust collector is built modularly like the Farr Gold Series, it can be expanded to handle increased airflow or dust intensities by adding modules and updating the fan. There are typically two reasons that facilities need to expand their dust collector. The first scenario is that the company grows, production increases and the application changes, so it now needs higher air volume. The second scenario is that the dust production level increases, which changes the air-to-cloth ratio needed, and now a higher surface area is required, needing more filter cartridges. In both of these scenarios, a dust collector that allows for expansion gives the end user the ability to re-utilize their investment and avoid disposal costs.

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