



FIRE & RISK
★★ ALLIANCE ★★

Combustible Dust Safety Solutions

About Us

Fire & Risk Alliance (FRA) is a leader in fire and risk engineering. Our staff is composed of highly trained and educated engineers and scientists that focus on developing optimized solutions for our clients throughout the world. Our hands-on practical experience, active engagement in the industry, and our applied research ensure that we provide state-of-the-art solutions to our clients.

Dust Hazard Analysis (DHA)

A Dust Hazard Analysis is the first step in understanding the potential risk to your operations from processing and handling combustible dusts. Through the DHA, we can identify where credible fire, flash fire, and explosion hazards exist and establish appropriate measures to manage risk. Our DHAs are tailored to meet your specific needs. From checklist compliance audits to comprehensive engineering and risk based analyses, we offer a solution that works best for your organization.

Our DHA reports provide a systematic assessment of where risk is being introduced into your operations and provides pragmatic, actionable recommendations for managing that risk. Since we understand that no two systems or facilities are completely identical, our approach ensures a tailored response that accounts for operational constraints and the resources your facility has to offer.

Combustible Dust Services

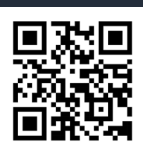
FRA staff has extensive experience analyzing, assessing and mitigating risks as it pertains to combustible dust, including:

- NFPA and OSHA compliant Dust Hazard Analysis
- Dust Testing
- Hazardous Area Classification
- Performance-Based Design
- Quantitative Risk Assessment
- PHAs/HAZOPs/HAZIDs
- Fire and Explosion Investigation
- Fire and Explosion Modeling
- Training
- Building and Fire Code Consulting
- Emergency Response Plans

Design Capabilities

FRA staff has comprehensive capabilities in analyzing and designing appropriate fire and explosion mitigation means, including:

- Explosion Protection Design
- Third Party Review and Testing of Explosion Protection Systems
- Explosion Venting Analysis and Design



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Industry Experience

- Additive Manufacturing
- Agricultural
- Biomass
- Building Materials
- Food and Beverage
- Metals
- Mining
- Pharmaceuticals
- Plastics and Resins
- Power Generation
- Pulp and Paper
- Recycling
- Specialty Chemicals and Catalysts
- Woodworking and Forest Products

Dust Hazard Analysis (DHA) (continued)

FRA's analysis incorporates valuable information obtained through representative dust testing, application of current research, advanced modeling and risk analysis techniques, and extensive industry experience. This approach ensures that resources are appropriately allocated to provide optimal risk management and code compliance solutions in a cost-effective manner.

Fire and Explosion Protection Analysis and Design

When a DHA determines that fire and explosion protection systems are necessary, there are many commercially available solutions. However, identifying appropriate and cost-effective protection technologies can be challenging. In addition, the codes and standards that govern the design and installation of such systems are complex, vary among jurisdictions, and can change with each new edition.

FRA has extensive experience in the analysis and design of fire and explosion protection systems. Our approach offers an unbiased solution to manage hazards in a cost-effective, safe, and code-compliant manner. Our capabilities include state-of-the-art application of performance-based design, risk analysis, and advanced modeling to develop innovative cost-saving solutions. Beyond design, FRA offers bid assistance and construction administrative support that includes vendor design reviews, installation oversight, and commissioning and final acceptance testing.

Safety Management Systems

Safety management systems are the backbone of administrative controls for managing combustible dust hazards. Effective programs for Management of Change, housekeeping, personal protective equipment (PPE), maintenance, emergency response planning, and training are key aspects to combustible dust safety. FRA takes a collaborative approach to evaluating and optimizing these management systems to include combustible dust, matched to your organizational culture. As knowledge empowers safety, FRA also offers in-person, remote, or prerecorded training tailored to your facility-specific processes and materials.



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**ENGINEERING A
SAFER FUTURE**