

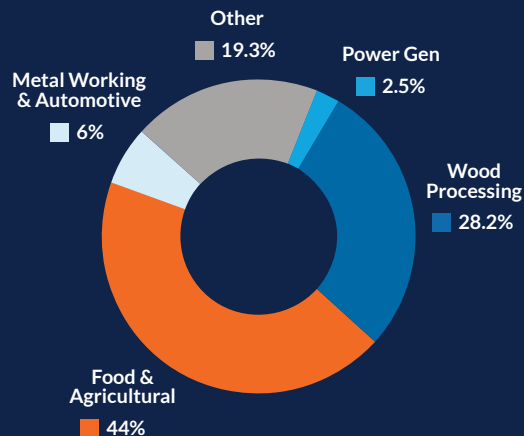
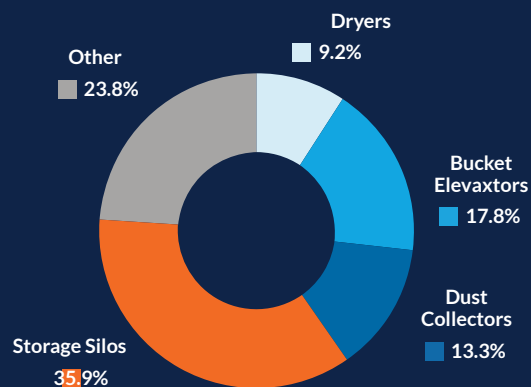


PROTECT YOUR GRAIN HANDLING PROCESS FROM DUST EXPLOSIONS

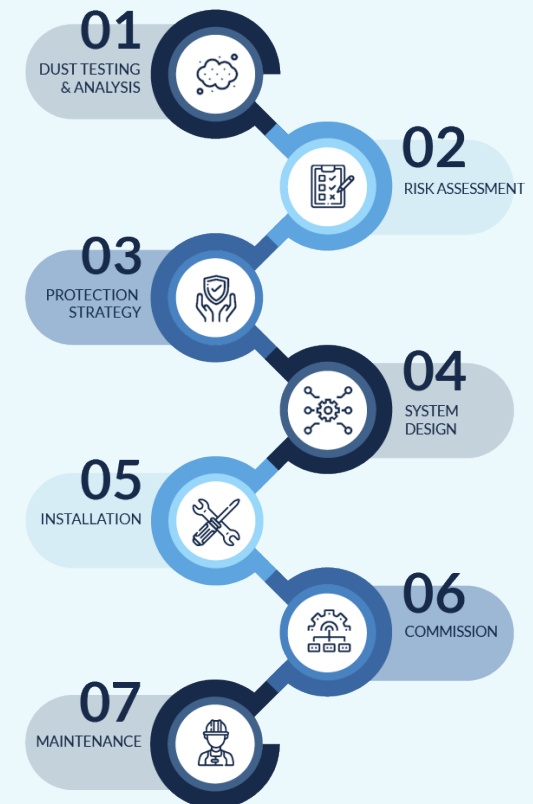


Did you know of the 316 dust-related explosions and fires in 2023, the highest percentage of them occurred in the agricultural industry (44%) and in storage silos (35.9%)?

Source: <https://dustsafetyscience.com>



Fike Corporation is a global industrial safety solutions provider dedicated to protecting against these hazards and ensuring workers return home every day to their families through the following steps:



FIKE'S RECOMMENDED PROTECTION STRATEGIES

DUST COLLECTORS

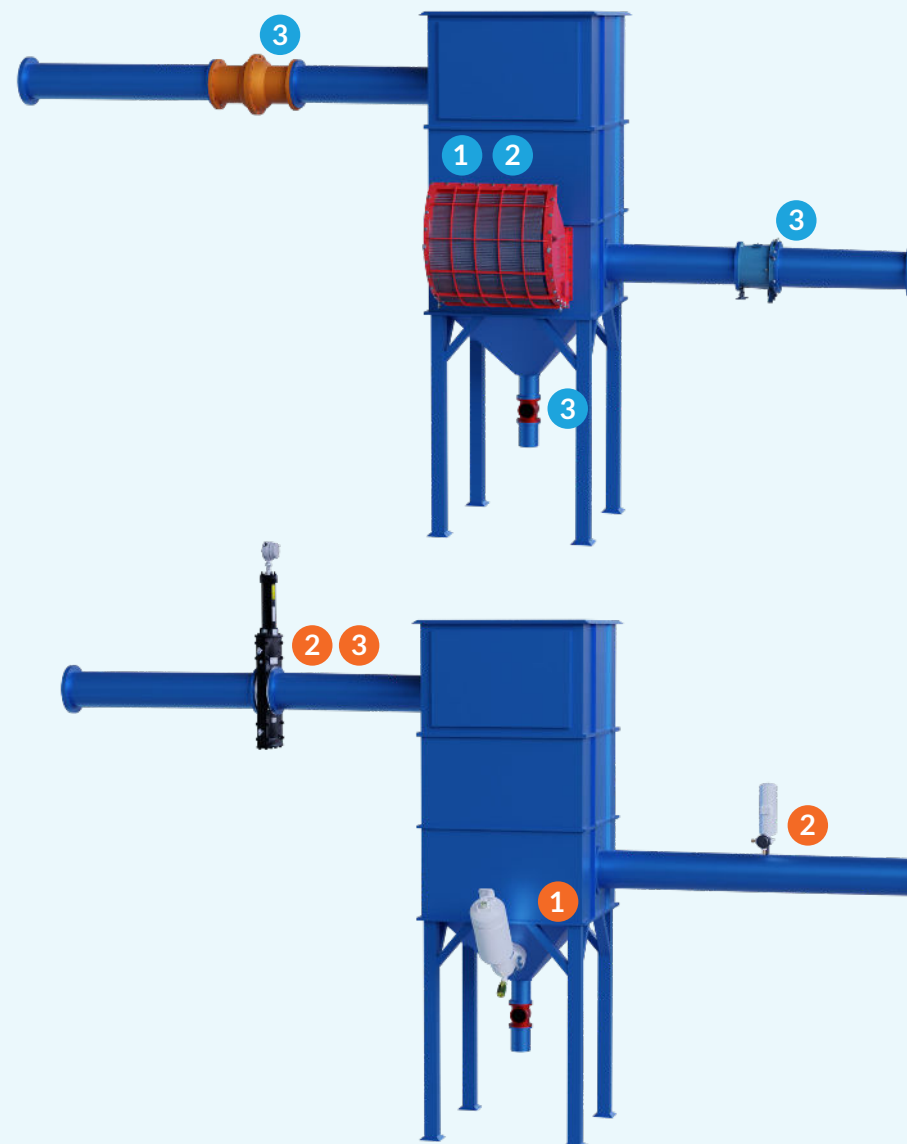
Because dust collectors often convey the finest and highest concentration of dust, explosion protection efforts are highly focused on this area of the grain-handling process.

Venting Protection Strategy

- 1 Fike explosion vents on the dirty air plenum
- 2 For indoor applications, a Fike FlamQuench over the explosion vent
- 3 Fike DFI isolation valve on the dirty air inlet, mechanical isolation valve on clean air outlet and approved rotary valve on product outlet

Suppression Protection Strategy

- 1 Fike HRD suppression on the dirty air plenum
- 2 Fike SRD chemical isolation on dirty air inlet, clean air outlet and product outlet (approved rotary valve may be used instead)
- 3 Fike gate valves may be preferred instead of SRDs to stop pressure propagation





SILOS

The filling process often creates a dust cloud and may also convey sparks or embers into the vessel, resulting in a deflagration that will often propagate into connected equipment.

Venting Protection Strategy

- 1 Fike explosion vents on roof or above product fill level
- 2 Fike SRD chemical isolation on inlet (passive isolation may be difficult with amount of conveyed product)
- 3 Mechanical isolation valve or SRD on dedusting line and approved rotary valve on outlet

Suppression Protection Strategy

- 1 Fike HRD suppression on the roof or distributed down the volume
- 2 Fike SRD chemical isolation on inlet and dedusting lines
- 3 Approved rotary valve or Fike SRD on product outlet

BUCKET ELEVATORS

The head is the most likely location of the development of an explosion due to the large open volume containing a dust cloud and multiple ignition sources present.

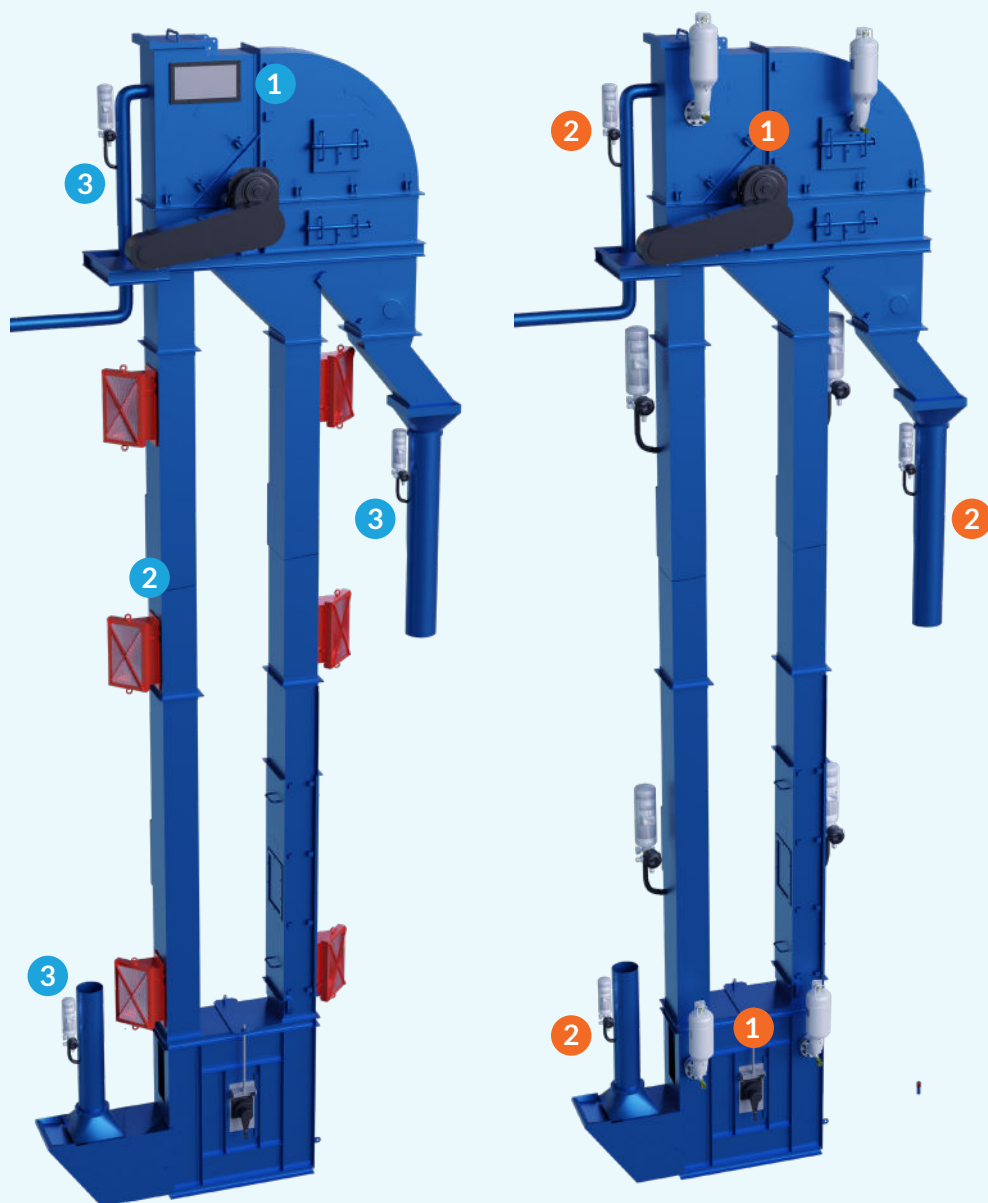
Venting Protection Strategy

- 1 Fike Eleguard explosion vents on the side of the head and boot
- 2 Fike Eleguard explosion vents on legs to mitigate pressure piling
- 3 Fike SRD chemical isolation on inlet, outlet and dedusting lines (passive isolation may be difficult with amount of conveyed product)

Suppression Protection Strategy

- 1 Fike HRD suppression on head and boot
- 2 Fike SRD chemical isolation on inlet, outlet and dedusting lines

Fike gate valves may be preferred instead of SRDs to stop pressure propagation



HAMMER MILLS

The highest risk area is found in the outtake hopper due to the presence of fine dust particles and multiple potential ignition sources entering the process from the mill above.

Venting Protection Strategy

- 1 Fike explosion vents on the product hopper
- 2 FlameQuench over vent if located indoors
- 3 Approved rotary valve on product inlet, Fike DFI on air inlet, Fike SRD chemical isolation on outlet (passive isolation may be difficult with amount of conveyed product)

Suppression Protection Strategy

- 1 Fike HRD suppression on hopper
- 2 SRD chemical isolation on product inlet, air inlet and outlet



EXPLOSION PROTECTION CONSULTANCY



DO YOU HAVE A COMBUSTIBLE DUST PROBLEM AND ARE UNSURE OF WHAT TO DO NEXT?

Fike's Explosion Safety Consultants are ready to answer any of your questions or help develop your Action Plan, which begins with a simple conversation. Our capabilities include but are not limited to the following:

- Hazard Identification
- Risk Assessment
- Dust Testing
- Computational Fluid Dynamics
- Vessel Strength Analysis
- Protection Strategy Development

To learn more about Fike Consultancy or
to receive a customized action plan visit:

fike.com/explosion-protection/consultancy/

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