



ATEX

ATEX zones are classified areas where explosive atmospheres may occur due to the presence of flammable gases, vapors, or dust, necessitating specific safety measures and equipment to protect workers and prevent explosions.



TYPES OF RISKS



Gas and vapor risks involve the presence of flammable gases and vapors that can create explosive atmospheres, particularly in confined spaces or areas where they are likely to accumulate.



Dust risks involve combustible dust particles that can form explosive atmospheres when suspended in the air, posing a significant hazard in industries handling materials like grains, metals, and plastics.

EXPLOSIONS



Explosions with gas or dust are typically caused by the ignition of a flammable mixture, which can occur due to sources such as sparks, open flames, static electricity, or high temperatures in environments where the gas or dust is present in sufficient concentrations.

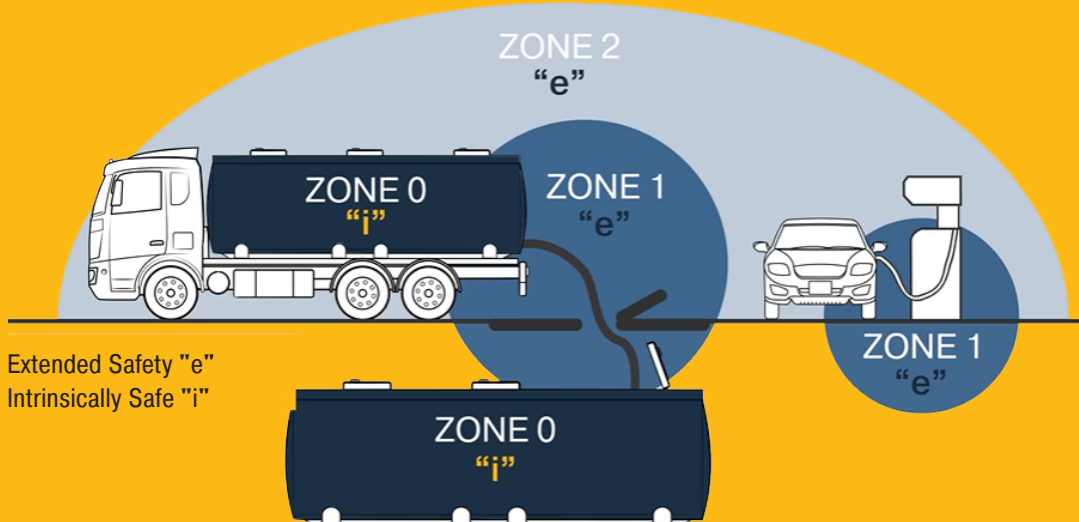
ATEX ZONES

GAS

- Zone 0** An area where an explosive atmosphere is likely to occur in normal operation.
- Zone 1** An area where an explosive atmosphere is present continuously or for long periods.
- Zone 2** An area where an explosive atmosphere is not likely to occur in normal operation and, if it does, will exist only for a short time.

DUST

- Zone 20** An area where an explosive dust atmosphere is likely to occur in normal operation.
- Zone 21** An area where an explosive dust atmosphere is present continuously or for long periods.
- Zone 22** An area where an explosive dust atmosphere is not likely to occur in normal operation and, if it does, will exist only for a short time.



IGNITION PROTECTION TECHNIQUES

Electrical equipment must utilize various protection methods to prevent ignition, including:

- ✓ **Intrinsic Safety (Ex i):** Limits energy to prevent ignition.
- ✓ **Flameproof Enclosures (Ex d):** Contain any explosion within the equipment housing.
- ✓ **Increased Safety (Ex e):** Reduces the risk of ignition through enhanced design features.
- ✓ **Encapsulation (Ex m):** Encapsulates components to prevent ignition sources.

