

Hazardous Locations

OSHA Publication 3073 defines a hazardous location as follows:

Hazardous locations are areas where flammable liquids, gases or vapors or combustible dusts exist in sufficient quantities to produce an explosion or fire. In hazardous locations, specially designed equipment and special installation techniques must be used to protect against the explosive and flammable potential of these substances.

The National Electrical Code (NEC) and the Canadian Electrical Code (CEC) defines hazardous areas as the following:

An area where a potential hazard (e.g., a fire, an explosion, etc.) may exist under normal or abnormal conditions because of the presence of flammable gases or vapors, combustible dusts or ignitable fibers or flyings.

Class Definition

The NFPA Publication 70, NEC, and CEC define three categories of hazardous materials that have been designated as Class I, Class II, or Class III. The Classes define the type of explosive or ignitable substances which are present in the atmosphere such as:

- Class I locations are those in which flammable vapors and gases may be present.
- Class II locations are those in which combustible dust may be found.

Indirect gas-fired heaters are unacceptable for hazardous locations as they typically provide all three of the potential Ignition sources:

- Open flames
- Heat exchanger surface temperatures as high or higher than 950 °F (higher than the auto-ignition temperature of the hazardous substance)
- Hot flue gas products