

## Overview

The following classification definitions are an interpretive summary based on the 1996 edition of the National Electrical Code (NEC, NFPA 70). Refer to the latest editions of NFPA 497M, NFPA 70 and the UL Hazardous Location Equipment Directory for current and more detailed information. For more information on NEMA classifications, refer to NEMA Standards Publication No. 250.

## NEC, NFPA 70 Hazardous Location Classifications

### Classes

**Class I - Hazardous Gases.** Class I locations are areas in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.

#### Typical Class I Hazardous Areas

- Spray painting and finishing areas
- Utility gas plants
- Petroleum refining production plants
- Petroleum dispensing locations
- Dry cleaning facilities
- Dip tanks containing combustibles or flammable liquids
- Plant facilities extracting solvents
- Inhalation anesthetics areas
- Process facilities manufacturing pyroxylin type plastics

**Class II - Hazardous Dusts.** Class II locations represent areas that are hazardous due to the presence of combustible dust.

#### Typical Class II Hazardous Areas

- Flour mills
- Feed mills
- Grain elevators and grain handling facilities

- Aluminum manufacturing and storage areas
- Magnesium manufacturing and storage areas
- Coal preparation and handling facilities
- Starch manufacturing and storage areas
- Confectionery plants
- Pulverizer sugar and cocoa manufacturing, and storage plants
- Spice grinding and storage plants

**Class III - Hazardous Fibers.** Class III locations have easily ignitable fibers or flyings present, but not likely to be suspended in air in quantities sufficient to produce ignitable mixtures in the atmosphere.

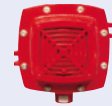
#### Typical Class III Hazardous Areas

- Textile mills
- Woodworking plants\*
- Furniture manufacturers\*
- Cotton gins
- Cotton seed milling plants
- Flax plants
- Carpet manufacturers

\* Except if wood flour (dust), which is Class II Group G, is present

# Hazardous Classifications

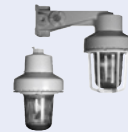
## Related GE Security UL-Listed Hazardous Location Products



- **Vibrating Horns**  
Data Sheet 85001-0397



- **Bells**  
Data Sheet 85001-0399



- **Strobes**  
Data Sheet 85001-0547



- **Electronic Horns**  
Data Sheet 85001-0385



- **Electronic Sirens**  
Data Sheet 85001-0385



- **Multiple Tone Signals**  
Data Sheet 85001-0387



- **Fire Alarm Stations**  
Data Sheet 85001-0371



- **Heat Detectors**  
Data Sheet 85001-0393



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## Divisions

The Location Classes are broken down by the NFPA into Divisions 1 and 2, defining different levels of risk. In general, the risk of there being a hazardous presence of flammable/combustible/ignitable materials is higher for Division 1 than for Division 2. The specifics differ between the three classes (I, II and III). Equipment suitable for Division 1 is also suitable for Division 2 locations.

## Groups

Class I and II locations are divided by the NFPA into Group designations identifying specific gases, vapors and dusts by characteristic similarities that relate to specific equipment construction requirements. Class III locations are not divided into separate group designations.

### Class I Groups

**Group A.** Atmospheres containing acetylene.

**Group B.** Atmospheres containing hydrogen, fuel and combustible process gases containing more than 30 percent hydrogen by volume, or gases or vapors of equivalent hazard such as butadiene, ethylene oxide, propylene oxide, and acrolein.

**Group C.** Atmospheres such as ethyl ether, ethylene, or other gases or vapors of equivalent hazard.

**Group D.** Atmospheres containing acetone, ammonia, benzene, butane, cyclopropane, ethanol, gasoline, hexane, methanol, methane, natural gas, naphtha (petroleum), propane, or gases or vapors of equivalent hazard.

### Class II Groups

**Group E.** Atmospheres containing combustible metal dusts, including aluminum, magnesium, and their commercial alloys, or other combustible dusts whose particle size, abrasiveness and conductivity present similar hazards in the use of electrical equipment.

**Group F.** Atmospheres containing combustible carbonaceous dusts, including carbon black, charcoal, coal, or dusts that have been sensitized by other materials so that they present an explosion hazard.

**Group G.** Atmospheres containing combustible dusts not included in Group E or F, including flour, grain, wood, plastic, and chemicals.

## NEMA Hazardous Location Classifications

**Type 7 Enclosures.** Intended for indoor use in locations classified as Class I, Groups A, B, C, or D, as defined in the National Electrical Code (*see Class I Groups above*)

**Type 9 Enclosures.** Intended for indoor use in locations classified as Class II, Groups E, F, or G, as defined in the National Electrical Code (*see Class II Groups above*).

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Compiled with information provided by GE Security Signaling Products.



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