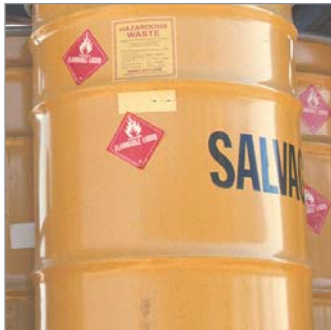




# RISK BULLETIN

## Hazardous Location Classification System

Recommendations for electrical equipment located in hazardous environments are contained in NFPA 70, National Electric Code, published by the National Fire Protection Association, Inc. (NFPA). The code establishes classes and divisions that group electrical requirements together based on the type of hazard present. The following summary will aid in determining the hazard class of an environment.



### CLASS I, DIVISION 1

This classification is used in locations where concentrations of ignitable flammable gases or vapors exist in the air under normal operating conditions, where concentrations can exist due to the frequency of maintenance operations, or where a failure of operating equipment and the electrical system could produce such concentrations. Electrical equipment for this classification is typically listed as "explosion proof" or "intrinsically safe." Typical locations that are classified as Class I, Division 1 include:

- Flammable storage areas where liquids and gases are transferred between containers.
- Paint spraying operations using flammable paints and solvents.
- Hot dip operations using flammable coatings.

### CLASS I, DIVISION 2

This classification is used for locations where flammable liquids and gases are handled, but are normally confined to closed containers and piping, and where an ignitable concentration would result if a rupture or failure occurred, where the failure of a positive pressure ventilation systems would produce ignitable concentrations, or when next to a Class 1, Division 1 location where vapors could enter the space if the ventilation system failed. Electrical equipment listed for this classification is typically listed "hermetically sealed" or as a "purged enclosure." Typical locations that are classified as Class I, Division 2 include:

- Propane cylinder storage areas.
- Sealed drum bulk storage.
- Downdraft paint booth control rooms.

### CLASS II, DIVISION 1

This classification is used for locations where combustible dust is suspended in the air under normal operating conditions, where a mechanical failure could cause combustible dust to be suspended in the air, or where conductive dust is present in the environment. Electrical equipment listed for this classification is typically listed as "dustproof." Typical locations that are classified as Class II, Division 1 include:

- Grain mills.
- Wood processing operations (i.e. sanding).
- Dust collectors.

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### CLASS II, DIVISION 2

This classification is used for locations where combustible dust may become suspended in the air because of equipment malfunctions or where a build up of dust may prevent heat dissipation from electrical equipment. Electrical equipment listed for this classification is typically listed as "dust-tight" and lamps enclosures should minimize the accumulation of dust. Typical locations that are classified as Class II, Division 1 include:

- Scrap paper baling.
- Pit balers.
- Printing equipment.

### CLASS III, DIVISION 1

This classification is used for locations where materials that produce ignitable fibers, such as textiles, are processed or otherwise handled. These locations produce moderate accumulations of fibrous material that can increase the fuel loading in the area. Electrical equipment, such as motors and circuit breakers, should be fully enclosed and listed as "dust tight." Typical locations that are classified as Class III, Division 1 include:

- Clothing manufacturers.
- Wood working operations.
- Textile processing.

### CLASS III, DIVISION 2

This classification is used for locations where materials that produce ignitable fibers, such as textiles, are stored. Electrical equipment, such as motors and circuit breakers, should be fully enclosed and listed as "dust tight." Typical locations that are classified as Class III, Division 2 include:

- Garment packaging and distribution.
- Book and periodical distribution.
- Wood products storage.



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