

Electrical Equipment – Hazardous Locations

Vapors from flammable liquids, gasses, organic dusts and fibers present a serious potential for fire and/or explosion.

Areas where combustible or flammable materials are stored, handled, or used are considered hazardous locations. This includes places where combustibles or flammables are normally in closed containers or systems, but could escape due to accident, maintenance, failure of equipment or ventilation.

Special precautions are required to control potential sources of ignition in hazardous locations. Obviously, smoking, open flames and the use of spark producing tools must be strictly prohibited in such locations. Conductive floors, grounded equipment, and bonding connections for transferring flammable liquids, must also be provided for to control static electricity.

Ordinary electrical wiring, fixtures, devices and equipment, capable of producing sparks or generating heat are also potential sources of ignition. All electrical equipment installed in hazardous locations must be listed for such use by a recognized testing laboratory, (such as Underwriters Laboratories Inc.-UL).

The National Electrical Code (NEC) classifies hazardous locations as described below. Electrical equipment is listed accordingly.

- Class I – Flammable gasses or vapors may be present in an ignitable or explosive concentration.
- Class II – Combustible dust may be present in sufficient quantity to produce an ignitable or explosive mixture.
- Class III – Easily ignitable fibers are present.
- Division 1. The hazard is expected to be present in normal production, or frequent repair, or maintenance.
- Division 2. Material is expected to be confined in closed containers or systems, but may escape due to rupture, breakage, or faulty equipment.
- Groups – Class I and II materials are further subdivided based on characteristics such as ignition temperature, conductivity, explosion potential and other factors.

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