



Coffee Break Training - Fire Protection Series

Inspection Techniques: Electrical “Classified Locations” (Part 2)

No. FP-2011-20 May 17, 2011

Learning Objective: The student shall be able to recite the “classes” and “divisions” used to classify hazardous locations for electrical equipment.

The National Fire Protection Association (NFPA) 70[®], *National Electrical Code*[®], Chapter 5 *Special Occupancies* provides descriptions of the various areas that might be classified as hazardous where electrical equipment could cause a fire or explosion.

These areas are divided into “classes” for general descriptions and are further detailed into “divisions” for specific hazards. This week’s Coffee Break Training will identify the three hazard classes, and next week it will explain the “divisions.”



These explosion-proof switches are installed in an environment where flammable vapors are present.

Hazardous Electrical Locations

Location	General Description
Class I	Flammable gases or vapors are or may be present in the air in sufficient quantities to produce explosive or ignitable mixtures. Examples include the area around fuel dispensers or vents at motor vehicle service stations; spray booths, spray rooms, or spray areas; or liquid storage rooms and warehouses.
Class II	Combustible dust is or may be present in the air in sufficient quantities to produce explosive or ignitable mixtures. Combustible dust is any finely divided solid material that is 420 microns (0.017 in) or smaller in diameter (material passing a U.S. No. 40 Standard Sieve) and presents a fire or explosion hazard when dispersed and ignited in air. Examples include chemical manufacturing facilities, some woodworking plants, or agricultural facilities including grain elevators.
Class III	Easily ignitable fibers or flyings exist, but where the fibers or flyings are not likely to be in suspension in the air in quantities sufficient to produce ignitable mixtures. Examples include commercial laundries, areas where paper products may be trimmed, or textile operations.

When a hazardous location assessment is performed, rooms, sections, or areas should be considered individually in determining their classifications. Therefore, even a small portion of a larger space may require special attention. For example, the area around a spray painting booth in a large metal fabricating facility may require classification, while the rest of the building may be exempt from classification.

Hazardous area classification should be performed by knowledgeable and qualified experts.

For additional information, refer to NFPA 70[®], *National Electrical Code*[®], Chapter 5 *Special Occupancies*.



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