



# Coffee Break Training - Fire Protection Series

## Inspection Techniques: Electrical “Classified Locations”: Flammable Vapors and Gases (Part 3)

No. FP-2011-21 May 24, 2011

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

Last week’s Coffee Break Training explained the National Fire Protection Association (NFPA) 70®, National Electrical Code® three hazard classes for electrical wiring and equipment, and this week it will begin to explain the corresponding “divisions” for flammable vapors and gases.

### Hazardous Electrical Locations

Location	Division	General Description
Class I	1	(1) Where ignitable concentrations of flammable gases or vapors can exist under normal operation conditions, or (2) Where ignitable concentrations of such gases or vapors may exist frequently because of repair or maintenance operations or leakage, or (3) Where breakdown or faulty operation of equipment or process might release ignitable concentrations of flammable gases or vapors and also might cause simultaneous failure of electrical equipment in such a way as to directly cause the electrical equipment to be the source of ignition.
Class I	2	(1) Where flammable liquids or flammable gases are handled, processed, or used, but in which liquids, vapors, or gases normally will be confined within closed containers or closed systems from which they can escape only in the case of accidental rupture or breakdown of such containers or systems or in the case of abnormal operation of the equipment, or (2) Where ignitable concentrations of gases or vapors normally are prevented by positive mechanical ventilation and which might become hazardous through failure or abnormal operation of the ventilating equipment, or (3) Where it is adjacent to a Class I, Division 1 location, and to which ignitable concentrations of gases or vapors occasionally might be communicated unless such communication is prevented by adequate positive-pressure ventilation from a source of clean air and effective safeguards against ventilation failure are provided.



The area around these underground gasoline tank vents must be classified because flammable vapors are heavier than air.

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. Next week’s Coffee Break Training will address Class II and Class III classified locations.



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