



## Coffee Break Training - Fire Protection Series

### Inspection Techniques: Electrical “Classified Locations” (Part 1)

No. FP-2011-19 May 10, 2011

**Learning Objective:** The student shall be able to explain the process for classifying hazardous locations for electrical wiring and equipment installation.

The use of electrical wiring and equipment is truly pervasive. Business, industry, dwellings, hospitals, schools, government buildings, and even rural agricultural facilities could not operate as we know them today without the convenience and power of electrical energy.

Despite its benefits, every safety inspector knows that electrical wiring and equipment are blamed for a substantial number of fires. In some cases, the installation or maintenance was faulty, or there was some unauthorized tampering with the equipment. In some cases, the equipment and devices installed turned out not to be suitable for their environment.



The accumulation of highly combustible lint in this commercial laundromat should cause the inspector to review the electrical classified location requirements.

Today’s Coffee Break Training starts a series that explains how hazardous environments are “classified” so the electrical engineer, electrician, and inspector can be assured the equipment and wiring that are installed are suitable for the environment. The foundation for these classifications is found in the National Fire Protection Association’s (NFPA) 70<sup>®</sup>, National Electrical Code<sup>®</sup>.

Hazardous location classification is required where fire or explosion hazards may exist due to the presence of flammable gases or vapors, flammable liquids, combustible dust, or ignitable fibers or flyings, which include lightweight, highly combustible items (like the lint in today’s picture) that might be in suspension. Locations are further classified depending on the *properties* of the flammable vapors, liquids, gases, or combustible dusts or fibers that may be present, and the likelihood that an ignitable flammable or combustible concentration or quantity is present.

Where pyrophoric materials are the only materials used or handled, these locations are not classified. Where explosives, blasting agents, or pyrotechnics are manufactured, used, stored, or handled, refer to the appropriate NFPA standards to address electrical issues.

Hazardous area classification should be performed by knowledgeable and qualified experts. NFPA 70 requires that all areas designated as hazardous (classified) locations must be properly documented, and the documentation be available to those authorized to design, install, inspect, maintain, or operate electrical equipment at the location.

For additional information, refer to NFPA 70<sup>®</sup>, National Electrical Code<sup>®</sup>, Chapter 5 Special Occupancies.



Eligible for Continuing Education Units (CEUs)  
at [www.nfaonline.dhs.gov](http://www.nfaonline.dhs.gov)

For archived downloads, go to:  
[www.usfa.dhs.gov/nfa/coffee-break/](http://www.usfa.dhs.gov/nfa/coffee-break/)