



014: Class I Precautions

Definition of Class I

The National Electrical Code defines Class I environments as “those in which flammable gases or vapors are or may be present in the air in quantities sufficient to produce explosive or ignitable mixtures.”

A location is Class I if

- Enough flammable gases or vapors may be present in the air to create ignition.
- Ignitable concentrations of gases or vapors can exist under normal operating conditions.
- Ignitable concentrations of gases or vapors may exist frequently because of leakage, or because of repair or maintenance operations.
- The breakdown or faulty operation of equipment or processes might release ignitable concentrations of gases or vapors.
- People are handling volatile flammable liquids.
- Any of several other conditions, listed in the NEC Article 500.5, apply.

Hazard prevention

Prior to starting work in a Class I environment, you need to review NEC Article 501. Be sure to discuss any questions you have with your foreman—do not assume.

Absolutely no smoking in a Class I location. If you are a smoker, go to a designated smoking location. Standing just beyond the edge of a Class I location is not sufficient.

Do not bring welding equipment into a Class I location without a welding permit that specifically addresses the Class I concerns.

Do not bring any communication devices, sparking tools, regular flashlights, PDAs or other electronic equipment into a Class I location without approval from the site safety director. If in doubt, ask your foreman.

Ensure motors, receptacles, and communications equipment are rated for Class I locations.

Check any arcing devices you will install to ensure they are approved for Class I use. Such devices include breakers, switches, motor controllers, and fuses.

Ensure luminaires are explosion-proof and guarded against physical damage.

Ensure instrumentation and controls are either in their own Class I housings or are mounted in Class I enclosures.

Apply seals as required per NEC Article 501.

Use only heavy-use industrial grade flexible cords. Typically, these will be thermoset-jacketed rather than thermoplastic or thermoplastic elastomer. Ensure the cord has the grounding pin intact, and the jacket is free of cracks or other deformities. Support the cord so there is no tension on the terminal connections. Provide suitable seals where these enter boxes.

Discussion leader duties for this session:

Obtain a flash suit, so you can demonstrate proper use during the discussion session.

What this Safety Talk covers:

What a Class I location is, and what some of the necessary precautions are.

Discussion notes :

