

ENSURING SAFETY IN CLASSIFIED AREAS

Hazardous Location (HazLoc) Inspections

White Paper



What is a Hazardous Location (HazLoc) Inspection?

A HazLoc inspection is a formal review of electrical equipment in industrial areas where flammable dusts, gases, vapors, or fibers may be present. It ensures compliance with CSA C22.2 standards in Canada and confirms that equipment is properly rated to prevent fires or explosions in hazardous environments.

Purpose

- **Verify compliance** with hazardous location classifications (e.g., Class I, II, III or Zones 0, 1, 2).
- **Ensure safety** by confirming that all electrical equipment is properly rated, installed, and maintained for the specific environment.
- **Reduce risk** of ignition from sparks, heat, or improper equipment.
- **Satisfy legal** and insurance requirements before energizing systems or after modifications.
- **Support audits** and certifications, especially in regulated industries.

Key Elements of a HazLoc Inspection

- **Verify Area Classification**
Class I/II/III, Division 1/2 or Zone 0/1/2, 20/21/22.
- **Check Equipment Approvals**
CSA or UL certifications for appropriate zone/class.
- **Inspect Seals and Fittings**
Ensure explosionproof or dust-tight seals are properly installed.
- **Confirm Grounding and Bonding**
Reduce ignition risks from static or faults.
- **Evaluate Wiring Methods**
Check for suitable conduits, cable types, and enclosures.
- **Review Documentation**
Area classification drawings, equipment certificates and inspection reports.

Common Findings During a Hazloc Inspection

- **Missing or Incomplete Nameplates**
Equipment is installed without the required permanent nameplate showing hazardous area rating, temperature code, voltage, or certification number.
- **Improper Wiring Methods from OEM's**
Non-compliant wiring is used in classified zones where armored TECK90 or properly rated conduit installations are required.
- **Unapproved Equipment**
Motors, panels, or other devices lack Canadian approval markings or are not certified for use in hazardous areas.
- **Intrinsically Safe (IS) Wiring and Labeling Issues**
IS circuits may be installed alongside non-IS wiring without proper separation or lack required documentation and barrier labeling. Safety warnings about IS circuits are also often missing.
- **Enclosure Integrity Compromised**
Modifications like adding vents or drilling holes compromise the rating of Type 4X or flameproof enclosures.
- **Missing Seals on Explosion-Proof Enclosures**
Cable glands or conduit seals required for flameproof "d" enclosures are not installed, increasing the risk of flame propagation - or failure to contain an internal explosion.

Here are Industries Where Classified Areas are Regularly Encountered

Industry	Examples of Hazards	Common Locations Requiring HazLoc Inspection
Food & Beverage	Sugar dust, flour dust, ethanol vapors	Ingredient handling, alcohol processing, silo areas
Pharmaceutical	Solvent vapors, fine powders	Mixing rooms, solvent storage
Agriculture	Grain dust, feed dust	Grain elevators, feed mills
Oil & Gas	Flammable gases and vapors	Refineries, well sites, tank farms
Chemical	Volatile organic compounds, vapours	Process areas, storage tanks
Water Treatment	Methane or hydrogen sulfide gases	Pump stations, sludge handling areas
Wood Products	Fine sawdust	Dust collection systems, cutting areas
Paint & Coatings	Flammable vapours	Spray booths, mixing rooms

What Classifies an Area as Hazardous?

An area becomes a “classified location” when normal operations or equipment failures could release:

- **Flammable gases/vapors** (Class I)
- **Combustible dusts** (Class II)
- **Ignitable fibers/flyings** (Class III)

The classification (Zone or Division system) depends on the likelihood and type of hazard.

How we Help!

Sheridan Electric supports industrial clients in hazardous locations by coordinating certified third-party inspections and offering expert consulting on compliance questions for OEM’s and End Users. We manage the process end-to-end to ensure your installations meet all requirements.

Call us at today at 1-800-517-8512

or email anytime at info@sheridanelectric.ca to schedule service.