



# Training Program & Technical Education Courses for Hazardous Locations (HazLoc)

Equip your organization with the skills and knowledge to help streamline compliance.

In today's evolving Hazardous Locations (HazLoc) marketplace, navigating the complexities of designing, constructing, and distributing equipment that meets applicable safety and performance requirements can be a challenge. While technical expertise is a critical consideration when manufacturing any product, it is especially important for complex equipment designed for use in HazLoc industries, such as oil and gas, chemical refining, additive manufacturing, mining, and agricultural, among others.

**At CSA Group, our training program and technical education courses are designed to equip your workforce with the knowledge and skills needed to streamline the compliance journey. Our courses can help your organization:**

- **Avoid Costly Mistakes:** Design errors are likely to result in increased cost and delay your product's entry into target markets. Our courses provide extensive education on the intricate requirements affecting your product and industry, helping mitigate the risk of costly errors.
- **Maintain a Knowledgeable Workforce:** Whether due to employee turnover, new product designs, entry into new markets, or the need for a refresher, our training helps keep your workforce up to date and well-informed about evolving requirements.



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# HazLoc Training Program Details

## Introduction to Hazardous Locations (HazLoc)

**Duration:** 1-2 Hours | **Cost:** \$50 USD

**Overview:** In this course, participants will gain foundational knowledge in safety considerations for hazardous environments. The course covers essential topics, including area classification, properties of flammable materials, sources of ignition, methods of protection, applicable standards and codes, and groupings and temperature classes.

**Ideal for** Product Management teams, Sales teams, Marketing professionals, and Customer Service professionals.

## HazLoc Explosionproof & Flameproof - Level 1

**Duration:** 2 Days | **Cost:** \$1,500 USD

**Overview:** Participants will delve into the intricacies of explosionproof and flameproof enclosures and their components. This course covers an extensive range of topics, including metallic and non-metallic enclosures, fasteners, O-ring grooves, bolts, surface roughness, threaded joints, flat joints, cylindrical joints, rabbet/spigot joints, and operating rods and shafts.

**Ideal for** manufacturers and designers of explosionproof and "Ex d" electrical equipment.

## Advanced HazLoc Explosionproof & Flameproof - Level 2

**Duration:** 3 Days | **Cost:** \$2,100 USD

**Overview:** Participants will undergo an in-depth exploration of safety considerations in hazardous environments. The course covers a wide range of critical topics, including shafts with sleeve bearings, ball/roller bearings, welded joints, cemented joints, fused glass joints, labyrinth joints, conical joints, and more.

**Ideal for** manufacturers and designers of explosionproof and "Ex d" electrical equipment.

## Hazardous Locations (HazLoc) Fundamentals

**Duration:** 1 Day | **Cost:** \$800 USD

**Overview:** Participants will gain an understanding of the applicable legislation, equipment requirements, and processes related to hazardous areas. Specifically, this course will cover a wide range of topics, including all global schemes, properties of flammable materials, area classification, equipment protection concepts, equipment marking, and an exploration of the certification process for different markets, among other key topics.

**Ideal for** organizations and professionals who are new to the HazLoc industry.

## HazLoc Intrinsic Safety - Level 1

**Duration:** 2 Days | **Cost:** \$1,500 USD

**Overview:** Participants will be equipped with an understanding of intrinsic safety (IS). This course includes defining various safety aspects, understanding basic IS framework requirements, and learning about power supplies and resistive safety. It also covers capacitive and inductive safety, surface temperature assessment, and the rating of safety components. Participants will also learn about the physical construction of safety components and the understanding of infallible components, assemblies, and connections.

**Ideal for** manufacturers and designers of "Ex i" electrical equipment.

## Advanced HazLoc Intrinsic Safety - Level 2

**Duration:** 3 Days | **Cost:** \$2,100 USD

**Overview:** Participants will develop a robust understanding of various electrical and electronic components. This course covers the definition, assessment, and testing of specific components like transformers, fuses, and supercapacitors. It also explores the intricacies of Intrinsically Safe (IS) cells and batteries, their construction, and safety measures, as well as pollution degree reduction and separation distances, according to the requirements stipulated in Annex F.

This course will also delve into spark ignition assessment and safety-critical components. Lastly, it covers the significant changes from Edition 6 to Edition 7 of IEC 60079-11, equipping participants with a strong understanding of the changing requirements.

**Ideal for** manufacturers and designers of "Ex i" electrical equipment.



To learn more about our training program & technical education courses for hazardous locations (HazLoc), visit our website at [csagroup.org/HazLocTraining](https://www.csagroup.org/HazLocTraining).