

# IEC Training Requirements

*Based on the requirements of IEC60079-14 Ed 4.0*

The IEC 60079 series of standards contain multiple standards on the construction, testing, selection, installation, and maintenance of equipment for use in areas with potentially explosive atmospheres. Although the ATEX directive references the EN 60079 series of standards, it should be noted that these standards are identical to the IEC standards.

The IEC standards are intended to create a GLOBAL standard for safety in hazardous areas and hazardous area equipment. They are being adopted by more and more countries across the globe, with the aim of not only reducing trade barriers on a global scale but also to ensure the utmost safety in operating in these environments.

IEC 60079-14 is the standard on selection and installation for equipment intended for use in hazardous areas. The standard details the knowledge that personnel who are tasked with designing, constructing, or managing such areas should have in order to ensure these areas are built and operated in the safest manner. These are not requirements, but suggested levels of competency.

A certification program exists within the IECEx for personnel competency. Persons certified under this program receive a certificate demonstrating their competence in any combination of 10 areas regarding hazardous area installations.

## **Knowledge and Skills Requirements**

### Responsible Persons

Responsible persons who are responsible for the processes involved in the design, selection and erection of explosion protected equipment shall possess, at least, the following:

1. General understanding of relevant electrical engineering
2. Understanding and ability to read and assess engineering drawings
3. Practical understanding of explosion protection principles and techniques
4. Working knowledge and understanding of relevant standards in explosion protection
5. Basic knowledge of quality assurance, including the principles of auditing, documentation, traceability of measurement and instrument calibration

Such persons shall confine their involvement to the management of competent Operatives conducting selection and erection duties and not engage themselves directly in the work without ensuring their practical skills at least meet the requirements given in this document.

### Operatives (Selection and Erection/Installation)

Operatives shall possess, to the extent necessary to perform their tasks, the following:

1. Understanding of the general principles of explosion protection
2. Understanding of the general principles of types of protection and marking
3. Understanding of those aspects of equipment design which affect the protection concept
4. Understanding of content of certificates and relevant parts of IEC 60079-14
5. General understanding of inspection and maintenance requirements of IEC 60079-14

6. Familiarity with the particular techniques to be employed in the selection and erection of equipment referred to in IEC 60079-14
7. Understanding of the additional importance of permit to work systems and safe isolation in relation to explosive protection

### Designers (Design and Selection)

Designers shall possess, to the extent necessary to perform their tasks, the following:

1. Detailed knowledge of the general principles of explosion protection
2. Detailed knowledge of the general principles of types of protection and marking
3. Detailed knowledge of those aspects of equipment design which affect the protection concept
4. Detailed knowledge of content of certificates and relevant parts of 60079-14
5. Understanding of practical skills for the preparation and installation of relevant concepts of protection
6. Detailed knowledge of the additional importance of Permit to Work systems and safe isolation in relation to Explosion Protection
7. Detailed knowledge of the particular techniques to be employed in the selection and erection of equipment referred to in IEC 60079-14
8. A general understanding of Inspection and Maintenance requirements of IEC 60079-17

### **Competencies**

#### General

Competencies shall apply to each of the explosion protection techniques for which the person is involved. For example: it is possible for a person to be competent in the field of selection and erection of Ex'i' equipment only and not be fully competent in the selection and erection of Ex'd' switchgear or Ex'e' motors. In such cases, the person's management shall define this in their documentation systems.

#### Responsible Persons

Responsible Persons shall be able to demonstrate their competency and provide evidence of attaining the knowledge and skill requirements specified above relevant to the types of protection and/or types of equipment involved.

#### Operatives

Operatives shall be able to demonstrate their competency and provide evidence of attaining the knowledge and skill requirements specified in above relevant to the types of equipment involved. They shall also be able to demonstrate their competency with documentary evidence in the:

1. Use and availability of documentation
2. Production of job reports to the use
3. Practical skills necessary for the preparation and installation of relevant concepts of protection
4. Use and production of installation records

### Designers

Designers shall be able to demonstrate their competency and provide evidence of attaining the knowledge and skills requirements specified above relevant to the types of protection and/ or types of equipment involved. They shall also be able to demonstrate their competency with documentary evidence in the:

1. Production of documentation
2. Production of designers certificates to the uses
3. Practical skills necessary for the preparation and compilation of relevant design details for the concepts of protection and systems involved
4. Update and production of installation records as specified in 60079-14

#### **Assessment**

The competency of Responsible Persons, Operatives and Designers shall be verified and attributed, at intervals relevant to national regulations or standards or user requirements, on the basis of sufficient evidence that the person:

1. Has the necessary skills required for the scope of work
2. Can act competently across the specified range of activities
3. Has the relevant knowledge and understanding underpinning competency

A verification of 'practical skills' is necessary for people involved in the preparation and installation of equipment.

**ATEC Training & Certification Services, LLC courses meet the training and competence assessment requirements of the IEC standards. Students successfully completing our competency courses are awarded a certificate verifying their compliance with the competency assessment standards specified by the IEC standards.**