

Fact Sheet No.8

CompEx Modules EX11 for Gas and Vapour Environments

Module Breakdown

Ex11: The preparation & installation of Ex 'd', 'n', 'e', and 'p' equipment in potentially explosive atmospheres.

Locations

ExVeritas Training Centres (Wrexham UK, Cork Ireland, Valletta, Malta).

Course Duration

3 days

Maximum Number

The maximum number of candidates per course is eight for the UK and ten for Cork.

Examined

Yes (practical and theoretical). Please note the theoretical examination is on-line. Laptops will be provided for the duration of the examination.

Certificate issue

Yes (Certificate of Core competency)¹

Audience

Practitioners; for those with a practical background, the course may also be beneficial to maintenance engineers, project engineers wishing to gain a practical understanding of the subject

Course Overview

The course is intended to give awareness to the candidate with regard to working in explosive atmospheres formed by gases, vapours & mists. It covers the basic elements of application design as well as a more detailed review of the

¹ Certificate will list the assessments the candidate has been successful in. Full certification is issued provided the candidate can demonstrate base line competency through existing training and qualifications supplemented by an employer's letter of endorsement.

specific requirement for equipment selection, installation, inspection and maintenance of mechanical installations in explosive atmospheres. The course will give an understanding and awareness of the requirements of working safely in a potentially explosive atmosphere. The course covers elements of the installation requirements from a practical viewpoint. For the inspection module then a review of a typical mechanical installation is also covered.

All presentation material is in Microsoft PowerPoint, whilst hand-outs are available in PowerPoint (three slides per page) some of the presentations are available in word documentation format. The format of the course notes are intended that they can be used as an aide-memoir tool in the future for the candidate.

Course delivery and all assessment material (instruction as well as exam papers) are currently in **English**.

English Language Proficiency Levels.

It is expected that attendees to CompEx courses have a suitable level of the English language associated with a technical discipline, sometimes identified as “Technical English”. As English language learners acquire English as a second language, they progress through five language proficiency levels:

1. beginning,
2. early intermediate,
3. intermediate,
4. early advanced, and
5. advanced.

It is recommended that the minimum acceptable level of English for the CompEx Ex11 course will be “early advanced” or higher.

Course Agenda

Health & Safety

Introduction to safe working in explosive atmospheres

Legal Aspects

Health and safety legislation for working in explosive atmospheres.

Explosive Atmospheres

Introduction into the subject including definition of the three groups, gas/vapour or dust subdivisions, surface temperatures, temperature classes, density of gases and vapours, flammable range and explosive range ambient temperatures, minimum Ignition Energy (MIE), Maximum Experimental Safe Gaps (MESG), etc.

Area Classification

Understanding of the basic requirements of area classification, i.e. IEC 60079-10-1 gases and vapours grading sources of release i.e. continuous, primary or secondary, zone types etc.

ATEX Directive 2014/34/EU (was 94/9/EC – Equipment)

A detail review of what the equipment marking on different types of equipment means: e.g. ATEX and CENELEC marking schemes.

Equipment Protection Levels (EPL)

Overview of the IEC Equipment Protection Levels for explosive atmospheres e.g. Ga, Gb, Gc

Protection Concepts

An overview of the concepts as applied to the equipment for use in explosive atmospheres e.g.

Mechanical concepts – Ex h (c, k, and b);

Principals of how the mechanical concepts works;

Installation practices for equipment installed in gas/vapours environments

Review of the requirements for mechanical installations in explosive atmospheres.

Inspection and Maintenance for equipment installed in gases/vapours

Review of the requirements with regard to the inspection and maintenance of mechanical installations in explosive atmospheres.

Understanding of the additional importance of permit to work systems and safe isolation in relation to explosion protection.

Re-enforces attitudes and work processes in relation to working in a potentially explosive atmosphere.

Course Agenda

1. Health and Safety
2. Explosive atmospheres
3. Area Classification
4. ATEX 94/9/EC- Equipment and equipment marking
5. Equipment Protection Levels.
6. Installation Practices (Mechanical concepts)
7. Inspection Practices and guidance.

Assessments

Candidates are required to undertake a series of practical assessments. These assessments are divided to cover the elements of module Ex11. A time limit is set against each assessment as this is designed to simulate the pressures that can be encountered in the work place. In addition to the above practical assessments a candidate's knowledge is assessed by undertaking a multi-choice examination. On completion of the course certification will be awarded based on candidates passing both the practical and theoretical parts of the assessments.

Candidate Pre-Qualifications

It is a pre-requisite requirement of the course that candidates are able to demonstrate their underpinning knowledge and training as an "Mechanical" craftsperson. There is a recognised route for this within the UK through apprenticeships, national vocational qualifications (NVQ), specific training courses, etc.

Candidates outside of the UK attending a course are encouraged to start some form of dialogue with ExVeritas as early as possible in order to ensure that their local, national or company scheme meets the criteria set by CompEx.

Employment/Sponsorship Letter

A Company employment/sponsorship letter will also be requested in support of the candidates' technical qualifications, career history and current technical role. A template sponsorship form will be issued along with the booking forms.



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