Fact Sheet No.8

CompEx Modules EX11 for Gas and Vapour Environments

Module Breakdown

EX11

This course determines the core competency of mechanical practitioners working in explosive atmospheres. Course delivery is conducted over three days consisting of a mechanical hazardous area awareness course including the established CompEx Foundation Module (Ex F), with a written examination and finally overall core competency is validated with an installation and inspection practical assessment on mechanical equipment.

Ex11 follows a syllabus to enable safe working practices for the international standard ISO 80079 Parts 36 & 37 and allows employers to benchmark the core competency requirements of both their staff and sub-contractors

The installation and inspection of Ex ‘h (c, b, and k) equipment in potentially explosive atmospheres.

Locations

Exveritas Training Centres (Wrexham UK, Cork Ireland, Valletta, Malta, BOLOGNA Italy).

Course Duration

3 days

Maximum Number

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

Examined

Yes (practical and theoretical). Please note the theoretical examination is on-line. Lap tops 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 basic elements of application design as well as a more detailed review of the 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 either 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**.

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[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.

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 atmosphere.

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 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.

Minimum internet requirements

Hardware

Processor 1.80GHz or faster

RAM 4GB as a minimum and 8 GB as the recommended (with 1GB of free memory whilst the application is running)

1GB of free space

Single display

Screen resolution of 1024x768 (1280x1024 for BTL test centre network suppliers)

Software

Supported operating systems:

Windows 7 (32bit or 64bit)

- Windows 8 (32bit or 64bit)
- Windows 8.1 (32bit or 64bit)
- Windows 10 (32bit or 64bit)

Microsoft .NET Framework 4.5.2

Running SecureClient

General

1GB of free disk space

Note: Depending on the test you are running, you may need more disk space.

Tests may contain media or attached files. In this case, you may also need:

- External applications capable of opening files, for example text documents, spreadsheets, video, audio, or PDFs.
- Audio capability and headphones
- Microphone

Bandwidth

A centre connection of 2Mbps or greater for every 30 candidate tests being sat at the same time is recommended to ensure candidates are not affected by connection issues during test delivery. You are advised to download the test in advance if you do not want candidates to have to wait for the test to download at the start of the session.
Please note that the use of 3G cards may not guarantee a constant bandwidth and could therefore not meet the minimum requirements.

Depending on the size of the test and number of candidates, download speeds and submission times may be affected.

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