

## Fundamentals of Explosion Protection.

### The IECEx Scheme for Certification of Personnel Competencies (CoPC).

The IEC International Electrotechnical Commission has defined a scheme for certification acc. to standards for potentially explosive atmospheres.

This also includes a procedure for the certification of persons working in explosion protection, the IECEx Scheme for Certification of Personnel Competencies – CoPC.

The aim and intention of this IECEx personal certification is to offer an international uniform and comparable standard of qualification and further training to specialists confronted with safety-related requirements of explosion protection and working in potentially explosive atmospheres.

TÜV Rheinland has fulfilled and successfully completed the requirements for the IECEx assessment process and is an approved Recognised Training Provider (RTP) of the IECEx CoPC Scheme and therefore authorized and entitled to issue certificates for specialist working in explosion protection. In accordance with the IECEx requirements defined in the Operational Document OD 504, TÜV Rheinland offers seminars on the defined modules Ex 000 to module Ex 010.

The Operational Document OD 504 contains and explains the contents of all competence modules as well as the required prerequisites. These modules are offered by TÜV Rheinland and other internationally operating companies in order to ensure that the further training and qualification of specialists is internationally comparable and at a uniform quality level.

These modules are structured as follows in terms of content and according to the requirements for participation:

#### **UNIT EX 000**

Basic knowledge and awareness to enter a site that includes a classified hazardous area.

#### **UNIT EX 001**

Applying the basic principles of protection in explosive atmospheres.

#### **UNIT EX 002**

Performing classification of hazardous areas.

#### **UNIT EX 003**

Installing explosion-protected equipment and wiring systems.

#### **UNIT EX 004**

Maintaining equipment in explosive atmospheres.

#### **UNIT EX 005**

Overhauling and repairing explosion-protected equipment.

#### **UNIT EX 006**

Testing electrical installations in or associated with explosive atmospheres.

#### **UNIT EX 007**

Performing visual and close inspection of electrical installations in or associated with explosive atmospheres.

#### **UNIT EX 008**

Performing detailed inspection of electrical installations in or associated with explosive atmospheres.

#### **UNIT EX 009**

Designing electrical installations in or associated with explosive atmospheres.

#### **UNIT EX 010**

Performing audit inspection of electrical installations in or associated with explosive atmospheres.

## GENERAL INFORMATION

Participants must meet certain requirements for participation in the individual modules and successfully complete an examination for each module. The IECEx CoPC certificate is then issued, listing and confirming the participant's qualification. In addition, holders of a valid IECEx CoPC certificate are listed on the IECEx website and each participant can get a personal ID card.

The IECEx CoPC certificate is recognized worldwide. As globalization continues, more and more companies and industries are demanding that individuals or professionals demonstrate expertise and competence in relevant national and international standards and norms relevant in explosion protection.

This includes not only being able to define safety-related requirements for installations and the classification of potentially explosive atmospheres, but also being able to provide evidence of an appropriately suitable qualification.

## TÜV RHEINLAND OFFERS UNITS EX 000 AND EX 001 IN A ONE-DAY SEMINAR.

The seminar is held online or as a classroom seminar at the TÜV Rheinland headquarters in Cologne, Germany. Seminar documents are sent as a pdf file.

## TARGET GROUP

Specialists who want to acquire or refresh basic knowledge in the field of explosion protection.

## CERTIFICATE

Participants who wish to obtain an IECEx CoPC certificate in accordance with the IECEx Scheme for the units Ex 000 and Ex 001 must take and pass an examination.

## ID-CARD

In addition, IECEx issues an ID card to certified persons – similar to a credit card. On this card the name and photo of the IECEx certified person is depicted, as well as the company logo of the issuing ExCB certification body – in this case the TÜV Rheinland company logo.

## REQUIREMENTS

No requirements or prior knowledge need to be fulfilled to attend the Ex 000 and Ex 001 units.

For participation in the examination including certification, it is recommended to have a basic knowledge of explosion protection.

## SCHEDULE

Start: 9 a.m.  
Coffee break: 10.30 a.m.  
Lunch: 1 p.m. to 2 p.m.  
Coffee break: 3 p.m.  
End: 5 p.m.

## EXAM

A date for the exam will be arranged after consultation with the participant.

The exam is conducted in written form and consists of a part with multiple choice questions and open questions. The exam will take approximately 8 hours.

Start: 9 a.m. End: approx. 5 p.m.

## FEE

Price for participation in the seminar (modules EX 000 and EX 001)  
Minimum number of participants 10 persons.

€ 950 per participant, without exam

€ 1.450 per participant, incl. exam and IECEx certificate for units EX 000 and EX 001 if exam is passed.

## CONTENT

- Basics of explosion protection
  - Explosive atmospheres and explosion-protection principles
  - Physical/chemical basics
  - Flashpoint (gas atmosphere)
  - Smoldering temperature (dust atmosphere)
  - Ignition temperature
  - Vapor pressure
  - Gas atmosphere
  - Dust atmosphere
- Occupational requirements and duties
- Entering a facility considering measures for explosion protection
- Ex certification schemes
- IECEx
  - Schemes
  - Equipment
  - Competent Personnel
- HazLoc
  - Equipment
- ATEX
  - Occupational Safety Ordinance
  - Competent Personnel
  - European Legal Requirements
- Explosion-protected equipment
  - Ignition protection techniques
  - Electrical: Techniques Marking