

Personnel Competence



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Certification of Personnel Competence (CoPC)

Key elements of the CoPC Scheme and
the relationship with Training Organizations.

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Reactions to Competence

Whenever there is discussion on Personnel Competence we find the people:

- ❖ *will respond*
- ❖ *are passionate*
- ❖ *fear the outcomes*
- ❖ *become concerned with the consequences*

What is Competence?

The concept of competence focuses on what is expected of an employee in the workplace rather than the learning process.

It embodies the ability to transfer and apply skills and knowledge to new situations and environments.

Owner/Operator Responsibility

In most countries legislation or regulations identify that the owner is responsible and accountable for the safety of the design, installation and maintenance of electrical equipment within their plant.

This is usually achieved through Occupational Health & Safety legislation in most countries.

How is Competency identified?

An owner or occupier:

- ★ can accept the responsibility of deeming his own personnel as competent however they would face the consequences if there was an incident.
- ★ rely on their personnel being considered competent through a company or National scheme
- ★ use the new pathway through the IECEx Certification of Personnel Competence scheme

What is Competence?

- ★ Competence comprises:
 - ❖ Knowledge
 - and
 - ❖ Skills



What is Competence?

- ★ Application of that knowledge and skill to the standards of performance required in the workplace.
- ★ Competence includes all aspects of work performance and not only specific skills.

Why is Competence required?

- ★ Equipment must be used correctly.
- ★ Plant must be compliant and operate safely.
- ★ Personnel Competence Scheme supports other certification schemes.
- ★ IECEx Certificate of Personnel Competence (CoPC) creates a Global scheme.
- ★ Recognizes that both knowledge and skills are needed but does not determine how they are obtained.

Elements of Competence

- ★ Competence involves three elements.
 - ❖ Qualifications (Off the Job)
- ★ Experience
 - ❖ (On the Job)
- ★ Recent and Relevant Training
 - ❖ (Off and On the Job)

Elements of Competence

Competence assessments require objective evidence that is:

★ Valid –

- ❖ relates to the area of competence.

★ Direct –

- ❖ attributable to the competent person.

★ Authentic –

- ❖ is shown to be original, correct & in order.

★ Current –

- ❖ It is recent work and not demonstrated to older standards.

★ Sufficient –

- ❖ covers all aspects of the required competence.

Philosophy of the IECEx CoPC

- ★ The Scheme has been established to provide a consistent approach to the assessment of the Competence of personnel.
- ★ It assesses the individual – not an organization.
- ★ Independent of training to remove conflict so not concerned with how the knowledge and skills are obtained.

Where Competence is Required? (Examples)

Examples of Standards references:

IEC 60079-14 Ed 5, Clause 4.5 & Annex A

IEC 60079-19 Ed 3, Clause 4.4.1.3 & Annex B

Owner/Operator Responsibility

Responsible for plant safety
Use qualified persons

Development of the IECEx CoPC

IECEX CoPC has developed:

- ★ **IECEX05** - Scheme Rules based on:
ISO/IEC17024 & 17065
- ★ Operational Documents for:
 - ❖ **OD501** - Assessment Procedures for ExCBs;
 - ❖ **OD502** - Application for Personnel Competence;
 - ❖ **OD503** - ExCB Procedures for issuing and maintaining certificates
 - ❖ **OD504** - Specification for Units of Competence Assessment Outcomes.

Scheme Rules IECEx05

Key details include:

- ★ *Suspension or withdrawal*
- ★ *Compliance with rules*
- ★ *Appeals*
- ★ *Withdrawal*
- ★ *Suspension*
- ★ *Complaints*
- ★ *Typical Forms for application*
- ★ *Governing of the IECEx Scheme for Competence*
- ★ *Principles of the IECEx Certification of Personnel Competence Scheme*
- ★ *Confidentiality*
- ★ *Participating countries*
- ★ *IECEx instruments*
- ★ *Certification procedure*
- ★ *Acceptance of certification bodies*
- ★ *Complaints*

Units of Competence

The different types of work are covered by “Units of Competence”

- ❖ A unit of competence is the competence required for a useful work function and which resides with an individual. It must include the ability to apply both the theory and the practical skills.
- ❖ This should not be confused with a job description which may comprise a number of units of competence.
- ❖ Recent restructure of the ‘basic’ units has introduced a new Unit 000 which is not a unit that provides for work to be undertaken.

Units of competence

Different type of work is by “Units of Competence”

Each IECEx Unit of Competence comprises:

- ❖ Scope
- ❖ Pre-requisites
- ❖ Elements and performance criteria
- ❖ Scope Limitations

Units of Competence

The ten “Units of Competence” are:

- ★ Apply basic principles of protection in explosive atmospheres
- ★ Perform classification of hazardous areas
- ★ Install explosion-protected equipment and wiring systems
- ★ Maintain equipment in explosive atmospheres
- ★ Overhaul and repair of explosion-protected equipment
- ★ Test electrical installations in or associated with explosive atmospheres
- ★ Perform visual & close inspection of electrical installations in or associated with explosive atmospheres
- ★ Perform detailed inspection of electrical installations in or associated with explosive atmospheres
- ★ Design electrical installations in or associated with explosive atmospheres
- ★ Perform audit inspection of electrical installations in or associated with explosive atmospheres

Units of Competence

- ★ Unit Ex 000 – Basic knowledge and awareness to enter a site that includes a classified hazardous area.
 - ❖ covers the safety obligation of person entering a hazardous area, and demonstrates the person has an understanding of the nature of the risks associated with hazardous areas, limitations on devices that may be taken into a hazardous area and the occupational health and safety responsibilities and procedures related to hazardous areas
 - ❖ Is not a 'competence' that allows work to be carried based on Ex requirements
 - ❖ Attracts an IECEx Ex Facility Orientation Certificate (EFOC) not a CoPC

Units of competence

Scope limitations:

- ❖ Type of explosion protection
- ❖ Product type
- ❖ Groups
- ❖ Voltages
- ❖ Other – which may be related to specific National requirements

Validity

- ❖ On-going surveillance
- ❖ Re-certification every 5 years.

Application for CoPC

An applicant is expected to provide:

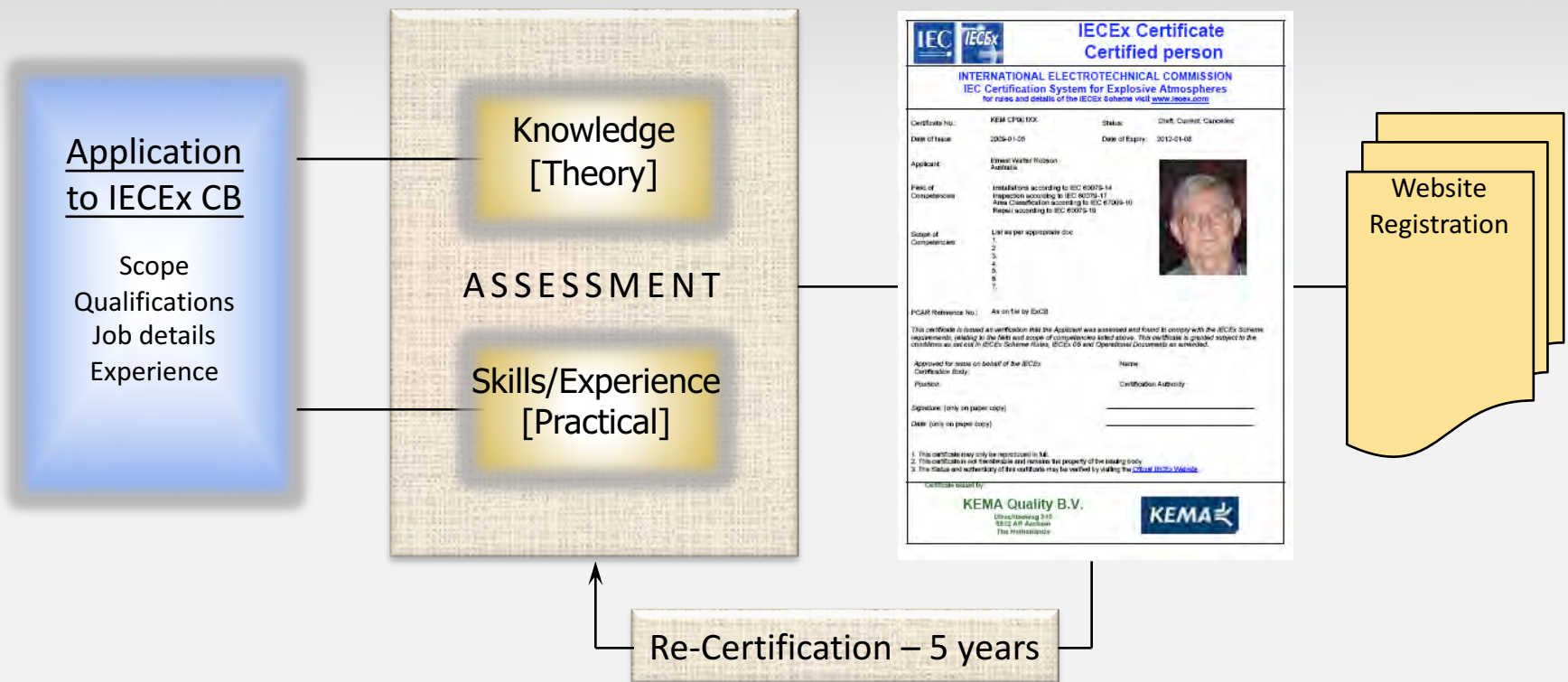
- ★ Evidence of education and training:
 - ❖ Work experience in both non-hazardous and hazardous areas
 - ❖ Validation of the information
- ★ Personal details sufficient to uniquely identify the individual
- ★ Scope of Competence being requested
- ★ Declaration

Instruments of the CoPC Scheme

- ★ Application Form
- ★ A Certificate of Personnel Competence [CoPC] or An Ex Facility Orientation Certificate [EFOC]
- ★ A Personnel Competence Assessment Report [PCAR]
- ★ An Identification Card (credit card size)

Details of the Certificate, ID Card and PCAR
can be verified on-line at www.iecex.com

IECEX CoPC Process



Additional

In addition to the Rules and Operational Documents:

- ❖ A simple language Guidance Document IECEx05A has been released and is intended for use by any person seeking a CoPC or any organization requiring to verify they are using Competent persons. It is also very useful for organizations wanting to use competent persons
- ❖ A databank of assessment questions and tests for use by the ExCBs conducting assessment.

Summary

- ★ Recognizes unique Hazardous Area requirements
- ★ Areas (units) of Competence
- ★ Global Scheme with Regional requirement allowance
- ★ Assists in maintaining plant integrity and function
- ★ Independent of training
- ★ Sets the Competence benchmark for use in any regulatory framework
- ★ Endorsement by United Nations, via the UNECE, as the best practice model for verification of compliance with International Standards.

Key areas for ExCBs

- ★ Compliance with ISO/IEC17024.
- ★ Central Certification Committee.
- ★ Appointment of Examiners.
- ★ Development of Questions.
- ★ Facilities for Practical Skills assessment.
- ★ Verification of acceptance of evidence.
- ★ Use of additional Regional or National Standards.
- ★ Separation of Training.

Summary

Standards for hazardous locations require the use of special equipment to avoid ignition of the explosive atmosphere.

If that special equipment is NOT installed correctly it may no longer provide the explosion protection integrity and therefore cause the installation to be unsafe.

The use of Competent persons allows equipment to be used correctly and the explosion protection integrity for the life of the equipment will be maintained by persons who have been assessed and found to have the necessary knowledge and skills. Competent persons can identify faults which could become potential sources of ignition.

Summary

IECEX CoPC opens the way as a global scheme to provide consistency in the assessment of competent persons. It is structured to provide separation from any training schemes and therefore gives the highest level of integrity of assessment.

This Scheme recognizes that the knowledge and skills could be obtained by any means such as tertiary education, internal company training, external private training, on the job mentoring, etc.

The IECEX CoPC is the ideal Scheme to benchmark competence requirements for use within any framework providing essential support for the overall package of compliance requirements for hazardous areas.

Training Organizations

Introduction to Training

- ★ The introduction of requirements, application and assessment procedures for applicant Recognised Training Providers (RTPs) in the Recognised Training Provider Program (RTPP).
- ★ Aim of the IECEx RTPP is:
 - ❖ for training organizations to benchmark their current operations to the IECEx 05 / OD 504 and other aspects of the IECEx System such as the personnel requirements of the IECEx Certified Service Facilities Scheme.
 - ❖ to provide their customers with the confidence that they have implemented processes to manage and provide training services for Ex equipment.

Introduction to Training

Expectation that an RTP will provide sound training that covers the all aspects of the Ex Field

- ❖ Provide a pathway to the IECEx CoPC.
- ❖ Align with the structure and requirements of IECEx CoPC
- ❖ Maintain the credibility of the IECEx CoPC Scheme.

Provides a framework that formalizes international recognition of acceptable Ex skills and knowledge of training provider organisations by the IECEx System with benefits including:

- ❖ *access to the participants in the Ex sector*
- ❖ *credibility, through IECEx 'recognition', of their training services*
- ❖ *establishing closer links with other participants and stakeholders in the "IECEx System".*

Introduction to Training

Provide trainees with:

- ❖ *assistance in making an informed choice of training providers*
- ❖ *an input to risk management practices*
- ❖ *compliance with workplace health and safety regulatory requirements related to personnel qualifications*
- ❖ *independent evaluation and qualification that is focused on relevant workplace competency (not just to pass an exam after training)*
- ❖ *assistance to 'end users' and service providers to select competent training service partners*
- ❖ *assurance that training is being provided with links to the latest versions of relevant IECEx Rules and Ex Standards.*

Principles of the Training Program

1. The overriding interest of the IECEx System, particularly the IECEx CoPC Scheme is COMPETENCE.
2. Participation in a training course provided by a training provider is ONE of several paths to achieving competence.
3. The IECEx RTPP is only for providing training services. The CoPC Scheme will continue to operate independently and certify an individuals competence.
4. The scope of the IECEx RTPP must cover all CoPC Units of Competence but can cover more.
5. A RTP shall support the IECEx System.
6. Participation in the IECEx RTPP is voluntary.

Principles of the Training Program

7. Training is NOT compulsory before applying for CoPC.
8. The recognition of a training provider is not certification or recognition of the content of the training material.
9. The recognition of a training provider does guarantee a successful outcome under the IECEx CoPC Scheme.
10. The recognition of a training provider shall support and not devalue the IECEx CoPC Scheme.

Quality Requirements

- ★ Quality Management System in place.
- ★ Control of documents
 - ❖ training course materials and related documents,
 - ❖ documented procedures ensuring compatible with IECEx 05.
- ★ Control of records
 - ❖ retain records to satisfy IECEx OD521.
As a minimum:
 - ❖ documents related to the RTPP status,
 - ❖ training records of both candidates,
 - ❖ details of practical training courses & simulated workplaces

Quality Requirements

- ★ All the elements, requirements and provisions ensuring compliance with IECEx OD521 as written policies, procedures and instructions.
- ★ Responsibilities and authority is defined for:
 - ❖ the effective coordination of training activities,
 - ❖ the liaison with the IECEx ExPCC regarding changes,
 - ❖ the customers' information of any applicable specific conditions for the training course
 - ❖ the review and maintenance of training course materials.

Quality Requirements

- ★ The RTP ensures that all persons involved are properly trained. People 'involved' may include those concerned with training, maintenance of training course materials, sales, marketing, supply management, calibration and control services and other services.
- ★ Test and measuring instruments used for practical training courses are calibrated where they may impact on the results. (for example IEC 60079-19 requires demonstrated ability to use measuring equipment competently).

Trainers

- ★ Specialist trainers are used with:
 - ❖ demonstrated knowledge of Ex technologies and relevant IEC Standards
 - ❖ an understanding of the application of standards, directives, specifications and regulations pertaining to the Ex sector.
 - ❖ evidence of above as relevant to the training material being provided. An IECEx Certificate of Personnel Competence (or commitment to complete this) may be sufficient evidence.
 - ❖ access to the Ex sector and relevant IEC Standards as the basis for ensuring the currency and relevance of training materials and methods.

Rules applicable to Training Organizations

- ★ The RTPP does not apply to the content of training material but it is expected it will reflect the IEC TC31 standards and take into account OD 504 without any conflicts.
- ★ An RTP may issue a 'record of attendance', including the IECEx logo, as approved by IECEx.
- ★ The subcontracting of training services is not permitted as it must be under the full control of the RTP.
- ★ The requirements of ISO / IEC 17024 with respect to the separation of training provision and competency assessment functions applies to all RTPP applicants.

Agreement

Declaration by a training provider includes:

- ★ A description of the body which gives information about the legal status of the body and includes an organization chart:
- ★ the address(es) at which it carries out its operations (both administrative and for training activities);
- ★ any legal relationship between the training organization and ExCBs operating in the CoPC Scheme
- ★ documents available for providing supporting information, for example with regard to other relevant credentials or references as a training provider
- ★ Evidence of a documented management system.

Agreement

- ★ Awareness of the operation of personnel certification systems and the principles of ISO/IEC 17024.
- ★ Details of training staff with competence in Ex technologies
- ★ Details of the scope of their training services to be provided.
- ★ Acceptance that IECEx has the right to:
 - ❖ *request information on the RTP's training activities*
 - ❖ *request samples of training materials*
 - ❖ *request copies of the RTP's management system documentation*
 - ❖ *to contact, via the RTP, trainees for the purposes of surveying them on the training services provided or to review the results of individuals' assessment*

Agreement

- ★ Agreement to advise any changes to the organisation's systems or personnel
- ★ Agreement to respect the intellectual property rights of the International Electrotechnical Commission (IEC).
- ★ Acknowledgement that their use of the IEC Ex logo will be monitored by the IECEx Secretariat and instances of misuse reported to the IECEx ExMarkCo.
- ★ Agreement to participate in the activities of IECEx ExPCC Working Groups as requested.

QUESTIONS

Thank you very much for your attention
and for the opportunity to present
this information on Competence

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