Fuel for Safety
How IECEx Certification Helps to Reduce Risk

Mark Amos, IECEx Business Manager, IECEx
The Executive Centre, Australia Square Level 33, 264 George Street, Sydney NSW 2000 Australia
Tel: +6124628 4690 • Email: info@iecex.com • Web: www.iecex.com

All companies expect their employees to get home after work. In some industries like automotive refuelling stations or petrol stations, oil and gas extraction or refineries or even sewage treatment plants, workers need to be more aware of their surroundings and what is happening around them because they work in explosive environments.

In a place with an explosive atmosphere safety is important. It is important in the equipment – the manufacture, installation, repair and overhaul – as well as in the competencies of the people working in those environments.

IECEx, IEC System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres, covers the highly specialised field of explosion protection associated with the use of equipment in areas where flammable gases, liquids and combustible dusts may be present. The System provides the assurance that equipment is manufactured to meet safety standards and that services such as installation, repair and overhaul also comply with IEC, International Electrotechnical Commission, International Standards on safety.

IECEx can help companies in industries like oil and gas measure the performance of processes and systems against accepted best practice and plan improvements in safety, efficiency, environmental performance and productivity.

What is IECEx?

IECEx is the International System solely dedicated to providing internationally recognised Certification Schemes as verification of compliance with International Standards.

In the early 1990s various industries found that as governments were responding to the concerns of risk in the Ex field. Differing national standards were being introduced along with differing certification and approval regimes. This meant that if a manufacturer wished to sell a product in more than one country, the manufacturer was required to obtain approval/certification from each. For many countries this meant the need to repeat expensive and time consuming product testing and assessment. The differing approval processes, some with factory inspections, others not and different intervals between factory inspections all meant additional costs and delays in bringing products to the market.

This led the industry to request that the IEC create an international forum to provide manufacturers with a single system. This system would be one where testing and assessment would only need to be conducted once. Acceptance by all members of the system would ensure that operators of the system would have the necessary equipment, facilities, systems and competent staff to conduct this work.

The result is IECEx, an International Certification Scheme, modelled on the strict compliance with International ISO/IEC Standards such as 17025, Guide 65 and 67. Compliance with the standards listed on an IECEx certificate is mandatory as part of an ISO System No 5 Certification Scheme (according to ISO/IEC Guide 67).

IECEx now operates three separate International Certification Schemes covering a large number of industrial sectors addressing equipment, service providers and competent persons. The United Nations, through UNECE (United Nations Economic Commission for Europe), recommended the IEC and IECEx as the world's best practice model for the verification of conformity in explosive atmospheres to International Standards.

One of the roles of the United Nations is to protect workers and consumers – as well as all human beings and forms of life – from hazards. It also exists to promote sustainable development that is in keeping with the needs of present and future generations. By joining forces with the United Nations, through UNECE, the IEC and IECEx aim to act as catalysts in the drive to arrive at a coalition. This coalition will provide and ensure safety for all industries worldwide where flammable or combustible materials are used, stored or transported, and where the risk of fire and explosion always lurks.

While the initial aim of the IECEx System and its Schemes was to facilitate international trade of explosion protected equipment (termed Ex equipment) by avoiding duplicate testing and certification, its role has since become much broader. Now IECEx also provides the international community with a dedicated compliance tool that assures that Ex equipment and services meet international Ex Standards.

The IECEx System comprises the following three separate Global Certification Schemes:

• The IECEx Certified Equipment Scheme

This Scheme provides:

a) A single International Certificate of Conformity that is issued when manufacturers successfully complete:

• Testing and assessment of samples for compliance with Standards

• Assessment and auditing of manufacturers premises

• Ongoing surveillance audits of manufacturers premises

or

b) A "fast-track" process for countries where regulations still require the issuing of national Ex Certificates or approval. This is achieved through global acceptance of IECEx equipment tests and assessment reports.

Certificates are issued by the IECEx Certified Equipment Scheme as "Electronic Certificates" and are live on the IECEx Website.

• The IECEx Certified Service Facilities Scheme

Ex facilities and workshops that are certified under the IECEx Certified Service Facilities Scheme provide industry with the assurance that work is done in accordance with the requirements of IEC International Standards IEC 60079-14 and IEC 60079-19.

The System includes on-site audits prior to issuing the IECEx Certificate and periodic audits to ensure repair and overhaul processes continue to satisfy the requirements.

To avoid counterfeit certificates, only "Electronic Certificates" are issued on the online system.

• The Ex Mark of Conformity Scheme

A Mark of Conformity will be granted by approved IECEx Certifiers (ExCBs). The ExCBs are located in IECEx participating countries for equipment that is covered by an IECEx Certificate of Conformity.

The Certificate of Conformity will help governments, safety regulators, and industry to have greater assurance that the equipment being operated or supplied for use in Ex areas meet the world's most respected and vigorous safety standards.

The Mark can only be placed on products or on packaging and promotional material covered by a valid IECEx Certificate of Conformity issued in accordance with the IECEx System rules.

• The IECEx Certificate of Personal Competence Scheme (CoPC)

When it is said that someone is competent it means that they are applying their knowledge and skills to a task and performing at a high level. Competence can include all aspects of a person's performance in their job given that they need to be aware of the hazards in their work area and work safely in their presence. The person needs to know what they are doing in various dangerous scenarios and they need to be able to use equipment correctly.

The IECEx Personal Competence Scheme is a global scheme that recognises that both knowledge and skills are needed for work to be safe but also makes clear that there are many paths to competency. The CoPC Scheme provides the international Ex industries with a personal qualification system that is transportable across borders.

Why is IECEx important?

IECEx prevents wasteful duplication of testing and certification. It reduces cost and the time it takes to certify equipment and people. The capital costs of Ex installation and their equipment are extremely high compared to non Ex related industrial situations. For this reason getting it right the first time is important. It is also important that maintenance and repair be done correctly as in many situations it is more cost effective to repair than replace. This is coupled with the fact that when things do go wrong in Ex they do so very quickly with severe consequences to both safety of personnel and costs in equipment and loss of production.