

# IECEX International Conference 2012

## IECEX and ATEX (and other regional systems)



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- **The European Economic Area (EEA)**
  - **The European Union (EU)**
  - **The European Free Trade Association (EFTA)**
  - **Switzerland**
- **Common policy on Ex Certification since 1976**
  - **First three ATEX Directives**
- **Current (fourth) ATEX Directive from 1994**
- **Compulsory since 2003 for all Ex Equipment**

- **Not about Safety**
- **About Removing Barriers to Trade**
- **Sets only minimum requirements**
  - **To avoid safety concerns being a barrier to trade**
- **Conformity Assessment Requirements**
  - **Not consistent**
  - **Vary with Category of Equipment**
  - **Less than earlier directives**
  - **Does not require compliance with standards**

<b>ATEX Category</b>	<b>IEC Equipment Protection Level</b>	<b>Installation Zone</b>
<b>1G / 1D</b>	<b>Ga / Da</b>	<b>0 / 20</b>
<b>2G / 2D</b>	<b>Gb / Db</b>	<b>1 / 21</b>
<b>3G / 3D</b>	<b>Gc / Dc</b>	<b>2 / 22</b>
<b>M1</b>	<b>Ma</b>	<b>Leave on *</b>
<b>M2</b>	<b>Mb</b>	<b>Switch off *</b>

**\* When flammable gas is detected in the body of the mine**

<b>Categories (Annex in 94/9/EC)</b>	<b>1 + M1</b>	<b>2 + M2 Electrical</b>	<b>2 + M2 Non-electrical</b>	<b>3</b>
<b>Type Examination (III)</b>	<b>NB</b>	<b>NB</b>		
<b>Production QA (IV)</b>	<b>NB</b>			
<b>Product Verification (V)</b>	<b>NB</b>			
<b>Conformity to Type (VI)</b>		<b>NB + M</b>		
<b>Product QA (VII)</b>		<b>NB</b>		
<b>Internal Control of Production (VIII)</b>			<b>M (+ deposit file)</b>	<b>M</b>
<b>Unit Verification (IX)</b>	<b>(NB)</b>	<b>(NB)</b>	<b>(NB)</b>	<b>(NB)</b>

- **Essential Health and Safety Requirements**
  - Several pages of generalised requirements
  - Flameproof is the only type of protection mentioned (and only in one sentence)
- **Harmonised Standards**
  - Accepted as demonstrating compliance to the EHSRs
  - Prepared by CEN and Cenelec according to a mandate from the EU Commission
  - Use of these standards is normal (though voluntary)

- EN 60000 series standards are generally technically equivalent to IEC 60000 series
- For EN 60079 series standards, the main difference is the addition of ATEX marking
- EN 50000 series standards are not directly based on IEC documents and may not have an international equivalent
  - E.g. EN 50495 Safety Systems for ATEX
- Dual certification to IEC 60079 series and EN 60079 series is common practice.

## ■ ATEX

- Body is “Notified” by national government to European Commission
- Process may not involve accreditation
- Every country has a different procedure

## ■ IECEx

- Acceptance based on peer assessment
  - From three countries outside home country
- Acceptance based on accreditation standards plus scheme rules
- Accreditation taken into account



## ■ ATEX

### ■ Manufacturer's Declaration of Conformity

- No involvement of Notified Body
- Manufacturer's sole responsibility
- Technical Documentation may never have been seen by a Notified Body (Category 3)

## ■ IECEx

### ■ IECEx Equipment Certificate

- Issued by an IECEx ExCB
- Based on review of both ExTR and QAR
- Available to all on line

- **ATEX Declaration of Conformity**
  - Theoretically made on the day each individual item of equipment is “placed on the market”
  - In practice usually pre-printed for serial production – leads to errors
  - Change in harmonisation status of standards
    - Initially not harmonised
    - Harmonised
    - Not harmonised when superseded
    - “State of the Art” issues
  - Change in authorised signatory

- **IECEx Equipment Certificate**
  - **Full ISO/IEC Type 5 Certification where the ExCB is responsible for both type examination and production**
  - **Issued by ExCB, not manufacturer**
  - **Status checkable on-line in real time**
    - **Current, Suspended, Cancelled**
  - **Full text available to all**
  - **Searchable database**

- **An over-simplification !**
- **ATEX may have serious issues but it also has some good points**
  - **Need not adhere to the exact requirements in the standards but use the principles in the EHSRs.**
  - **This gives flexibility and allows equipment of equivalent safety to be assessed – provided that the assessor has the competence**
  - **Covers all equipment and protective systems whereas IECEx currently limited to just electrical equipment**

- **The ideal solution**
- **IECEX gives full confidence in the conformity of the equipment with standards and allows access to many markets around the world (directly or indirectly)**
- **ATEX allows access to European markets**
- **The cost for both may be little more than the cost for one**

- If the equipment is within the scope of IEC standards, adding ATEX conformity assessment documentation to the IECEx Certification is virtually a cost free process if using a European NB/ExCB
  - SGS Baseefa uses the IECEx format for nearly all reports even if IECEx is not required
- A European NB/ExCB will accept an IECEx Report from any other ExCB as an input to the process (The report will be read and clarifications may be sought as it is the NB taking responsibility for the documentation)

## ■ Right now

- An IECEx Certificate can form the basis of a Technical File for Category 3 Equipment (Zone 2) under the module “Internal Control of Production”
  - Only the DoC needs to be prepared
- An IECEx Report from any ExCB in the world can form the basis of EC-Type Examination for Category 2 or Category 3 Equipment (Zones 0 and 1)
  - A NB needs to be involved
- An IECEx QAR can be used as the basis for an ATEX QAN
  - A NB needs to be involved but will accept the QAR

- **In future times (hopefully)**
  - **An IECEx certificate issued by any ExCB in the world will be given the same status as an EC-Type Examination Certificate and QAN**
    - **In all cases, only the DoC will be needed in addition**
  - **ATEX is currently being modified along with all other “New Approach” directives in accordance with the “New Legislative Framework”**
    - **Unfortunately the use of IECEx is not being adopted at this time**
    - **The full time official of the EU Commission responsible for ATEX attended the IECEx/UNECE seminar in Split (September 2011) and seemed impressed with the IECEx System**



- **The world is divided**
- **Administrations where “certification” alone is the only requirement for market penetration**
  - **Fairly straight forward**
- **Administrations where “installation permissioning regimes” apply in addition to or as an alternative to certification**
  - **More complicated**

- **Both Certification and Permission**
  - The GOST-R Certificate can be obtained in a number of ways based on the IECEx certificate
  - The standards are based on the IEC 60079 series but have slight variations, particularly recognising a third (lower) level of protection for mining
  - The Rostekhnadzor permission can only be issued by a body licenced for the purpose
  - Recommendation: Contact the ExCB in Russia NANIO CCVE [www.ccve.ru](http://www.ccve.ru)
  - Particularly <http://www.ccve.ru/ENG/data/2/SravnenieSertSyst2.1.pdf>

- **A change in the law, effective May 2011 allowed any INMETRO accredited certification body to issue local INMETRO certification based on an IECEx ExTR and an IECEx QAR**
  - **Use of an IECEx ExCB would be preferred**
- **This has opened up the Brazilian market where previously the local body would have had to visit the manufacturer and repeat tests, even if basing certification on the IECEx certificate**

- **Both certification and permission**
  - **Local certification is issued by the Bureau of Indian Standards (BIS) based on a report from any of the Indian testing laboratories**
  - **Permission for mining equipment is issued by the Director General of Mining Safety (DGMS)**
    - **DGMS only recognises Indian Government Labs**
  - **Permission for non-mining equipment is issued by the Petroleum and Explosives Safety Organisation (formerly known just as the Chief Controller of Explosives CCoE)**
    - **PESO recognises all Indian Labs and IECEx**

- **But (for PESO)**
  - **Manufacturers outside India can sell and install equipment directly if they have a BIS certificate or a report from any Indian Laboratory**
  - **Manufacturers outside India can only use their IECEx Certificate directly if they have an Indian representative or agent who can be shown to take responsibility for follow-up servicing of the equipment**
    - **SGS Baseefa operates through its associate laboratory in India (Karandikar Laboratories) to obtain the local documentation for manufacturers**

- **IECEX is gaining ground**
  - **Directly acceptable in many places**
  - **Legislation is gradually changing in many parts of the world to make IECEx more useful**
  - **IECEX is recognised as giving a higher grade proof of conformity than some systems, particularly ATEX**
- **The future is IECEx**

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## End of Session



Thank You