

Explosion-Proof Equipment – Differences Between ATEX, IECEx and EAC EX Certification

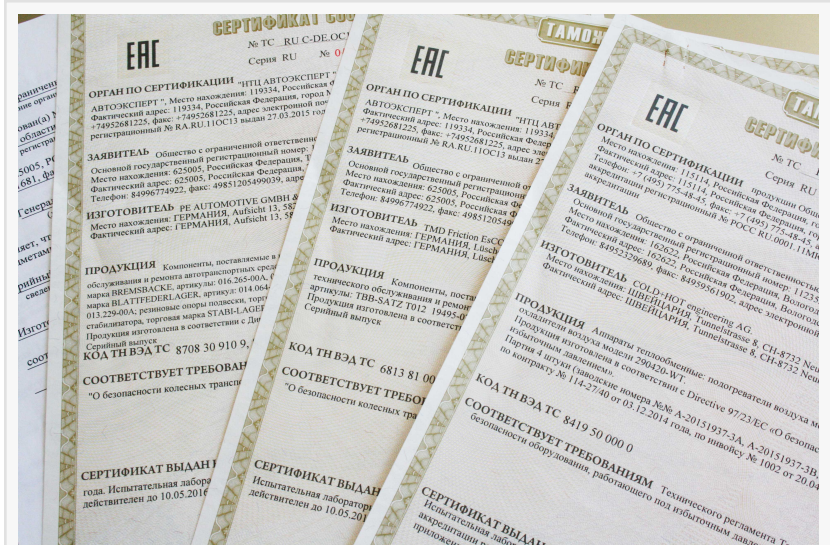
In Europe, the ATEX Directive applies. IECEx is a global certification system. In Eurasian Economic Union a technical regulation TR CU 012/2011 is obligatory.

NEW YORK, NY, UNITED STATES, October 24, 2025 /EINPresswire.com/ -- [Explosion protection](#) is a field that follows almost uniform fundamental principles of explosion safety worldwide. Although the regulations have many overlaps and remarkable similarities, there are also clear differences.

Explosive atmospheres, caused by flammable gases, vapors, fibres or dust, pose significant risks in industrial settings and human lives. Ensuring safety in these environments is crucial. Only specialized equipment designed to prevent ignition can be used in hazardous areas. Explosion protection standards have been evolved over decades in response to industrial accidents and technological progress. The ATEX Directive (EU), the EAC Ex certification under TR CU 012/2011 On safety of the equipment for operation in explosive atmospheres, and the IECEx certification system all regulate explosion-protected equipment, but they differ in scope, legal requirements, and certification procedures.

What is an [EAC EX-Certificate](#)?

The EAC EX-Certificate of the Eurasian Economic Union (EAEU) is an official document that proves that the conformity of the products is fulfilled in compliance with the specified requirements in



EAC certificate



EAC Eurasian Economic Union

the harmonized technical regulation TR CU 012/2011. It proves the capability of equipment or systems to withstand the effects of an explosion—including impact and heat—without sustaining damage, while continuing to operate normally.

What is the EAC certification procedure?

The first step is to prepare technical documents. The next step is conducting the manufacturing audit. During the audit the notified body chooses samples for testing. After analyzing the results of the tests, audit and technical documents, the certification body issues the EAC certificate. According to current legislation, only a company registered within the territory of the Eurasian Economic Union can apply for the EAC certification. In this case, the foreign producer needs an [authorized representative](#) in an EAEU Member State.

What is the Period of validity of EAC certificates?

The maximum validity under Scheme 1c is 5 years.

What are the main differences between ATEX, TR CU 012 und IECEx?

1. Legal area and scope

ATEX certification applies within the European Union and is mandatory under Directive 2014/34/EU. The TR CU 012/2011 Technical Regulation governs explosion-protected equipment in the Eurasian Economic Union (EAEU), which includes Russia, Kazakhstan, Belarus, Armenia, and Kyrgyzstan, and is also mandatory. In contrast, the IECEx certification system is a voluntary international scheme, recognized in many countries worldwide. It is based on IECEx standards developed by the IEC (International Electrotechnical Commission).

2. Application area

All three systems cover electrical and non-electrical equipment used in explosive atmospheres, including Ex components. In the IECEx also facilities and personnel competencies can be certified.

3. Conformity assessment procedures

Under the ATEX directive, manufacturers can issue a self-declaration of conformity for some kind of equipment, while Notified Bodies are required for higher-risk categories.

The EAC Ex certificate, however, can only be issued by accredited certification bodies within the EAEU. Similarly, IECEx certification requires assessment and approval only through accredited IECEx bodies regardless of the zone of use of the product.

4. Schemes and modules

ATEX uses a modular approach (Modules A, B, D, F, C1, E, G) depending on the equipment category.

TR CU 012/2011 defines certification schemes 1c, 3c, and 4c, depending on the type of delivery — serial, batch, or single production.

IECEx follows a standardized process involving both product testing and factory audits.

5. Marking

ATEX-certified equipment carries the CE + Ex marking.

EAC-certified explosion-proof equipment must bear the EAC Ex mark.

IECEX does not require a specific marking, there is no special logo. The marking is technical, following the Ex code format from the IEC 60079 standards.

6. Zones and Categories

All systems classify hazardous areas into gas (Zones 0, 1, 2) and dust (Zones 20, 21, 22).

ATEX uses Groups I and II and Categories 1, 2, and 3.

EAC Ex adds Group III for dusts and special classifications for mining: PO, PB, and ПП.

IECEX defines equipment protection levels such as a, b, and c.

7. Quality system audit

ATEX requires QAN/QAR audits for Category 1 and 2 equipment.

EAC Ex mandates a quality audit for serial production under Scheme 1c.

IECEX certification also requires an audit of the manufacturer's quality system.

8. Language requirements

Documentation for ATEX must be provided in the local EU language.

For EAC Ex, all documents must be in Russian and another official EAEU language.

IECEX documentation is typically in English.

9. Applicant eligibility

Under ATEX and IECEX, the manufacturer or an authorized representative may apply.

For EAC Ex, only a legal entity registered within the EAEU — usually a manufacturer's authorized representative — may submit the application.

10. Testing and certification bodies

Testing under ATEX is conducted by EU Notified Bodies, under EAC Ex by accredited EAC certification bodies, and under IECEX by accredited IECEX certification bodies.

Important points about EAC EX-Certificate:

1. ATEX certificate or other approvals for explosion-proof equipment are not a prerequisite for obtaining a EAC Ex-certificate. The certification body independently assesses the safety of the device regardless of existing approvals.
2. ATEX certificate and test reports cannot replace the product testing carried out by an accredited certification body within the scope of the EAC EX-certification. Tests and audit must be conducted
3. EAC certificate cannot be prolonged or amended. This is possible within the IECEX and ATEX certification. No changes are possible with the EAC certification. In case of significant technical changes of the product or adding of additional manufacturing facilities, a certification procedure must be repeated.

4. Unlike ATEX where the manufacturer may declare conformity independently for equipment category 3 , the EAEU regulation requires certification exclusively by an accredited certification body within the EAEU.

5. A very important issue is compliance with EU and US sanctions in the context of EAC Certification. In addition to the technical regulations of the Eurasian Economic Union (EAEU), European and international companies must also comply with the applicable sanctions of the European Union and the United States when undergoing EAC certification.

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