inorms

TECHNICAL COMPLIANCE

PRACTICAL GUIDE · 2026 EDITION

EAC Ex Certification Explosion-Protected Equipment

A comprehensive handbook for manufacturers, exporters and product managers



ELECTRICAL AND NON-ELECTRICAL EX EQUIPMENT
TESTING · DOCUMENTATION · CHECKLISTS

As of 11 October 2026

ac-inorms.com

PRACTICAL GUIDE

How to use this handbook

From the Ex specification to certification and shipment release.

This guide supports manufacturers, designers, exporters, importers and quality managers of electrical and non-electrical equipment for hazardous areas. It combines the AC Inorms sector page and regulations archive with official regulations. It covers equipment, Ex components and interfaces within machinery and assemblies. Both language editions have the same chapter structure.

Answer three questions first

What equipment is actually placed on the market? What atmosphere and protection must it accommodate? What supply model and responsible actors belong to the project? An ATEX motor alone does not settle conformity of a complete pumping assembly. A zone alone describes neither gas subgroup nor temperature limit. The project dossier connects these details to the certified product version.

Pages 4-16 address scope, classification and procedures. Pages 17-24 explain records, standards, samples and testing. Technical topics appear on pages 25-33; marking, maintenance and costs on pages 34-40. The case study, FAQs and worksheets follow on pages 41-46. Sources and contact details conclude the guide.

Edition 1.0 · As of 11 October 2026

Basis: TR CU 012/2011 and standards lists under No. 158/2020 including No. 20/2026. Changes already applicable and list dates in 2027 are distinguished. Explanations are not official translations; actual design and assessment follow the effective regulation and recognised standards.

Sources: [1]-[6]

PRACTICAL GUIDE

Contents

Chapters and external sources are linked within this PDF.

Chapter	Pages
Quick start, market and legal framework	4-6
Scope, Ex classification and procedures	7-16
Records, standards, samples and testing	17-24
Technical topics and assemblies	25-33
Marking and operating documentation	34-36
Surveillance, registers, changes and costs	37-40
Case study, mistakes and FAQs	41-43
Checklist, enquiry and product matrix	44-46
Regulations archive and terminology	47
Sources and regulatory status	48-49
Your Ex project with AC Inorms	50

Suggested starting point

Prepare a model list with intended use, atmosphere, zone, group, protection technique, temperature and factory. Add drawing revisions, Ex components and existing test reports. This matrix supports a defensible procedure, sample and production-assessment plan.

PRACTICAL GUIDE

Quick start: seven project decisions

These details form the basis of a reliable quotation.



Assess intended use and design together

Assessment area	Project implementation
01 · Product	Equipment, Ex component, assembly or complete machine?
02 · Use	Gas/vapour/mist, dust or mining; actual installation.
03 · Ex data	Zone, group/subgroup, protection level and temperature limits.
04 · Design	Protection technique, safety drawings, components and variants.
05 · Supply	Series, defined batch or identified individual item.
06 · Evidence	ATEX/IECEx, reports, instructions, standards edition and production.
07 · Responsibility	Manufacturer, factory, EAEU applicant, destination and schedule.

A catalogue and HS code help initial intake but do not replace an Ex specification. Define equipment boundaries: internal and external atmosphere, electrical drive, mechanical process and connected protective systems. Marking, instructions and certificate must describe the same model and permitted use. Substantiate differences within a product family technically; a shared brand does not prove common explosion-protection characteristics.

In practice

Reconcile operator requirements and manufacturer data before the test order. A generic zone does not replace missing substance or temperature information.

Sources: [3], [4]

PRACTICAL GUIDE

The EAEU market and responsible actors

A common conformity framework with national interfaces.

Assessment area	Project implementation
Member states	Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia.
TR CU / TR EAEU	Technical regulations of the former Customs Union or EAEU.
Manufacturer	Responsible for design, product identity and consistent manufacture.
Applicant	Eligible registered person within the EAEU, according to scheme.
Certification body	Decides certification within its recognised accreditation scope.
Operator / importer	Import, conditions of use and national operating duties.

TR CU 012/2011 remains the familiar designation although the present market is the EAEU. A properly issued, valid document supports access to the common market. Actual import and commissioning may additionally involve customs, language, occupational-safety, installation and other national duties. Export restrictions are checked separately. Certification should therefore not be described as a blanket guarantee for every shipment to every recipient.

In practice

Record destination state, importer, end customer and actual place of use in the enquiry. This simplifies record and language planning.

Sources: [3], [4], [14], [16]

PRACTICAL GUIDE

Legal basis and regulatory status in 2026

Track the regulation, standards lists and standards editions separately.

Assessment area	Project implementation
TR CU 012/2011	Decision No. 825 of 18 October 2011; effective since 15 February 2013.
No. 158/2020	Lists for safety requirements and test/measurement methods.
No. 20/2026	Lists amendment with staggered applicability and end dates.
Since 1 July 2026	New list entries include gas-area classification and intrinsically safe systems.
From 1 January 2027	Further entries include dust protection and non-electrical equipment.

A new standards list does not automatically rewrite the technical regulation. Decision No. 20 of 26 February 2026 amends the lists under No. 158/2020. Several new editions apply since July 2026, others from January 2027; certain older entries have deadlines in July 2028. Determine the supporting edition for each test item in the actual procedure. This does not justify a universal claim that all previous certificates became invalid in July.

In practice

The standards plan records full designation, edition, list reference, applicability date, assessed requirement and responsible person.

Sources: [3]-[6]

PRACTICAL GUIDE

Scope: electrical and mechanical Ex equipment

Intended use and protective design determine scope.

Assessment area	Project implementation
Electrical equipment	Motors, luminaires, sensors, switching/control equipment by actual Ex design.
Non-electrical equipment	Pumps, gears, fans, mixers and other equipment with ignition hazards.
Ex components	Safety-relevant Ex parts without independent intended use.
System boundaries	Internal space, external atmosphere, connections and protective functions.
Identification	Explosion-protection measures in records and corresponding marking.

Article 1 covers electrical equipment, including Ex components, and non-electrical equipment for explosive atmospheres. The manufacturer defines intended use and safeguards; the body identifies the submitted product. Mechanical equipment may involve hot surfaces, friction, impact sparks and electrostatic effects. For assemblies, determine what complete product is supplied and who manufactures it. A certified Ex part alone neither establishes complete assembly conformity nor automatically classifies every connected standard component.

In practice

Document the product boundary in an overview drawing. Explicitly identify externally connected equipment and its own evidence.

Sources: [4], Art. 1-4

PRACTICAL GUIDE

Exclusions: assess the actual circumstances

Article 1 exclusions are not blanket industry exemptions.

Assessment area	Project implementation
Medical / PPE	Medical products and PPE are not assessed under TR 012.
Specific substance hazard	Equipment whose explosion hazard arises only from explosive substances or unstable compounds.
Household	Exclusion concerns the specified non-industrial use with unforeseen combustible-gas leakage.
Ships / platforms	The specified ships, floating installations and machinery used on them.
Transport	Public transport intended to carry passengers and goods.
Nuclear sector	Specified nuclear facilities; equipment in their hazardous areas needs separate attention.

Read each exclusion with its conditions. Industrial process equipment is not excluded merely because similar products also exist in households. The ship exclusion is not equivalent to all land-based port installations. The public-transport exclusion does not justify a blanket statement for every mobile industrial machine. Other technical or national requirements may apply outside TR 012. Record the reasoned classification in the project dossier and agree it with the competent body.

In practice

For borderline cases, provide the product description, actual function and installation circumstances. A generic exclusions list without context is insufficient.

Sources: [4], Art. 1

PRACTICAL GUIDE

Equipment groups I, II and III

Group, subgroup, protection level and temperature are different characteristics.

Group I

Firedamp / mining

Group II

Explosive gas

Group III

Explosive dust

Three use groups · track subgroup and EPL separately

Assessment area	Project implementation
Group I	Underground mines and associated surface installations with firedamp/dust hazards.
Group II	Explosive gas atmospheres outside the specified mining scope.
IIA / IIB / IIC	Subgroups according to properties of the gas atmosphere.
Group III	Explosive dust atmospheres outside the specified mining scope.
IIIA / IIIB / IIIC	IIIA: combustible flyings; IIIB: non-conductive dust; IIIC: conductive dust.

A quarry or any ore-processing installation is not automatically group I. Annex 1 defines the firedamp/dust mining context more precisely. The letters A, B and C in subgroups are not universal protection levels. A temperature class T1-T6 is neither a subgroup nor a fire class. Where gas and dust coexist, assess both hazards and the actual marking. Obtain substance data and use conditions from the operator; the manufacturer explains the design intended for them.

In practice

Use separate columns for Ex group and Ex subgroup. This prevents confusion with EPL, zone or ATEX category.

Sources: [4], Anhang / Annex 1; [10]

PRACTICAL GUIDE

Allocate zones and protection levels correctly

Area classification describes the atmosphere at the place of use.

Gas · Zone 0 Typically at least Ga	**Gas · Zone 1** Typically at least Gb	**Gas · Zone 2** Typically at least Gc
Dust · Zone 20 Typically at least Da	**Dust · Zone 21** Typically at least Db	**Dust · Zone 22** Typically at least Dc

Assessment area	Project implementation
Gas zones	0, 1 and 2 by frequency and duration of the explosive atmosphere.
Dust zones	20, 21 and 22 with the corresponding dust assessment.
Very high level	Protection under the infrequent faults described in the regulation.
High level	Normal operation and the specified expected fault.
Enhanced level	Protection in normal operation specified by the manufacturer.

Annex 1 defines three levels and links them to expected atmospheres and fault conditions. Familiar EPL abbreviations Ga/Gb/Gc for gas and Da/Db/Dc for dust assist technical communication. The graphic shows a typical minimum allocation; it does not authorise selection of a particular item. Subgroup, temperature, protection technique, ambient conditions and specific conditions of use must also match. Installation or workplace assessment does not replace product certification.

In practice

The responsible installation designer/operator determines the zone technically. The manufacturer should not treat an unclear operator zone as an assessed fact.

Sources: [4], Anhang / Annex 1; [10]

PRACTICAL GUIDE

Temperature, atmosphere and ambient limits

A suitable protection level alone is insufficient for selection.

Assessment area	Project implementation
Gas atmosphere	Temperature class or permitted maximum surface temperature.
Dust atmosphere	Dust cloud, deposits, layer thickness and maximum surface temperature.
Ambient conditions	Permitted ambient range and thermal installation conditions.
Process	Substance, inlet temperature, load, speed and operating states.
Other influences	Moisture, corrosion, vibration, UV, contamination and electrostatic charging.

Gas temperature classes at a glance

Class	Max. surface	Class	Max. surface
T1	450 °C	T4	135 °C
T2	300 °C	T5	100 °C
T3	200 °C	T6	85 °C

These classes concern gas atmospheres. The permitted equipment surface temperature must remain below the ignition temperature of the relevant mixture. T6 denotes a lower temperature limit than T1, not universal suitability for every use condition. Assess dust separately.

Maximum surface temperature may arise from electrical losses, friction, bearings, process heat or restricted cooling. Compare the assessed operating envelope with actual installation conditions. Dust deposits may impair cooling and require their own assessment; a gas temperature class is not a complete dust evaluation. Confirm technical coverage for different ambient conditions, converter operation or hot process media. Take values from the applicable standard and released certificate dossier, not a similar catalogue construction.

In practice

Keep ambient temperature, substance temperature and maximum surface temperature separate. They are different quantities.

Sources: [4], Art. 4; [5], [6], [19]

PRACTICAL GUIDE

Certification and schemes 1c, 3c and 4c

TR CU 012/2011 requires mandatory certification.

1c · Series

Testing, production, surveillance

3c · Batch

Samples from identified batch

4c · Individual item

Testing the actual unit

Alternative schemes according to actual supply model

Assessment area	Project implementation
1c · Series	Type-sample testing, production assessment and subsequent surveillance.
3c · Batch	Testing samples from a defined, identified batch.
4c · Individual item	Testing the identified individual equipment.
Evidence form	Certificate; declaration does not replace TR 012 certification.
Scope	Define models, variants, manufacturer, factory and Ex characteristics clearly.

Article 6 specifies these procedures. Scheme 3c is not series production with changing future deliveries. Identify a batch through quantity and supporting supply records. Under 4c, assess the individual item concerned. For 1c, evaluate production conditions and maintain surveillance during validity. Testing and production assessment are both provided for in this scheme; an audit alone does not replace type evidence. Select the scheme by actual supply model and eligible applicant role.

In practice

Include all elements of the selected scheme in the quotation. A low document price without testing or surveillance scope does not describe the full project.

Sources: [4], Art. 6

PRACTICAL GUIDE

Series, batch and individual item compared

Evidence scope follows the supply model, not the desired price.

Assessment area	Project implementation
Series	Repeated manufacture of the defined family at covered sites.
Batch	Defined product quantity in a specifically documented supply context.
Individual item	Identified unit with clear technical and supply records.
Series validity	Certificate up to five years; actual period stated in the issued document.
Batch / individual item	Article 6 sets no validity period; coverage remains limited.

No validity period for a batch does not allow unlimited exports of additional products. Scope and identity of certified goods remain decisive. Likewise, a five-year series certificate does not promise automatic coverage of unreported new models or factories. Check whether replacements and subsequent deliveries fall within existing coverage. Scheme 4c may suit a unique assembly; 1c may provide a suitable basis for repeated equivalent equipment. The certification body confirms selection and the assessment plan.

In practice

Separate document validity, service life and supply scope in the project plan. None replaces the others.

Sources: [4], Art. 6

PRACTICAL GUIDE

Applicant and EAEU representation

Contractual tasks and responsibilities belong in the project dossier.

Assessment area	Project implementation
1c	EAEU manufacturer or registered person contractually performing the foreign manufacturer’s functions.
3c / 4c	Eligible EAEU manufacturer, seller or contractually authorised person.
Contract	Conformity, responsibility, data access, changes and authority communication.
Operational capacity	Availability, archive access and handling complaints.
Representative change	Prior agreement on registers, records and continuing duties.

A manufacturer outside the EAEU cannot simply use its foreign address as the local applicant role in these procedures. Establish eligible representation before commissioning testing. A mailing address or purely logistical importer role is not automatically sufficient series representation. The contract should address scope, continuing cooperation, access to technical records and duties upon nonconformity. Also determine who handles surveillance and authority enquiries throughout validity and who retains records after the contract ends.

In practice

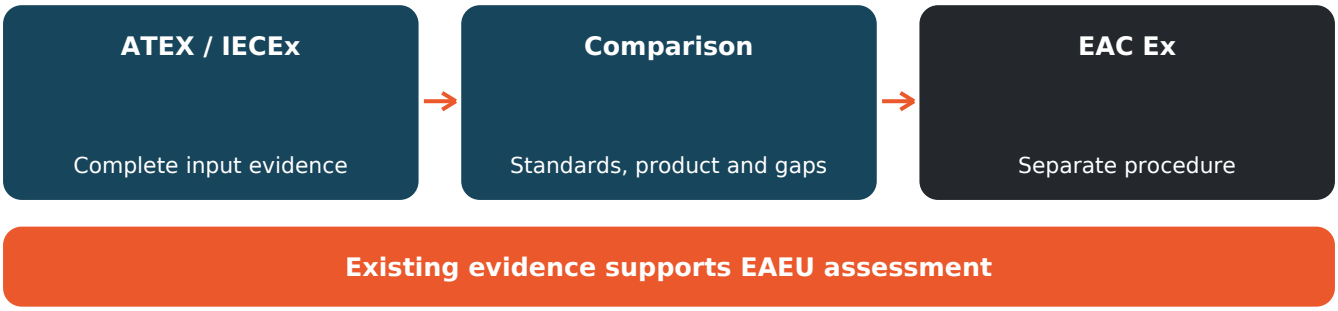
Representation, certification and laboratory testing are different services. Describe each responsibility and fee transparently.

Sources: [4], Art. 6

PRACTICAL GUIDE

ATEX, IECEx and EAC Ex

Existing evidence helps; each system has its own legal basis.



Assessment area	Project implementation
ATEX	EU product law under Directive 2014/34/EU; check the current consolidated text.
IECEx	International certification system with its own bodies, reports and status evidence.
EAC Ex	Mandatory certification of covered products under TR CU 012/2011.
Useful records	Certificates with schedules, reports, drawings, standards editions and production evidence.
Assessment	Product equivalence, technical gaps and eligible use by the EAEU body.

ATEX and IECEx records are valuable inputs but not automatic substitutes for EAC Ex. The body checks complete reports, editions, variant, factory and protective characteristics. A certificate cover without schedules or reports may hide technical differences. Directive 94/9/EC was replaced by 2014/34/EU from 20 April 2016; classify historical records by their actual legal and technical significance. Do not copy the EU category into EAEU marking without assessment. Document actual acceptance or additional testing in the procedure plan.

In practice

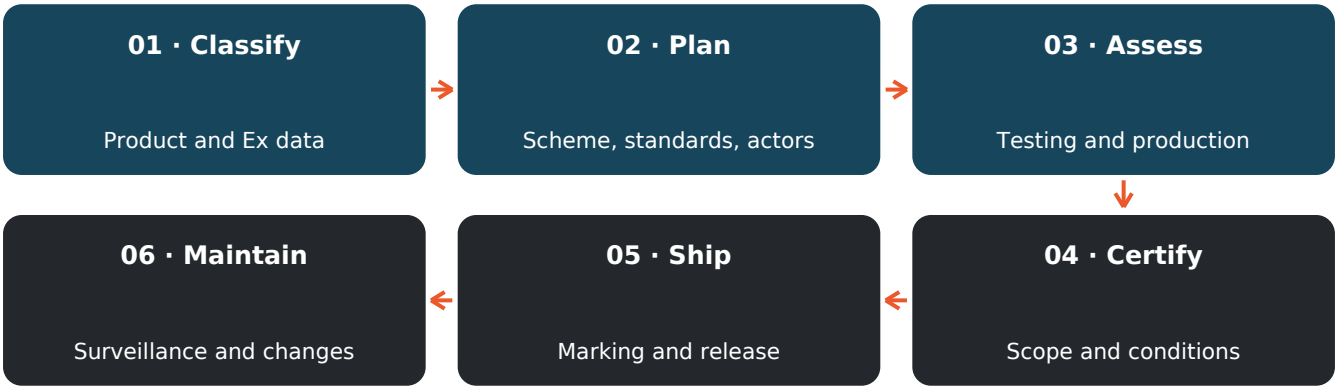
An existing ATEX certificate is not a universal statutory entry requirement for every TR 012 product. Build the required evidence through the EAEU procedure.

Sources: [4], [8], [9]

PRACTICAL GUIDE

From initial enquiry to shipment release

A common data version controls the individual steps.



Assessment area	Project implementation
Classify	Resolve boundary, atmosphere, Ex characteristics and additional regulations.
Plan	Define scheme, applicant, standards plan, samples and audit.
Assess	Address records, testing, production assessment and nonconformities.
Certify	Document released scope, conditions and schedules completely.
Ship	Check status, nameplate, instructions, goods identity and import.
Maintain	Continue surveillance, changes, complaints and archiving.

Release the technical project version before sampling. Test orders, audit records and application use the same model/drawing matrix. Close outstanding issues technically after assessment; text corrections alone are insufficient if construction differs. Compare the completed certificate, including schedules, with actual goods to be supplied. Then release nameplate and operating records finally. For series production, establish a maintenance plan with owners and dates. This keeps the project traceable beyond initial registration.

In practice

Define a release owner and version date. Changes after sample release go through documented change assessment.

Sources: [4], Art. 4-7

PRACTICAL GUIDE

The technical certification dossier

The dossier connects identity, protective design and assessed version.



Link every record to the same approved version

Assessment area	Project implementation
Identity	Type list, brand, photographs, manufacturer, factories and boundary.
Design	Overview/detail drawings with safety-relevant dimensions and tolerances.
Protection concept	Ex classification, safeguards, risk assessment and standards matrix.
Components	Bill of materials, certificates with schedules, conditions and permitted versions.
Operating records	Instructions, technical passport where required, maintenance and nameplate.
Procedure file	Application, contracts, sample records, reports, audit, findings and certificate.

Article 6 lists operating records, technical specifications where available, applied standards and, where standards are not used, a rationale for technical solutions with risk assessment. Submit a QMS certificate if available; this does not establish a universal ISO 9001 requirement for every Ex item. Batch procedures additionally require supply contracts or shipping records. In practice, organise Ex drawings, schematics and component lists so the assessor can identify the protective construction. A generic datasheet with power and voltage is usually insufficient.

In practice

Maintain a record index with number, edition, language, approval and link to the model or test report.

Sources: [4], Art. 4, 6

PRACTICAL GUIDE

Drawings, bill of materials and Ex components

Safety-relevant constructions are established as controlled specifications.

Assessment area	Project implementation
Ex drawings	Protective geometry, material, surface, fastening and tolerances.
Electrical data	Circuit, routing, protective devices and safety-relevant component values.
Mechanical data	Bearings, seals, clearance, lubrication, speed and material pairing.
Component evidence	Exact type number, certificate schedule, conditions and revision.
Approved alternatives	Technically assessed replacements and traceable limits.

A certified cable entry is suitable only within its approved application. Thread, cable type, seal, temperature and protection technique must match the enclosure design. The same applies to terminals, windows, compounds and safety sensors. Component records include complete schedules and specific installation conditions. A U-marked IECEx component certificate identifies an incomplete component and does not automatically permit use as finished equipment. Assess interfaces and supplementary measures in the completed product. Purchasing and design should not approve alternatives solely by dimensions or price.

In practice

Keep approved drawings separate from drafts. Purchase and production records clearly reference the certified revision.

Sources: [4], [11]

PRACTICAL GUIDE

Ignition hazard assessment: from source to safeguard

The assessment must represent the actual product supplied.



Connect source, safeguard and evidence traceably

Assessment area	Project implementation
Operating states	Normal operation, starting, stopping, expected faults and further level-dependent faults.
Ignition sources	Heat, sparks, electrostatic effects and other relevant mechanisms.
Effectiveness	Can the source ignite the actual atmosphere under assessed conditions?
Safeguards	Design prevention, monitoring, limits and safe response.
Evidence	Drawing, calculation, test, component evidence and instructions.

Risk assessment is neither a generic CE checklist nor merely a list of conceivable ignition sources. It links source, operating state, atmosphere, protection level, safeguard and evidence. A mixer assessment may consider bearing heating, rubbing contact, static charging and process heat. A safeguard stating “operator checks regularly” is not automatically sufficient where a safety-relevant fault must be detected and controlled in time. Define responsibility, detection limit and reaction technically. Remaining conditions appear in instructions and, where applicable, the certificate schedule.

In practice

Use the working matrix on page 46. Each closed item requires clear technical evidence and a responsible approver.

Sources: [4], Art. 4-6; [5], [6]

PRACTICAL GUIDE

Standards plan: 2026 changes and 2027 dates

This selection shows important dates under No. 20/2026.

Assessment area	Project implementation
Gas areas	GOST 31610.10-1-2022 (IEC 60079-10-1:2020): list entry from 1 July 2026.
Intrinsically safe systems	GOST 31610.25-2022 (IEC 60079-25:2020): from 1 July 2026.
Separating elements / levels	GOST 31610.26-2023 (IEC 60079-26:2021): from 1 July 2026.
Dust protection t	GOST 31610.31-2024 (IEC 60079-31:2022): from 1 January 2027.
Non-electrical equipment	GOST 31610.36-2024 (ISO 80079-36:2016): from 1 January 2027.
Further entries	Gas detectors and explosion-prevention fundamentals; read the complete amendment.

The table is a selection and does not replace the complete safety and methods lists. State the GOST designation together with its underlying IEC or ISO edition; a matching international standard alone does not settle EAEU listing. No. 20/2026 sets end dates in July 2028 for selected older entries. This is not a universal parallel period for every standard. Record the listed edition and applicable date for each assessment item. For changes during the project, the body assesses implications for the application, report and certificate.

In practice

Do not copy standards lists uncritically from an old ATEX report. Prepare a gap matrix using the regulatory version appropriate to the EAEU application.

Sources: [5], [6]

PRACTICAL GUIDE

Select the laboratory and certification body

The scope must cover the product, protection technique and test methods.

Assessment area	Project implementation
Accreditation	Valid status and relevant product/test scope.
Register	Confirm inclusion in the relevant common register.
Test capacity	Protection technique, atmosphere, size, loading and required methods.
Procedure management	Sampling, test plan, production assessment and findings handling.
Record quality	Reports linking product, drawings and standards to complete results.

General electrical accreditation does not prove competence for every Ex test. Check actual scope and recognised status of the participating actors before commissioning. The certification body organises required testing and evaluates results. Laboratory reports must identify the technical records of the protective construction. For large equipment, establish early whether testing at the manufacturing or installation location is technically and procedurally possible. A service provider coordinates the project but does not automatically make the accredited certification decision. Retain scope, test plan and communication arrangements in the dossier.

In practice

Verify register information at the decision stage and before shipment. A stored accreditation extract may have become outdated.

Sources: [4], Art. 6; [14]

PRACTICAL GUIDE

Samples, sampling and project logistics

Samples must substantiate the intended coverage.

Assessment area	Project implementation
Selection	Released type/variant matrix; technically justified critical constructions.
Identity	Record model, serial number, drawing revision, components and photographs.
Quantity	According to scope, protection technique, method and possible destructive testing.
Sampling	Responsible actor, location, date and record according to procedure.
Import	Permitted sample route, goods description, purpose and required customs records.
Large equipment	Testing at manufacture/installation site with technical justification and body approval.

There is no universal sample quantity for every Ex project. Some tests require enclosures, critical components or several samples; others concern the particular unit. Agree sampling and shipment before producing or modifying test items. Packaging protects protective surfaces, seals, cable entries and identity plates in particular. For site testing, agree access, instruments, operating states and responsibilities beforehand. Article 6 allows location-based testing where manufacturing or assembly circumstances necessitate it; this does not create a blanket exemption from accredited assessment.

In practice

Do not send a different prototype without identifying it. Resolve its differences and relevance to later supplied goods before testing.

Sources: [4], Art. 6

PRACTICAL GUIDE

Test programme and technical evidence

The actual protective construction determines necessary assessment items.

Assessment area	Project implementation
General characteristics	Materials, strength, temperature, charging and environmental effects by standard.
Electrical techniques	Technique-specific assessment of enclosure, energy, distances or encapsulation.
Mechanical equipment	Friction, bearings, seals, heat, monitoring and safe response.
Variants	Critical size, power, material, temperature or attachment configuration.
Report	Sample, edition, conditions, results, deviations and drawing references.

Develop the programme from the safety concept. A generic functional or EMC test does not prove explosion safety. Typical technical questions concern maximum temperatures, material behaviour, enclosure construction or effectiveness of a limiting function. The competent body determines required tests, calculations and examinations from the product and recognised methods. One successful test does not automatically cover the entire family. Document acceptance criteria, samples and eligible variant coverage in the plan. Close findings technically and trace them back to drawings, manufacture and instructions.

In practice

The assessment dossier also records untested variants and their justified coverage. Merely stating “equivalent construction” is not a complete comparison.

Sources: [4]-[6]

PRACTICAL GUIDE

Production assessment and quality control

For scheme 1c, manufacture must reliably reproduce the assessed type.

Assessment area	Project implementation
Released records	Drawing revisions, work instructions, limits and change rules.
Incoming goods	Identity and suitability of safety materials and Ex components.
Manufacture	Control of critical dimensions, processes, fastening and encapsulation where relevant.
Final assessment	Planned routine tests, marking, traceability and release.
QMS certificate	Assess existing scope; it does not universally replace product-specific assessment.

Production assessment addresses consistency of the certified protective construction. It includes outsourced processes, suppliers and responsibilities at each covered factory. An existing QMS may be considered; the body assesses its ability to ensure actual Ex requirements. Article 6 provides no production assessment for 3c and 4c. This does not relieve the manufacturer of responsibility for conformity of the goods supplied. For series manufacture, close audit findings and plan subsequent surveillance from the outset.

In practice

Resolve factories, outsourced activities and available contacts in the quotation. Last-minute site changes may affect assessment scope.

Sources: [4], Art. 6

PRACTICAL GUIDE

Overview of electrical protection techniques

A protection technique is an engineered design with its own requirements.

Assessment area	Project implementation
d · Flameproof enclosure	The enclosure prevents internal ignition from propagating to the external atmosphere.
e · Increased safety	Additional measures against unacceptable heating and sparking.
i · Intrinsic safety	Limitation of electrical energy and thermal effects in circuits.
m · Encapsulation	Protective components are embedded in suitable compound.
p · Pressurisation	Protective gas and specified pressure/purging limit atmosphere ingress.
t · Dust protection	Enclosure protection against dust and limitation of surface temperature.

This overview explains principles, not every normative subdivision or permitted combination. Annex 1 includes further techniques and older marking forms. Reconcile the full designation with the effective standards plan and certificate schedule. A common enclosure may contain several protective sections; transitions, connections and maintenance must suit them. Do not compare techniques solely by a catalogue abbreviation. An IP rating is not a substitute for complete Ex assessment either. Assess changes to enclosure, electronics or operating limits against the protection concept.

In practice

Use the approved protection designation exactly in sales records. Technically confirm broader protective claims before publication.

Sources: [4], Anhang / Annex 1; [5], [6]

PRACTICAL GUIDE

Non-electrical equipment and mechanical ignition sources

Effective ignition sources can arise without an electrical supply.



Assess non-electrical equipment for ignition hazards too

Assessment area	Project implementation
Bearings / movement	Heat, dry running, rubbing, wear and alignment.
Materials	Impact sparks, corrosion changes and electrostatic properties.
Process	Compression, hot substance, blockage and foreign bodies.
Protection concept	Constructional safety, ignition-source monitoring or other recognised safeguards.
Standards edition	Non-electrical equipment under the relevant listed edition; dates under No. 20/2026.

A purely mechanical pump or fan is not automatically outside TR 012. Intended atmosphere and potential inherent ignition sources determine assessment. Describe bearings, clearances, materials, loading and monitoring. The older regulation lists c, b and k among its protection techniques; modern international records may use other marking structures. Reconcile these against the effective EAEU standards edition. GOST 31610.36-2024 is scheduled in the amended lists from 1 January 2027. This does not establish blanket eligibility of every new marking for an October 2026 application.

In practice

Assess mechanical risks of the complete equipment. Motor Ex evidence does not automatically cover bearings, coupling and process side.

Sources: [4]-[6]

PRACTICAL GUIDE

Intrinsically safe circuits and systems

Individual certificates must form a safe complete circuit.

Field device

Input and storage parameters

Wiring

Capacitance and inductance

Associated apparatus

Output and protective function

Assess the complete circuit · not just added certificates

Assessment area	Project implementation
Field device	Permitted input parameters, internal storage and certified version.
Associated apparatus	Output parameters and safe separation under its certificate.
Connection	Cable capacitance, inductance, length, installation and circuit segregation.
System evidence	Check parameter relationships, units and conditions from both schedules.
Documentation	Circuit overview, item list, limits and installation conditions.

An intrinsically safe sensor and certified barrier do not form an approved system merely by being installed together. Electrical parameters and permitted stored energy, including wiring, must be compatible; special characteristics or multiple sources require more than a generic numerical comparison. Assessment follows the applicable listed method. GOST 31610.25-2022 is included in the amended lists from 1 July 2026. Also check EPL, gas/dust subgroup, separation distances and specific conditions. System drawings record actual wiring; assess changes to the field device or cable routing.

In practice

Obtain technical approval of circuit assessment. A similar connection drawing from an earlier project does not prove new component parameters.

Sources: [4]-[6]

PRACTICAL GUIDE

Enclosures, cable entries and connections

The connection arrangement forms part of the certified protective design.

Assessment area	Project implementation
Enclosure	Material, protective surfaces, fastening, seals and environmental effects.
Cable entry	Protection technique, thread, cable geometry, seal and temperature range.
Blanking element	Suitable certified construction for unused openings.
Terminals / connection	Assignment, conductors, torque and permitted loading by records.
Assembly	Agreed instructions, tools and checks after installation.

A newly drilled opening or replaced blanking plug may change the protective construction. Even a mechanically compatible thread adapter is not automatically approved for the actual Ex application. Check full schedules, restrictions and enclosure approval limits. Do not modify flameproof protective surfaces without an approved procedure. Dust protection involves both ingress and temperature. Instructions must explain which connections are supplied and which the installer may add under defined criteria. Record final configuration with photographs and an item list.

In practice

Treat cable entries and blanking elements as safety parts in purchasing. Unassessed “equivalent” replacements remain blocked.

Sources: [4], Art. 4; [5], [6]

PRACTICAL GUIDE

Ex motors, drives and frequency converters

The approved operating mode must match actual control.

Assessment area	Project implementation
Motor version	Ex protection, temperature, voltage, power and cooling.
Control	Direct supply or converter operation and approved parameters.
Thermal protection	Sensors, evaluation, shutdown and specified limits.
Mechanical loading	Coupling, brake, gearbox, bearings, overload and speed range.
Record reconciliation	Motor schedules, converter data, drive plan and complete product.

Read motor evidence with its full conditions. A different converter, changed switching frequency, restricted cooling or increased mechanical load may affect temperature assessment. The complete machine must actually provide required protective functions. Where temperature sensors are safety-relevant, include evaluation and safe response. A drive containing motor, gearbox and brake can have several inherent ignition sources. Do not infer general assembly approval solely from the motor certificate number. Also record permitted modes and parameters for commissioning.

In practice

State explicitly in the enquiry whether converter operation is intended. Provide manufacturer, type and planned parameter ranges.

Sources: [4], Art. 4-6

PRACTICAL GUIDE

Pumps, mixers, fans and gearboxes

Assess drive, process side and mechanical protection together.

Assessment area	Project implementation
Pumps	Dry running, hot medium, seals, bearings and possible internal atmosphere.
Mixers	Shaft, bearings, rubbing, materials, process states and deposits.
Fans	Impeller, enclosure clearance, foreign bodies, charging and handled substance.
Gearboxes	Load, speed, lubrication, heat, leakage and monitoring.
System boundary	Protective functions, drive, interfaces and operator conditions.

Assess a product under its actual loading. A water-based test configuration does not necessarily cover a hot flammable process liquid. Fans have different internal and external atmospheres; protection claimed for the surrounding area does not automatically cover the handled medium. Wear or incorrect assembly may introduce rubbing in mixers. Define operating limits, maintenance and shutdown measures and link them to evidence. Do not borrow material-pairing or speed limits from similar products. Variants without sufficient technical equivalence require separate assessment.

In practice

Ask the operator for substance, temperature, load, location and foreseeable fault states. These belong in the technical specification.

Sources: [4], Art. 4; [5], [6]

PRACTICAL GUIDE

Luminaires, sensors and control equipment

Small electrical equipment needs a complete protection definition.

Assessment area	Project implementation
Luminaires	Enclosure, light source, electronics, thermal assessment and permitted maintenance.
Sensors	Measurement principle, circuit, electrical parameters and installation limits.
Control equipment	Terminals, switching devices, heat, wiring and certified configuration.
Measurement function	Resolve measurement requirements and national metrological duties separately.
Software	Safety functions, version, parameter settings and fault response.

Low electrical power does not automatically mean low ignition risk. Surfaces, energy storage and material behaviour may matter. In luminaires, the LED module, driver, enclosure colour and mounting position may influence temperatures. Sensor Ex safety differs from actual measurement accuracy; national metrological requirements may additionally apply. Assess software-based safeguards with their faults and reactions. A cabinet assembled from certified devices needs assessment of its configuration and interfaces. The product version and evidence must cover every marketed variant.

In practice

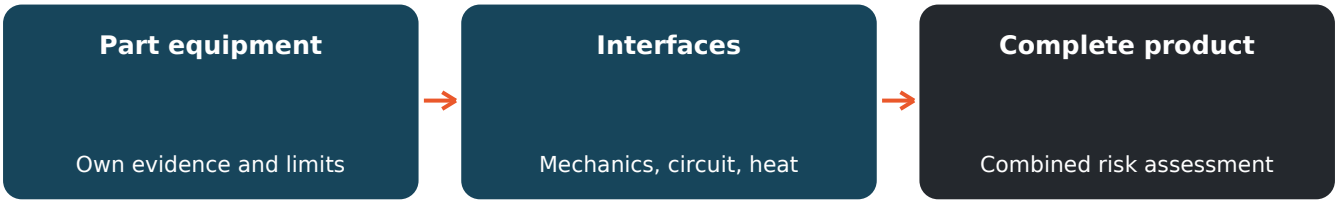
Assess replacement modules, batteries, light sources and firmware before release. A new part number may affect safety despite identical external dimensions.

Sources: [4], Art. 4-6

PRACTICAL GUIDE

Complete assemblies and installations

Individual certificates do not fully resolve interfaces.



Part evidence does not replace assessment of the combination

Assessment area	Project implementation
Complete product	Define supply boundary, manufacturer role, function and configuration.
Part evidence	Motors, sensors, enclosures and further Ex items with full schedules.
Interfaces	Mechanics, electrical circuits, temperature, monitoring and common faults.
Overall assessment	Combination ignition hazards and required complete-product evidence scope.
Operator side	Distinguish area classification, installation and operation from product certification.

A pump unit may contain several certified parts and still introduce hazards at the coupling, bearings, electrical connection or control. The complete-product manufacturer describes the combination and its limits. The body determines which parts are already covered, which evidence remains useful and which assessments are required at complete-product level. The result is a traceable product/interface matrix. An installation erected on site also needs assessment of national operator duties. A collection of certificate copies or a shared brand does not replace overall technical assessment.

In practice

Identify “stand-alone equipment”, “Ex component” and “complete product” in the item list. This clarifies evidence, supply and maintenance.

Sources: [4], Art. 1-6

PRACTICAL GUIDE

Other regulations and neighbouring product sectors

TR 012 addresses explosion safety; other requirements follow their own scope.

Assessment area	Project implementation
TR CU 010/2011	Assess machinery and mechanical safety separately for covered products.
TR CU 020/2011	EMC by actual scope and exclusions.
TR CU 032/2013	Pressure equipment by pressure, volume/nominal size, fluid and category.
TR CU 004/2011	Check current scope and Ex exclusions; no blanket additional certificate.
TR CU 006 / 028	Pyrotechnic products and explosives are separate product sectors.

The TR 012 preamble requires compliance with other applicable regulations for different safety aspects. This does not automatically require every electrical or machinery regulation. TR 004 in particular contains relevant boundaries for Ex equipment; check its actual current text, including possible specific cases such as cables. TR 006 concerns pyrotechnics and TR 028 explosives and products based on them. Do not confuse these requirements with protection of a motor in an explosive atmosphere. Mixed projects use a matrix stating product, regulation, evidence form and owner.

In practice

Pyrotechnics and explosives require their own procedure. This Ex-equipment guide provides the boundary, not complete approval instructions for those products.

Sources: [4], [12], [13], [15]

PRACTICAL GUIDE

Nameplate and required information

Product, certificate and operating records must agree.

Certificate

Scope and schedules

Nameplate

Identity, Ex data and EAC

Instructions

Operation and conditions

Schematic reconciliation · not official print artwork

Assessment area	Project implementation
Manufacturer	Manufacturer’s name or registered trademark.
Type / identity	Type designation and factory/serial number.
Certificate	Conformity certificate number and relevant body reference.
Explosion protection	Approved Ex marking and special explosion-protection mark.
EAC	After all applicable procedures; design under the effective rules.
Durability	Readable without disassembly/tools; maintained throughout service life.

Article 4 lists manufacturer, type, factory number, certificate number and Ex marking. Article 6 additionally references the registration number of the certification body. Further operating data follow the regulation, standard and approved design. Apply marking to the equipment or accessible plate and maintain it durably. Article 7 addresses EAC on product and technical records; packaging-only placement is allowed only for the specified design-based impossibility. Check visibility after installation too. A visually attractive plate must not shorten protective data or omit conditions.

In practice

Check final nameplate artwork against the certificate and schedules. Use prescribed original artwork for official marks.

Sources: [4], Art. 4, 6, 7; [7]

PRACTICAL GUIDE

Read Ex marking and observe conditions

The designation refers to a complete technical approval.

Technique	Group / level	Temperature / X
Assessed protective design	Atmosphere and protection	Limits and conditions

Reading aid · reproduce the complete approved designation

Assessment area	Project implementation
Ex mark / technique	Identification of Ex construction and assessed safeguards.
Group / subgroup	Permitted atmosphere characteristics, separate from protection level.
Temperature / EPL	Approved temperature designation and level-dependent use.
X	Observe specific conditions of use in the certificate schedule.
Component status	Do not use IECEx U certificates as stand-alone equipment approval.
Further limits	Ambient conditions, mounting, cable, substance and operation from full records.

A short Ex designation does not describe every installation and operating condition. Specific conditions may concern electrostatic charging, mechanical protection, permitted connections or ambient conditions. TR 012 requires X conditions to appear in the schedule. U in IECEx records identifies component status in that system; address it under the respective evidence framework. For EAC, take actual approved marking from certificate, schedules and the applicable standard. Do not copy a marking line uncritically from an ATEX file. The graphic is a reading aid, not printable approval marking.

In practice

Translate each specific condition into a verifiable supply or installation action with an owner.

Sources: [4], Art. 6; [11]

PRACTICAL GUIDE

Instructions, language and operational safety

Operating records preserve certified safeguards during use.

Assessment area	Project implementation
Content	Purpose, parameters, installation, commissioning, operation, maintenance and repair.
Faults / limits	Critical faults, misuse, limit states and actions upon malfunction.
Lifecycle	Resource/service life, storage, transport, preservation and disposal.
Personnel / contact	Personnel requirements; manufacturer, authorised person and importer.
Language	Russian and additional state languages where national law requires them.
Form	Technical documentation on paper; electronic records may supplement it.

Article 4 describes required operating information in detail. Instructions also identify necessary supplementary parts, such as cable entries, and requirements for preserving Ex characteristics. Translations must transfer protective abbreviations, values, units and drawing references correctly. Supplement a generic standard-version manual for the assessed Ex version. Warnings should describe actual behaviour: permitted cleaning, opening, repair and connection. Control instruction changes during series production because they may affect approved use. Technical records remain linked to certificate coverage.

In practice

A QR code can facilitate access to supplementary information. It does not universally replace the supplied records required by the regulation.

Sources: [4], Art. 4

PRACTICAL GUIDE

Surveillance and continuing maintenance

Series assessment does not end with initial issuance.

Assessment area	Project implementation
Scheme 1c	Surveillance throughout certificate validity.
Scope	Sample testing and/or production assessment according to procedure.
Schedule	Agree binding interval, actions and responsible body in writing.
Records	Surveillance file, production data, changes, complaints and routine checks.
Findings	Document cause, correction, effectiveness evidence and body decision.

Article 6 requires continuing surveillance for 1c through testing and/or production analysis. Establish the actual interval and procedural requirements with the body before issuance; include maintenance in the annual project calendar. This does not establish an unqualified annual deadline for every case. Agree costs, site access, samples and records early. Long certificate validity does not replace these duties. Schemes 3c and 4c have differently structured batch/unit procedures. When findings or critical changes arise, the manufacturer should not wait until the next routine contact.

In practice

Appoint an owner for dates, audit preparation and authority contact. Retain written body decisions as well.

Sources: [4], Art. 6

PRACTICAL GUIDE

Registers, import and shipment identity

Evidence must be valid and cover the actual goods.

Assessment area	Project implementation
Status	Check current validity, suspension, termination or other register status.
Identity	Reconcile manufacturer, factory, model, serial number, quantity and schedule.
Body / laboratory	Consider recognised/accredited status at the relevant time.
Shipment file	Keep invoice, packing list, customs description and evidence consistent.
National duties	Resolve customs, language, operation and other destination requirements separately.
Export conditions	Assess recipient, end use and current legal restrictions.

A certificate PDF is important evidence but not an immutable proof of present status. Check number, schedule and scope in the competent register or with the body. Batch coverage includes identified quantity and supply context. For series production, use only released models and factories. Incorrect customs descriptions may prompt questions even with suitable technical evidence. Technical conformity, customs processing and export eligibility are separate checks in the same shipment workflow. The release record documents the assessed status and responsible reviewer.

In practice

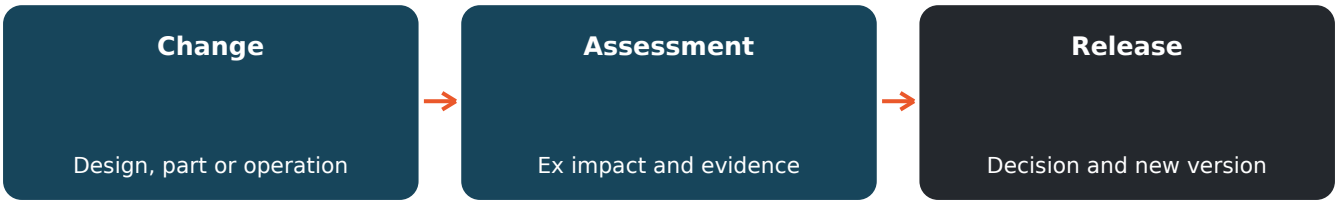
Retain the date and outcome of status checking in the shipment file. Resolve open findings before shipment.

Sources: [4], Art. 3, 6-8; [14], [16]

PRACTICAL GUIDE

Changes, repairs and archiving

The certified version remains traceable throughout the lifecycle.



Approve changed construction technically before shipment

Assessment area	Project implementation
Technical change	Construction, material, electronics, protective function, limits or drawing.
Assessment	Resolve Ex impact and evidence scope with the body before implementation.
Decision	Record review, additional tests if necessary, confirmation or new evidence.
Repair	Preserve protective characteristics; approved instructions and national rules.
Series archive	At least ten years after manufacture of the equipment ceases.
Batch archive	At least ten years after sale of the final item in the batch.

Article 6 requires a change description and revised technical records where explosion protection is affected. The body may require additional sample tests if records alone are insufficient. It confirms coverage with the change or issues a new certificate where a new product needs assessment. Supplier changes and safety software may also matter. Retention periods refer to production cessation or sale, not universally to issuance. The body retains its certification materials for at least five years after certificate expiry. Keep your own records, reports and decisions independently of service-provider changes.

In practice

Block changed constructions pending technical approval. Also record changes demonstrated to have no Ex impact.

Sources: [4], Art. 6

PRACTICAL GUIDE

Plan timing and costs realistically

Testing, production assessment and evidence scope determine the project.

Assessment area	Project implementation
Website indication	Around 30-40 working days; project indication, not a delivery guarantee.
Preparation	Records, translation, variants, standards gaps and applicant.
Testing	Samples, laboratory, tests, possible repetition and site work.
Production	Audit preparation, assessment, travel and findings closure.
Continuing services	Representation, surveillance, changes and records maintenance.
Quotation boundaries	State included models, factories, techniques, tests and additional fees in writing.

The sector page gives a broad timeline, not a universally binding price. A reliable quotation follows review of the product matrix and records. Critical dates often involve sample availability, laboratory scheduling, factory access and closure of technical gaps. A complete ATEX or IECEx report may support assessment but does not guarantee a blanket reduction. Separate initial costs and continuing maintenance. Agree when timing starts, expected cooperation and changes needing recalculation. Fees relate to a clearly defined scope, not unrestricted promises for every future model.

In practice

Request a quotation covering testing, audit, logistics, representation and surveillance. Define schedule assumptions and exclusions expressly.

Sources: [1], [4]

PRACTICAL GUIDE

Case study: an Ex pumping unit

An illustrative example of technical project structure.

Assessment area	Project implementation
Starting point	Pump unit with Ex motor, coupling, mechanical pump and monitoring.
Specification	Operator provides atmosphere, zone, substance, temperatures and load.
Part evidence	Complete motor/sensor records; mechanical pump still needs assessment.
Interfaces	Assess coupling, bearing heat, dry running, protective response and connection.
Supply model	Repeated defined manufacture: 1c with testing, production assessment and surveillance.
Release	Overall scope, Ex conditions, nameplate, instructions and supply data agree.

This example is not an approval promise for a particular actual assembly. Planning starts with a clear product boundary. Review existing part certificates for usability, then assess combination hazards. Explicitly include converter operation or hot pumped media where intended. Additional machinery, EMC or pressure requirements follow a separate applicability assessment. After laboratory and production evaluation, reconcile the certificate with final construction. Later material, motor or control changes go through change assessment before releasing new shipments.

In practice

The motor forms part of the evidence. Boundaries, interfaces and actual supply scope resolve conformity of the complete assembly.

Sources: [4], [12]

PRACTICAL GUIDE

Common mistakes and prevention

A consistent dossier prevents avoidable questions.

Assessment area	Project implementation
Treating 3c as series	Identify the batch expressly; plan repeated shipments by actual supply model.
Audit instead of testing	Plan all required assessment elements for 1c.
Motor certificate only	Assess mechanics and complete interfaces.
Automatic ATEX acceptance	Have the EAEU body assess reports, editions and technical gaps.
A/B/C treated as levels	Track subgroup, EPL, zone and temperature separately.
Purchasing changes	Assess new components and materials before use.
Missing schedule / X conditions	Use complete certificates with schedules and translated actions.
Outdated standards list	Maintain a dated matrix including No. 20/2026.

Many difficulties arise from small inconsistencies: a model suffix is missing, a factory appears only in the report, a cable adapter changed or instructions state different temperatures from the certificate. Responsible release compares all records with a common matrix. Reopen technical assessment when a deviation affects safety. An editorial addition cannot replace missing testing. Also review sales claims and replacement-part offers to prevent unnoticed new protective claims or unassessed variants.

In practice

A central model, drawing and component matrix is the most effective tool for consistent records.

Sources: [4]-[6]

PRACTICAL GUIDE

Answers to frequently asked questions

Actual construction and procedure determine the answer.

Is an ATEX or IECEx certificate sufficient?

No. It supports technical assessment but does not replace mandatory TR 012 evidence. Complete schedules and reports assist comparison.

Are non-electrical items covered?

Yes, where they fall within the stated scope. Assess mechanical heat, friction and other inherent ignition sources.

Can I use a declaration instead of a certificate?

TR 012 requires certification. A declaration under another regulation does not automatically fulfil Ex requirements.

Are samples or a production audit necessary?

1c includes type testing and production assessment with later surveillance. 3c/4c concern a batch or individual item with their required tests. Location and sample scope follow the plan.

Does an individual-item certificate also last five years?

Article 6 limits series validity to five years. It sets no validity period for batches/individual items; product coverage remains expressly limited.

Does an Ex motor approve the complete machine?

The motor provides part evidence. The complete product, mechanical ignition sources and interfaces must fit the overall assessment.

Do all standards changes already apply?

No. No. 20/2026 contains staggered list dates including July 2026 and January 2027. Assess each relevant edition separately.

Sources: [4]-[6], [8], [9]

PRACTICAL GUIDE

Pre-shipment release checklist

Use as a worksheet and close every open item.

Area	Check	Status
Classification	Boundary and intended use substantiated.	open
Atmosphere	Zone, substance data, group and subgroup confirmed.	open
Protection	Level, technique, temperature and ambient conditions match.	open
Scheme	1c/3c/4c selected by actual supply model.	open
Actors	Manufacturer, factories and eligible applicant established.	open
Dossier	Drawings, risk file, bill of materials and standards plan released.	open
Components	Evidence complete with schedules and conditions.	open
Samples	Sampling, identity and permitted import route recorded.	open
Testing	Plan and reports cover construction and variants.	open
Production	Required assessment completed; findings closed.	open
Certificate	Number, schedule, scope and register status checked.	open
Nameplate	EAC, Ex data and identity match evidence.	open
Instructions	Language, warnings and specific conditions correct.	open
Supply file	Invoice, packing list, customs and export conditions checked.	open
Maintenance	Surveillance, change control, archive and ownership resolved.	open

Project: _____ Release date: _____
Responsible: _____ Signature: _____

Sources: [4]-[19]

PRACTICAL GUIDE

Enquiry form for your Ex project

Submit with technical records for a reliable initial assessment.

Information	Your details
Company / contact	_____
Manufacturer / factories	_____
Destination / importer / end customer	_____
Product / models / HS code	_____
Supply boundary / use	_____
Series / batch / individual item	_____
Atmosphere / substance data	_____
Zone / group / subgroup	_____
EPL / technique / temperature	_____
Ambient / substance / loading	_____
Motor / converter / control	_____
Ex components / specific conditions	_____
ATEX / IECEx / test reports	_____
Standards editions / drawing revision	_____
Instructions / nameplate / risk file	_____
Samples / audit / shipment date	_____

Useful attachments

Catalogue and photographs, model list, drawings, schematic, Ex-component list, protection concept, existing certificates with schedules and complete reports. Add operator conditions and, where relevant, a product/assembly overview.

Sources: [4]

PRACTICAL GUIDE

Product matrix and ignition-hazard worksheet

Product identity and technical rationale in a common data version.

Example	Allocation	Assessment question
P-01 · Motor	Electrical Ex equipment	Schedules, operation and thermal limits?
P-02 · Pump	Non-electrical equipment	Friction, seal, medium and monitoring?
P-03 · Sensor	Device / circuit	Parameters, connection and specific conditions?
P-04 · Unit	Complete product	Interfaces, scope and manufacturer role?

The table illustrates the structure. Add model, factory, drawing revision, zone, group, EPL, technique, temperature, edition, evidence number and release to each row. Confirm actual technical classification through assessment.

Worksheet for each ignition source

Product / version: _____
Source / part: _____
Operating state / fault: _____
Atmosphere / level: _____
Source effectiveness: _____
Safeguard / limit: _____
Evidence / drawing / report: _____
Instruction condition: _____
Owner / release / date: _____

One consistent data version

Design, purchasing, manufacture, assessment and sales use the same approved matrix. Unresolved assumptions remain expressly open.

Sources: [4]-[6]

PRACTICAL GUIDE

Regulations archive and key terminology

Archives assist research; effective legal version and standards edition remain decisive.

Regulation	AC Inorms archive
TR CU 012/2011	Equipment for explosive atmospheres
TR CU 010/2011	Machinery and equipment
TR CU 020/2011	Electromagnetic compatibility
TR CU 032/2013	Pressure equipment

The official TR 012 text with annexes and effective standards lists form the basis. Translations assist work but do not replace assessment of originals and amendments. Select additional regulations by actual product.

Term	Meaning
Ex component	Ex part without independent intended use.
EPL	Equipment Protection Level.
Zone	Frequency and duration of the hazardous atmosphere at the location.
Protection technique	Engineered safeguards against ignition.
Batch	Identified, limited quantity of goods.
X condition	Specific condition of use in the certificate schedule.
Surveillance	Continuing checks under the relevant series procedure.

Sources: [2]-[6]

PRACTICAL GUIDE

Sources and legal foundations · 1

Numbered footnotes refer to these original sources.

[1] AC Inorms · EAC Ex / ATEX-equipment sector page
ac-inorms.com · Open original source

[2] AC Inorms · regulations and documents archive
ac-inorms.com · Open original source

[3] EEC · official TR CU 012/2011 sector page
eec.eaeunion.org · Open original source

[4] TR CU 012/2011 · official full text with annexes
eec.eaeunion.org · Open original source

[5] Decision 158/2020 · standards lists, consolidated version
old.adilet.zan.kz · Open original source

[6] Decision 20/2026 · amendment to Ex standards lists
old.adilet.zan.kz · Open original source

[7] Decision 711/2011 · EAC mark design and use
old.adilet.zan.kz · Open original source

[8] EUR-Lex · Directive 2014/34/EU, current version linked
eur-lex.europa.eu · Open original source

[9] IECEx · operation and certificate information
www.iecex.com · Open original source

Accessed and reviewed on 11 October 2026. Technical explanations primarily use the official full TR 012 text with Articles 1-8 and Annexes 1-2. Standards planning uses No. 158/2020 with amendments including No. 20/2026. Distinguish a new list-entry date from a regulation amendment and from certificate status.

Sources: [1]-[9]

PRACTICAL GUIDE

Further sources and image credits

Assess official texts, standards and project releases together.

[10] IECEx · technical training on EPL and equipment selection
www.iecex.com · Open original source

[11] IECEx OD 011-2 · online certificates, X and U
www.iecex.com · Open original source

[12] EEC · all adopted technical regulations
eec.eaeunion.org · Open original source

[13] TR CU 004/2011 · effective scope and exclusions
old.adilet.zan.kz · Open original source

[14] EEC · registers and classifiers
eec.eaeunion.org · Open original source

[15] AC Inorms · TR 012 archive and German explanations
ac-inorms.com · Open original source

[16] European Commission · current sanctions information
finance.ec.europa.eu · Open original source

[17] AC Inorms · general EAC page and document photograph
ac-inorms.com · Open original source

[18] EAEU legal portal · original Decision 158/2020
docs.eaeunion.org · Open original source

[19] Phoenix Contact · technical explanation of temperature classes
www.phoenixcontact.com · Open original source

Images and graphics

Cover: sparks image from the AC Inorms sector page (source 1). Document photograph: general EAC page (source 17). Product, group, zone, procedure, circuit, hazard, assembly and marking diagrams were created for this guide. They are explanatory schematics, not official printing or design templates.

Sources: [10]-[19]

PRACTICAL GUIDE

Your Ex project with AC Inorms

A clear specification connects technical assessment and planned market access.

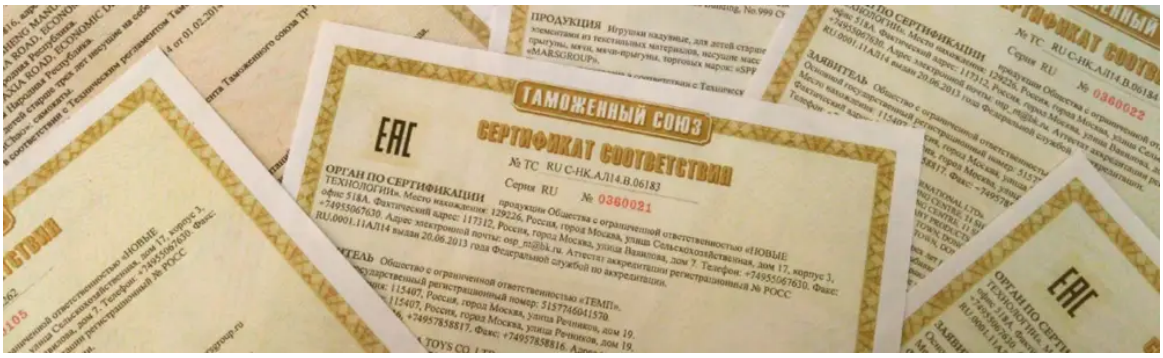


Image: technical records and EAC documentation.

AC Inorms supports manufacturers and exporters in preparation and coordination of EAC Ex projects. The basis is the product, use conditions, supply model and existing technical evidence. The accredited body makes the certification decision within eligible scope. Agree documentation, testing, samples, production assessment and EAEU representation transparently for your project. Include continuing surveillance and changes in series planning.

Service	Project contribution
Classification	Resolve boundary, Ex data, procedure and other regulations.
Documentation	Support dossier, drawing/component matrix and translation.
Testing / audit	Coordinate plan, samples, competent actors and assessment.
Maintenance	Support representation, surveillance, changes and archive planning.

Contact · AC Inorms GmbH

Nobel Straße 3/5 · 41189 Mönchengladbach · Germany
Telephone: +49 2161 990 497 0
Email: inbox@ac-inorms.com
Web: ac-inorms.com · EAC Ex / ATEX equipment

Send the enquiry form with model list, use conditions, Ex records and existing complete reports. State factories, destination, supply model and planned shipment date.

Sources: [1], [4], [17]