

APPROVED

[Commission decision](#)

[Customs Union](#)

[dated October 18, 2011 N 825](#)

TECHNICAL REGULATION OF THE CUSTOMS UNION

TR TS 012/2011

On the safety of equipment for work in explosive atmospheres

[Present](#) [Technical](#) [regulations](#) [adopted by decision of the Commission](#)
[Customs Union of October 18, 2011 N 825.](#)

AT [Decision of the Customs Union Commission of October 18, 2011 N 825](#)

changes made:

[by the decision of the EEC Board of December 4, 2012 N 250;](#)

[by the decision of the EEC Board of May 13, 2014 N 73;](#)

[by the decision of the EEC Board of October 25, 2016 N 119.](#)

- Note by the manufacturer of the database.

[Lists of standardization documents,
enforcement
of this Technical Regulation](#)

Foreword

1. This technical regulation of the Customs Union is developed in [in accordance with the Agreement on uniform principles and rules of technical regulation in the Republic of Belarus, the Republic of Kazakhstan and the Russian Federation of November 18, 2010.](#)

2. These technical regulations of the Customs Union establish

single customs territory of the Customs Union
 application and fulfillment of equipment requirements for work in
 explosive atmospheres to ensure free movement
 the specified equipment put into circulation at a single customs
 the territory of the Customs Union.

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3. If for equipment for use in explosive atmospheres
 other technical regulations of the Customs Union and (or) will be adopted
 technical regulations of the Eurasian Economic Community (hereinafter -
 EurAsEC) establishing requirements for the specified equipment,
 different from the requirements of explosion safety, it must comply
 the requirements of these technical regulations of the Customs Union and (or)
 technical regulations EurAsEC act which on the them
 spreads.

Article 1. Scope

1. This technical regulation of the Customs Union establishes
 requirements for equipment for work in explosive atmospheres,
 the implementation of which ensures the safety of its use in
 explosive atmospheres.

2. These technical regulations of the Customs Union are adopted in order to
 protection of human life and health, property, prevention of actions,
 misleading consumers.

3. These technical regulations of the Customs Union apply
 on electrical (electrical equipment), including Ex components, and
 non-electrical equipment for use in explosive atmospheres.

Identification feature of equipment for work in
 explosive atmospheres and ex-components is the availability of funds
 explosion protection specified in the technical documentation
 manufacturer, and marking of explosion protection applied to equipment and Ex-
 component.

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4. The effect of this technical regulation of the Customs Union is not spreads on:

- medical devices;
- equipment in the operation of which an explosion hazard occurs only due to the presence of explosive substances and unstable chemical compounds;
- equipment for domestic and non-industrial use in conditions when explosive Wednesday formed due to unexpected leakage of combustible gas;
- individual protection means;
- sea vessels, vessels of inland and mixed (river-sea) navigation, mobile offshore platforms and drilling platforms for work in sea and inland waters, other floating means, as well as used machines and equipment on them;
- public vehicles intended for transportation of passengers and goods by air, land, rail or water transport;
- nuclear weapons, research facilities of nuclear organizations defense complex, except for the equipment included in their composition, located in hazardous areas.

Article 2. Definitions

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In this technical regulation of the Customs Union apply the following terms and their definitions:

"emergency mode" - a mode in which the characteristics of the equipment for work in explosive atmospheres go beyond the limits, specified by the manufacturer in the technical documentation;

"analysis of the state of manufacture of the manufacturer" - an assessment of the availability of manufacturer's necessary conditions to ensure compliance manufactured equipment requirements of this technical regulations of the Customs Union;

"commissioning" - a documented event, fixing readiness of equipment for intended use;

"type of protection" - special measures provided for in equipment for work in explosive atmospheres in order to prevent ignition of the explosive environment;

"explosion safety" - no unacceptable risk of ignition explosive atmospheres harm and (or) damage;

explosion protection - measures, providing explosion safety equipment for work in explosive atmospheres;

"hazardous area" - part of an enclosed or open space, in explosive atmosphere present or likely to form in volume requiring special protective measures during construction, manufacturing, installation and operation of equipment;

"explosive atmosphere" - a mixture with air under atmospheric conditions flammable substances in the form of gas, steam, fog, dust, fibers or volatile particles, in which, after ignition, self-sustaining flame spread;

"equipment identification" - identification equipment characteristics to its essential features;

"manufacturer" - a legal entity or an individual as individual entrepreneur, carrying out on their own behalf production and (or) sale of equipment for work in explosive atmospheres and those responsible for its compliance with the requirements these technical regulations of the Customs Union;

"importer" - a resident of a state member of the Customs Union, which

concluded with a non-resident member states of the Customs Union foreign trade agreement for the transfer of equipment for work in explosive atmospheres, implements the implementation of this equipment and responsible for its compliance with safety requirements these technical regulations of the Customs Union;

"Ex-component" - explosion-proof equipment installed on (c) technical device necessary for safe operation equipment in explosive atmospheres but not intended for self-use;

"maximum surface temperature" - the highest temperature,

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arising during operation on one of the parts or surface equipment in violation of the established modes of its operation, provided in the manufacturer's technical documentation, or damage, but within the limits set for explosion protection specific type;

"explosion protection marking" - applied to equipment and Ex-components for work in explosive atmospheres and specified in the technical manufacturer's documentation a special sign of explosion safety and identification symbols of indicators defining explosion-proof equipment and Ex-components for work in explosive atmospheres;

"normal operation" - the operation mode of the equipment, with which its electrical and mechanical characteristics do not go beyond the limits specified by the manufacturer in the technical documentation;

"equipment for work in explosive atmospheres" - technical device (machine, apparatus, stationary or mobile installation, an element of their control systems, protection, a device that provides protection, control instrument), which is designed to operate during explosive atmospheres and may contain your own potential sources of ignition of the explosive environment, but its the design provides for measures to eliminate unacceptable risk ignition of this medium;

"failure" - an event consisting in the violation of working equipment status;

"certificate of conformity of the quality management system" - a document, which the certification body for quality management systems certifies conformity of the quality of work and services of the manufacturer with the requirements of standards ISO 9000

"special explosion protection mark" - a mark affixed to equipment and Ex-components, and testifying that the equipment and Ex components are explosion-proof;

"the ignition temperature of an explosive gas atmosphere" - the lowest temperature of the heated surface, which under given conditions

ignites combustible substances in the form of a gas or vapor-air mixture;
 "auto-ignition temperature of the dust layer" - the lowest temperature

heated surface at which self-ignition of a dust layer occurs

predetermined thickness on this surface;

"manufacturer's technical documentation" - a system of graphic and text documents used in the design, manufacture and

operation of equipment for work in explosive atmospheres (parts, assembly units, complexes and kits), as well as in the design,

construction and operation of protection systems;

"explosion protection level" - the level of protection against explosion assigned hazardous equipment to become a source of ignition and conditions of use in explosive atmospheres.

Article 3. Market circulation rules

1. Equipment for work in explosive atmospheres, manufactured in circulation in the single customs territory of the Customs Union at provided that it has passed the necessary assessment (confirmation) procedures compliance established by these technical regulations Customs Union, as well as other technical regulations Customs union and technical regulations Eurasian economic community (hereinafter - the EurAsEC), whose action applies to this equipment.

2. Equipment for work in explosive atmospheres, compliance whose requirements of this technical regulation of the Customs Union is not confirmed, should not be marked with a single sign circulation of products on the market of the Member States of the Customs Union and not allowed to be put on the market.

Article 4. Explosion protection requirements

1. Equipment for work in explosive atmospheres (hereinafter - equipment) must comply with the requirements necessary for safe operation and operation in relation to explosion risk:

to prevent the formation of explosive atmospheres, which may created by the release of combustible substances by equipment;

for the prevention of ignition of an explosive atmosphere, taking into account the nature of each explosion initiation source;

in accordance with the scope of the equipment, levels and types explosion protection according to appendix 1.

2. Explosion-proof equipment should be provided in

normal operating conditions and within the limits of deviations established manufacturer's technical documentation, taking into account the conditions of its use.

3. Equipment for work in explosive atmospheres must be designed and manufactured so that when applied to appointment and fulfillment of requirements for installation, operation (use) transportation (transportation) technical maintenance and repair provided the following requirements safety:

1) the equipment must provide explosion safety at operation during the entire expected (estimated) service life;

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2) the equipment must function in actual or predicted environmental conditions;

3) the equipment must maintain explosion safety in a changing environmental conditions and in the presence of external influences (humidity, vibration, pollution, lightning and switching overvoltage, etc.) with subject to the restrictions of the working conditions established by the manufacturer.

Parts of equipment must be designed for appropriate mechanical and thermal effects and must withstand exposure existing or suspected aggressive substances;

4) if the equipment contains parts that may be sources ignition, it must open in the off state or contain only intrinsically safe circuits, or have contact protection personnel and warning labels;

5) in the presence of electric charge shells (capacitors) and heated elements that may be sources ignitions, shells must open with a delay of time, sufficient to discharge the built-in capacitors to safe residual energy or to reduce the temperature of heated elements below maximum temperature surface or temperature class indicated on the equipment;

If the equipment is protected by explosion with a protective gas after a power outage, continued purging is provided shielding gas until the built-in capacitors discharge or decrease temperature of heated elements to the above values, manufacturer must put a warning on opening parts of the equipment inscription.

6) equipment surface temperature with explosion protection level

"Ex" ("very high") and "Explosion-proof" ("high") and (or) its parts should be below temperature the self-ignition of the surrounding explosive gas atmosphere and auto-ignition temperature of the dust layer during operation (within deviations established in the manufacturer's technical documentation) in specified emergency conditions and when changing environmental conditions.

Temperature above the auto-ignition temperature of the surrounding explosive atmosphere during operation (within deviations, established in the technical documentation of the manufacturer) is allowed only if the manufacturer takes additional measures to protecting specified equipment.

It is necessary to take into account the temperature increase caused by external heat sources and chemical reactions;

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7) equipment surface temperature with explosion protection level "increased reliability against explosion" ("increased") should not be above maximum surface temperature in normal mode operation.

The design of such equipment should not have parts capable of sparking, igniting the explosive environment;

8) Group I equipment must be dustproof and prevent danger of ignition of coal dust;

9) in equipment of group III, including cable glands and connections, dust (taking into account the size of its particles) should not form explosive mixtures with air or dangerous accumulations inside the equipment;

10) equipment that may emit flammable gases or dust must to have closed structures. Holes in the equipment or leaks should be designed so that gases or dust generated do not cause explosive environment from the outside of the equipment. Holes through which materials are introduced or output, must be designed and be equipped to limit the release of combustible materials during filling or draining;

11) equipment intended for use at the facilities and (or) their areas with dust present should be designed so that the dust settled on its surface, did not ignite. Dust deposits must limited by cleaning surfaces, the frequency of which indicated in the manual (instructions) for use (application). The surface temperature of parts of equipment should be lower auto-ignition temperature of the dust layer. At the same time should

means for limiting the surface temperature of parts are provided equipment to prevent hazardous heat generation in depending on the thickness of the layer of settled dust;

12) safe manual shutdown should be provided equipment included in automatic processes in case of violation established modes of operation provided for in the technical manufacturer's documentation if this does not adversely affect security;

13) during emergency shutdown of the equipment accumulated energy should dissipate to a safe value in the time indicated on warning labels placed on openable covers;

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14) the equipment should be equipped with appropriate introductory devices, and if the equipment is supposed to be used in combined with other equipment, their connection should be safe;

15) if the equipment has detection devices or warning alarm to control explosive atmospheres, places and conditions for their placement should be provided for in the technical manufacturer's documentation;

16) equipment should not contain materials capable of emitting combustible substances creating an explosive atmosphere;

17) within the limits of the working conditions established in the technical manufacturer's documentation, it is necessary to exclude the possibility of chemical reactions between the materials used and the constituent substances potentially explosive atmospheres that could adversely affect explosion protection;

18) the equipment should not contain materials that, when changed its characteristics under the influence of ambient temperature and conditions operation, as well as in combination with other materials reduce the level of explosion protection equipment;

19) Ex components installed in equipment or used to replace equipment parts and protection systems, must safely function at compliance with requirements providing explosion safety when installed in accordance with the manuals (instructions) on the operation (use) of the manufacturer;

20) equipment that may be exposed to external influences, must be provided additional means protection. The equipment must withstand external influences without disturbing it. explosion protection;

21) if the equipment is in a case or a closed container, which are part of the type of protection, such a case or container can only be opened with a special tool or with application of appropriate protective measures;

22) to prevent dangerous overload of equipment should be the use of measuring, regulatory and control devices (maximum switches, temperature limiters, differential pressure switches, flow meters, delayed relays time, speed indicators and (or) similar types devices).

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4. The design of the equipment should provide protection against the following potential ignition sources:

1) sparks (electric and frictional), flame, high temperatures heated surfaces, electromagnetic, ultrasonic, optical and ionizing radiation;

2) static electricity (electrostatic charges capable of cause hazardous discharges);

3) stray currents and leakage currents, which can lead to dangerous corrosion, sparks or overheating of surfaces and create, thus manner of ignition;

4) overheating as a result of friction or impacts that may occur between materials and parts in contact with each other rotation or penetration of foreign objects;

5) pressure compensation, which is carried out by regulatory devices and can cause shock waves or compressions leading to ignition.

6) lightning strikes;

7) exothermic reactions, including self-ignition of a dust layer.

In this case, all hazard factors must be taken into account. explosion and sources of ignition initiation identified explosive atmospheres. Based on the hazard assessment

explosion protection methods should be chosen (types explosion protection) equipment for its use in explosive atmospheres.

5. Devices providing equipment protection during emergency modes must comply with the following requirements:

1) protective devices must function independently of any necessary for the operation of a measuring or control device. Failure of the protective device must be detected by technical funds provided by technical documentation;

2) emergency shutdown must directly actuate appropriate control devices without intermediate command software;

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3) emergency controls of protective devices must be equipped with mechanisms or other devices for blocking repeated launch. A new start command can be executed, and normal operation resume only after a special reset launch;

4) the applied control devices and indicators should be designed to ensure the highest possible level operational safety regarding explosion risk;

5) devices with a measuring function should be designed and be made taking into account operational requirements and their conditions use in explosive atmospheres and meet the requirements for ensuring the uniformity of measurements;

6) it should be possible to verify the accuracy of the readings and functioning devices with a measuring function;

7) emergency threshold of a potential source of ignition of devices with measuring function, must be below the limit conditions the occurrence of an explosion and (or) ignition of a registered explosive environments, taking into account the coefficient established in the technical documentation safety, operating conditions and measurement system errors;

8) the software of the equipment controlled by him must consider the risks associated with errors in the program.

6. Upon delivery of equipment to the consumer, it must be attached manufacturer's technical documentation, which should include:

1) name and (or) designation of equipment (type, brand, model), its parameters and characteristics affecting safety, name and (or) manufacturer's trademark;

2) information on his appointment;

3) instructions for installation, assembly, commissioning or adjustment;

4) instructions on the use of equipment and measures to ensure safety that must be observed during operation (including commissioning, intended use, technical service, all types of repairs and technical surveys, remedies aimed at reducing the intensity and localization of harmful production factors, transportation and storage conditions);

5) the assigned indicators of the service life and (or) the assigned resource;

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6) a list of critical failures, possible personnel errors (user) leading to equipment emergency conditions, and actions, preventing these errors;

7) parameters of limit states;

8) information on measures to be taken upon detection malfunctions of this equipment;

9) information on the need for additional staffing elements (cable entries, etc.);

10) requirements for ensuring the preservation of technical characteristics equipment causing its explosion safety;

11) requirements for packaging, preservation, transportation conditions and storage, designated storage periods, instructions for regulatory periods re-examination of the condition, replacement of individual elements, parts, nodes with expired storage;

12) requirements for the disposal of equipment;

13) rules and conditions of storage, transportation and disposal (if necessity - establishing requirements for them);

14) staff requirements;

15) the location of the manufacturer, information for contacting him;

16) name and location authorized by the manufacturer person, importer, information for contacting him;

17) date of manufacture.

Technical documentation is made on paper. To her can be attached a set of technical documentation on electronic carriers.

7. Equipment must be labeled, which includes:

1) the name of the manufacturer or his registered trademark;

2) designation of the type of equipment;

3) serial number;

4) certificate of conformity number;

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5) explosion protection marking. Image of a special sign explosion protection is set out in Appendix 2.

8. Marking and technical documentation of the manufacturer are carried out on Russian language and in the state (s) language (s) of the Member State Customs Union, subject to the relevant requirements in legislation (s) of the state - a member of the Customs Union.

9. Marking must be affixed to the surface of this equipment. or plate accessible for inspection without disassembly or use tool, and be maintained throughout the life of the equipment.

10. By the decision of the manufacturer or in accordance with the contract (agreement) equipment labeling may include additional information that is relevant to its safe use, including including:

1) rated voltage or range of rated voltages;

2) long-term permissible operating voltage;

3) symbol of the type of current (if the rated frequency is not indicated);

4) symbol of the class of protection against human damage

electric current;

5) the degree of protection provided by the shell;

6) rated power or net power or rated current;

7) mass;

8) overall dimensions;

9) date of manufacture.

Article 5. Compliance safety

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1. Compliance of equipment with these technical regulations
The Customs Union is ensured by the implementation of its requirements
safety directly or voluntarily
requirements of interstate standards, and in case of their absence -
national (state) standards of member states
Customs Union, as a result of which voluntary
The basis ensures compliance with the requirements of this technical
Customs Union regulations, and standards containing rules and methods
research (testing) and measurements, including selection rules
samples required for application and enforcement
of this technical regulation of the Customs Union and implementation
assessment (confirmation) of conformity of equipment for work in
explosive atmospheres (hereinafter referred to as standards).

2. The list of standards referred to in paragraph 1 of this article is approved
Commission of the Customs Union (hereinafter - the Commission).

Section 6. Confirmation of Conformity

1. Before being put into circulation on a single customs territory

Customs Union equipment must be subjected to the procedure of confirmation of compliance with the requirements of this technical regulation of the Customs Union.

Confirmation of equipment compliance is mandatory and carried out in the form of certification.

2. Procedures for verifying equipment compliance with established in this technical regulation of the Customs Union requirements carried out by accredited certification bodies (assessment (confirmation) of conformity) and accredited test laboratories (centers) included in the Unified Register of Authorities for certification and testing laboratories (centers) of the Customs Union.

3. Confirmation of equipment compliance is carried out according to the schemes in accordance with the Regulation on the application of standard assessment schemes (confirmation) of conformity in the technical regulations of the Customs Union approved by the Commission of the Customs Union:

1) in relation to mass-produced equipment:
certification of equipment based on type testing in accredited testing laboratory (center) and condition analysis production followed by inspection control (scheme 1c);

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2) in relation to a limited batch of equipment:
batch certification of equipment based on sample testing equipment from this batch (scheme 3c) in an accredited test laboratories (center);
unit certification based on unit testing equipment in an accredited testing laboratory (Scheme 4c).

4. The applicant for certification under scheme 1c may be registered in accordance with the laws of a member state A customs union on its territory is a legal entity or an individual as an individual entrepreneur, or being manufacturer, or acting as a foreign manufacturer on the basis of the contract with him, in terms of ensuring compliance with the supplied products to the requirements of these technical regulations and in part liability for non-compliance of the supplied products with the requirements of this technical regulation of the Customs Union (person performing functions of a foreign manufacturer).

5. The applicant for certification under scheme 3c, 4c may be registered in accordance with the laws of a member state

A customs union on its territory is a legal entity or an individual as an individual entrepreneur, or being manufacturer or seller, or acting as a foreign manufacturer on the basis of an agreement with him, in terms of ensuring compliance products supplied to the requirements of these technical regulations and regarding liability for non-compliance of the supplied products the requirements of this technical regulation of the Customs Union (person, acting as a foreign manufacturer).

6. When conducting certification of equipment:

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1) manufacturer (person authorized by the manufacturer), importer provides to the certification body (assessment (confirmation) compliance) a set of documents for equipment confirming compliance of the equipment with the explosion safety requirements of this technical regulations of the Customs Union, which includes:

technical conditions (if any);

operational documents;

list of standards the requirements of which comply with this equipment from the List of standards referred to in paragraph 1 of Article 5 of the present technical regulation of the Customs Union (if applicable manufacturer);

explanatory note describing accepted technical decisions and risk assessment confirming compliance with requirements explosion safety of the present technical regulation of the Customs Union, if the standards are absent or not applied;

certificate of conformity of the manufacturer's quality management system (in the presence of).

contract (supply contract) or shipping

documentation (for a batch of equipment).

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2) certification body (assessment (confirmation) of conformity):
holds identification presented equipment by
establishing the identity of its characteristics to the signs established
in article 1 of these technical regulations of the Customs Union, as well as
the provisions established by paragraphs 8 and 9 of Article 4 of this technical
regulations of the Customs Union;
organizes testing of equipment sample (s) in
accredited testing laboratory (center) for compliance
requirements of standards from the List of standards specified in paragraph 1 of Article
5 of this technical regulation of the Customs Union, and conducts analysis
test protocol (s). The test report indicates
list of technical documentation (drawings of software
explosion protection), confirming the conformity of equipment and Ex-
component requirements of this technical regulation of the Customs
union.

If necessary, due to the specifics of manufacture and installation,
the manufacturer's technical documentation for the manufacture or

installation, it is allowed to test equipment at its place manufacturing and (or) installation.

If the manufacturer's standards have not been applied or are not available, then the authority certification (assessment (confirmation) of conformity) conducts confirmation of equipment compliance directly with requirements explosion safety of the present technical regulation of the Customs union. For this purpose, the certification body:

- using technical documentation and descriptions adopted technical solutions and risk assessments confirming compliance explosion safety requirements of these technical regulations Customs Union contained in the explanatory note of the manufacturer, defines specific security requirements for the certifiable equipment;

- defines standards establishing measurement methods and tests from the List of standards referred to in paragraph 1 of Article 5 of this technical regulations of the Customs Union, or in their absence defines methods for monitoring, measuring and testing equipment for confirmation of its compliance with specific requirements;

- organizes testing of equipment in an accredited testing laboratory (center);

- conducts an analysis of the state of manufacture of the manufacturer. If available manufacturer certified the system management qualities manufacturing or developing and manufacturing equipment evaluates the ability of this system to provide stable release certified equipment that meets the requirements of this technical regulations;

When confirming the conformity of a batch of equipment (single equipment) analysis of the state of production is not carried out;

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- carries out inspection control (if provided by the scheme certification) for certified equipment for the entire period validity of the certificate of conformity by testing samples in accredited testing laboratory (center) and (or) analysis production conditions (scheme 1c);

- issues a certificate of conformity in a single form approved Commission decision:

- for commercially available equipment with a validity period of not more than 5 years old;
- for a batch of equipment (single equipment) the period is not installed.

Certificate of compliance of Ex-components with the requirements of this technical regulations of the Customs Union issued upon implementation the procedures referred to in this subparagraph in the same form.

The certificate of conformity must contain in the application, including, the following information:

description of the design and means of ensuring explosion protection;
special conditions of use (if in the explosion protection marking
X is indicated);

3) manufacturer (person authorized by the manufacturer), importer:
upon receipt of the certificate of conformity, puts a single sign of appeal
products on the market of the Member States of the Customs Union and
registration number of the certification body (assessment (confirmation))
compliance);
generates a set of documents for equipment, which includes:
- documents for equipment specified in subparagraph 1 of this
paragraph;
- test report (s);
- certificate of conformity;
takes all necessary measures so that the production process is
stable and ensured compliance of manufactured equipment
the requirements of this technical regulation of the Customs Union (scheme
1c).

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7. In the case of making by the manufacturer in the design and (or) technical
documentation confirming compliance of equipment and (or) Ex-
component requirements of this technical regulation of the Customs
union, changes affecting explosion performance
equipment, he presents to the certification body (assessment
(confirmation) of conformity) that issued the certificate of conformity,
description of changes, technical documentation (drawings of tools
explosion protection) as amended and a sample for
additional tests if the certification body (assessment
(confirmation) of conformity) deems insufficient only
examination of technical documentation as amended for
deciding on the conformity of equipment and (or) Ex-component
these technical regulations of the Customs Union with
changes.

In this case, the certification body (assessment (confirmation)) compliance) conducts examination of technical documentation (drawings explosion protection means) as amended, and if deem this insufficient, and additional sample testing. At positive results certification body (assessment (confirmation)) compliance) draws up a decision confirming the validity of the certificate compliance with the changes made or draws up a new certificate of conformity with the technical regulations of the Customs Union, if the amendments require consideration of the equipment and (or) Ex-component as a new product.

8. On the territory of the Member States of the Customs Union documents, including documents confirming compliance, must stored:

for equipment - at the manufacturer (person authorized by the manufacturer) in for at least 10 years from the date of withdrawal (termination) from production of this equipment;

for a batch of equipment (single item) - at the importer, manufacturer or a person authorized by the manufacturer for at least 10 years from the day selling the last product from a batch.

Documents and materials confirming the results of certification stored in the certification body that issued the certificate of conformity in at least 5 years after the expiration of the certificate compliance.

A set of documents should be provided to state authorities supervision upon their request. * 6.8.3)

Article 7. Marking with a single sign of appeal products on the market of the Member States of the Customs union

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1. Equipment that meets the requirements of this technical Regulations of the Customs Union and the past confirmation procedure compliance in accordance with article 6 of these technical regulations Customs Union must be marked with a single sign of treatment products on the market of the Member States of the Customs Union.

The equipment is marked with a single sign of product circulation on the market of the Member States of the Customs Union, if applicable requirements of all technical regulations of the Customs Union and technical EurAsEC regulations covering it and providing for drawing a single sign of product circulation on the market of member states Customs Union.

2. Marking with a single sign of product circulation on the state market - members of the Customs Union is carried out before the release of equipment in market appeal.

3. A single sign of circulation of products on the market of member states The customs union is applied to each unit of equipment (product) in any way that provides a sharp and clear image for all equipment life.

A single sign of product circulation on the market of member states The customs union is applied to the product itself and is also given in manufacturer's technical documentation attached to it.

4. The application of a single sign of product circulation on the market is allowed. Member States of the Customs Union only for packaging and indication in manufacturer's technical documentation attached to it, if this mark it is impossible to apply directly to the equipment due to the features designs.

Article 8. Protective clause

1. Member States of the Customs Union are required to take all measures to limit, prohibit the release into circulation of equipment for work in explosive atmospheres in the single customs territory of the Customs Union, as well as withdrawal from the market of such equipment that is not appropriate safety requirements of this technical regulation of the Customs Union. * 8.1)

Appendix 1. Classification of indicators, defining explosion safety equipment

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Annex 1
to technical regulations
Customs Union "On Security
equipment for work in
explosive atmospheres "
(TR TS 012/2011)

I. Classification of hazardous areas

1. Classification of hazardous areas applies for selection purposes equipment, according to its level of explosion protection, ensuring safe operation of such equipment in an appropriate hazardous area.

2. Depending on the frequency and duration of the presence of explosive gas or dust environment explosive zones are divided into following classes:

- 1) for explosive gas atmospheres - classes 0, 1 and 2;
- 2) for explosive dust environments - classes 20, 21 and 22.

II. Classification of equipment by groups

Depending on the application, the equipment is divided into following groups:

1) equipment of group I - equipment intended for applications in underground mines and their surface structures dangerous mine gas and (or) combustible dust. Depending on the design Group I equipment may have one of three levels of explosion protection;

2) equipment of group II - equipment intended for application in places (except underground workings of mines and their ground buildings) hazardous in explosive gas atmospheres. Depending on the Group II equipment designs can have one of three levels explosion protection. Group II equipment can be divided into subgroups IIA, IIB, IIC depending on the category of explosive mixture for which it intended;

3) equipment of group III - equipment intended for application in places (except underground workings of mines and their ground structures) hazardous in explosive dust environments. Depending on the Designs can have one of three levels of explosion protection. Equipment group III can be divided into subgroups IIIA, IIIB, IIIC depending on characteristics of the explosive atmosphere for which it is intended.

III. Classification of equipment by levels explosion protection

1. Equipment, depending on the danger, become a source of ignition and conditions of its use in explosive atmospheres classified by explosion protection levels:

- 1) "especially explosive" ("very high");
- 2) "explosion proof" ("high");
- 3) "increased reliability against explosion" ("increased").

2. The level of explosion protection is "especially explosionproof" ("very high") applies to equipment that is designed to function as specified by the manufacturer operational parameters, provides the necessary level of explosion protection, even with unlikely failures, remains operational in the presence of an explosive atmosphere and in which in case of failure of one tool protection required level of explosion protection is provided by the second independent protective equipment or the required level of explosion protection provided with two failures of protective equipment occurring independently apart from each other.

Equipment of this explosion protection level is intended for applications in underground workings of mines and their surface structures, in which there is a risk of the presence of mine gas and (or) combustible dust (equipment of group I) either at the facilities and (or) their sites (equipment of groups II and III) on which the explosive atmosphere created mixtures with air of combustible substances in the form of gas, steam, fog or dust, fibers volatile substances is present constantly at flow long periods or often.

3. Level of explosion protection "explosion proof" ("high") applies to equipment designed for operation in accordance with the manufacturer's operational parameters and providing the necessary level of explosion protection and normal operation with one recognized probable damage.

Group I equipment of this explosion protection level must have the ability to safely turn off when reaching the regulated concentration of mine gas in the environment.

Equipment of this explosion protection level is intended for applications in underground workings of mines and their surface structures, in which there is a possibility of the presence of mine gas and (or) combustible dust (equipment of group I) either at the facilities and (or) their sites (equipment of groups II and III) on which the occurrence is likely explosive atmospheres in the form of gas, steam, fog, dust, fibers or volatile particles.

4. Level of protection "increased reliability against explosion" ("elevated") applies to equipment intended for functioning as specified by the manufacturer operational parameters and ensuring functioning only in the normal operating mode specified by the manufacturer.

Group I equipment of this explosion protection level can be safe shutdown when regulated concentration is reached mine gas in the environment.

Equipment of this explosion protection level is intended for applications in underground mines and their surface structures (equipment of group I) either at the facilities and (or) their sites (equipment groups II and III), in which under normal operating conditions the presence of mine gas and (or) combustible dust or explosive atmosphere created mixtures with air of combustible substances in the form of gas, steam, fog or dust, fibers, volatiles, is unlikely, and if an explosive atmosphere exists then only for a short period of time.

IV. Types of explosion protection equipment

1. Depending on the special measures provided for Explosive atmospheres equipment may have one type or a combination of several types explosion protection:

1) in relation to electrical equipment intended for work in explosive gas environments:

"d" is a flameproof enclosure;

"e" - enhanced protection;

"i" ("ia", "ib", "ic") - intrinsic safety (intrinsically safe electrical chain);

"m" ("ma", "mb", "mc") - compound sealing;

"nA" - non-sparking equipment;

"nC" is a contact device in a flameproof enclosure, or a hermetically sealed device, or a non-burning component, or sealed device;

"nR" - a shell with a limited gas pass;

"nL" - equipment containing limited electrical circuits energy

"nZ" - shell under overpressure;

"o" - oil filling of the shell;

"p" ("px", "py", "pz") - filling or purging the shell under redundant pressure

"q" - quartz filling of the shell;

"s" is a special type of explosion protection;

2) in relation to electrical equipment intended for work in explosive dust environments:

"t" ("ta", "tb", "tc") - protection by the shell;

"i" ("ia", "ib") - intrinsic safety (intrinsically safe electrical circuit);

"m" ("ma", "mb", "mc") - compound sealing;

"p" - filling or purging the shell under overpressure;

"s" is a special type of explosion protection;

3) in relation to non-electrical equipment intended for work in explosive atmospheres:

"c" - structural safety;

"b" - ignition source control;

"k" - liquid immersion protection;

"d" - protection by a flameproof enclosure;

"fr" - shell protection with limited gas passage;

"p" - protection by high pressure;

4) other recognized types of explosion protection.

2. The types of equipment explosion protection are determined by the following special measures provided for in the equipment of various explosion protection levels to prevent ignition of the surrounding explosive atmosphere:

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1) flameproof enclosure "d" - type of equipment explosion protection, in which its parts are capable of igniting an explosive gas medium enclosed in a shell capable of withstanding explosion pressure explosive mixture inside it and prevent the explosion from spreading explosive environment;

2) enclosure "t" - type of protection in which the equipment, protected by a sheath providing protection against the ingress of dust, and means to limit surface temperature;

3) increased protection of type "e" - type of protection in which additional measures are taken against possible excess permissible temperature, as well as sparking in normal or in the specified (emergency) operation mode;

4) intrinsic safety (intrinsically safe electrical circuit) "i" - type explosion protection based on the limitation of electrical energy (power) in the electric discharge and the temperature of the elements electrical equipment below ignition level from sparking or thermal effects;

5) sealing with compound "m" - type of protection in which parts equipment capable of igniting an explosive atmosphere due to sparking or heating are encapsulated to exclude ignition of an explosive atmosphere during operation or installation;

6) protection of type "n" - type of protection in which additional protective measures to prevent ignition of the surrounding explosive gas atmosphere in normal and specified (emergency) operating modes of electrical equipment;

7) oil filling of the shell "o" - type of protection, in which the equipment or parts of the equipment are immersed in a protective fluid, excluding the possibility of ignition of an explosive gas atmosphere, which may be present above the liquid or outside the shell;

8) filling or purging the shell under excess pressure "p" - view explosion protection, excluding the ingress of the external environment into the shell or the room due to the presence of protective gas in them under pressure, exceeding the pressure of the external environment;

9) quartz filling of the "q" shell - type of protection in which parts capable of igniting an explosive atmosphere are fixed in certain position and completely surrounded by placeholder preventing the ignition of an external explosive environment environment;

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10) special type of explosion protection "s" - type of explosion protection based on protective measures other than the protective measures provided for in subparagraphs 1-9 of this paragraph, but deemed sufficient to ensure explosion protection during assessment or testing;

11) structural safety "c" - type of protection in which additional protective measures are taken to exclude the possibility of ignition of the explosive environment from heated surfaces, sparks and adiabatic compression created by moving parts of equipment;

12) control of the ignition source "b" - type of protection, providing for the installation in non-electrical equipment of the device, which eliminates the formation of an ignition source and by whose internal built-in sensors control the parameters of the elements of equipment and trigger automatic protective devices or alarms;

13) liquid immersion protection "k" - type of protection in which potential ignition sources are safe or separated from explosive atmospheres by full or partial immersion into protective fluid when hazardous surfaces are constantly covered with protective liquid so that an explosive atmosphere that may be above the liquid level or outside the shell of equipment could not be ignited.

14) sheath with a limited gas passage "fr" - view explosion protection, in which the entry is limited through the shell of explosive atmospheres to an acceptable low level at which the concentration of the explosive atmosphere in the shell is lower than the lower concentration limit of flame propagation.

V. Classification of equipment by temperature classes

Depending on the highest permissible surface temperature Group II equipment is divided into the following temperature classes:

- 1) T1 - 450 degrees Celsius;
- 2) T2 - 300 degrees Celsius;
- 3) T3 - 200 degrees Celsius;
- 4) T4 - 135 degrees Celsius;

- 5) T5 - 100 degrees Celsius;
- 6) T6 - 85 degrees Celsius.

Appendix 2. Image of special explosion safety mark

Appendix 2
to technical regulations
Customs Union "On Security
equipment for work in
explosive atmospheres "
(TR TS 012/2011)

fig. 1

fig. 2

Description of the image of the special character explosion safety

the height of the letter "x" is 5/9 of the height of the letter "E", inscribed in a rectangle on a light (Fig. 1) or on a contrasting background (Fig. 2), with ratio of height to width 11/8.

Ex stands for Explosion-proof.

Dimensions special sign explosion safety defines
 manufacturer of equipment for work in explosive atmospheres. Base
 the height of the rectangle must be at least 10 mm. Dimensions
 special explosion protection mark must guarantee its clarity
 elements and their distinguishability to the naked eye on a common color background
 equipment or an ex-component.

*The text of the List of standards, as a result of which
 voluntary basis provided by compliance requirements
 Technical Regulations of the Customs Union "On Security
 equipment for work in explosive atmospheres "(TR TS 012/2011), see
 by [the link](#).*

*Text of the List of Standards containing Rules and Methods
 research (testing) and measurements, including selection rules
 samples required for application and enforcement
 Technical Regulations of the Customs Union "On Security
 equipment for work in explosive atmospheres "(TR TS 012/2011) and
 assessment (confirmation) of product conformity, see
[link](#).*

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