On approval of Technical Regulation "Safety requirements for coal and industrial processes of their mining, processing, storage and transportation"

Unofficial translation

Resolution of the Government of the Republic of Kazakhstan dated July 17, 2010 № 731

Unofficial translation

In accordance with the Law of the Republic of Kazakhstan dated November 9, 2004 "On Technical Regulation", the Government of the Republic of Kazakhstan hereby **RESOLVED as follows**:

1. To approve the attached Technical Regulation "Safety requirements for coal and industrial processes of their mining, processing, storage and transportation"

2. This resolution shall be enforced upon expiry of six months after the date of its first official publication.

Prime Minister of the Republic of Kazakhstan *K. Massimov*

Approved
by resolution of the Government
of the Republic of Kazakhstan
dated July 17, 2010 № 731

Technical regulations
"Safety requirements for coal and industrial processes of their mining, processing, storage and transportation"

1. Scope

1. This Technical Regulation "Safety requirements for coal and industrial processes of their mining, processing, storage and transportation" (hereinafter referred to as the Technical Regulation) shall establish requirements to safety of coal and products of their processing and processes.

2. Objects of technical regulation in this Technical Regulation shall be:

1) coal, lignite or brown coal (hereinafter referred to as the coals), the coal sorted and clean, briquettes and similar types of the agglomerated fuel (hereinafter referred to as the products of their processing);

2) mining, processing, storage, transportation and sales processes.

The list of coals and products of their processing according to the Foreign Economic Activity Commodity Nomenclature of the Customs Union (hereinafter referred to as FEACN of the CU) shall be given in the Annex 1 to this Technical Regulation.

3. The main hazards (risks) to be avoided shall be:

1) production noise availability, exceeding the regulatory values, having a negative effect on hearing organs, nervous system, concentration of attention;

2) common and local vibration availability in premises (workshops) above permissible levels and time of action per person;

3) availability of radioactive radiation sources in coal exceeding the maximum permissible values, which may have a negative impact on the human body;

4) dust and gas content of air in the working area;

5) explosion and fire hazard, including self-combustion of coal and coal dust;

6) development of mountain pressure, sudden release of coal and gas;

7) water and pulp breakouts;

8) pollution of airspace, surface and ground waters, pollution and sedimentation of the earth's surface, waterlogging of areas and regions, creation of artificially increased seismicity, deterioration of land fertility.

4. The identification of coal and its processing products should be carried out by verifying the documents of the manufacturer (contract for the right of subsoil use, license for the type of activity, project, technological regulation, regulatory document on standardization for products, plan for the development of coal mining and processing, permission for emission into the environment) and testing of samples of products according to the indicators of identification, classification, codification: technological brand (group, subgroup), rank (category, subcategory), piece size, code number.

2. Terms and definitions

5. This Technical Regulation shall use terms and definitions established by legislative, regulatory and other acts in the field of technical regulation, industrial safety, environmental protection, as well as the following terms used with corresponding definitions:

1) an emergency response plan - a set of measures to save people and eliminate the accident, determining the procedure of warning and actions of officials of the organization, a hazardous production facility and survival and safety formation, the way and time of people leaving emergency and threatened areas, the location of means to save people and eliminate the accident;

2) agglomerated fuel - fuel obtained in the process of fine particles pelletizing with addition of binding material ensuring adhesion or without it;

3) enrichment - a set of different technological processes of processing mineral raw materials with the purpose of mining of useful components from it (and if necessary, their mutual separation) with concentration exceeding their content in the raw materials;

4) enriched coal - coal obtained in the process of coal enrichment, wet or dry;

5) raw coal - extracted coal subjected to screening or crushing processes;

6) bituminous coal - middle-rank coal having vitrinite reflection index Rr equal to or more than 0.5%, but less than 2.0%;

7) briquetting - a process of producing pieces (briquettes) with and without adding binders , followed by pressing the mixture into briquettes of the desired size and shape;

8) gas mode - procedure introduced at coal-fired plants hazardous for methane or hydrogen release;

9) rank (subcategory) - the location of coal in the genetic series showing its maturity based on genetic and physical-chemical properties under the international classification system;

10) screening - coal separated from coal and not enriched, with size less than 12.5 (13; 25) millimeters (hereinafter referred to as mm);

11) sieve analysis - determination of grain size distribution of coal by sampling on sieves;

12) combustion heat - the amount of heat released at complete combustion of a unit of fuel mass;

13) the project - a set of technical documents necessary for the construction, installation and operation of the facility;

14) working area - space with height of 2 meters (hereinafter referred to as m) above the floor level of the service platform;

15) sudden release - spontaneous instantaneous destruction of a part of the massif near the mine face, accompanied by waste of rock, coal, reinforced by gas release;

16) code number - numerical designation of coals on the basis of values of classification parameters according to the international codification system;

17) coal - a solid combustible sedimentary rock, largely of organic origin, formed mainly from dead plants as a result of their biochemical, physical-chemical and physical changes;

18) coal and rock dust - tiny particles of solid substances with size less than 0.5 mm, formed during coal mining, processing and transportation;

19) coal mining - a complex of production processes for coal mining from subsoil;

20) coal processing - a technological process (a set of successive technological processes that make up a complete cycle) of processing the mined coal in order to provide the specified consumer properties;

21) coal sorting - the process of sizing the pieces to produce commercial classes of coal;

22) chemical composition of ash - content of main elements in ash in terms of oxides;

23) raw coal - extracted coal, not subjected to screening, crushing, enrichment processes;

24) the stack - coal folded into a regular shape (cone, pyramid in (non) truncated form, etc .);

25) solid fuel - solid combustible sedimentary rock (coal, combustible shale) and products of their processing (sorted and enriched coal, briquettes and agglomerated fuel, coke, semi-coke);

26) hazardous cargo - any substances, materials, articles, wastes of industrial and other activities which, due to their inherent properties, may cause explosion, fire or damage to technical means, devices, buildings and structures, as well as death, injury and disease of people, animals, during transportation, loading and discharge and storage;

27) hazardous waste - wastes that contain hazardous substances with hazardous properties (toxicity, explosion, radioactivity, fire hazard, high reactivity) and may pose an immediate or potential danger to the environment and human health by themselves or when in contact with other substances;

28) a hazardous waste passport - a document containing a standardized description of waste generation processes at the place of their origin, their quantitative and qualitative indicators, rules of their handling, methods of their control, types of harmful impact of these wastes on the environment, human health and (or) property of persons, information about waste producers, other persons who own them;

29) self-combustion - ignition of coal as a result of continuously developing oxidative reactions with air oxygen regardless of heat inflow from outside;

30) self-ignition - a sharp increase in the rate of exothermic volumetric reactions accompanied by flame burning and/or explosion;

31) self-ignition temperature - the lowest ambient temperature at which under the conditions of special tests self-ignition of the substance shall be observed;

32) industrial product - a product of coal enrichment, which by percentage of ash shall be intermediate between coal and empty rock;

33) product quality certificate (passport) - a document to which the manufacturer (supplier) shall certify the quality and quantity of the shipped batch of products;

34) fire and explosion hazard - a set of properties of substances characterizing their ability to create and spread combustion. The effect of combustion, depending on its velocity and flowing conditions, may be fire or explosion;

35) passport (in mining) - a document defining the procedure of mining operations with indication of parameters of mining work and interlinked arrangement of mining equipment;

36) shelf life - the period of time during which the genetic and technological properties of coal products shall be preserved, provided that the storage rules shall be observed;

37) sanitary-protective zone - territory beyond which impact factors do not exceed the established hygienic standards;

38) regulatory document on standardization - a document establishing standards, rules, characteristics, principles concerning different types of standardization activities or its results;

39) sorted coal - coal subjected to screening process, in order to produce coal products of certain size class;

40) specific activity of natural radionuclides - ratio of activity of natural radionuclides in substance to mass of substance;

41) mining branch - subsoil area, within the boundaries of which subsoil user shall have the right to carry out exploration, mining, construction and operation of underground structures;

42) mountain pressure - stresses, forces arising in the mass surrounding the mining mine due to mining operations;

43) rock impact - fast-flowing destruction of the extremely stressed part of the rock mass adjacent to the mine, manifested in the form of coal (rock) release into underground mines;

44) technical analysis - coal analysis presented in terms of moisture, ash, volatile substances and bound carbon content;

45) technological brand (group, subgroup) - symbol of coal variety close to genetic characteristics and technological characteristics;

46) technological regulation - a document defining the optimal technological mode, procedure for carrying out technological operations, ensuring the output of products of the required quality, safe operating conditions, compliance with environmental protection requirements;

47) technological diagram - sequence of technological operations and movements of production and processing products flows;

48) dust-and-gas mode – a procedure introduced at coal-fired enterprises, hazardous by gas and by explosive dust;

49) oxidation index - indicator reflecting chemical changes and decomposition of coal substance;

50) ignition - flame burning of the substance initiated by the ignition source and continued after its removal;

51) ignition temperature - the lowest temperature of the coal substance, at which under conditions of special tests combustible vapors and gases shall be released at such a rate that when they are exposed to the ignition source, ignition is observed;

52) granulometric composition - quantitative characteristic of coal by size of pieces;

53) maximum permissible concentrations (hereinafter referred to as MPC) - the maximum amount of harmful chemical in a unit volume, detected by modern methods of research, which with daily exposure for a long time has no harmful effect on the human body; is a genetic criterion in assessing the sanitary and epidemiological state of the environment (working zone air, atmospheric air, water bodies and soil);

54) sludge - fine particles with size less than 0.5 (1) mm, formed in waters of coal-heating factories as a result of enrichment;

55) elemental analysis - coal analysis presented in terms of ash, carbon, hydrogen, nitrogen, sulphur and oxygen content.

3. Conditions of products circulation on the market of the Republic of Kazakhstan

6. Coals and products of their processing when placed on the market shall comply with the requirements of this Technical Regulation.

7. Coal and its processing products issued to the markets must be accompanied by a quality certificate (passport).

8. The product quality certificate (passport) shall contain the following information:

1) product name and type of consumption;

2) country and place of manufacture of products;

3) name and legal address of the manufacturer (supplier);

4) name and designation of the regulatory document for the products;

5) lot number;

6) weight (gross);

7) date of manufacture of the products;

8) period of storage;

9) FEACN of the CU and Classification of products by economic activity (CPEA);

10) technological brand (group, subgroup);

11) rank (category, subcategory);

12) size of pieces;

13) code number;

14) information on the compliance document.

4. Safety requirements for coals and processing products

9. Coals and their products shall comply with the safety requirements specified in Annex 2 to this Technical Regulation.

10. Standards of radiation safety of coals and products of their processing shall be given in Annex 3 to this Technical Regulation.

Coals and products of their processing shall belong to the 1 class of radiation hazard. The sum of relations of specific activity of natural radionuclides to minimum significant specific activity should not exceed one. Coals and products of their processing, having the sum of ratios of specific activity of natural radionuclides to minimum significant specific activity of more than one unit, cannot be used in economic activity.

Ash of coals and products of their processing can be used in different directions depending on effective specific activity of natural radionuclides.

11. Indicators characterizing fuel and fire and explosion hazard of coals and products of their processing shall be ignition temperature and self-ignition temperature.

Coals and products of their processing shall belong to group "combustible (combustible)", capable to ignite spontaneously and also to flare up at influence of a source of ignition and to burn independently after its removal.

The ignition temperature of the coals and their products shall be not less than 120 °C.

The temperature of self-ignition of coals and products of their processing shall not be less than 50 °C.

12. Coals and products of their processing shall be characterized by tendency to oxidation and self-combustion.

Classification of coals and products of their processing by tendency to oxidation and self-combustion and limit storage terms shall be presented in Annex 4 to this Technical Regulation.

13. Coals and their products can form dust-air explosive mixtures.

The explosive nature of dust-air mixtures shall depend on the humidity of the mixture, the size of the dust, the access of air to the layer of fuel, the temperature of the environment and fuel, its natural properties.

The most explosive shall be a dust-air mixture with a coal particle content of less than 0.2 mm.

In order to assess the explosion hazard of coal dust and its products, the explosion criteria and fuel explosion groups shall be determined in accordance with Annex 5, for which the necessary explosion and explosion protection equipment shall be installed.

The initial data for calculation of dust explosion criterion shall be:

1) sieve analysis of coal and dust;

2) technical analysis;

3) element analysis;

4) heat of combustion.

14. The quality of coals and their processing products shall comply with environmental protection requirements.

In order to meet environmental requirements in mining, processing, storage, transportation, use of coal, provision of initial data for analysis and calculation of MPC of polluting and harmful substances in the air, emissions of greenhouse gases and emissions to the environment, enterprises need to determine within the specified time limits the indicators specified in paragraph 14 of this Technical Regulation (sieve analysis of coal and dust, technical analysis, elemental analysis, heat of combustion), and ash chemistry.

15. The quality of coal and its processing products shall correspond to the safety of the goods carried.

Indicators characterizing the safety of cargoes with coal and products of their processing shall be:

1) period of storage;

2) ignition temperature;

3) spontaneous ignition temperature;

4) group of potential of explosion.

The values of the given indicators shall comply with the requirements specified in paragraph 12 of Annexes 4, 5 of this Technical Regulation.

5. Safety requirements for coal and industrial processes of their mining, processing, storage and transportation

5.1 General requirements for safety of production processes coal mining and processing

16. Coal mining and coal processing shall be carried out in accordance with projects, technological regulations and certificates of enterprises.

Projects shall contain requirements ensuring safety: location of ground structures; implementation of technological processes of coal mining and processing, technological equipment, ventilation, mechanization, automation of production processes; storage and transportation of products; storage of production wastes; environmental impacts of the proposed activity.

17. At coal mining and processing plants, an accident management plan should be drawn up, providing for the immediate implementation of all the necessary forces and facilities available to save people and eliminate accidents during the initial period of its occurrence.

18. Technological equipment and technical devices used in coal-fired enterprises should ensure the safety of life, human health and environmental protection.

19. Moving, rotating parts of the equipment shall have protective fences, except for parts which cannot be protected due to their functional purpose.

20. The applied electrical equipment, cables and power supply systems should ensure electrical safety of operating, as well as explosion and fire safety.

21. Noise levels at workplaces should not exceed the limits given in Annex 6 to this Technical Regulation.

22. Vibration levels at workplaces during equipment operation should not exceed the maximum permissible values given in Annex 7 to this Technical Regulation.

23. Complex dust removal should be provided at the enterprises.

Process equipment and technical devices should be equipped with dust protection shelters and dust suppression facilities.

24. At coal mining and processing plants classified as hazardous by dust and gas explosions, dust and gas mode should be established.

The dust and gas mode should provide for compliance with requirements excluding deposition of coal dust on the surface of floors, walls and equipment, which in a buoyancy state can create explosive concentration in the air, as well as preventive accumulations of methane and harmful gases, explosion within the equipment and emission of explosion products into the premises.

25. MPC of dust in the air of the working zone by the degree of impact on the human body shall be given in Annex 8 to this Technical Regulation. Dust content in the working area should not exceed 3 hazard class (moderately hazardous) or 4 hazard class (low hazardous).

26. The content of harmful substances in the air of the working area should not exceed the MPC given in Annex 9 to this Technical Regulation.

27. Preliminary assessment of coal radioactivity shall be carried out at the stage of exploration of field on the basis of values of rate of equivalent dose of gamma-radiation determined from materials of gamma-ray logging or surface survey for open pit, formation in well bottom.

The individual annual effective dose should not exceed 10 microsieverts, and the collective effective annual dose - not more than one person-sieverts.

Based on the results of determining the rate of equivalent gamma radiation dose, the examined object shall be divided into homogeneous sections.

Coalfield, formation shall be considered homogeneous in terms of content of natural radionuclides, if results of measurements of rate of equivalent dose of gamma-radiation on its whole surface differ from average by not more than 30%.

When identifying areas that are not uniform in the content of natural radionuclides, the development and operation of the coalfield is carried out according to a specially developed project, with the provision of selective mining.

Areas of coalfield homogeneous in content of natural radionuclides shall be contoured into separate areas, which should be reflected in design and regulatory documents of economic entities.

5.2 Underground coal mining

28. Mining of coal by underground method should be carried out in compliance with safety requirements at passage and mining areas, during underground workings and attachment, drilling and blasting works, ventilation of mines, transportation of rock mass and transportation of people.

29. When working horizons with emission-hazardous and impact-hazardous formations, as well as with emission-hazardous rocks, the requirements to prevent sudden emissions of coal, rock and gas and mining impacts should be met.

30. Opening of formations, cleaning and preparatory works on hazardous and threatened by emissions and rock impacts of formations shall be permitted in case the bottom hole is in non-hazardous and non-hazardous condition.

31. In mines that develop formations of coal prone to self-combustion, the authorized service should monitor the early signs of self-heating (self-combustion) of coal.

32. It shall be prohibited to use and store flammable materials in underground workings and over-the-top buildings.

33. If fire signs are detected, the emergency response plan shall be put into effect.

34. From the moment of fire occurrence till the end of fire extinguishing it should be necessary to check the composition of mine atmosphere and control the temperature in the places of mining operations.

35. The mines shall be equipped with stable and reliable ventilation.

36. Oxygen content in the air of active mine workings shall be not less than 20% (by volume).

37. Methane content in mine air shall comply with the standards given in Annex 10 to this Technical Regulation.

38. Mines in which methane have been found in at least one mine shall be considered dangerous in gas. Mines in which it shall be allocated methane (was emitted), have to be completely transferred to the gas mode.

Methane concentration in coal mines should be monitored in all mines where methane is released or accumulated.

39. Degassing should be carried out in gas mines where it shall not be possible by means of ventilation to ensure methane content in the air within the limits of the established standards.

40. Carbon dioxide content in mine air at workplaces and in outgoing jets of excavation sections and dead-end workings should be not more than 0.5%, in workings with outgoing jet of wing, horizon and mine as a whole not more than 0.75%, at carrying out and restoration of workings by debris not more than 1%.

41. In the air of existing underground workings, the content of harmful gases (vapors) should not exceed the maximum permissible concentration specified in Annex 11 to this Technical Regulation.

42. Air velocity at ventilation of mines must not be less than:

0.25 meters per second (hereinafter referred to as m/s) - in the bottom-hole spaces of the treatment workings of all mines, dead-end workings of gas mines and other workings of the mine ventilated due to the general machine depression;

0.5 m/s - at mines of III category on methane and higher, in all carried out mining workings on coal and mixed bottoms, as well as having connection with worked space and extinguished workings;

0.15 m/s - at sinking of well bore and holes, in dead-end workings of non-gas mines.

43. Air temperature at permanent working places and underground mine workings should be not less than 16 oC and not more than 26 oC.

44. Each mine should meet the air-dust requirements.

45. Mining machines for breaking and transporting mining mass should provide minimum dust formation.

46. In the course of cleaning works, as well as in the course of workings by harvesters of selective action on formations of medium capacity and powerful, preliminary moistening of coal in the massif should be used.

47. Receiving bins, tilters, skips unloading and loading devices should be equipped with devices to prevent spillage of rock mass and dust blowing out of it.

48. Coal dust explosion prevention and containment requirements based on the use of inert dust (shale dust explosion protection), water (hydro dust explosion protection) or water and inert dust (combined dust explosion protection) should be met at mines that develop dust-hazardous formations.

49. Mining operations in areas dangerous by water breakouts should be carried out in accordance with the project providing measures to prevent water and harmful gases from breaking into the existing workings.

50. Geological and surveying service of the mine should identify, take into account and enter in the surveying documentation the boundaries of hazardous areas in a timely manner.

51. Transportation of people, rock and cargo should be carried out with the use of transport and lifting equipment, technology and organization of works excluding the occurrence of accidents.

52. The maximum speeds of lifting and lowering of persons and goods along vertical and inclined workings should not exceed the values given in Annex 12 to this Technical Regulation.

5.3 Open coal mining

53. Mining of coal by open method should be carried out in compliance with safety requirements during opening and mining operations, the use of mining equipment and vehicles.

54. During mining operations, special observation stations should carry out geological and surveying service of the condition of sides, trenches, ledges, slopes and dumps in order to establish the boundaries of propagation and the type of deformation of rocks, to determine the speed and values of deformations and the critical value of displacements.

55. Measures to protect against snow avalanches and sill flows should be taken in the conduct of work in avalanche and selenium areas.

56. Hydro technical structures (dams, stream diversion and catch water drains, spillovers) should ensure the passage of flood and storm waters.

57. In order to ensure the stability of mine workings and dumps slopes, reduce the moisture content of coal and open rocks, create safe operating conditions of mining and transport equipment, structures for water removal beyond the limits of the zone of impact of the drainage system should be provided.

58. Drilling and blasting works on sections should be carried out in accordance with safety requirements on organization of works and methods of initiation of charges, use of charges, fighters and explosive materials, identification of dangerous area, ventilation of the area of explosive works.

5.4 Coal mining by combined method

59. Coal mining in a combined way should be carried out according to agreed projects of coal cut and mine and plans of mining works of open and underground mining.

In the combined method of coal deposit development, safety requirements related to underground and open mining processes must be fulfilled.

60. The mining front should be located in the direction of:

during open works - towards the front of underground treatment works development;

during underground cleaning works - from mass to section.

61. Enterprises engaged in the combined development of the deposit by open and underground methods, together with the Emergency and Rescue Services, should determine the areas (places) of mining operations within the boundaries of hazardous zones, into which gas penetration, water penetration, deformation of the mining massif shall be possible, and shall develop measures to ensure the safety of works at these areas.

62. During works in areas of possible collapse or failure, due to the presence of underground workings or karst, the surveying service of mines and cuts should carry out instrumental observations of the condition of the sides and soil of the quarry.

63. Development of safety pillar between open and underground mining works should be carried out during implementation of measures excluding collapse of pillar and quarry sides and ensuring safety of works.

5.5 Processing of coals

64. At coal processing plants (sorting, enrichment, briquetting) dust and gas mode should be installed.

65. Enterprises should monitor:

methane content in indoor air;

dust content in the air of rooms and at emissions into the atmosphere;

content (CO and CO2) in indoor air;

dust deposition in the rooms.

66. In the areas of coal removal, coal preparation, drying and loading of the finished product, pneumatic separation, dry classification and dusting of coal before enrichment, the concentration of dust in the air of the working zone should be maintained at the level of MPC in accordance with Annex 8.

67. Places of loading, unloading and transfer of raw materials and finished product on crusher, conveyor belts, screens, to ensure achievement of MPC, should be equipped with aspiration shelters and dust removal systems.

68. All rooms equipped with aspiration systems should have plenum ventilation.

69. Methane content in indoor air should not exceed 2%.

70. Reagents used in coal processing must be stored in closed warehouses in metal tanks and tanks under a canopy protecting against direct sunlight and atmospheric precipitation.

71. Reagents supply to contact tanks, flotation machines and other units should be carried out via closed communications preventing reagents ingress to the floor, soil.

72. Delivery of reagents to the place of consumption and unloading should be mechanized .

73. In order to protect against noise at the areas of screening, crushing and dewatering of sludge in centrifuges, it should be possible to remotely monitor the process from sound-insulating cabins, service workers should be provided with means of individual protection of the hearing organ.

74. Vacuum equipment (vacuum pumps, receivers, traps, distribution head, gate valves, main lines) shall be sealed.

75. Pressure monitoring instruments and safety valves should be installed on pressurized pipelines and tanks.

76. The arrangement of external settling tanks should ensure the cleanliness of the air basin in the area of existing or designed industrial organizations and settlements, as well as the cleanliness of discharged production water into open water bodies.

77. In order to prevent dusting of the surface layer of the tailings storage facility, measures must be taken to secure it: application of film-forming substances, planting of herbs , plants, etc.

78. Drying paths should not have areas, bags and dead ends where dust may be deposited.

79. The angle of inclination of the gas ducts to the horizon should be not less than 45 degrees.

80. In case of detection of combustion centers in the path of the drying plant and on the conveyors of dried coal, it is necessary to supply steam or to turn on the automatic fire-extinguishing system, or to extinguish the combustion and melting centers through the hatches by manual fire-extinguishing means.

5.6 Requirements for safety of coal storage and transportation

81. Storage of coal and its processing products should be carried out in specially equipped warehouses and dry areas, which shall not be subject to watering, with compliance with measures preventing the fires and explosions, pollution and contamination of the environment .

82. Warehouses and sites for storage of self-ignited coal should be located at a distance from the burned buildings not less than 8 m.

83. Storage location and organization of transport operations should provide mechanized supply, unloading and loading using pollution prevention methods and devices, air basin and industrial site.

84. Safe storage of unloaded coal in formless heaps and in bulk shall be permitted for not more than 2 days.

85. During the period of long-term storage of coal, the enterprise should monitor the temperature condition of the stack. The frequency of temperature measurement shall depend on the tendency of coal to self-burn.

When heating coal in the stack above the critical temperature of more than 2 oC, measures should be taken to eliminate the areas of self-ignition.

86. When supplying coal to the warehouse, stacking and return feeding, measures should be provided to reduce the grinding of coal and prevent its spraying.

87. In order to prevent heating and self-burning of coal in the stack during long-term storage, it shall be necessary to perform the following:

1) periodic replacement of old coal from the stack with coal of fresh production with preliminary complete shipment of old coal to consumers from the refreshable part of the stack ;

2) deceleration of oxidation processes in coal prone to oxidation and self-combustion and associated release of harmful gases by addition of anti-oxidant inhibitors in the form of solutions, aqueous emulsions, suspensions or dry reagents at layer-by-layer formation of a stack with subsequent layer-by-layer and surface compaction of coal;

3) uniform wetting of coal at its stacking with water suspension of slaked lime of concentration not more than 3%. Ash content should increase by not more than 0.06%.

88. In case of detection of coal self-heating centers with temperature exceeding 35 oC appearing in coal stacks, immediate shipment from heated coal stack to railway cars and other vehicles shall be performed. If such shipment is impossible, coal shall be further compacted in the area of heating sites.

89. When the temperature of the coal continues to rise and reaches 50 °C, it shall be necessary to immediately start removing all heated coal from the stack, storing it in a free place in separate stacks with a height of not more than 1.5 m.

90. When using sheltered warehouses for coal, dangerous by gas, in the underground part it is necessary to carry out daily methane control.

91. In order to detect possible areas of self-ignition of coal rocks and to take timely measures to prevent self-ignition, the thermal condition of dumps should be monitored by the enterprise.

Temperature measurements shall be carried out at a depth of not less than 0.5 m from the surface.

92. Agglomerated fuel shall be transported in cooled form (not more than 45 oC), unfrozen, easily separated from each other, not dispersed.

93. Before loading the coal into gondola cars with lower discharge hatches, it shall be necessary to take measures to seal the existing gaps, including the number of structural ones,

through which during transportation it shall be possible to drain the coal of classes less than 13 mm.

94. The transport of coal and its processed products by different modes of transport should be safe and shall be carried out in accordance with the requirements of paragraph 15 of this Technical Regulation.

95. Coal mining and processing plants that generate waste must provide for safe management measures, comply with environmental, sanitary and epidemiological requirements and implement disposal measures.

6. Confirmation of products compliance

96. Confirmation of products compliance should be carried out in accordance with the requirements of the Technical Regulation "Compliance confirmation procedures" approved by the resolution of the Government of the Republic of Kazakhstan dated February 4, 2008 No. 90. Identification and compliance confirmation of coals and products of their processing shall be carried out on the basis of test results of samples in accredited testing laboratories in accordance with regulatory documents on standardization.

7. Terms and conditions for the implementation of the Technical Regulation

97. From the moment this Technical Regulation shall be enforced, the regulatory legal acts being in force on the territory of the Republic of Kazakhstan until they are put into effect in accordance with the Technical Regulation shall be applied in the part not contrary to the Technical Regulation.

98. Regulatory documents for standardization and other documents of state bodies, which shall be formed within the limits of their competence, shall be harmonized in accordance with the procedure established by the legislation of the Republic of Kazakhstan in the field of technical regulation.

99. The central and local executive bodies shall ensure the alignment of their regulatory legal acts in accordance with these Technical Regulations, as well as their adapted implementation.

100. Excluded by the resolution of the Government of the Republic of Kazakhstan dated 16.10.2012 № 1317 (shall be enforced upon expiry of ten calendar days after the day of its first official publication).

101. This Technical Regulation shall be enforced upon expiry of six months after the day of its first official publication.

Annex 1
to Technical Regulation
“Safety requirements for coal and,

industrial processes of their
mining, processing, storage and
transportation”

List
of coals subject to the requirements of the Technical Regulation "Safety requirements for coal
and industrial processes of their mining, processing, storage and transportation "

Code of FEACN of the CU	Name of position	Name of the product
2701	Hard coal; briquettes, pellets and similar types of solid fuel derived from hard coal: hard coal, pulverized or not dust-like, but not agglomerated	**Hard coal** briquettes, pellets and similar types of solid fuel; hard coal dust-like or not dust-like, not agglomerated
2701 12	bituminous coal	coal bituminous coal coking coal ordinary coal coal raw coal sorted coal enriched coal concentrate mid-coal slack coal screening
2701 12 100 0	coking coal	
2701 12 900 0	other	
2707 19 000 0	other coal	
2701 20 000 0	briquettes, pellets and similar types of solid fuel, produced from hard coal	briquettes, pellets and similar types of agglomerated fuels produced from hard coal
2702	lignite or brown coal, agglomerated or not agglomerated except gagate	**lignite or brown coal** agglomerated or not agglomerated
2702 10 000 0	Lignite or brown coal Dust-like or non-dust-like, but not agglomerated	lignite or brown coal ordinary coal raw coal sorted coal enriched coal screening
2702 20 000 0	lignite or brown coal, agglomerated	briquettes, pellets and similar types of agglomerated fuel produced from lignite or brown coal

Annex 2
to Technical Regulation

"Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation"

Standards
of the indicators characterizing safety coals and products of their processing

Footnote. Annex 2 as amended by the resolution of the Government of the Republic of Kazakhstan dated 16.10.2012 № 1317 (shall be enforced upon expiry of ten calendar days after the day of its first official publication).

Name of the indicator of products	Standards for products
1. Ash content Ad %, maximum	45,0
2. Mass fraction of total sulphur Sdt %, not more than	3,0
3. Mass fraction of chlorine Cld %, maximum	0,4
4. Mass fraction of arsenic Asd %, max.	0,01

Annex 3
to Technical Regulation
"Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation"

Standards for radiation hazard of solid fuel

Class radiation hazard of solid fuels	Amount of the relations specific activity natural radionuclides in solid fuel to least significant specific activities (LSSA, Stv. t., unit)	Safe condition uses of solid fuel
I	≤1	For solid fuel use in economic activity restriction shall not be introduced
II	>1	Use of solid fuel in economic activity shall be forbidden

Standards for radiation hazard of solid fuel ash

Class of radiation	Effective specific activity of natural radionuclides in sol	

hazard of ashes	A-ash eff. (A –ash eff.progn.), Bekkeler for kilogram (Bq/kg)	Conditions for safe ash uses
I	till 370	Ashes can be used in constructed and reconstructed inhabited and public buildings
II	от 370 до 740	Ashes can to be used in road construction within the territory settlements and zones of perspective construction, as well as during construction production structures
III	от 740 до 1500	Ashes can be used in road construction out of settlements
IV	более 1500 до 4000	Issues of use ash shall be solved in each case separately on to coordination with territorial bodies state sanitary epidemiological service of the Republic of Kazakhstan

Annex 4
to Technical Regulation
“Safety requirements for coal and,
industrial processes of their
mining, processing, storage and
transportation”

Coal groups by tendency to oxidation and self-combustion

Number of the group	Name of the group	Name of the coals, technological brand	Indicator oxidation Ox %, no more	Term of storage, month, no more
1	Most steady to to oxidation	Anthracites, semi-anthracites	-	36
2	steady to to oxidation	hard coals of marks Zh, Kzh, K, KO, KSN, KS, OS raw coal, sorted, enriched coal	50	18
		Coals stone marks DG, G, GZhO, Gzh		

3	Average steady to to oxidation	raw coals, sorted coals, enriched coals	50	12
4	Unstable to oxidation	Hard coals, lignite and brown coals brand D brand B raw coals, sorted coals, enriched coals	5 5 60	6 3

Annex 5
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Groups of dust explosion hazards of coal and products of their processing

Group potential of explosion hazards	Criterion of explosibility Кт	Potential of dust explosion hazards
1	Кт ≤ 1,0	small
2	1,0 < Кт ≤ 1,5	medium
3	1,5 < Кт ≤ 3,5	medium-to-high
4	Кт > 3,5	high

Annex 6
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Noise levels at workplaces during equipment operation

Workplaces and types of work	Noise level, Decibel (hereinafter referred to as dB), no more
Mine workings, industrial premises, territory of a surface	80
Observation and remote control cabins: without back-up telephone communication with voice communication by telephone	8 0 65
The highly skilled works demanding concentration and attentiveness	60

Annex 7
to Technical Regulation
“Safety requirements for coal and,

industrial processes of their mining, processing, storage and transportation”

Vibration levels at workplaces during equipment operation of coal enterprises

Type of vibrations	Category of vibrations (type of machines and equipment)	Correcting on frequency and equivalent the corrected values vibration accelerations, dB	
		vibration accelerations	vibration speeds
Local	picks, drills, punchers	126	112
General	1. Transport (self-propelled mine transport) 2. Transport technological- (mining machines, mine loaders, self-propelled drill) 3. Technological (pumps, air propeller, lifting machines, compressors, etc.)	112 109 100	116 101 92

Annex 8
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Maximum permissible concentrations (MPC) dust in the air of the working area

Name of the substances	Content of free silicon dioxide, %	Size of MPC, milligram on cubic meter (hereinafter referred to as mg/m3)	Class hazards
Dust coal, rocky	more than 70	1	3
	from 10 to 70	2	4
	from 2 to 10	4	4
	less than 2	10	4

Annex 9
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Maximum permissible concentrations (MPC) of harmful substances in the air of the working zone

Name of the substances	Content of free silicon dioxide %	Size MPC, mg/m3	Mainly aggregate state in conditions of production	Class hazards	Features of effect on an organism
Anthracite	less than 5	6	a	4	f
Coals and rocky coal dust	less than 5	10	a	4	f
	from 5 to 10	4	a	3	f
Symbols: a - aerosol; F-aerosol of mainly fibrogenic effect					

Annex 10
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Standards of methane content in underground workings atmosphere

Ventilation stream, pipeline	Concentration Methane, % on volume, not more than
Coming from cleaning or dead end workings, chamber, recess section supported by workings	1
Outgoing covered mines	0,75
Supplied to the mining section, cleaning workings, to bottoms of dead-end workings and to chambers	0,5
Local methane accumulations in treatment, dead end and other workings	2
At the outlet of mixing chambers	2
Pipelines for isolated methane removal with help of the air propeller (ejectors)	3,5

Annex 11
to Technical Regulation
“Safety requirements for coal and, industrial processes of their mining, processing, storage and transportation”

Concentration of harmful gases in the air of operating underground workings

Harmful gases	Concentration of gas in the operating workings of mines, no more	
	% on volume	mg/m3
Carbon oxide (SO)	0,00170	20
Nitrogen oxides (in terms of NO_2)	0,00025	5
Dioxide of nitrogen (NO_2)	0,00010	2
Sulphurous anhydride (SO_2)	0,00038	10
hydrogen sulphide (H_2S)	0,00070	10

Annex 12
to Technical Regulation
“Safety requirements for coal and,
industrial processes of their
mining, processing, storage and
transportation”

Maximum speed of lifting and lowering of people and cargo by vertical and inclined workings

Name of workings	Maximum speed of lifting and descent, m/s	
	persons	cargoes
The vertical workings equipped: cages skips	1 2 -	defined by projects
The inclined workings equipped: skips trolleys	- 5	7 5
Vertical workings in the penetration, equipped: tubs (on guides) tubs (without guides) suspended driving equipment fire escapes	8 2 - 0,35	1 2 2 0 , 2 -
Descent of oversize along vertical and to inclined workings		1 / 3 nominal speeds for this rise