

MINISTRY OF REGIONAL DEVELOPMENT AND PUBLIC WORKS

DRAFT

Regulation amending and supplementing

Regulation No RD-02-20-1 of 2017

on the planning and design of buildings intended for the production, storage and trade in weapons, ammunition, explosives and pyrotechnic articles (published in the State Gazette

(SG) No 11/2017)

§1. Article 1(2) is amended as follows:

1. In subparagraph 3, 'urban areas' is replaced by 'urban areas borders';
2. Subparagraph (4) is inserted:

'4. storage of category F1 fireworks within the meaning of the Weapons, Ammunition, Explosives and Pyrotechnic Articles Act.'

§ 2. Articles 3, 4 and 5 are amended to read as follows:

'Article 3. Buildings, plants, engineering units and installations intended for WAEPA, or parts thereof, shall not be used for purposes other than their intended purpose beyond the maximum design capacity of the building intended for the production, storage and/or trade in explosives, ammunition and/or pyrotechnic articles or in breach of the terms of commissioning.

Article 4. (1) Explosives, ammunition and pyrotechnic articles, depending on the hazard degree, shall be classified in the following subclasses:

1. subclass 1.1 – substances, mixtures and articles that pose a mass explosion hazard (mass explosion is an explosion where virtually the entire quantity available explodes almost at once);
2. subclass 1.2 – substances, mixtures and articles that pose a projection hazard but no mass explosion hazard;
3. subclass 1.3 – substances, mixtures and articles which pose an ignition hazard and a minimum explosion hazard or a minimum projection hazard or both, but no mass explosion hazard;

4. subclass 1.4 – substances, mixtures and articles which pose no significant hazard. The impact is largely confined to an explosion inside the packaging and no projection of fragments of significant size or range is expected. An external flame practically cannot cause an instantaneous explosion of almost the entire contents of the package.

5. subclass 1.5 – substances or mixtures of very low sensitivity which pose a mass explosion hazard but whose sensitivity is so low that a very low probability of activation or transition from combustion to detonation under normal conditions exists;

6. subclass 1.6 – exceptionally insensitive substances or articles which do not pose a mass explosion hazard. The articles only contain exceptionally insensitive detonating substances or mixtures and the probability of their accidental activation or projection is only negligible.

Article 5. The classification of explosives, ammunition and pyrotechnic articles according to their compatibility group shall be in accordance with Annex 2.'

§ 3. In Article 6(2), a comma is inserted after 'excavated' and 'in an embankment (three-way covered with land mass)' is inserted.

§ 4. Article 7 is amended to read as follows:

'Article 7. The permissible joint storage of explosives, pyrotechnic articles and ammunition in one room and depending on the compatibility group shall be determined in accordance with Annex 3.'

§ 5. In Chapter Three, the title of Heading III is amended to read as follows: 'Risk assessment'

§ 6. Article 8 is amended to read as follows:

'Article 8. (1) During the planning and designing stage of buildings intended for WAEPA, a risk assessment shall be carried out employing qualitative and quantitative methods in order to establish the type of explosion hazard and, depending on the classification, the type and estimated quantity of the produced and/or stored AEPA.

(2) The risk assessment shall include identification of hazards, including securing safe distances for persons and property inside and outside the WAEPA building site, as well as environmental hazards (e.g. emissions, releases, etc.), quantitative assessment of the magnitude and severity of the consequences (including maps, images or equivalent descriptions showing the impact areas/emergency planning areas), calculation of risks and identification of measures to eliminate and/or reduce the identified risks.

(3) The quantitative risk analysis shall include as a minimum:

1. identified hazards and minimum distances from existing structures;
2. classification, type and quantity of AEPA;
3. layout of the buildings and facilities on the WAEPA site;
4. type of construction structures;
5. accident scenarios and frequencies;
6. delineation of areas at risk for thermal, mechanical and toxic effects;
7. qualification assessment of the risk of accidents;
8. potential number of affected persons, affected property and environmental damage;
9. escape routes;
10. safety measures in view of the level of risk identified.

(4) the risk assessment in the planning and design of buildings intended for WAEPA shall be produced as an integral part of the design assignment.

(5) In carrying out the risk assessment for buildings intended for WAEPA, well-established in practice and recognised accident risk assessment methodologies shall be used and the risk assessment algorithm included in the Information Annex 4 may also be used.'

§ 7. In Article 9, paragraph 1 is amended to read as follows:

‘(1) buildings intended for WAEPA shall be built outside the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks) in accordance with the provisions of the municipal zoning plans and the detailed development plans following a change in the land use pursuant to a special law.’

§ 8. Article 10 is repealed.

§ 9. In Article 11, paragraph 3 is repealed.

§10. In Article 12, ‘urban areas’ is replaced by ‘the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks)’ and ‘the provisions of Chapter Seven of the ZUT’ is replaced by ‘Article 59(1) of the ZUT’.

§ 11. Article 13 is amended as follows:

1. In paragraph 1:
 - (a) in subparagraph 1, ‘outbuildings’ is inserted after ‘complex of buildings,’;
 - (b) in subparagraph 2, ‘necessary’ is replaced by ‘the necessary’;
 - (c) in subparagraph 3, ‘routes’ is replaced by ‘the routes’;

- (d) in subparagraph 4, 'technical means' is replaced by 'the site of the technical means';
- 2. In paragraph 2, the third sentence is repealed;
- 3. New paragraph 3 is inserted:
 - '(3) The explanatory note to the detailed development plan shall include the calculations and the justification of the envisaged protective structures.'

§ 12. Article 14 is amended to read as follows:

'Article 14. (1) Protective structures that prevent the spread of an explosion that has occurred in the buildings, plants and platforms shall be designed in way that takes into account the identified risks and the specific conditions in order to absorb the force of the explosion.

(2) Protective structures may be built as land mounds (banks), embankments (three-way earth cover) on the building or protective monolithic walls, or they may be of a mixed type – a protective wall and a land mound, as well as a protective water reservoir.

(3) The design height of the land mound shall be equal to the height of the upper cornice of the building (in the case of buildings with cornices) or to the height of the highest point of the surrounding walls (in the case of buildings without cornices and without eaves). The slope of the mound shall not be less than 45 degrees, its width at the base shall not be less than 5 m, and its width at the top shall not be less than 1 m. The land mound shall be positioned at a distance of not less than 1 m and not more than 3 m from the buildings.

(4) The design height of mixed-type protective structures shall be equal to the height of the cornice of the buildings (in the case of buildings with cornices) or to the highest point of the surrounding walls (in the case of buildings without cornices and without eaves). The wall of the protective structure shall be erected at a distance of not less than 1 m and not more than 3 m from buildings. The land mound shall be at least 1 m wide at the top and at least 3 m wide at the base.

(5) In order to ensure a higher level of protection and in accordance with the Terms of Reference, the height of the land mound or of the mixed-type protective structure may be increased. Examples of parameters for such protective structures are given in Annex 4a.

(6) The stability of the slope may be reinforced using a wall lower than 1/2 of the height of the building, but the overall height of such a wall may not be less than 1 m. To prevent erosion, the land mound may be covered with slope protection netting.

(7) The three-way earth cover of the building shall be created as an embankment in the direction of the action of the explosion towards the endangered site. The earth cover shall be at

least 1 m thick. Where the jeopardised site is located in the direction of the action of the explosion, a land mound or a mixed-type protective structure may be built in front of the unprotected side of the building at a distance that allows for the normal operation of the building, but not exceeding 6 m.

(8) Where it is not possible to construct a land mound, a mixed-type protective structure or a three-way land mound cover, the protective structure may be designed with a protective monolithic reinforced-concrete structure with an 85-degree slope, which ensures safety, in accordance with the technological requirements of the design task.

(9) Three-way protection (using a land mound, mixed-type protective structure or monolithic reinforced-concrete structure) may be used when the unprotected side does not threaten the buildings on that side.

(10) The land mound shall be made of plastic or loose materials. The use of stones, gravel and combustible materials shall be prohibited. Stone or concrete blocks larger than 200 mm may only be placed inside the mound. They must be covered with at least 1 m of soil on all sides, with the exception of the base.'

§ 13. Article 15 is amended as follows:

1. Paragraph 1 is amended to read as follows:

'The minimum safe distances R (m) from buildings, plants and platforms with a potential risk of explosion, which are part of the buildings intended for WAEPA, to the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks) and individual land plots outside these areas as referred to in Article 8(1) of the ZUT, shall be measured in accordance with Annex 6. The minimum safety distances shall be measured in a horizontal plane and regardless of the intersection of the terrain from the outer edge of the building and/or site with a potential risk of explosion to the nearest point of an urban area and/or an individual land plot outside that urban area to which the safety distance refers.'

2. In paragraph 2, 'trotyl equivalent' is inserted after 'up to 10 t', and 'blasting caps and electric blasting caps recalculated to a quantity of explosives' is replaced by 'blasting caps, electric blasting caps, non-electric and electronic detonators recalculated to a TNT equivalent';

3. New paragraphs 6 and 7 are inserted:

'(6) Where the protective structures are constructed as land mounds or mixed-type structures in accordance with Article 14 and Annex 4a (high protective structures) and for

buildings in embankments (three-way earth cover), the safety distances specified in Annex 6 shall be further reduced by dividing the resulting values by 1.1.

(7) In Annex 8a, information on the coefficients for bringing types of explosives, pyrotechnic articles and gunpowder to troy is given.'

§ 14. Article 16 is amended as follows:

1. Paragraphs 1 and 2 are amended to read as follows:

'(1) Fire access routes shall be provided for all buildings intended for WAEPA and for all production and storage facilities. The pavement of fire access routes for buildings intended for WAEPA shall be designed for vehicles with a minimum load of 100 kN/axle for all weather conditions. Streets and alleys shall also be treated as fire access routes.

(2) Fire access routes shall be so designed that the projection of any part of the structure they serve onto the ground and the projection of any part of the external walls (excluding curtain walls) of the first floor of the building they serve onto the ground shall be at a distance of not more than 90 m from the near side of a fire access route. The distance shall be determined from the outside of the building/facility along a possible route for laying the hose line. Example situations are given in the figure following this paragraph (of situation 'd' $X \leq 90$ m).



2. New paragraphs 3 and 4 are inserted:

‘(3) The distance referred to in paragraph 2 may be increased to 135 m if an automatic fire-extinguishing system has been provided for in the whole building or facility.

(4) Dead-end fire routes whose length exceeds 45 m shall end in a platform (extension) measuring at least $12 \text{ m} \times 12 \text{ m}$ where fire-fighting vehicles may turn in the opposite direction.’

3. The current paragraphs 3, 4 and 5 become paragraphs 5, 6 and 7.

§ 15. Article 18 is amended as follows:

1. The current text becomes paragraph 1.

2. Paragraphs 2 and 3 are inserted:

„(2) The technological requirements are a defining (main) part of the design task for buildings intended for WAEPA depending on the respective use of the building. The minimum technological requirements of the design task for buildings intended for WAEPA have been set out in Annex 8b.

(3) When designing buildings intended for the production, storage and/or trade in explosives, ammunition and/or pyrotechnic articles, the main technological parameter shall be the maximum design capacity of the building intended for the storage of explosives and/or pyrotechnic articles, calculated in TNT equivalent. The maximum design capacity of the building shall be determined in the technological part of the investment project and must be logged as the main characteristic of the building in the building permit and in the technical passport drawn up in accordance with Regulation No 5 of 2006 on the technical passports of buildings (SG No 7/2007).'

§ 16. Article 23(1) is amended as follows:

1. Table 1 in paragraph 1 is amended to read as follows:

Table 1

2. In point 1 of the notes below Table 1, ‘non-fire-resistant steel’ is replaced by ‘fire-resistant steel’ and ‘with doors and lids of EI 90 fire resistance, made of construction products with a minimum reaction-to-fire class B’ is replaced by ‘with automatic-closing smoke-tight doors or lids of EI 90 fire resistance class’;
3. In point 4 of the notes below Table 1, ‘two-floor buildings and’ is inserted before ‘multi-floor buildings’.

§ 17. Article 27 is amended as follows:

1. In paragraph 1, ‘automatic-closing’ is inserted before ‘doors’.
2. Paragraph 2 is amended to read as follows:

‘(2) Fire-protected passageways where the pressure is constantly increased to not less than 30 Pa shall be used as a technological connection between the premises referred to in Article 41(2) and premises at no risk of an explosive atmosphere. The structural components of the fire-protected passageways shall be made of construction products with a reaction-to-fire class not lower than A2 and with a REI 60 (EI 60) fire resistance class. Passageway openings shall be protected by automatic-closing smoke-tight doors of EI 60 fire resistance class. Where an elevator door has direct access to a fire-protected passageway, it shall be of EI 60 fire resistance class, as no requirements for automatic closing and smoke tightness shall be established.’

3. Paragraph (4) is inserted:

‘(4) The sizes of the ventilation systems used for creating increased pressure in fire-protected passageways shall be in accordance with the requirements of the standard BDS EN 12101-13 ‘Smoke and heat control systems. Part 13: Pressure differential systems (PDS). Design and calculation methods, installation, acceptance testing, routine testing and maintenance’.’

§ 18. In Article 30(1), a second sentence is inserted: ‘It is permissible for the floors to not be resistant to sparking when a justification is provided in the ‘Technological’ part of the design that it is not possible for an explosive atmosphere to occur.’.

§ 19. In Article 41(3), ‘BDS EN 60079-10-1 Explosive atmospheres. Part 10-1: Classification of areas. Explosive atmospheres.’ is replaced by ‘BDS EN IEC 60079-10-1 ‘Explosive atmospheres. Part 10-1: Classification of areas. Explosive gas atmospheres’ and ‘Part

10-2: Classification of areas. Combustible Dust Atmospheres' is replaced by 'Part 10-2: Classification of areas. Explosive dust atmospheres'.

§ 20. Article 46 is amended as follows:

1. At the end of paragraph 2, a comma is inserted and "luminous signs containing a pictogram are provided for" is added.

2. In paragraph 4, point 9, 'the fire alarm buttons' is replaced by 'the manual call points'.

§ 21. In Article 67, a second sentence is inserted: 'It is permissible for the floors to not be anti-static when a justification is provided in the 'Technological' part of the design that it is not possible for an explosive atmosphere to occur.'.

§ 22. Article 71 is amended as follows:

1. The current text becomes paragraph 1.

2. Paragraph 2 is inserted:

'(2) Recording devices must be protected in such a way as to prevent the destruction of information in the event of an incident (fire, explosion, etc.).'

§ 23. In Article 72(1), 'Regulation No 2 of 2005 on the design, construction and operation of water supply systems (SG No 34/2005)' is replaced by 'Regulation No RD-02-20-2 of 2024 on the design, construction and operation of water supply systems (SG No 61/2024).'.

§ 24. Article 74 is amended as follows:

1. Paragraph 4 is amended to read as follows:

'(4) The firefighting tank shall consist of two interconnected water vessels or of two tanks. Each of the individual tanks or water vessels must:

1. store not less than 50 % of the volume of water required for fire-extinguishing purposes;

2. be connected individually to an isolated pipe connection and a stopcock mounted on it, conveying the entire water needed to extinguish the fire to a unifying intake manifold. This requirement shall not apply where mobile motor or electric pumps have been provided for water supply purposes;

3. be provided with a ventilation tube.'

2. In the first sentence of paragraph 5, 'subject to the requirements of paragraph 4' is inserted after 'for other needs';

3. In paragraph 6, '1 m' is replaced by '0.5 m' and 'the water quantities required' is replaced by 'the water volume required'.

§ 25. Article 77 is amended to read as follows:

'Article 77. (1) Fire-extinguishing water mains for buildings of up to two floors above ground shall be sized for a minimum pressure at the design height of the adjacent terrain at the critical fire point/critical fire hydrant of at least 0.14 MPa.

(2) Fire-extinguishing water mains for buildings of three and more floors above ground shall be sized for a minimum pressure at the design height of the adjacent terrain at the critical fire point/critical fire hydrant not less than:

1. for buildings of three above-ground floors – 0.18 MPa;
2. for buildings of four above-ground floors – 0.22 MPa;
3. for buildings of five or more above-ground floors - 0.26 MPa.'

§ 26. In Chapter Three, Heading VII and Heading VIII with Articles 80a to 80k are inserted:

'Heading VII

Requirements for the design of platforms on the site of buildings intended for WAEPA

Article 80a. (1) Where a loading/unloading platform for closed transport containers containing explosives, ammunition and/or pyrotechnic articles/compositions technologically required for the production process has to be designed on the technical site of buildings intended for WAEPA, the following platform-specific technical requirements must be followed:

1. the maximum capacity of the platform shall be determined for a period not exceeding one week (the estimated maximum stored quantity on the platform full of containers);
2. the maximum capacity of the platform shall be specified in the design task and in the investment project for the building intended for WAEPA, and the minimum safe distances for the respective capacity shall be determined in accordance with the procedure laid down in Article 15 of this Regulation;
3. transport access to the platform shall be provided, including for platform servicing needs during operation;

4. the fire access routes to the platform must comply with Article 16 of the Regulation, and the investment project must include details about the fire-fighting equipment necessary for initial fire-fighting (handheld or mobile fire-extinguishers), depending on the type and quantity of materials stored;

5. the platform shall be connected to the platform fire-extinguishing water mains, as the minimum water quantities necessary for platform fire-extinguishing shall be provided and the locations of the fire hydrants shall be determined in accordance with the requirements of this Regulation;

6. measures for platform draining and discharge of run-off water shall be provided for in accordance with the legislation for the protection of the environment and water from pollution in force;

7. the permissible joint storage of materials and articles of different compatibility groups in a single container shall be according to Annex 3;

8. where protective facilities are provided for the platform, the respective requirements of this Regulation must be followed;

9. Protection against lightning shall be designed and built on the platform in accordance with the procedure laid down in Article 64(1) and in compliance with the requirements of the Regulation applicable thereto;

10. means to connect each container to the grounding installation on the platform shall be provided for in order to protect the containers from voltages induced from electrostatic induction;

11. the platform shall be provided with physical protection having physical protection class as laid down in Regulation No RD-02-20-6 of 2016 on the technical requirements for physical safety at construction works;

(2) Sample diagrams of loading/unloading platforms for closed transport containers containing explosives, ammunition and/or pyrotechnic articles/compositions technologically required for the production process are given in Annex 9a.

Article 80b. (1) In cases where sites for destruction/incineration of unfit and/or poor quality explosives and/or gunpowders and/or pyrotechnic compounds/articles are planned on the technical site of buildings intended for WAEPA, the following specific technical requirements must be followed for the site:

1. the maximum capacity of the site shall be designed for not more than 2 kg NEC (net explosive content);

2. the site shall be intended for outdoor spaces, at a distance of not less than 50 m from the nearest workshop/warehouse on the leeward side;

3. the site shall be made of concrete and surrounded by reinforced-concrete walls which shall be at least 2 m high;

4. the incineration spot shall be provided with a grounded metal plate which is at least 30 mm thick, and if necessary, a fireplace equipped with a flue and a spark collector may be built;

5. the platform shall be connected to the platform fire-extinguishing water mains, as the minimum water quantities necessary for platform fire-extinguishing shall be provided and the locations of the fire hydrants shall be determined in accordance with the requirements of this Regulation;

6. the fire access routes to the platform must comply with Article 16 of the Regulation, and the investment project must include details about the fire-fighting equipment necessary for initial fire-fighting (handheld or mobile fire-extinguishers), depending on the type and quantity of materials stored;

7. measures for platform draining and discharge of run-off water shall be provided for in accordance with the legislation for the protection of the environment and water from pollution in force;

8. the site shall be equipped with a shelter (bunker) whose aim shall be to protect people during the incineration of explosives, gunpowder and/or pyrotechnic compounds/articles;

(2) Sample diagrams of sites for destruction/incineration of explosives and/or gunpowders and/or pyrotechnic compounds/articles are given in Annex 9b.

Article 80c. (1) In cases where, according to the technological requirements of the design, a blasting area containing a site for destruction/incineration of unfit and/or poor-quality explosives, ammunition, gunpowders and/or pyrotechnic compounds/articles is envisaged on the site of buildings intended for WAEPA, the following specific technical requirements for the site must be followed:

1. the blasting area shall be planned for an outdoor space, surrounded by a fence not less than 2 m high and located at a distance calculated in accordance with Article 15, but not less

than 400 m from the nearest workshop/warehouse on the technical site of the building intended for WAEPA;

2. a road allowing for the movement of large machinery during all seasons and in any weather conditions shall be provided for on the inside of the fence referred to in point 1;

3. the distance of the blasting area from the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks) shall be calculated in accordance with Article 15, but not less than 1 000 m;

4. the maximum capacity of the site shall be not more than 10 kg NEC (net explosive content);

5. the necessary technical means of destruction (incineration furnaces, detonation chambers, etc.) shall be planned on the site in accordance with the technological requirements of the project;

6. protection against lightning of the entire blasting area shall be designed and built in accordance with the procedure laid down in Article 64(1) and in compliance with the requirements of the Regulation applicable thereto;

7. the facilities located on the site shall be earthed in accordance with the requirements of this Regulation;

8. transport access to the platform shall be provided, including for platform servicing needs during operation;

9. the platform shall be connected to the platform fire-extinguishing water mains, as the minimum water quantities necessary for platform fire-extinguishing shall be provided and the locations of the fire hydrants shall be determined in accordance with the requirements of this Regulation;

10. the fire access routes to the platform must comply with Article 16 of the Regulation, and the investment project must include details about the fire-fighting equipment necessary for initial fire-fighting (handheld or mobile fire-extinguishers), depending on the type and quantity of materials stored;

11. the platform shall be provided with physical protection having physical protection class as laid down in Regulation No RD-02-20-6 of 2016 on the technical requirements for physical safety at construction works;

12. the site shall be equipped with the necessary shelters (bunkers), as per the technological requirements of the project, whose aim shall be to protect people during the incineration or combustion of explosives, gunpowders and/or pyrotechnic compounds/articles;

13. in cases where electrical power supply is needed for the operation of the technical means located on the site, such power supply shall be designed in accordance with the requirements of the Regulation.

(2) A sample diagram of a blasting area containing a site for the destruction/combustion/incineration of unfit and/or poor-quality explosives, ammunition, gunpowders and/or pyrotechnic compounds/articles is given in Annex 9c.

Heading VIII

Requirements for the design of open-air shooting ranges/WAEPA testing ranges located near buildings where WAEPA are produced

Article 80d. (1) Open-air ranges near buildings where WAEPA are produced shall be designed on the site of the buildings intended for WAEPA or as a separate building outside the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks), which is technologically connected to a building where WAEPA are produced.

(2) Open-air ranges near buildings where WAEPA are produced shall be designed in compliance with the requirements of this Regulation, as appropriate measures against possible risks to the life and health of people inside and outside the boundaries of the range shall be provided.

(3) The use of firearms and their ammunition, gunpowders, explosives and pyrotechnic articles on open ranges near buildings intended for WAEPA shall be carried out in accordance with the procedure laid down in the Weapons, Ammunition, Explosives and Pyrotechnic Articles Act.

(4) When designing open-air ranges near buildings where WAEPA are produced, the investment project shall determine the types of arms, ammunition, explosives and/or pyrotechnic articles that may be used on the range and the measures for their safe use, in accordance with their respective rules, instructions and/or methodologies.

Article 80e. (1) Open-air ranges shall be classified according to their intended purpose, as follows:

1. open-air ranges with shooting grounds for ground-based shooting;
2. open-air ranges with shooting grounds for anti-aircraft shooting;
3. open-air ranges with shooting grounds for marching fire and trapshooting;
4. open-air test sites for explosives and/or pyrotechnic articles.
5. open-air ranges with shooting areas and mixed-use sites according to points 1, 2, 3 and/or 4;

(2) When designing open-air ranges near buildings where WAEPA are produced, the following shall be taken into account:

1. the classification of the range according to the preceding paragraph 1 and the type of weapons, ammunition, explosives and/or pyrotechnic articles that may be used on the range;
2. the intended use of the open-air range according to the shootings/tests provided for by the technological assignment;
3. the availability of safety structures on the site of the building intended for WAEPA;
4. the maximum quantity of WAEPA that may be stored in accordance with the technological assignment;
5. the number of shooting grounds.

(3) One or several shooting grounds for one or several types of shootings may be built at an open-air range near a building where WAEPA are produced.

(4) Depending on the availability and type of safety structures and/or natural barriers, open-air shooting ranges near buildings where WAEPA are produced shall be classified as follows:

1. field-type range – a range with no specially installed safety structures and no natural safety barriers in the topography of the area along the shooting directions;
2. a range with specially installed safety structures along the shooting directions;
3. a range with natural safety barriers in the topography of the area (high hills, high and steep slopes, etc.);
4. combined ranges – ranges that combine natural safety barriers and specially installed safety structures.

Article 80f. (1) When deciding on the location of open-air ranges near buildings where WAEPA are produced, their safe distance to the nearest urban areas shall be taken into account.

(2) The safe distance referred to in paragraph 1 shall be determined according to:

1. the design shooting directions according to the intended purpose of the open-air range pursuant to the types of shooting/tests specified in the technological assignment;

2. the availability of safety structures and/or natural barriers, and their type according to the range classification;

3. the required minimum safe distances along the shooting directions from the designed firing positions to the boundaries of the respective territories depending on the type and calibre of the firearms intended for use;

4. the regulatory requirements for protection from noise and environmental protection;

(3) The greatest distance referred to in paragraph 2 shall be considered as the safe distance of an open-air range near a building where WAEPA are produced up to the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks). Distances are counted from the shooting position as horizontal projections, unless explicitly stated otherwise in the project.

Article 80g. (1) Safe distances along the shooting directions with a 90° range from the firing positions to the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks) shall be not less than 1 000 m and shall be determined in accordance with the type of firearms and ammunition permitted for use on the range in question and the ballistic charts for the ammunition of the permitted weapons, in accordance with their respective rules, instructions and/or methodologies, but not less than:

– 1 000 m for shooting ranges with hunting smooth-bore weapons and short-barrelled weapons;

– 2 500 m for shooting weapons with a calibre of less than 12.7 mm;

– 5 000 m with a calibre greater than 12.7 mm;

– for reactive systems, the maximum shooting distance at a firing angle of 45° increased by 1 500 m;

– an artillery system within the limits of the maximum distance for each charge increased by 1 500 m;

(2) the ballistic tables for the ammunition of weapons permissible for the designed open-air range are an integral part of the investment project;

(3) Reduction of the safe distances referred to in paragraph 1 by up to 50% shall be permitted if projectile restraining equipment has been put in place for the respective type of weapon for all firing positions and the height of which is increased proportionally to the percentage of reduction of the safe distance;

(4) In cases where additional projectile restraining safety equipment which does not allow the projectiles or their fragments to leave the boundaries of the respective shooting grounds is provided, no safety distances beyond the safety equipment shall be required.

(5). The minimum distance between an open-air range, measured from its boundary, to the boundaries of the nearest areas and development zones in urban areas and beyond, for which noise-level standards are in place, shall be determined in accordance with the requirements of Regulation No 6 of 2006 on environmental noise indicators, taking into account the level of nuisance at different times of day and night, the limit values for environmental noise indicators, measuring methods for the noise levels and for the harmful effects of noise on the health of the population (SG No 58/2006), but not less than 1 000 m.

Article 80h. (1) The open-air ranges near buildings where WAEPA are produced shall be designed:

1. completely surrounded by a fence not shorter than 2 m;
2. with an entrance/exit of a clear width of at least 3.5 m in order to ensure the free passage of vehicles in the event of accidents and emergencies;
3. with roads on the outside and the inside of the fence;
4. with provided warning signals along the boundaries of the range when WAEPA testing is conducted;
5. with not less than two emergency entrances/exits;
6. with provided physical protection according to the class of physical safety defined in Regulation No RD-02-20-6 of 2016 on the technical requirements for physical safety during construction works;
7. with lightning protection and grounding installation, in accordance with this Regulation (for all shooting grounds);

8. with fire-extinguishing water pipes, in accordance with the requirements of this Regulation, and when the range is part of the site of the building intended for WAEPA, the fire-extinguishing water pipes of the range shall be connected to the fire-extinguishing water pipes of the building intended for WAEPA. The minimum water quantities required for fire extinguishing purposes for the site and the locations of fire hydrants shall be determined in accordance with the requirements of this Regulation;

10. with fire access routes to the range that comply with Article 16 of the Regulation, and the investment project must include details about the fire-fighting equipment necessary for initial fire-fighting (handheld or mobile fire-extinguishers), depending on the type and quantity of materials stored;

11. with technical means that provide continuous meteorological information;

12. with measures provided for the safe use of each shooting ground in the direction of shooting between the firing position and the target, and it shall not be permitted to design range elements that are not related to the use of the respective shooting ground in the direction of shooting;

(2) A road connection, accessible for all kinds of vehicles (applicable according to the technological requirements) shall be provided for each open-air range near a building where WAEPA are produced during all seasons of operation, connecting the range with the national and/or municipal road network.

Article 80i. (1) Each open-air range shall be designed with one or more of the following areas located on its territory:

1. a shooting area (with shooting positions and shooting grounds);
2. a safe area for the persons conducting the tests (e.g. shelters, bunkers, etc.);
4. an area for the technical means that provide continuous meteorological information;
5. a safety zone for observers (e.g. bunkers, boom lifts, etc.);
6. an observation area for guests (e.g. boom lifts, observation platforms, etc.);
7. a storage area for ammunition, explosives and/or pyrotechnic articles;
8. an area for preparation of ammunition for shooting/testing;
9. a weapons storage area;
10. an area for the safe inspection and maintenance of weapons;
11. a parking area;

12. changing rooms, toilets and/or bathrooms;

13. a service and storage area.

(2) Each area shall be designed with safe access when shooting/tests are carried out.

(3) Each area shall be marked with at least one visible sign bearing the name of the area in permanent, legible and contrasting wording, located in the respective area. Means for permanent marking of the directions of shooting shall be provided.

(4) The shooting area shall be designed with one or more shooting grounds whose layout, dimensions and configuration and their respective safe distances shall be in accordance with the rules, methodologies and specificities identified by the project as permissible for a WAEPA site.

(5) The warehouses in the storage area for ammunition, explosives and/or pyrotechnic articles shall be designed to store the types of WAEPA permitted for use on the range and in compliance with the requirements of this Regulation.

(6) The parking area shall be designed taking into account the number of visitors to the open-air range, in compliance with the requirements of Regulation No RD-02-20-2 of 2017 on the planning and design of the communication and transport system of the urban areas (SG No 7/2018).

Article 80j. (1) The firing positions and the direction of shooting in relation to the firing positions for each individual shooting ground of the open-air range shall be determined in the design, as the shooting direction of each shooting ground and the required safety structures shall be designed in accordance with the requirements for the permissible WAEPA for the respective shooting ground.

(2) Shooting grounds shall be designed with a flat surface, with a minimum slope of 1.5% for run-off of atmospheric water and with a maximum slope of not more than 3%;

(3) The surface of the shooting grounds shall be made of natural or artificial materials with solid particles less than 2 cm in size or of asphalt or concrete.

(4) Where service lanes (roads) around the shooting grounds are required, they shall be made of materials that prevent the ricochetting of projectiles or parts thereof.

(5) Where open water is present on the territory of the shooting grounds, it must be protected against direct hits of projectiles or any parts thereof or against ricochets by means of safety structures, the parameters of which shall be determined accordance to the direction of shooting.

Article 80k. (1) The safety structures of the shooting grounds shall be built in such a way as to capture and retain within the boundaries of the shooting ground the projectiles fired in the direction of shooting, the ricocheted projectiles and any parts thereof.

(2) The dimensions, structure, configurations and the manner of positioning of the safety structures shall be determined in accordance with the requirements for the permissible WAEPA for the respective shooting ground.

(3) Where natural protective barriers (natural safety barriers in the topography of the area along the shooting directions) are present, they must provide equal or greater protection than that provided by specially designed safety structures along the directions of shooting.'

§ 27. The title of Chapter Four is amended to read as follows: 'Planning and designing within the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks)'

§ 28. Article 81 is amended as follows:

1. Paragraph 1 is amended to read as follows:

'(1) Within the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks), in accordance with the provisions of the municipal zoning plans and the detailed development plans in force, building may be built intended for:

1. trade in weapons and ammunition and storage facilities thereto intended for the storage of articles with a maximum permissible quantity of 100 kg, calculated as powder content;

2. trade in pyrotechnic articles and storage facilities thereto:

(a) for pyrotechnic products with subclass 1.4 hazard degree for quantities up to 333 kg, calculated as net explosive content;

(b) for pyrotechnic articles with subclass 1.3 hazard degree for quantities up to 50 kg, calculated as net explosive content;

3. weapon repair;

4. open-air and indoor shooting grounds for civil use, designed in accordance with Article 89;

5. the production and storage of weapons;

6. the storage of weapons, ammunition and pyrotechnic articles for use by sports organisations licensed under the Physical Education and Sports Act, as well as by museums, theatres, etc.;

7. laboratories for testing of firearms, ammunition and pyrotechnic articles (excl. field tests) with a maximum permissible level of gunpowder for the building not exceeding 20 kg, provided that safety measures are in place;

8. the production of ammunition for weapons for use in civilian firing grounds with a maximum permissible level of gunpowder for the building not exceeding 20 kg.'

2. Paragraph 2 is repealed.

§ 29. Article 88 is amended as follows:

1. Paragraph 1 is amended to read as follows:

'(1) When designing open-air shooting grounds outside the boundaries of urban areas, the requirements of Regulation No RD-02-20-3 of 2021 on the conditions and the procedure for the construction and operation of sport facilities – open-air sport shooting grounds outside urban areas (SG No 13/2021) shall apply.'

2. In paragraph 2, 'the boundaries of' is inserted before 'urban areas'.

§ 30. Article 89 is amended as follows:

1. In paragraph 1, 'urbanised areas' is replaced by 'the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks)';

2. In paragraph 3, 'the boundaries of' is inserted before 'urban areas'.

§ 31. The Supplementary Provisions are amended, as follows:

1. In § 1:

(a) point 3 is amended to read as follows:

'3. 'Buildings with a potential risk of explosion' means any building, facility or site whose intended purposes is related to the use, production, trade and/or storage of explosives, ammunition and pyrotechnic articles, with the exception of the buildings referred to in Article 81(1) of this Regulation.'

(b) points 6 and 7 are repealed;

(c) point 8 is amended to read as follows:

'(8). 'Pyrotechnic substance or mixture' means any substance or a mixture of substances designed to produce heat, light, sound, gas or smoke, or a combination of such effects through self-sustained exothermic chemical reactions.'

(d) in point 10, '0.5' is replaced by '5'.

(e) points 25, 26, 27, 28, 29, 30 and 31 are inserted:

‘25. ‘Maximum design capacity of a building intended for the production, storage and/or trade in ammunition, explosives and/or pyrotechnic articles’ means the maximum permissible quantity (expressed in TNT equivalent) of ammunition, explosives and/or pyrotechnic articles according to which minimum safe distances have been determined at the planning and designing stage pursuant to this Regulation and according to which technological solutions against the spread of an explosion and for extinguishing the effects caused by an explosion have been set out in the investment project.

26. ‘Explosive substance or mixture’ means any solid or liquid substance or a mixture of substances which by itself is capable, by chemical reaction, of forming a gas at such temperature, pressure and speed as to cause damage to the surrounding environment. Explosives are substances that fall within Class I of the UN Recommendations on Dangerous Goods;

27. ‘Explosive article’ means an article containing one or more explosive substances or mixtures.

28. ‘TNT equivalent’ means a unit of measurement for bringing the operability of different explosives to that of the reference explosive, the trotyl;

29. ‘Net explosive content (NEC) (net explosive content)’ is the quantity of explosive substance in an article measured in kg;

30. ‘Open-air ranges near buildings where WAEPA are produced’ means open-air shooting grounds where tests are carried out on all types of ammunition, explosives, firearms and pyrotechnic articles which form an integral part of the production process at an WAEPA building.

31. ‘Pyrotechnic article’ means any article containing one or more pyrotechnic substances and mixtures.’

2. A new § 1a is inserted:

‘§ 1a. (1) The current editions of the standards referred to in the Regulation shall apply, together with all amendments, modifications and national annexes thereto.

(2) Where the Regulation refers to a standard which has been repealed and replaced by another standard while the Regulation is in effect, the superseding standard shall apply.

(3) The current version of the cited EU documents (regulations) shall apply, and where such a document is replaced, the superseding document shall apply.’

§ 32. Annex 1 is repealed.

§ 33. Annex 2 is amended as follows:

1. In the title of the annex, ‘according to their compatibility group’ is inserted at the end;
2. The text in the second column of point 4 of the table is amended to read as follows:
‘Secondary detonating explosive or article containing secondary detonating explosive, excluding means of ignition and propelling charge, or an article containing primary explosive and equipped with two or more protective devices’
3. In point 7, second column of the table, ‘Pyrotechnic substance or article containing pyrotechnic substance or’ is replaced by ‘Pyrotechnic substance, mixture or article containing a pyrotechnic substance or mixture or’;
4. The row in point 10 of the table is deleted;
5. The current rows in points 11 and 12 become points 10 and 11;
6. The current row in point 13 is moved to point 12, and in the text in the second column of the table, ‘Substance or article’ is replaced by ‘Substance, mixture or article’;
7. Letter ‘c’ of the symbols after the table is amended as follows:
‘Recalculated amount in NEC’.

§ 34. Annex 3 is amended as follows:

‘Annex 3
to Article 7

Permissible joint storage of explosives, pyrotechnic articles and ammunition in a single room according to the compatibility group

Compatibility group	A	B	C	D	E	F	G	H	J	L	N	S
A	X											
B		X										X
C			X	X	X		X				a, b	X
D			X	X	X		X				a, b	X
E			X	X	X		X				a, b	X

F						X						X
G			X	X	X		X					X
H								X				X
J									X			X
L										c		
N			a, b	a, b	a, b						c	X
S		X	X	X	X	X	X	X	X		X	X

Notes and indications in the table:

‘a’ Different types of articles from subclass 1.6, compatibility group N, may be stored together as articles from subclass 1.6, compatibility group N only where it has been demonstrated by means of tests or by analogy that there is no additional risk of detonation caused by the interaction of articles. Otherwise, they must be treated as a subclass 1.1 hazard.

‘b’ When articles from compatibility group N are stored together with substances or articles from compatibility groups C, D or E, articles from compatibility group N shall be treated as having the characteristics of compatibility group D.

‘c’ Packaging containing substances and articles from compatibility group L may be stored in the same room or container together with packaging containing the same type of substances and articles from that compatibility group.

‘X’ Mixed storage permitted’

§ 35. In Annex 4, point 2 is amended to read as follows:

‘2. Assessing the risk of explosion when planning and designing buildings housing WAEPA

Figures 6 and 7 show diagrams for determining the risk assessment scope when designing buildings housing WAEPA and the risk assessment algorithm. The risk assessment shall include a justification of the selected risk analysis methodology.

	Scope	1. Scope, purpose and risk criteria 2. Description of the site and processes
RISK		1. Identification of hazard sources

ASSESSMENT	Risk identification	
	Risk analysis	2. Initiating events and processes 3. Detailed description of emergency scenarios 4. Assessment of the probability 5. Assessment of the dimension and severity of the effects
	Risk assessment	6. Presentation of the risk and assessment of its admissibility against the risk criteria 7. Identification and evaluation of preventive measures 8. Evaluation of past accidents and incidents

Figure 6

RISK ASSESSMENT ALGORITHM	
Description of the site and processes	<ul style="list-style-type: none"> – description and assessment of the location of the site; – type and quantity of AEPA; – description of the technological processes;
Hazard identification	<ul style="list-style-type: none"> - accidental fire; - human error; - operational causes; - external causes, including domino effects; - natural causes.
Risk analysis	
Emergency scenarios	<ul style="list-style-type: none"> - a summary of the events which can play a role of a root cause; - factors inside or outside the site.
Assessment of the probability	<ul style="list-style-type: none"> - statistical data; - expert evaluation.
	<u>Models of the consequences:</u>
	<u>Models of the effects:</u> <ul style="list-style-type: none"> - exposure;

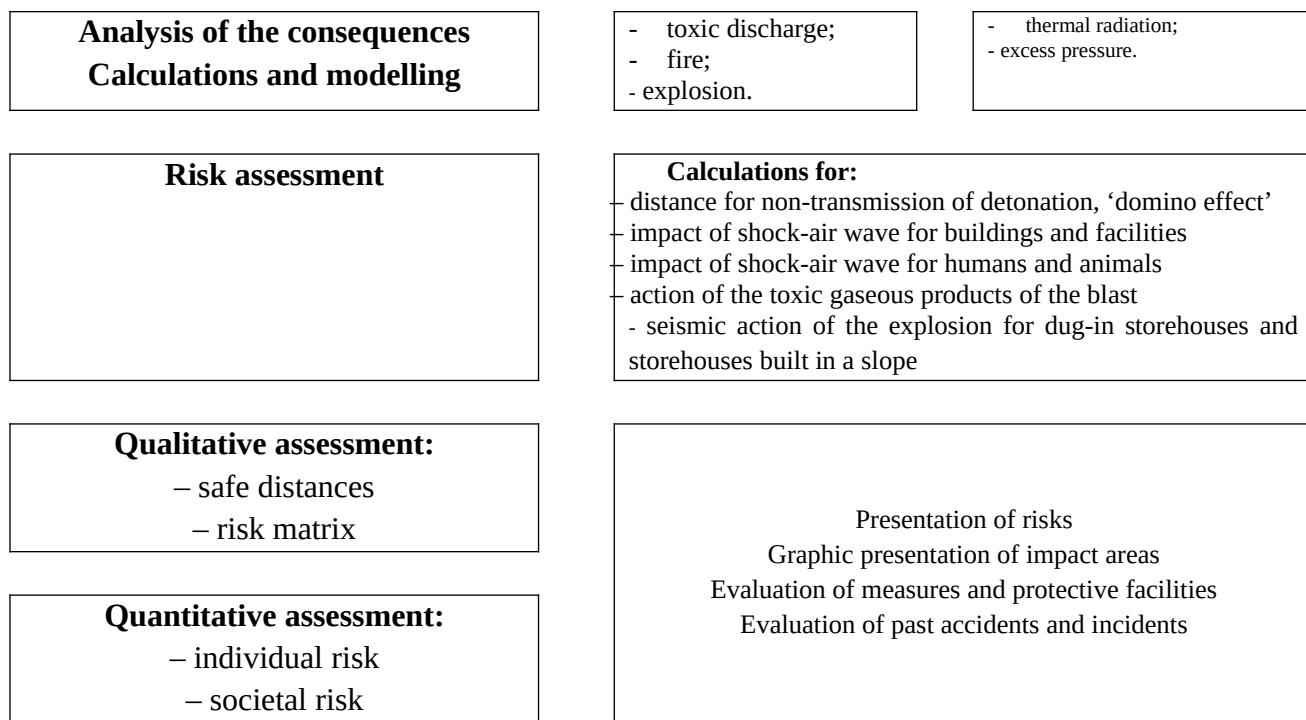


Figure 7

§ 36. Annex 4a is inserted:

‘Annex 4a
to Article 14(4) and Article 15(6)

Requirements for high protective structures built as land mound or mixed type

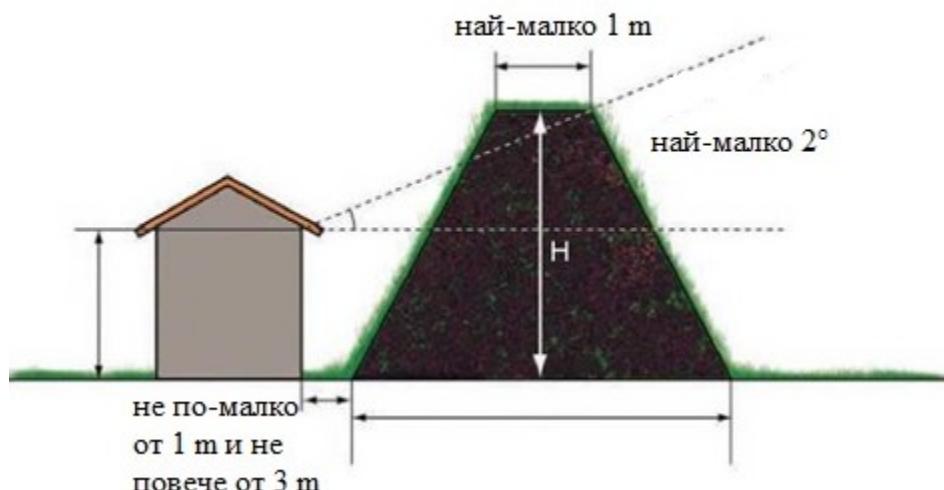


Figure 1. Example of a protective structure – high land mound

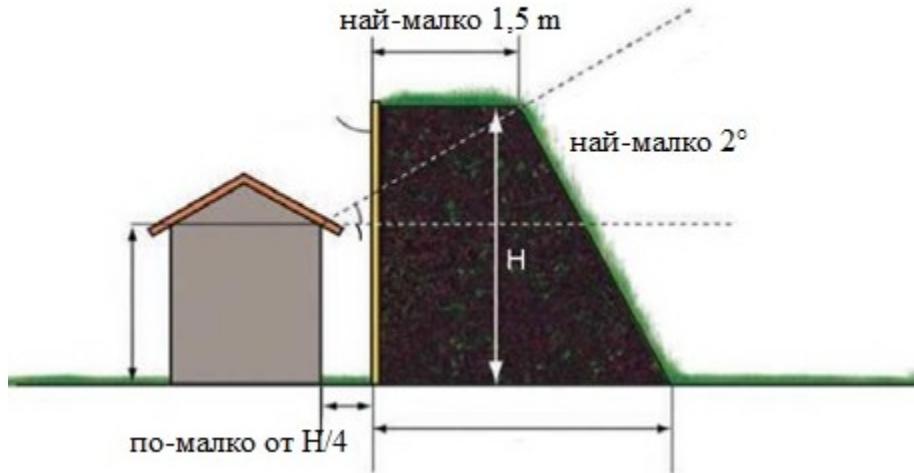


Figure 2. mixed-type protective structure

§ 37. The title of Annex 5 to Article 10 is amended to read as follows: Annex 8b to Article 18(2), where in point 2 of the current text of the Annex ‘urban areas and existing sites’ is replaced by ‘the boundaries of urban areas (towns, villages, localities, dispersed settlements and industrial parks) and existing sites outside these areas’.

§ 38. Annex 6 is amended as follows:

1. In the header of the table, the clarification of minimum distances is amended as follows:

‘Storehouses, production premises and a blasting area with a maximum quantity of explosives, calculated as trotyl equivalent’;

2. The text in the second column of point 1 is amended as follows: ‘Urban areas (towns, villages, localities, dispersed settlements and industrial parks) and individual land plots outside these areas as referred to in Article 8(1) of the ZUT with a concentration of more than 50 people, including public buildings, industrial buildings, farmyards, workshops and work sites;

3. In the second column of point 3, a comma and ‘expressways’ are inserted after ‘motorways’;

4. In the second column of point 6, ‘and self-supply stations for fuels’ is inserted after ‘combustible materials’;

5. The text in the second column of point 9 is amended to read as follows: ‘Individual land plots as referred to in Article 8(1) of the ZUT outside the boundaries of urban areas with a concentration of less than 50 people’;

6. The note below the table is deleted.

§ 39. Annex 7 is amended as follows:

1. In point 1 of the notes to the table ‘Meanings of factor K_1 when placing explosives and ammunition’, a new indent is created:

‘– in the case of buildings in an embankment – 2 to 2.8;’

2. Point 1.1 of the notes to the table ‘Meanings of factor K_1 when placing explosives and ammunition’ is amended to read as follows:

‘1.1. If the land mound or the mixed-type protective structure are constructed in accordance with Annex 4a (high protective structures), the safe distance shall be further reduced by dividing the resulting values by 1.1.’.

3. The table titled ‘Factors for expressing various types of pyrotechnic and capsule compounds, primers, blasting explosives and gunpowder in terms of tetryl’ is deleted.

§ 40. Annex 8 is amended as follows:

‘Annex 8 to Article 15(3)

Meanings of factor K_2 for the non-transfer of detonation

Pyrotechnic articles	unprotected	2.3	1.4		3.2	2.3	X	3.7	2.8	X	4.6	3.7	X	6.5	5.1	X
	protected	1.4	0.9	X	2.3	1.4	X	2.8	1.9	X	3.7	2.8	X	5.1	8.3	X
Dynamite using more than 33% nitroglycerine	dug, built into a slope or an embankment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
	unprotected	3.7	2.8	X	4.6	3.7	X	5.6	4.2	X	6	5.6	X	9.7	7.4	X
Trotyl Picric acid	protected	2.8	1.9	X	3.7	2.3	X	4.2	2.3	X	5.6	4.2	X	7.4	5.6	X
	dug, built into a slope or an embankment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Initiating explosives Other nitrate derivatives and similar	unprotected	9.3	5.6	X	13	9.3	X	14.8	11.1	X	18.5	14.8	X	25.4	20.4	X
	protected	5.6	3.7	X	9.3	5.6	X	11.1	7.4	X	14.8	11.1	X	20.4	14.8	X

	dug, built into a slope or an embankment	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
--	--	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Nota bene: U-unprotected warehouse; P-protected warehouse, D - dug, built into a slope or in an embankment (three-way earth cover)

X – according to the Terms of Reference and the risk assessment

§ 41. Annex 8a is inserted:

‘Annex 8a
to Article 15(7)

Conversion factors for brining types of explosives, pyrotechnic articles and gunpowders to trotyl

Substance, mixture or article	Density (g/cm³)	Factor
Ammonium nitrate emulsion	1.30	0.68
ANFO	0.80	0.75
Gelatinized nitroester explosives	1.40	1.29
Blasting caps, electronic, electric and non-electric detonators		0.001
Dynamite 60%	1.30	0.66
Octene crystalline	-	1.8
Phlegmatised octogen	-	1.2
Lead azide	-	0.34
Lead picrate	-	0.73
Lead styphnate (TNRS)	-	0.43
Nitroglycerin	1.60	1.31/1.5
PENTOLITE	1.67	1.18
PETN	-	1.37
Hexogenic white crystalline	-	1.8
Hexogenic phlegmatised	-	1.2
Trinitrotoluene (TNT)	1.65	1.00
Gunpowders (flue and smokeless)	-	0.4-0.5
Rocket fuels	-	0.4-0.5
Fuel-air explosives	-	2.00
Pyrotechnics compounds and NEC of pyrotechnic articles	-	0.5
Slow-burning compounds (SM-300, SM-2, SB-90, SB-150, SB-200, MGS-54)	-	0.05
Incendiary compounds (STs-1, V-11)	-	0.05
Non-hygroscopic PC-5 composition	-	1.20
CS-based compounds	-	0.05
Ammonium nitrate, porous granules	0.70-0.95	0.32
Ammonium nitrate, solid granules	0.95-1.05	0.10
Emulsion explosive cartridges, basic compounds		
Ammonium nitrate and sodium nitrate (excl. PPAN and Al)	1.20	0.69
Ammonium nitrate, sodium nitrate and PPAN, excl. Al	1.20	0.72
Ammonium nitrate, sodium nitrate and Al, excl. PPAN	1.20	0.74
Ammonium nitrate, sodium nitrate, PPAN and Al	1.20	0.78
Ammonium nitrate, SP excl. PPAN, excl. Al	1.20	0.78
Ammonium nitrate, SP and PPAN, excl. Al	1.20	0.80
Ammonium nitrate, SP and Al, excl. PPAN	1.20	0.82

Substance, mixture or article	Density (g/cm ³)	Factor
Ammonium nitrate, SP, PPAN and Al	1.20	0.91

§ 42. Annex 9 is amended as follows:

1. The title of the Annex is amended to read as follows:

‘Degrees of protection provided by the enclosures of electrical equipment in accordance with BDS EN 60529 ‘Degrees of protection provided by enclosures (IP code)’;

2. The diagram at the beginning of the annex regarding the indication of the degrees of protection is amended to read as follows:



*IP - International protection - Международна защита

3. In the third column of the rows under points 1 and 2 of Table 1, ‘sufficient distance’ is replaced by ‘sufficient isolation distance’;

4. In Table 3, a new row with point 9 is inserted:

9	Protection against high-pressure water jet and temperature	The water supplied with high pressure and high temperature to the casing from each direction shall not have a detrimental effect.
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§ 43. New Annexes 9a, 9b and 9c are inserted:

‘Annex 9a
to Article 80a(2)

Sample diagrams of loading/unloading platforms for closed transport containers containing explosives, ammunition and/or pyrotechnic articles/compositions technologically required for the production process

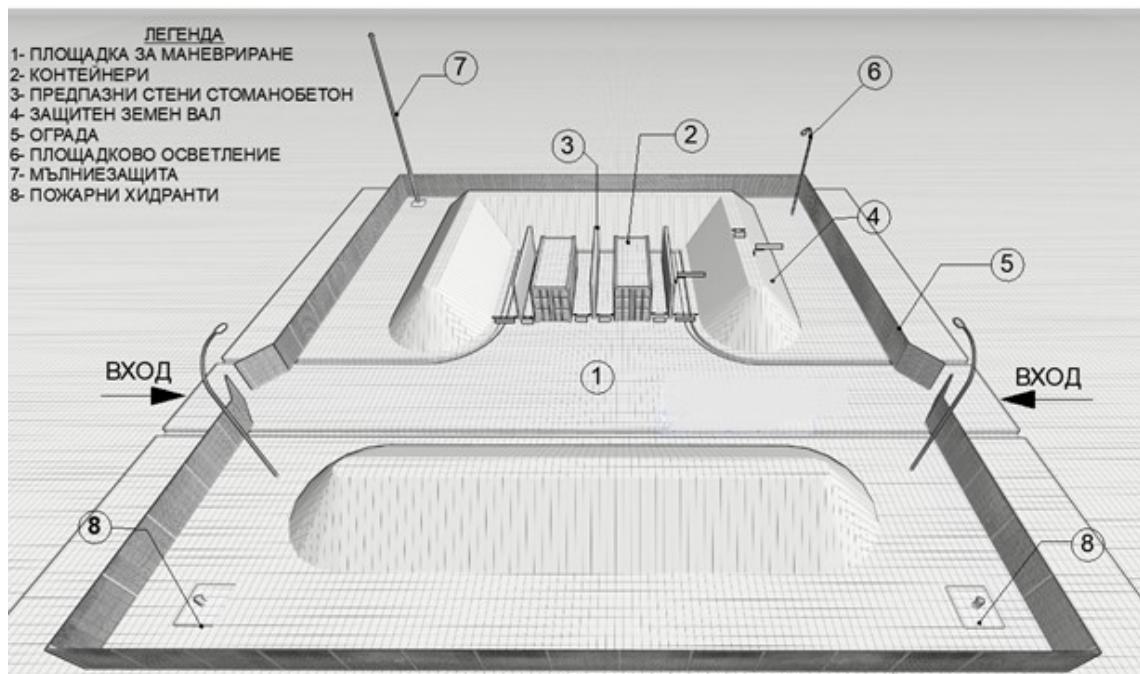


Figure 1

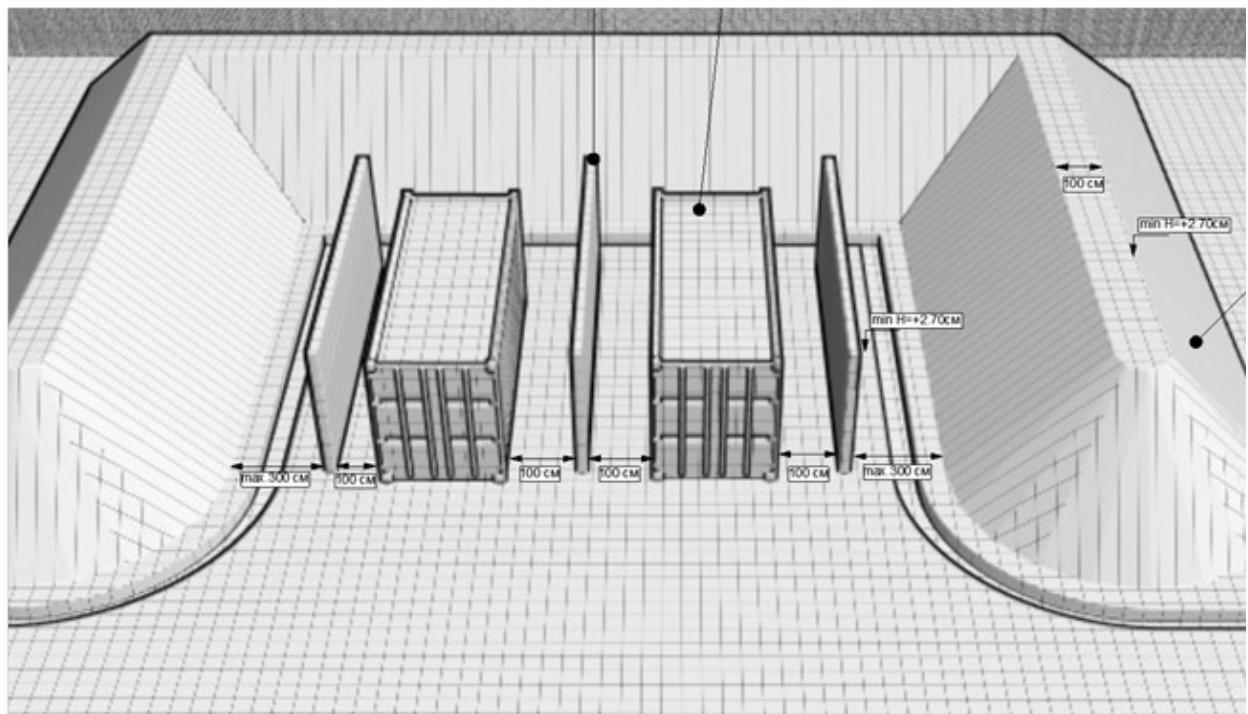


Figure 2

Illustrative schemes of disposal/incineration sites for explosives and/or powders and/or pyrotechnics/devices

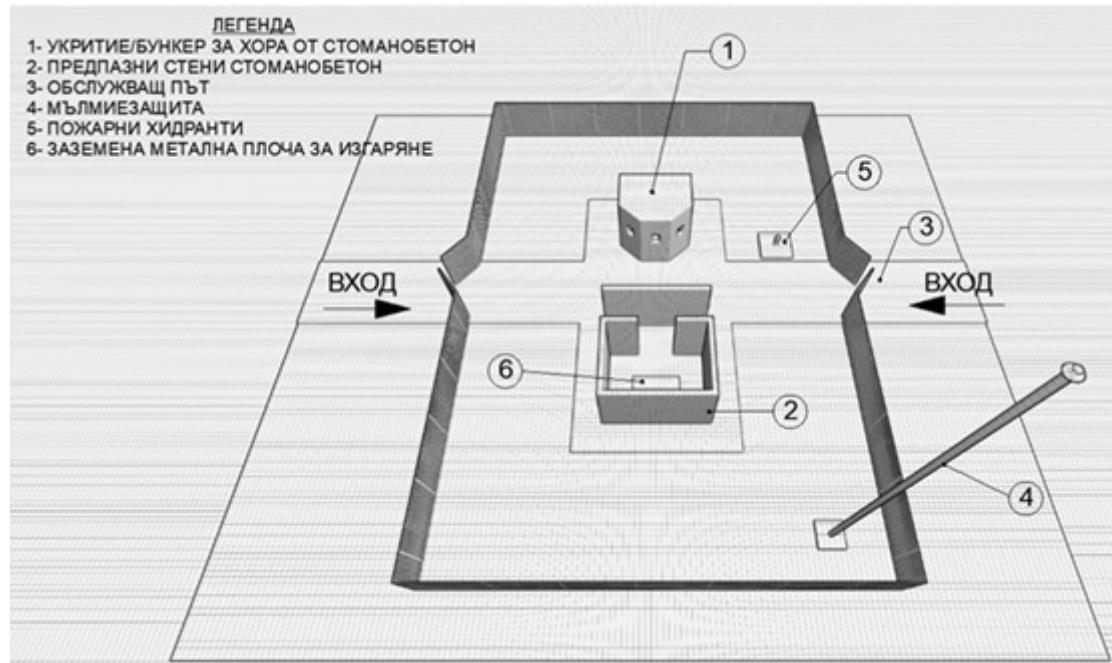


Figure 1

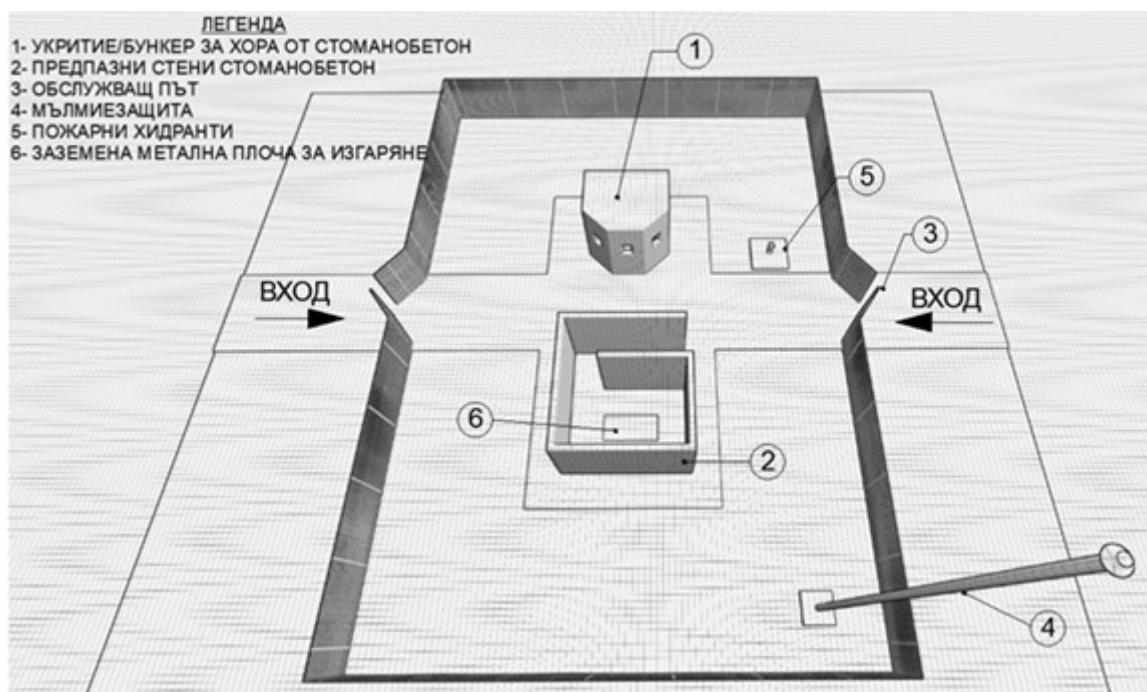
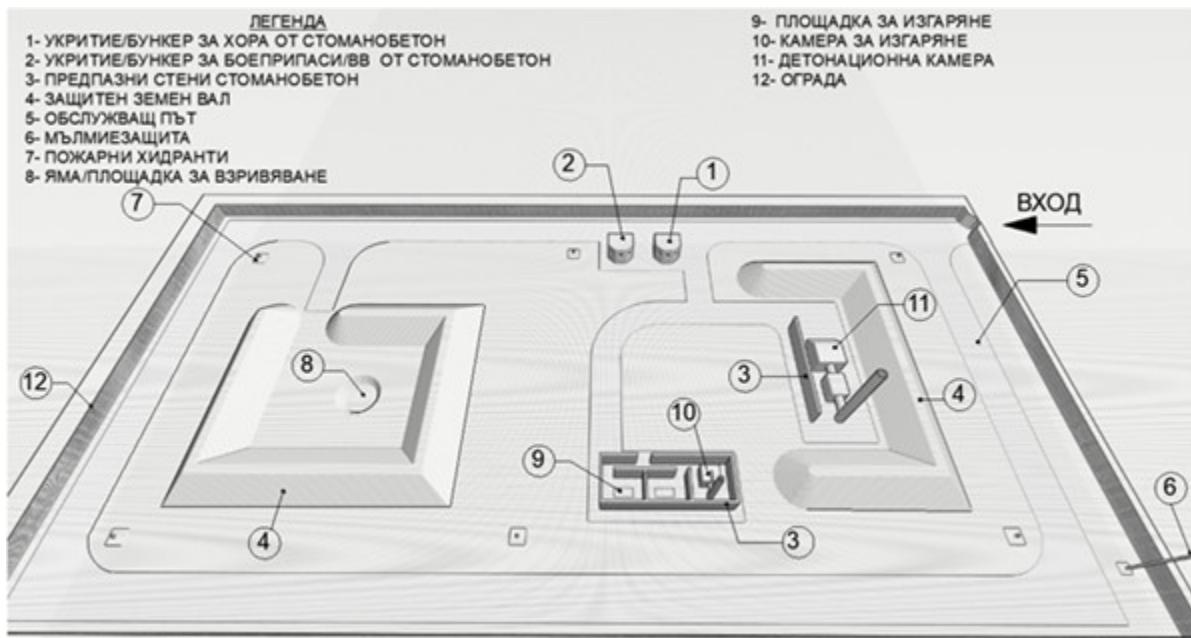


Figure 2

A sample diagram of a blasting area containing a site for the destruction, combustion and/or incineration of unfit and poor-quality explosives, ammunition, gunpowders and/or pyrotechnic compounds/articles



§ 44. In the title, in the first sentence and in the explanation of Figure 1 in Annex 10, ‘urban areas’ is replaced by ‘the boundaries of urban areas’.

Transitional and final provisions

§ 45. (1) The Regulation shall apply to investment projects whose investment project approval procedure and building permit issuance procedure begin after its entry into force

(2) The date the investment project is submitted to the competent authority for approval shall be considered as the start date of the investment project approval procedure and the building permit issuance procedure.

§ 46. The Regulation shall enter into force four months after its publication in the State Gazette.

IVAN IVANOV

**MINISTER FOR REGIONAL
DEVELOPMENT AND PUBLIC WORKS**