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«Дніпровська політехніка»

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Матеріали збірки призначені для наукових і інженерно-технічних працівників, які спеціалізуються у названих вище напрямках господарської діяльності територіальних громад.

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PROTECTIVE STRUCTURES OF CIVIL PROTECTION OF EDUCATIONAL INSTITUTIONS UNDER THE CONDITIONS OF THE LEGAL REGIME OF THE MARITAL STATE IN UKRAINE

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The means of destruction used by the Russian Federation in armed aggression against civilian objects in Ukraine require the need to constantly improve the means of protecting the population against them, in particular, the means of collective protection, which include protective structures of civil defense (storage and anti-radiation shelters), structures of double buildings of DPB) and the simplest shelters, which make up the fund of protective structures of civil defense. Today, the requirements for the creation, maintenance, operation and accounting of the fund of protective structures of civil protection (PSCP) are determined by a number of regulatory documents, in particular, such as the Code of Civil Protection of Ukraine (Code), the Procedure for the creation, maintenance of the fund of protective structures of civil protection and its accounting (Order) and others [1-3].

Maintaining the quality of the educational process in Ukraine requires the functioning of educational institutions in the offline mode with the provision of the necessary level of security for the entire staff and children (pupils, students). In accordance with the requirements of the Code and the Procedure, the creation of a fund of protective structures in educational institutions can be carried out by [4]:

- design and construction of protective structures and dual-purpose structures (implementation of the provisions of sections of engineering and technical measures of civil protection of design and urban planning documentation of the corresponding level) – is carried out during the construction of educational institutions (new construction, reconstruction or capital repair), which requires significant capital investments and time;

- taking into account as dual-purpose buildings (DPB) and the simplest shelters of objects of other purpose, which are operated, in particular, underground and above-ground buildings and structures, as well as other objects, is carried out by conducting measures of an organizational nature, does not require funds or requires allocation of insignificant funds (compared to construction);

- the formation of fortification structures as the simplest shelters – is carried out without the construction process by erecting temporary structures from concrete and reinforced concrete building structures (perhaps those that were in use), gabions and bags with soil (sand),



creating covered gaps in the soil, which requires the presence of appropriate structures and materials, as well as time.

Also, in accordance with the requirements of the Code, educational institutions can use the objects of the fund of protective structures of other business entities to shelter their employees and children (pupils, students) on a contractual basis. Such objects include:

- basements, basements and first floors of civil and industrial facilities, while the structural scheme of the basement part of the building must meet the requirements of ensuring strength and stability under the influence of operational loads and loads of a special connection, as well as economic feasibility;
- underground space structures (pit-type structures and other underground structures and premises);
- underground mine workings, caves and other underground cavities for various purposes;
- other objects that, by their technical characteristics and protective properties, can be used to shelter the population.

In the conditions of the legal regime of martial law, associated with time limitations for the implementation of relevant measures, the heads of educational institutions must prepare the available units for their intended use in accordance with the norms of requirements for the maintenance and operation of protective structures of civil protection, approved by the order of the Ministry of Internal Affairs objects of the fund of protective structures, first of all, to protect their full staff and employees and children (pupils, students) from conventional means of destruction and to determine the additional need for such objects (quantity and capacity).

During the inspection of buildings (structures, premises), other construction objects, it is recommended to take into account the requirements for ensuring the protection of their population from such dangerous wartime factors [5]:

- actions of an air shock wave when using conventional means of destruction and side effects of modern weapons of mass destruction;
- actions of conventional means of destruction (small arms, fragments of hand grenades, artillery ammunition and aerial bombs);
- negative impact from other buildings, structures, engineering networks, the destruction (accident) of which may lead to injury or death of the population subject to shelter;
- external ionizing radiation (in case of radioactive contamination of the area).

In order to ensure the living conditions of persons subject to shelter in protective structures (storage and anti-radiation shelters) and dual purpose structures with appropriate protective properties, they must be provided with the necessary property, inventory, means and

materials in accordance with the norms of requirements for the maintenance and operation of protective structures of civil protection, approved by order of the Ministry of Internal Affairs

Objects of various purposes (including basements of educational institutions), which according to their technical characteristics meet the requirements for the PSCP, can also be included in the PSCP fund as a DPB in the manner provided for by the requirements for ensuring the numbering and accounting of the PSCP fund, based on the conducted assessment of the state of readiness (status of assessment of the state of readiness of the PSCP) and based on the results of the technical inventory as DPB (technical passport for the PSCP).

The equipment of the simplest shelters should ensure the possibility of a continuous stay of the population in them for at least 48 hours. This is possible if buildings (structures, premises) are equipped with the necessary special equipment. For example, a basement (deep) room of an educational institution with a capacity of more than 50 people, equipped with an electrical network, lighting, water supply, sewage, forced ventilation with an electric manual fan drive, can be inventoried there and registered as an anti-radiation shelter (ARS) or DPB with protective properties of the ARS. At the same time, the vast majority of educational institutions must be sheltered in the ARS or DPB with the protective properties of the ARS.

The arrangement and registration of the simplest shelters during wartime does not mean full compliance with the requirements of the legislation regarding the provision of workers and children (pupils, students) with means of collective protection and does not release the heads of educational institutions from the need to take further measures to create protective structures or dual-purpose structures with appropriate protective properties.

References

1. Civil Protection Code of Ukraine dated 02.10.2012 No. 5403-VI.
2. The procedure for creation, maintenance of the fund of protective structures of civil protection and its accounting. Resolution of the Cabinet of Ministers of Ukraine dated March 10, 2017 No. 138.
3. On the approval of requirements for the use and accounting of the fund of protective structures of civil protection. Order of the Ministry of Internal Affairs No. 579 of 07/09/2018, registered with the Ministry of Justice of Ukraine on July 30, 2018 under No. 879/32331.
4. Recommendations regarding the organization of shelter in the objects of the fund of protective structures of civil protection of personnel and children (pupils, students) of educational institutions. Letter of the State Emergency Service of Ukraine dated June 14, 2022 No. 03-1870/162-2.
5. DBN B.2.2-5-97 «Buildings and structures. Protective structures of civil defense».

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