



DEVICES OF CIVIL PROTECTION

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Abstract

The content of the article is that it provides information about the protection of civil protection, protective structures, shelter, need, demand, radiation protection shelter, "Air pollution", "Danger of radioactive damage".

Key words

"Air pollution", "Risk of radioactive damage", chemical, biological weapons and conventional attack, ventilation device, air suction pipe, electric or manual air pump, patients.

Protection of citizens and objects of national economy from the harmful effects of various emergency situations is the main task of civil protection. One of the ways to protect citizens is to keep them in protective structures. Defense facilities are places where citizens are collectively protected from the primary and secondary harmful factors of weapons of mass destruction and other types of emergency situations.

Protective structures are divided into:

- According to the direction: intended for the storage of citizens, the placement of management systems and medical centers;
- According to location: separately located (metropolitan and mining buildings);
- According to the construction period: — pre-built and quick-build; According to the level of protection: — shelter, RSB and simple shelter (open or closed basements).

Shelter - protects people from all the harmful factors of nuclear weapons (shock wave, light radiation, absorbed radiation and radioactive contamination of places), as well as from the damage of chemical, biological weapons and conventional weapons, from the effects of WMD, damaged structures and fragments of equipment . The shelter will be located in the basements of the buildings or will be built separately. The shelters are very solidly built, with high hermeticity, sanitary-hygienic and material conditions, where people can be kept for several days without incident. Shelters are divided into 5 classes according to the number of people they can accommodate: small (150-300 people), medium (300-600 people), large (more than 600) and others.

- storage for no less than 3 days;
- Construction in flood-proof areas;
- Construction in places far from running water, sewage communications and building communications;
- Availability of entrance and exit doors.

The top of the shelters should be very thick and strong, and the walls should be resistant to shock waves and absorbed radiation. It must be hermetically sealed so that toxic air does not enter from the outside. 3 doors will be built to enter the shelter. The first door will be made of metal so as not to be damaged by the shock wave, the rest should be gas-tight. The edges of the doors are sealed with rubber for tight closing. Between these doors, two drums - corridors are formed. In addition to the entrance doors, there should be an

emergency exit. The emergency exit is constructed in the form of a well closed with a brick, iron-concrete hole (pipe) from the ground, and a very solid door at the top. The shelter consists of main and additional rooms. People, control systems, medical service systems are placed in the main rooms. Equipment, equipment, food, water and other necessary tools are placed in additional rooms. Shelters are where people are kept lying down and standing up. Basements of industrial, administrative and public high-rise buildings are used as permanent shelters. The shelter consists of several sections, each of which can accommodate 50-75 people. They are equipped in tiers and each person is expected to have 0.5 m² of space. Filter for sufficient air in the shelter - ventilation device, air intake pipe, electric or manual air pump, air pipes to each part of the shelter, air cleaner for RM, ZM and disease-causing microbes will be an absorbing filter. They will also have electricity, communication, water, sewage and heating networks. The shelter must have radiation and chemical intelligence equipment, protective equipment, fire extinguishers, food, water supply and medicine. A commandant and a daily duty officer are appointed from among those in the shelter. Residents enter the shelter after signals of "Air pollution", "Danger of radioactive damage", chemical and biological damage. After the signal "Closing protective structures", the hermetic doors are closed and people are stopped from entering the shelters. After a while, the filter-ventilation device is activated. It is forbidden to smoke, make noise, light candles and lamps, bring pets, rough objects, smelly and flammable objects into the shelter. Personal protective equipment should be kept ready. An alarm release is allowed after the radiation level has decreased and the toxic substance (ZM) has completely evaporated or the area has been decontaminated. Medical services are provided in the medical room, and this post controls the sanitary condition of the shelter. Medical assistance is provided to the sick and injured. If there are no specially built shelters in an emergency situation, quickly equipped and usable shelters will be built. Such shelters are prepared by equipping subways, underground roads, basements of buildings with the necessary tools and equipment.

Radiation protection shelter (RSB). Radiation shelters (RSBs) are non-hermetic protective structures where citizens are kept in emergency situations. Such shelters reduce the exposure of people in the RM-damaged center by 100-400 times, protect them from contact with shock waves, light radiation, incendiary bombs, and toxic substances in liquid and droplet form. However, since RSBs are not hermetic, it is necessary to use personal protective equipment when the atmosphere is contaminated with radioactive substances (RM), toxic substances (ZM) and biological agents. RSBs include custom-built and prefabricated RSB. The storage property of individually constructed RSBs is determined by the radiation light (gamma ray) attenuation coefficient (K_{γ}) and it depends on the material it is made of and its thickness. Basements, semi-basements and basements of buildings can be used as RSB. Basements of wooden buildings reduce radiation by 7-12 times, and brick houses by 200-300 times. When reclosing the basements of buildings, additional columns and beams are placed where the walls protrude from the ground. An additional door will be built for the entrance, holes, holes, and cracks will be well sealed. For ventilation, an air intake pipe or a simple fan is installed (electric or motor-driven fan). In front of the air intake pipe, an absorbent filter is installed to catch RM, which consists of a box filled with sand and rags. Food and water reserves are kept in hermetic containers. RSBs for more than 50 people should have at least two doors on opposite sides. RSB will also have two rooms. People are kept in the main room. There are benches and benches in it, 0.4 - 0.5 m of space should be available for one person. Sanitary and hygienic equipment and an air exchanger will be placed in the additional room. Due to the fact that the air supply equipment in RSBs does not fully meet the demand, citizens cannot be kept there for a long time and can stay for 4-6 hours at most. Before entering RSBs, people from radioactively contaminated areas must remove radioactive dust from clothes and shoes in a drum (deactivation, shaking, cleaning agents), and then carefully remove clothing (protective clothes, shoes), then they should enter the shelter. During the first 3-5 hours of radioactive damage, exit doors and ventilation holes of the shelter are well closed. During this period, the level of radiation decreases rapidly, and radioactive dust mostly falls to the ground. After 4 - 6 hours, the shelter (RSB) is ventilated. Protected persons can be outside the RSB for 15-20 minutes wearing protective equipment when they go out.

s, as well as utility pits, vegetable storage facilities, and simple living facilities. If the level of radiation outside is very high, then people should wear respiratory protective equipment while the shelter is being ventilated. A typical storage facility is a basement. Ordinary storage shelters (basements) have a special place in the protection of citizens. Basements are among the simple protective structures according to the

construction structure, because their construction is carried out in a very short time. They are open and closed. If open basements are not deactivated, people will be harmed two to three times less from RM than in an open place, if they are deactivated, they will receive 20 times less radiation dose. Closed basements reduce radioactive damage by 40-50 times. Cellars are made with a depth of 200 cm, a width of 120 cm, a lower part of 80 cm, and a length depending on the number of people. Citizens are kept in the open basement using protective equipment. Closed basements are shelters that prevent radioactive dust, biological fog, and chemical weapons from falling on clothes and skin.

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