According to this, ensuring the safety of residents of residential complexes is becoming more and more relevant.

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DEFINITIONS OF INTEGRATED SAFETY IN CONSTRUCTION

Currently, much attention is paid to solving problems of life safety, industrial safety, environmental safety, radiation safety, fire safety, and explosion safety.

In recent years, when considering safety issues, the term “comprehensive safety” has begun to be used, as the safety of various objects or types of production and economic activities in conditions of the combined action of various types of hazards.

The definition of this concept in different fields of activity varies greatly and this causes a certain confusion in terminology, in setting tasks and, ultimately, does not contribute to increasing the safety level of certain objects.

This is especially important when considering an object whose safety must be ensured. For example, it could be a source of danger or the object itself, which should be safe. The safety object can be an entire industry, for example, construction or nuclear energy; in other cases, the objects are a specific structure, for example, a residential building or a physical phenomenon, or an electromagnetic hazard.

There are several definitions of this concept:

“Comprehensive safety” is the safety in conditions of the combined action of various types of danger.

“Comprehensive safety system” is a system that simultaneously performs several safety functions, reducing the risks associated with various types of hazards.

“Comprehensive security assurance” is the coordinated interaction of engineering and technical systems, facilities and personnel involved in preventing unauthorized actions and ensuring the safety of people in emergency situations, implemented in design solutions.

From the above mentioned definitions it is clear that they formulate the concept of integrated security in the most general form, in relation to any object or type of activity.

Construction activities occupy a special place in solving the problem of integrated safety.

In relation to construction activities, it is proposed to consider the concept of comprehensive safety at three levels:

- comprehensive construction safety;
- comprehensive safety of the construction site;
- comprehensive security of a building or structure.

Based on this, the comprehensive construction safety means such organization of construction activities that ensures the formation of a safe and comfortable environment for human activity. At the same time, on the one hand, the created construction projects have such impacts on the environment that comply with certain established standards, for example, with the so-called “green standards”. In this case, we can talk about environmental protection, or, more precisely, about environmentally friendly construction, which ensures the safety of the external environment for the construction site.

With this interpretation, the concept of comprehensive construction safety will be fully complied with modern requirements for construction activities, namely:

- safety;
- consistency and flexibility;
- energy and resource saving;
- quality and efficiency.

Thus, the concept: of "integrated construction safety" can be formulated as a set of forms and methods of organizing construction activities, which ensure compliance with regulations and safety standards aimed at shaping the human living environment, minimizing environmental impacts, taking into account the risks associated with occurrence and elimination of consequences of emergency situations.

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DEVELOPMENT OF EFFECTIVE METHODS FOR MONITORING HYDROLOGICAL PARAMETERS OF RIVERS AND THE DESIGN OF DATA COLLECTION SYSTEMS TO IMPROVE FORECASTS AND RESOURCE MANAGEMENT

Hydrological parameters play a crucial role in understanding the water cycle and impact the safety and stability of water resources. To effectively manage these resources and ensure reliable forecasts related to them, it is necessary to develop efficient methods for monitoring hydrological parameters and design advanced data collection systems.

Hydrological parameters, such as water level, river discharge, and water temperature, are key to understanding water systems. They determine the water balance and influence ecosystems, the agricultural sector, and industry. Collecting and analyzing these parameters allow for informed decision-making in water management.

The water level in rivers, lakes, and other water bodies determines the water volume and can be an indicator of the water body condition. The quantity of water flowing through a specific river cross-section per unit of time, known as river discharge, is crucial for determining the water balance and predicting potential floods or droughts.

The thermal regime of water is important for determining ecological conditions and the viability of aquatic organisms. The amount of water used for drinking, agricultural needs, industry, and other sectors affects the water resource balance.

The degree of water turbidity, determined by the presence of particles and contaminants in the water, is also a significant parameter.

These hydrological parameters form the basis for studying water systems, their efficient use, and the management of water resources. Monitoring these parameters helps in forecasting and managing water resources, addressing ecological issues in water bodies, and ensuring the sustainable utilization of this vital resource.

New technologies such as satellite imaging, sensors, and IoT systems are revolutionizing the monitoring methods for hydrological parameters. They provide real-time data collection, enabling: