

MAIN PROBLEMS IN PROVIDING FIRE SAFETY IN MODERN MULTI-STORY RESIDENTIAL BUILDINGS



Tadjiboev Bunyodbek Kasimjon ugli

Graduate student of civil protection and safety of technological processes, safety of life activities, department of the Andijan Mechanical Engineering Institute **E-mail**: bekkosimovich@gmail.com

ABSTRACT

In this article, taking into account that the number of multi-story residential buildings and their density is increasing from year to year in our country, the problems of organizing fire safety measures in multi-story residential buildings were discussed in detail. In the case of evacuation measures, in the organization of measures to eliminate the fire, the conditions of the building, the fire warning and alarm system of the population, preventive measures were studied, and brief recommendations were given for solving the problems of fire safety in multi-story residential buildings.

Key words: *Fire safety, evacuation, alarm system, building design, rescue corridor, security rooms, modern equipment, high-rise residential buildings, number of fires.*

АННОТАЦИЯ

В данной статье, принимая во внимание, что в нашей стране из года в год увеличивается количество многоэтажных жилых домов и их плотность, подробно рассмотрены проблемы организации мероприятий пожарной безопасности в многоэтажных жилых домах. При проведении эвакуационных мероприятий, при организации мероприятий по ликвидации пожара изучено состояние здания, системы пожарной сигнализации и оповещения населения, профилактические мероприятия, даны краткие рекомендации по решению задач пожарной безопасности. В многоэтажных жилых домах.

Ключевые слова: Пожарная безопасность, эвакуация, сигнализация, конструкция здания, спасательный коридор, помещения охраны, современное оборудование, высотные жилые дома, количество пожаров.

INTRODUCTION

Relevance of the topic: It is no exaggeration to say that with the development of construction technology (design and construction of buildings), new types of risks have appeared and the risk of fire has increased. The development of megacities, the

expansion of high-rise and underground constructions, the constant increase in the price of land used for construction, the use of artificial polymer building materials are accompanied by the emergence of new types of risks, such as fire risk. The lack of sufficient information about the occurrence and development of the fire process in buildings is the most common cause of emergency situations in crowded buildings.

Gradually, many types of risks are becoming more widespread and affect the interests of more and more people globally. In recent decades, fires in the World Trade Center (USA), high-rise buildings in Spain, China, Russia, Kazakhstan, etc., have proven the importance of assessing and preventing such catastrophic events. demand to introduce new means and methods of fire safety aimed at protecting people's life and health in the event of a fire in buildings. As a result of studies, fire safety in modern high-rise residential buildings, safety during fire.

LITERATURE ANALYSIS FROM TOPIC SURFACE

As we all know, high-rise residential buildings have several problems that cannot be observed in traditional residential buildings, and they are mainly; long fire exit time requirements and , evacuation problems, difficulty in entering the fire department, smoke movement near me and difficulties in fire control.

Evacuation

One of the promising directions for solving this problem is the use of special means of emergency evacuation from a burning building to a safe area, the use of which reduces the time of exposure to fire hazards for people.[2,79]

The urgency of using emergency evacuation tools in the event of a fire in crowded facilities is that it is in these facilities that crowds of people can often be created during staffing.

Evacuation increases the evacuation time and consequently increases the fire risk to people. The biggest social and material damage is caused by fires in buildings where people live.¹

At the same time, currently there are almost no scientifically based methods for determining the effectiveness of quantitative equipment use in buildings with different levels of functional fire risk and selecting types of evacuation management systems [4,6-9].

High-rise residential buildings require the creation of objective technical conditions for various objects to fulfill the basic requirements of fire safety, which ensures the implementation of preventive measures and maintenance of all fire protection systems in the specified order. These are the requirements of design,

 $^{^{1}} https://cyberleninka.ru/article/n/developing-recommendations-on-updating-modern-technologies-on-fire-safety-of-multi-storey-buildings$



technical and regulatory documents. The most important component of such systems are warning devices that should provide timely information on the occurrence of fire danger, choosing the safest evacuation routes depending on the scenario of the fire development, including the necessary map structure of the fire direction,

The total percentage of fires in high-rise residential buildings worldwide is very high and is 42.1%

Here, let's look at the statistics of fires observed in our Republic

According to the agency, 126 emergency situations occurred in the republic last year, of which 80 were man-made and 46 were natural. Among them:

Road traffic accidents make up 31%;

- Poisoning with natural, carbon monoxide and toxic substances 31.7%;
- Gas lighting in residential buildings 13.5%;
- Collapse of buildings, structures and underground structures 7.1%;
- \triangleright Car fires 4%.

The main reasons why the number of fires in high-rise residential buildings is not decreasing despite preventive measures:

• non-compliance with fire safety requirements for residential buildings with their actual fire risk level;

• increase in the number of floors of residential buildings;

• an increase in the combustible load in the buildings of residential buildings;

• the presence of built-in buildings with a purely functional purpose in residential buildings;

• lack of necessary control over the fire protection of residential buildings;

• high wear and tear of residential buildings and engineering equipment;

• Inadequate firefighting tactics in residential buildings.

DISCUSSION AND RESULTS

The human factor also has a great influence on the occurrence of fires: in 40% of cases, fires are caused by careless handling of fire, in 10% of cases by the games and pranks of unattended children, in 22% of cases - by violation of the rules for using electrical equipment and household electrical appliances. Unfortunately, alcohol or drug addiction continues to be the leading cause of death in fires.

In addition, the fire load in residential buildings is constantly increasing. The density of residential buildings is increasing, which increases the time it takes firefighters to reach the scene of a fire, the number of multi-story residential buildings increases, which objectively complicates the processes of extinguishing



fires and rescuing people. Despite the inability of electrical wiring (especially in older buildings) to withstand increased loads, the saturation and power supply of residential buildings is increasing.[5,25,27]

In such conditions, it is necessary to take measures not only to reduce the level of fire risk in residential buildings, but also to prevent the possible consequences of additional risks.

As can be seen from the above information, it is necessary to emphasize a number of systemic issues of fire safety in the fire safety system in high-rise buildings, which are currently the main residences of urban residents:

1) Protection of people in residential buildings during fire with technical means of fire automation:

- Absence of a fire alarm system;

- Absence of smoke exhaust system;

- Absence of automatic fire extinguishing system.

2) Problems of extinguishing fires in residential and public buildings:

- There is no external second evacuation exit in the first and basements of the house;

- Owners of apartments often block the common use of residential floors and allocate a part of these buildings for private use;

- Using the road or lawn to park personal vehicles;

- Includes building and residential access barriers.

3) Management of fire departments during firefighting:

- Traffic jams;

- Speed of movement of fire fighting equipment;

- Insufficient number of fire stations for the total area of the city.

It can be said that this is the main problem not only of firefighters, but of all special equipment.

Also, the main problems in the field of fire safety may be related to the moral and physical obsolescence of fire fighting equipment during the construction of buildings.

Thus, the role of the fire protection system in residential buildings should increase! And this should be defined in the rules.

In accordance with the modern requirements of the state fire control system, it is urgently necessary to create radically different methods of ensuring fire safety. In this regard, our Government should take systematic measures to ensure fire safety in order to reduce such cases as much as possible, and we should not allow our people to lose their loved ones in peaceful times!

It is necessary to develop effective legal, organizational, economic, social and scientific-technical measures aimed at preventing fires, extinguishing them and carrying out emergency rescue operations.

CONCLUSION

Based on the above, the following is recommended:

- Amendments and additions to regulatory documents on strengthening the fire protection system;

- Development and approval of a prospective fire safety plan.

This is not only a problem of state bodies, but we ordinary people need to ensure fire safety in our daily life and show responsibility with our conscience.

Let us always remember that our one mistake can ruin someone's life

REFERENCES

1. Nasiba, A. (2022). DEVELOPMENT OF RECOMMENDATIONS FOR THE IMPLEMENTATION OF MODERN TECHNOLOGIES FOR FIRE SAFETY OF INDUSTRIAL BUILDINGS. *Innovations in Technology and Science Education*, *1*(1), 159-165.

2. Tadjiboyev, Bunyodbek Kasimjon oglu. Scientific text "Science of the Earth and ecological science",

3. https://cyberleninka.ru/article/n/developing-recommendations-on-updating-

modern-technologies-on-fire-safety-of-multi-storey-buildings

4. Technical regulations for fire safety requirements. Federal Law on 22.07.2008 No. 123. Sobraniye zakonodatelstva RF — Collection of Laws of the Russian Federation, 2008, no. 30 (part I), art. 3579; 2012, No. 29, Art. 3997 (in Russian).

5. For explosive zones and fire explosive categories in the design of industrial premises]. Pozharovzryvobezopasnost — Fire and Explosion Safety, 2014, vol. 23, no. 5, pp. 6–9.

6. Baratov AN, Pchelintsev VA, Nikonova EV. Pozharovzryvobezopasnost — Fire and Explosion Safety, 2001, vol. 10, no. 3, pp. 25–27.

7. Set of rules 12.13130.2009. Determination of categories of rooms, buildings and external installation

8. On explosion and fire hazard. Moscow, All-Russian Research Institute for Fire Protection of Emercom, Of Russia Publ., 2009 (in Russian).