

FIRE AND EXPLOSION SAFETY RULES IN LIFE SAFETY SCIENCE TRAINING

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Annotation: In the article, the essence of the rules of fire and explosion safety in the teaching of the science of life safety and the recommendations for following these rules are given.

Keywords: fire, explosion, diffusion combustion, kinetic combustion, small scale, medium scale, large scale.

There are a lot of fire and explosion hazard objects in our republic, they are a source of danger for the population and regions and can turn into FV under certain conditions.

According to the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated October 27, 1998 No. 455 "Classification of man-made, natural and ecological emergency situations", accidents in objects with fire-explosion risk: explosive in the technological process, in objects that use or store flammable and other fire-hazardous substances and materials, mechanical and thermal injuries, poisoning and death of people, destruction of the main production funds, production cycle and people's lives in emergency areas accidents, fires and explosions that cause malfunctions; associated with gas and dust explosions in coal mines and the mining industry that cause personal injury, poisoning and death and require search and rescue operations and the use of special respiratory protection equipment and devices accidents, fires and rockfalls.

Combustion is the process in which a combustible substance is oxidized by air oxygen and emits heat and light under the influence of a source.

The combustion process is 2 types:

1. Diffusion burning.
2. Kinetic combustion.

Things that cause diffusion burning include: wood, coal, candles.

Kinetic burning products include: gas, oil, alcohol.

Fire is an uncontrollable phenomenon, a calamity that destroys priceless material and cultural assets every minute, especially it is an emergency situation that causes hardship to citizens. For the origin of fire, it is enough to have 3 factors in one place at the same time. That is:

- ✓ combustible substance (oil, acetone, paper, etc.);
- ✓ air temperature (heat);
- ✓ spark-flame (match, spark, short circuit of electric wire).

Causes of fire.

Fire-combustible substance + oxidizer + energy pulse

The main causes and types of fires and explosions:

- ✓ non-compliance with fire safety regulations;
- ✓ citizens' indifference, inattention;
- ✓ malfunction of electric wires;
- ✓ means heated with gas, coal, wood;
- ✓ children playing with grass;
- ✓ deliberate arson;
- ✓ other reasons.

The main thing is that our citizens themselves become the cause of the fire.

Reasons for the rapid spread of fire:

Factors of fire occurrence;

In places where there is a fire, the surroundings are hot;

Smoke and toxic substances emitted from burning objects in a fire;

Changes in air temperature in and around the fire.

While the primary and secondary contributing factors to this fire are:

Collapse of building wall in case of fire.

The occurrence of an explosion.

Dispersal of various chemical and toxic substances into the environment at the place of fire.

When a fire is extinguished with water, explosions occur as a result of a mixture of different chemicals.

According to the data, 60-80% of those who died in the fire died due to poisoning of the respiratory tract or lack of fresh air.

Fire is divided into 3 types in terms of width:

- ✓ in small size;
- ✓ in medium size;
- ✓ in a large volume;
- ✓ The main reasons for the spread of fire and its limits:
- ✓ mistakes and shortcomings made in the development of the project of facilities;
- ✓ non-observance of construction norms and rules and state standards in the construction of facilities;
- ✓ non-fulfillment of fire prevention measures specified by fire control, gas use control staff;
- ✓ citizens do not know their duties in the event of a fire and panic;
- ✓ negligence of children's games that cause fire;
- ✓ lack of rescue equipment used in fire fighting;

Fire places are divided into two types.

State organizations;

Residential areas of citizens.

Fires cause great material damage to the national economy. A fire can burn a huge amount of people's wealth to ashes in a matter of minutes or hours. During a fire, smoke, carbon dioxide and other harmful odors and gases are released into the atmosphere in large quantities and spoil the composition of the air necessary for breathing. Also, the worst damage caused by fire is that many people are injured and may even die. All this forces us to study fire fighting measures, methods of safe execution of work that arise at this time, together with labor protection.

Fire prevention measures:

- permanent inspections of organizations and institutions, immediate elimination of deficiencies that cause fire and explosions;
- unconditional compliance with construction norms and rules, special instructions on state standards;
- to carry out the instructions given by the employees of the fire protection agencies, the most important thing is to carry out the work to be done by the special forces for the first elimination of situations that lead to fire;
- regular elimination of deficiencies indicated by state special inspection agencies and prevention of them;
- to know fire fighting measures, and remember that a cup of water is enough to put out a fire in 1 minute, a bucket of water in 2 minutes, and a cistern of water may not be enough in 3 minutes;
- regularly teaches the population to take fire prevention measures and to demand from others;

At present, some work has been done to reduce the risk of fire in industrial enterprises, the risk of fire is reduced and electrical equipment that works completely safely is used. Industrial enterprises are removing combustible construction materials from their buildings and structures. Mechanized and automated fire extinguishing systems are being used more widely.

Measures for fire protection of large objects:

1. Installation of automatic alarm.
2. Installation of hydrants.
3. Increasing the number of fire extinguishers.

Technological processes and technical equipment can have a certain negative impact on the environment and workers during their operation. In order to prevent such situations, it is necessary to introduce modern equipment and technological innovations that do not produce waste and do not harm the environment.

As we know that fire and explosions are interrelated, fires that occur in all organizations can also cause explosions, or vice versa, fires can occur as a result of explosions.

An explosion is the release of a large amount of energy in a limited amount of time. The explosion occurs under high pressure due to the intense heating of gases. Explosions mainly occur in organizations with a fire and explosion hazard, which can cause fires. Warehouses where explosives are stored, organizations related to them are considered explosive organizations, where explosions can occur under certain conditions. These include defense, oil and petroleum product processing-storage, chemical, gas, cotton, paper, bakery, light industrial enterprises, warehouses that store finished products produced by them, and all organizations related to them. In the territory of Uzbekistan, there

are more than 500 organizations that are at risk of explosion and fire, not including the houses of our citizens, which are supplied with gas.

Damage factors of the explosion: shock wave (shock waves), scattering of fragments. These are the primary ones, while the secondary ones are explosions, fires, disasters, chemical and radiation damage, widespread dam failures and floods, and building collapses.

Primary injury factors include:

Shock Waves A shock wave in the form of a powerful air wave generated by a high-pressure explosion causes disintegration and scattering of objects in contact with it.

Fractures are broken pieces of broken objects in the areas (causes damage and disintegration of equipment of nearby enterprises, buildings).

An explosion is the release of liquids, explosive substances due to the failure of the volume in which it is located under the influence of force or heat. Explosive factors: chemical (explosives); nuclear (nuclear weapons); mechanical style (rupture of high-pressure liquid-distributing vessels); electromagnetic (spark charge, laser spark, etc.); sonic and other powers.

More than 15-17 explosions occur in the territory of our republic per year. These explosions are mainly caused by improper use of gas in residential buildings, and these are called residential explosions. The main reason for their origin is non-compliance with gas handling procedures. In this regard, during 1998, more than 50 explosions occurred in houses, as a result of which citizens died, dozens of people received various injuries, and in 1998, an explosion occurred due to a malfunction of the Shatlik-Khiva, Mubarak-Zarbulok high-pressure gas pipelines. and many of our citizens were killed and injured. From the above, it is clear that fires and explosions occur randomly and cause many deaths or serious injuries.

Every citizen of our republic should take care of public and state property, protect it and enrich it. Therefore, fire prevention and fire fighting activities in industrial enterprises are carried out with the participation of every worker in the workshops, relying on the general public. Therefore, we should always be vigilant and avoid any disappointments. It is the duty of every citizen of Uzbekistan to follow it.

Procedure for organizing fire prevention works in residential areas. In the activities of state fire control and public organizations, the following are the main complex methods and forms of fire prevention in residential areas:

1. Fire of high-rise and low-rise residential buildings with a high fire risk (bedrooms, two-story houses with fire resistance level V, houses with utility rooms in the basement, etc.) to carry out the inspection of cases against him on the basis of a plan.
2. Before the beginning of the periods when the fire situation in residential areas is aggravated (winter heating season, summer months), check the fire condition of the housing stock, all personnel of the fire safety units, volunteer grass examination with extensive involvement of the employees of the extermination teams, housing use organizations.
3. Teaching fire safety rules to tenants, owners of private houses, country yards and their families.
4. Carrying out inspection of the fire protection condition of residential houses in cities and neighborhoods.
5. Distribute leaflets, notices, booklets with fire safety rules in residential areas and distribute them to the population in multiple copies.

6. Organization of community fire safety guards, selection of guards and their training under neighborhood committees and housing use organizations.
7. To organize fire-technical stations (fire safety rooms and corners) in neighborhoods, cities, districts and households, and promote compliance with fire safety rules among the population.
8. Discussing the results of fire-technical inspections conducted in residential areas with apartment owners and their family members, considering these issues in citizens' self-management organizations, as well as to communicate the fires and their consequences to the population.
9. General education of fire safety rules to citizens in cities, districts, residential areas using mass media (cinema, video, television, radio, newspapers, propaganda vehicles).
10. In fire safety departments, plenums of volunteer firefighting societies in cities and districts, state fire control bodies review the progress of work on ensuring the fire safety of residential areas discussion with the participation of activists.
11. Wide use of methods of material and moral encouragement of the heads of volunteer fire brigades and fire safety inspectors who have actively participated in the stabilization of the fire situation in residential areas and achieved good results.
12. Conducting practical conferences and meetings of self-management organizations on the problems of ensuring fire safety of high-rise residential buildings, dormitories, hotels.

Organization of fire prevention works in production enterprises. The following measures should be taken to ensure fire safety of industrial enterprises:

- performing daily technical maintenance of buildings and structures when equipping them with automatic fire extinguishers;
- instead of flammable liquids used for cleaning and degreasing parts, aggregates and finished products, using fire-safe technical detergents;
- determination of combustion and explosion parameters (indicators) of materials and tools used in the technological process and selection of electrical devices used in the rooms according to the flammability and explosiveness classes of the production rooms;
- use of fire barriers, quick-moving barriers, valve-shibers and shutters in order to prevent the spread of fire in the production rooms and air circulation (ventilation) systems;
- to increase the fire resistance of the building structure, to separate the fire-hazardous equipment and aggregates into separate rooms of the building or to release them into the open spaces outside;
- banning the use of various flammable materials for decorating evacuation routes;
- to establish the use of anti-smoke systems in fire-hazardous production buildings and to ensure the continuous operation of previously installed smoke extraction systems;
- workshops equipping laboratories and warehouses with safety signs, regulating work related to fire, etc.

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