
PROBLEMS AND PROSPECTS OF FIRE PREVENTION AND SUPPRESSION

Review article

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TECHNICAL REGULATION OF FIRE SAFETY OF ALGERIA

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Abstract. The characteristics of key economic, political, geographical and other features of Algeria as a sovereign unitary state. The article considers technical regulation and analysis of normative documentation that coordinates the activities of institutions responsible for ensuring fire safety in Algeria. The structure of the department responsible for fire safety in the country is described in detail, as well as the goals, objectives and legal regulation of all subordinate institutions and departments.

Keywords: Algeria, technical regulation, technical regulations, fire safety

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Introduction

The main goal of technical regulation is the adoption of technical regulations aimed at protecting the life and health of citizens, the property of individuals and legal entities, state or municipal property, environmental protection, life or health of animals and plants.

The regulation defines the general principles for ensuring fire safety and introduces classification systems, terminology in the field of fire safety [1, 2].

The regulation establishes specific fire safety requirements:

- in the design, construction and operation of settlements and urban districts;
- in the design, construction and operation of buildings, structures and structures;
- to production facilities;
- to firefighting equipment;
- for general purpose products.

Technical regulation is necessary in every country, regardless of climatic and territorial characteristics.

To date, there are practically no publications that study the technical regulation of the countries of North Africa. Therefore, this paper analyzes the regulatory documentation governing the activities of institutions responsible for ensuring fire safety in Algeria.

Analytical part

Algeria occupies a favorable geographical position at the crossroads of Europe, the Mediterranean, the countries of the Arab world and Africa and owns one of the richest oil and gas reserves. One of the advantages of the country is the positive demographic situation with the predominance of the young population.

Algeria is a republican country located in North Africa bordering the Mediterranean Sea [3, 4]. It also neighbors with countries such as Libya, Mali, Morocco, Niger, Tunisia. Algeria is a member of the Arab League, which includes Qatar, the United Arab Emirates, Saudi Arabia, as well as other monarchies and republics [5, 6].

The economy of Algeria is based on the export of oil and natural gas, which constitute about 95 % of its export economy [7]. Algeria is classified by the World Bank as an upper middle income country, but poverty is still widespread throughout the country [8].

The country is dominated by a desert landscape (more than 80 % of the territory). There are also flat areas and several hills [9, 10].

Despite the fact that forests and trees cover less than 1 % of the country's territory, forest fires represent one of the biggest threats to life, property and economic activity [11, 12]. In the period from 2010 to 2019, about 3 000 fires were registered; in the summer of 2021, more than 100 000 hectares of forest land were destroyed [13–16].

The agency responsible for the safety of the population and material assets is the Ministry of Internal Affairs and Local Self-Government. The tasks and powers of the Ministry are determined by Executive Decree of August 10, 1994 № 94-247 «Public order and security, public freedoms, operations of national interest, and in particular emergency operations, regulated activities, decentralized activities and control over local authorities, laws, local development, territorial organization, local finance, cooperation between local authorities, civil protection, national communications» [17–19].

The unit responsible for firefighting, rescue work and emergency response is the Algerian Civil Defense (Civil Protection), established by decree of April 15, 1964 № 64-129 «On the administrative organization of civil defense» [20].

The mission of Civil Protection is to protect people, property and the environment. This concept of protection is very broad, it includes both emergency assistance to victims of accidents, accidents or natural disasters, as well as their evacuation, preparation of protective measures and the organization of rescue resources, such as fire prevention or control, as well as the prevention and assessment of civil security risks.

The tasks of Civil Protection are distributed among four divisions and departments: the department of prevention, the department of organization and coordination of actions in emergency situations, the department of personnel management and training, the department of logistics and infrastructure management [21].

1. The Department of Prevention is responsible for studying and defining safety rules and standards, as well as controlling and monitoring their application. It includes:

- subdivision for research and regulations;
- sub-management for major risks;
- sub-department on statistics and information.

2. The Department of Organization and Coordination of Actions in Emergency Situations is responsible for studying and determining the means and rules for organizing, preparing, coordinating and performing emergency rescue operations. It includes:

- subdivision for operational planning;
- sub-department for operations;
- sub-department for communications and operational relations;
- emergency department, medical services.

3. Personnel management and training department is responsible for the management and distribution of human resources, the definition of training policy, the creation of educational programs and defining the rules and conditions for their implementation. The department includes:

- sub-management for personnel;
- sub-department for social actions;
- training department.

4. Department of Logistics and Infrastructure Management is responsible for research and implementation of infrastructure and equipment programs that establish, execute credit projections, determine and control management conditions and maintenance of infrastructure, civil protection equipment. It includes:

- subdivision on budget and accounting;
- infrastructure sub-department;

- sub-department for equipment and logistics.

Civil Protection also has specialized sections in the main divisions:

- group of reconnaissance and intervention in dangerous conditions;
- water rescuers (divers, sea rescuers);
- sections specializing in technological and chemical risks (pollution control, etc.);
- rescue and cleaning units;

- Civil Protection air group (participates during critical operations, such as escorting seriously injured people);

- motorcyclists (rapid response units);

- technical (the composition includes heavy transport equipment (tow trucks) and vehicles specializing in the repair and extraction of vehicles).

Aviation security is organized with the help of the Air Group unit, created in 2016 [22].

The tasks of the Air Group include:

- fight against forest fires;
- emergency assistance and air rescue;
- rescue in dangerous conditions (mountains, bad weather conditions, etc.);
- ground search and rescue;
- aerial photography and video filming at disaster sites;
- reconnaissance and surveillance in anticipation of forest fires;
- transportation of civil protection elements in hazardous environments.

If necessary, preliminary reconnaissance of the territory and rescue in the natural and artificial environment, operational reconnaissance and intervention groups may be involved. This group is often involved in incidents that occur in hard-to-reach areas, in particular, in areas with mountainous terrain [23, 24]. The missions of the reconnaissance group include:

- recognition and rescue in especially dangerous natural and man-made environments;

- intervention in emergency situations in hazardous natural environments and hard-to-reach places (mountains, dungeons, rocks);

- evacuation of people from dangerous natural and man-made environments.

The main normative act regulating the activities of the Civil Protection is the Law of December 25, 2004 № 04-20 «On the Prevention of Serious Risks and Natural Disasters». The agency determines the main risks, keeps records of preventive mechanisms in cases of earthquakes, geological risks, climate risks, forest fires, industrial and energy hazards, risks related to human health, risks related to animal and plant health, air. The law obliges industrial enterprises to develop internal action plans in case of emergency situations, as well as procedures that must be implemented in the event of a disaster» [13].

The establishment of the structure of the Main Directorate of Civil Protection is regulated by the Decree of December 21, 1991 № 91-503 «On the organization of the central administration of the General Directorate of Civil Defense». The control includes [25, 26]:

1. Guidelines for prevention, in which:

- sub-management of research and regulation;
- sub-management of the main risks;
- submanagement of statistics and information.

The manual defines the safety rules and standards applicable to prevention in various areas of activity, and establishes rules for monitoring their application.

2. Directorate for Organization and Coordination of Emergency Relief Activities, which includes:

- submanagement of operational planning;
- sub-management of operations;
- sub-department of medical care;
- sub-management of communications and operational communications.

The Directorate is authorized to study and determine the means and rules for the organization, preparation and implementation of emergency assistance, as well as to control and coordinate its implementation. In this capacity, he is responsible in particular for:

- management of relief operations in the event of major disasters;
- defining the conditions and rules for the development of disaster response and emergency plans, as well as ensuring their constant updating and effective implementation;
- definition, organization and coordination of protection measures;
- definition, organization and installation of management procedures, operation of the communication network and operational communications.

3. Personnel management and training, which includes:

- personnel management;
- training submanagement;
- submanagement of social activities.

Management has competence in the field of human resources management and their distribution, the development of training policies, the development of curricula and the definition of rules and conditions for their implementation. In this capacity, it is responsible in particular for:

- assessment of the management and distribution of human resources;
- developing and managing a policy for the recruitment and management of Civil Protection officers and ensuring its implementation;
- development of a policy in the field of professional training and advanced training of personnel;
- encouragement of activities related to sports and leisure;
- control of the pedagogical activity of training institutions on issues of Civil Protection.

4. Department of logistics and infrastructure, which includes:

- sub-management of budget and accounting;
- sub-management of infrastructure;
- sub-management of equipment and logistics.

Management studies and implements infrastructure and equipment programs, makes budget forecasts, and determines and controls management conditions and maintenance of civil protection infrastructure and equipment. Management is responsible for:

- study, evaluation and implementation of infrastructure programs and equipment;
- definition and control of rules for the management and maintenance of infrastructure;
- definition of rules and supervision for the implementation of maintenance of civil protection equipment.

To reduce the possibility of fires, a Decree was issued dated February 20, 1976 № 76-4 «On the rules applicable in the field of safety from the risks of fire and panic when creating commissions for prevention and civil protection», describing the requirements for:

- protection against the risk of fire and panic in catering establishments and in high-rise buildings;
- Ensuring fire safety in residential buildings;
- creating a classification of building materials and elements by categories according to their fire resistance and test methods.

The safety criteria in accordance depend on:

- the number of people who can be admitted to the facility;
- the size of the buildings;
- nature of operation and method of construction.

General fire safety measures are aimed at determining:

- conditions for the use of materials;
- insulation of equipment structures with which they must be equipped [27].

Safety in public buildings, structures and premises (ERP) is regulated by the Decree of February 20, 1976 № 76-36 «On protection against the risk of fires and panic in public institutions» [28].

Depending on the purpose of the premises and operational tasks, a list of mandatory fire safety measures for public institutions has been determined. Security measures depend on the nature of their activities, the size of their premises, the way the buildings are constructed and the number of people admitted to them. An example of categorization by the maximum number on the territory of the institution is presented in the table below.

Table

Categorization of premises by the number of visitors

№ categories	Maximum number, pers.
1	more 1 500
2	700–1 500
3	300–700
4	less 300

When categorizing an object, the number of personnel located in an institution, provided that separate rooms are provided for staff.

Also, in accordance with Decree № 76-36, several industries with similar activities or activities of different types can be located in the same premises. The distribution by types of institutions does not prevent the existence in one and the same volume same building of several institutions of different or similar type.

The basic distribution rules concern:

- location of the building. This rule concerns the conditions for servicing the institution with emergency vehicles and its isolation from third parties;
- constructive agreements. This item includes aspects such as fire resistance of structures, conditions for the implementation of internal planning, isolation of rooms with special risks (for example, storage or technical rooms);
- planning;
- gaps, their number, width and location;
- emergency aids (for example: fire extinguishers, alarm systems and alerts).

The norms for residential buildings and structures are determined by the Decree of February 20, 1976 № 76-37 «On fire safety in residential buildings». The Decree applies to «residential buildings, the ground floor of which is located at a height of less than 50 m above the ground, suitable for use by rescue and fire services vehicles» [29].

Residential buildings and structures are classified into four sections:

- separate residential buildings no more than two floors, with the exception of basements and basement floors;
- individual residential buildings with more than two floors, collective residential buildings, the lower floor of which is located at a height of less than eight meters from the ground;
- residential buildings that do not belong to the previous categories, the ground floor of which is located at a height of more than 28 m above the ground;
- residential buildings, in which the lower floor of the highest residential building is located at a height of more than 28 m and not more than 50 m above ground level.

Ventilation must be made of non-combustible materials and installed in accordance with the plans submitted by the developer. In the case of collective systems, these air ducts must not only be made of non-combustible materials, but also be at a sufficient distance from wood and flammable materials.

Piping containing either gas risers or electrical piping must be made of non-combustible materials. This requirement also applies to a dividing wall in the event of a shutdown of a common pipeline to isolate the gas and electrical risers between them.

Ducts for gas risers should not have airtight partitions at floor level and should not have any deviations in the selection at these levels. They must be partially closed at the top.

Conclusion

Thus, this paper considers part of the main regulations governing fire safety in Algeria. As can be seen from the data presented, the main activity for the prevention of fires and emergencies is carried out by the Civil Protection together with such units as the intelligence group and Intervention in a Hazardous Environment and the Air Group. However, without the relevant resolutions, orders and orders, the activities of these bodies would be ineffective.

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