

# Fire safety in apartment buildings

**CFPA-E Guideline No 27:2021 F**





## **FOREWORD**

CFPA Europe develops and publishes common guidelines in order to achieve similar interpretation in the European countries and to give examples of acceptable solutions, concepts and models. CFPA Europe has the aim to facilitate and support fire protection, security and protection against natural hazards across Europe, and the whole world.

The market imposes new demands for quality and safety. Today, fire protection, security and protection against natural hazards form an integral part of a modern strategy for survival, sustainability and competitiveness.

These Guidelines are primarily intended for the public. They are also aimed at rescue services, insurers, consultants, safety companies and the like so that, in the course of their work, they may be able to help manage risk in society.

These Guidelines reflect best practice developed by the national members of CFPA Europe. Where these Guidelines and national requirements conflict, national requirements shall apply.

This Guideline has been compiled by the Guidelines Commission and is adopted by all members of CFPA Europe.

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## **1 Introduction**

There is a real problem from a life safety perspective in large apartment buildings.

Most residential fires are caused by the misuse of domestic equipment or by a wrong behaviour of the occupants (wrong reactions, or behaviour deviances). In large apartment buildings, these factors are multiplied by the number of units or occupants.

Let us only speak about cooking equipment, individual heating, open fire, smoking, candles, Christmas tree but also poor installation or maintenance of them. On another hand, the characteristics of the inhabitants (such as young children, elderly, people with disabilities, sleeping people) could be obstacles to a safe and quick evacuation.

The building design or construction could lead to the fast spread of fire and smoke to the surrounding rooms, corridors and stairs exposing people to smoke and heat.

Therefore the designs of the buildings, their complexity and density of occupation have to be considered in a life safety perspective.

The building's owners have to take adequate fire safety measures in order to protect the people and improve their chance of survival in case of fire.

It is vital that any large apartment buildings would be provided with means of escape and other life safety safeguards.

We also emphasize the importance of public awareness, an essential factor in prevention. The occupants have to be informed, and the risks and the actions have to be explained to be efficient. Awareness is the first and most important step towards safety.

## **2 Scope**

The objective of this guideline is to provide a reasonable safe environment for the occupants of apartment buildings and mainly to give them the opportunity to safely escape a fire.

Some solutions are proposed in this guideline, however, they can be replaced by others giving the same safety level or determined by a risk analysis.

For complex buildings or special building's design or technics, we strongly recommend that the escape means will be defined during the fire risk analysis.

General remark:

Apartment buildings must comply with national laws and regulations (eg, electrical, heating).

Any fire protection system, building service equipment, feature of protection, or safeguard provided to achieve the goal of this guideline has to be designed, installed, and approved in accordance with national regulations.

All products, materials and equipment's must meet the European requirements and directives, especially concerning the CE marking (construction products, low voltage equipment's, lifts, etc).



### 3 Definitions

#### **Dwelling:**

A unit of residential accommodation occupied (whether or not as a sole or main residence).

#### **Apartment:**

An apartment or a dwelling unit is a separate and self-contained premise constructed or adapted for use for residential purposes and forming part of a building from some other part of which it is divided horizontally or/and vertically. The occupant may be the owner or a tenant.

#### **Apartment building:**

An apartment building is a building or portion thereof containing three or more dwelling units with independent cooking and bathroom facilities. Apartment buildings are also called multiple occupation houses.

#### **Height and size of a building:**

The height of a building is defined in the national regulation. If not otherwise determined, the height of an apartment building is the difference between the highest level where a fire truck can approach the building and the highest level of a floor where there are sleeping rooms. The buildings are usually classified in low, medium and high buildings.

#### **Building materials:**

The materials, products and building elements shall comply with the Euro classes on fire reaction and fire resistance classes as described in:

- 2000/147/EC: Commission Decision of 8 February 2000 implementing Council Directive 89/106/EEC as regards the classification of the reaction to fire performance of construction products.
- 2000/367/EC: Commission Decision of 3 May 2000 implementing Council Directive 89/106/EEC as regards the classification of the resistance to fire performance of construction products, construction works and parts thereof.

The required Euro classes are defined in the national regulations.

#### **Fire resistance**

Ability of an element of building construction, component or structure to fulfil, for a stated period of time, the required stability, fire integrity and/or thermal insulation and/or other expected duty.

#### **Fire reaction**

Response of a material under specified test conditions in contributing to a fire to which it is exposed in terms of heat release and smoke production.



## 4 General fire safety measures in apartment buildings

### 4.1 Fire risk analysis

A fire risk analysis could better determine specific fire prevention measures according to the occupation (kind of population), the bad or good state of the structure, the complexity, the situation or the secure environment of a building. Protective measures against fire and escape means have to be adapted to cases analyzed.

### 4.2 Construction

Apartment buildings have to conform with the construction requirements in accordance with the national regulations.

Fire resistance:

In an apartment building, the structural integrity must be maintained during the time needed to evacuate, relocate, or defend in place the occupants. Means of protection of internal and external support elements (such as beams, columns, bearing walls, facades, and floor or ceiling structures) can improve the fire resistance and structural integrity and avoid premature failure of the element or structure.

Reaction to fire:

The choice of materials including the coatings of floors, walls and ceilings could significantly affect the spread of a fire and its rate of growth.

#### 4.2.1 Fire compartment

Apartment buildings shall be divided into fire resistant compartments to avoid fire and smoke spread from compartment to compartment. Compartments will be separated from each other by fire resistant barriers (walls and floors).

The residential units (for ex. apartment(s)) and their exits have to be separated from non-residential occupancies such as shops, workshops, etc.) by fire resistant walls and floors.

#### 4.2.2 Boundaries

Distance to other buildings: To limit the propagation of fire by thermal radiation or flying particles from one building to another, a minimum separation distance may be required between unprotected or partially unprotected exterior walls or facades (ex.: non fire resistant glazing or cladding).

The safety distance is determined by the height of the buildings and the surrounding risks.

#### 4.2.3 External walls & facades

The external walls and facades should have the required fire resistance and reaction to fire rate according to national regulations. An appropriated external cladding could limit the propagation of flame and fire along the entire walls.

#### 4.2.4 Roof coverings

An adequate roof covering should avoid the propagation of a fire due to outside thermal radiation



or flying particles. Coverings without an adequate protection against fire spread should preferably be avoided.

#### **4.2.5 Interior walls**

Interior walls of compartment, escape routes, enclosed stairways, boiler heating rooms, underground parking's and basements should be fire resistant. In these rooms, the cladding should also show adequate fire reaction classes.

#### **4.2.6 Fire stop systems**

Each gap, pipe or cable penetration for example through a fire resistant element has to be protected by a fire stop system or device offering the same level of protection as the element. It concerns also cables, cable trays, conduits, pipes, tubes, combustion vents and exhaust vents, wires, and similar items to accommodate electrical, mechanical, plumbing, and communications systems.

### **4.3 Interior linings**

In some rooms such as escape ways, specific fire reaction classes should be required.

#### **4.3.1 Concealed spaces or cavities**

Concealed spaces and technical cavities and void have to be subdivided by fire barriers to avoid that smoke and flame would spread easily through the entire building.

#### **4.3.2 Basements**

When possible the basement should be equipped with one or more smoke outlets for ventilation, however a direct access to venting is recommended in an underground fire compartment. Basements and their leading stairs should be separated from the ground floor by a fire resistant door or wall.

Garages and leading stairs should be separated from the rest of the building by a fire resistant door.

#### **4.3.3 Garages**

Garages and covered car parks pose similar problems to cellars. Care should therefore be taken to provide fire resistant compartmentation (at least EI 60 walls and EI 30 doors), without forgetting fire sealings to protect the technical ducts and pipe passages and to provide protected access to the escape routes. Basement car parks must, like cellars, be equipped with smoke ventilation systems.

Note:

We draw attention to the access to covered or underground car parks of LPG-, methane, hydrogen and electric vehicles.

LPG consists of gases that are heavier than air. In the event of a leak, it will accumulate in the basement and may explode. LPG cars are often not allowed in underground car parks.

The presence of electric cars, scooters, or bicycles with lithium-ion batteries calls for caution when charging the batteries. Damaged batteries can also ignite in parked vehicles. Electric





vehicle fires pose firefighting problems to fire services as they are very virulent and difficult to control.

The most recent developments in terms of mobility point to new types of fuel. A more detailed study of fire risks is needed to decide whether hydrogen or natural gas vehicles for example can be used in garages and car parks.

## **5 Means of escape**

### **5.1 General principles**

To ensure the safety of the occupants, escape routes need to be protected from the effects of fire and smoke. This can be achieved by passive and active systems. The priority when designing the escape means has to ensure to all occupants can reach a safe place (outside or in a refuge).

The natural escape way is mostly the main and usually path used by the occupants to exit.

In case such as larger properties, complex design, multiple floors or multiple occupancies, additional escape should be required.

An escape route should never pass through a high hazard area or any non-residential occupancy unless the escape route would be protected by a fire resistant enclosure.

NOTE: Portable escape devices

Such devices are not recognized as an escape means and are unsuitable for use by aged or disabled people or by young children.

Ladders and ropes are not recognized as an escape device.

### **5.2 Escape ways**

#### **5.2.1 Height**

The clear headroom is expected to reach 2 meter minimum.

#### **5.2.2 Walking surfaces**

##### **Slope**

The slope in the direction of the exit should not exceed 10%.

##### **Slip resistance**

Walking surfaces and flooring should be slip resistant and maintained in a manner to prevent slipping.

##### **Elevation changes**

Surfaces should be flat, avoiding sudden changes (over 15 mm), in which case they will be marked in accordance with Directive 92/58/EEC.



### **Protection against falls**

If the path runs along a void or a gap, it should be provided with fall protection such as barriers or guardrails.

### **5.3.3 Decoration and mirrors**

Large mirrors should not be placed in, or adjacent to, any exit to avoid confusion.

### **5.2.4 Number of escape routes and exits**

National regulations set number, width and size of escape routes and exits. However the presence of a second way doubles the chances of survival and would always be recommended.

Number and size of escape routes are linked to the number of occupants in the rooms (occupant load), area or levels, the travel distances to the nearest exit, and the height of the building.

Exits and egress should be independently located from each other, accessible to all the occupants of a level and at all levels.

### **5.2.5 Travel distances**

The travel distances are fixed in the national regulations.

They could be determined by the presence or not of fire detection and/or fire suppression systems.

### **5.2.6 Lighting**

All escape routes and facilities should be properly lit, and included in the lighting design.

### **5.2.7 Fire and escape safety signals**

Every exit should be clearly visible and the escape routes signaled all along. The exit signs shall be in accordance with the Council Directive 92/58/EEC or the standard EN ISO 7010. It is strongly advised not to mix the two sets of signals.

### **5.2.8 Unobstructed escape**

At all times, all means of escape should be kept free of obstruction such as furnishing, decorations, or storage.

The outside exits and their access thereto would be kept free and in good state. Accumulations of snow and ice should be avoided and if so cleaned for example.

### **5.2.9 Relocation area**

A safe meeting point, where occupants can wait after escape, should be established.



## **5.3 Doors**

### **5.3.1 General principles**

Doors should have the fire resistance required by their use and location.

They may be:

- Fire doors
- Smoke-resisting doors
- Non-fire-rate doors (normal door)

Remark: Even a normal door provides a limited degree of protection against smoke and flames if kept closed.

### **5.3.2 Doors in the escape way**

Doors should be kept closed to avoid the spread of smoke and fire in the escape ways. They should have the fire resistance rate required in exit ways.

### **5.3.3 Swing**

The front door and any door in a way of escape should open outwards. It may in anyway obstruct the travel.

If escape is available in two directions, the doors can be open in both directions. Revolving and sliding doors should not be allowed unless if equipped with special automatic opening hardware or systems.

Any manual system to block the door open should be forbidden.

### **5.3.4 Locks**

Doors on escape routes have to be easily opened at any time. They may not be locked in closed position without an easy device to open it in case of emergency such as panic lock.

Securing devices, if provided, should not require the use of a key, a tool, or special knowledge or effort for operating from the escape side. Chain locks that require a key are prohibited.

Panic locks shall meet the European standards.

### **5.3.5 Self closing device**

Fire doors should be self-closing or equipped of an automatic closing device in case of fire.

## **5.4 Stairs**

### **5.4.1 General principles**

Building main staircase should be of permanent fixed construction, made with non-combustible materials and located in a fire resisting enclosure. Special fire protection may be required for wooden stairs or special design.

The stair, treads, flights and landings are maintained in a manner to prevent slipping. An open staircase should be avoided round a non-resisting lifts enclosure.



#### **5.4.2 Number and minimum width**

A single common stair should only be allowed in low apartment buildings. The minimum width is depending of occupant load, the number of stairs provided and the escape strategy of the building (based on simultaneous or phased evacuation).

#### **5.4.3 Treads and risers**

The treads should be solid, without perforations and constructed and maintained in a manner to prevent slipping.

Attention would be given to the tread depth, height of the riser and number of risers.

#### **5.4.4 Stairs landings and flights:**

At intermediate levels the width should be respected, without any decrease along of the stair. The flights and landings should be solid, without perforations, and made with non-combustible materials.

Doors to stairs are only allowed on landings.

#### **5.4.5 Handrails**

Stairs should have a handrail on minimum one side.

The main handrails should be provided between 80 cm and 100 cm height, from the centre of the tread. Additional lower or higher handrails are allowed.

Handrails should continue along each flight of stairs. At turns of the stairs, inside handrails should continue along the landings.

#### **5.4.6 Signalization**

The signalization should indicate the floor level of, and the direction to exit discharge. Safety sign would be in accordance with the Directive 92/58/EEC or EN ISO 7010. It is strongly advised not to mix the two sets of signals.

### **5.5 Smoke control**

Enclosed stairways should be provided with a smoke control system. (See 7.1)

### **5.6 External escape stairs**

External escape stairs must be installed when interior stairs are not sufficient or are not in conformity with the national regulations.

External escape stairs should ensure structural integrity to protect the user from fire, smoke and heat.

### **5.7 Fire escape ladders**

The guideline does not intend to encourage the use of ladders, especially concerning the evacuation of elderly, children and disabled persons.



In any case, the ladder construction and installation should ensure structural integrity and ease of use.

### **5.8 Horizontal escape way**

Horizontal escape ways provide protection against fire and smoke during a limited period of time. It can also be used by disabled people to wait for rescue in safety. A horizontal escape way is a fire resisting enclosure.

### **5.9 Areas of refuge**

Refuges are protected waiting areas where people with disabilities, for example, can temporarily wait. Refuge areas should be located and constructed in accordance with the national regulations.

### **5.10 Elevators**

Elevators and lifts shall not be used in case of fire unless protected, therefore they usually are signalled with the warning "Do not use in case of fire". However, following the result of the fire risk analysis, evacuation elevators may be included in the escape plan of some complex buildings. "Fire lifts" are dedicated to fire fighting and emergency operations.

## **6 General building equipment and utilities**

### **6.1 Gas**

Equipment using gas and related gas piping such as heating or cooking devices shall be in good state in accordance with the national regulations and standards. Gas appliances should be CE marked. The gas installation will be installed by professional fitters and regularly controlled by an accredited inspection organization.

### **6.2 Electrical installation**

Electrical wiring and equipment should be in good state in accordance with the national regulations and standards. The installation will be controlled by an accredited inspection organization.

### **6.3 Emergency generators and standby power systems**

Emergency generators and standby power systems, where required, should be installed, tested, and maintained **in good state**.

### **6.4 HVAC (heating, venting and air-conditioning)**

Any system of mechanical ventilation should ensure that, in case of fire, fire and smoke can not spread through the building.

Any exhaust points should be located to avoid the propagation of the fire and smoke. Outlet ducts and shafts through a fire resistant element should be enclosed in a fire resistant enclosure.



## **6.5 Rubbish chutes and laundry chutes**

Rubbish chutes and laundry chutes should be separately enclosed and protected by an automatic fire suppression system.

## **7 Specific fire safety equipment and utilities**

### **7.1 Smoke control systems**

Enclosed staircases would be equipped with a smoke control system such as a natural ventilation system, a smoke shaft on the top, a mechanical ventilation or pressurized stairs systems. Smoke control systems have to be checked once a year.

### **7.2 Fire detection systems**

The presence of an alarm system and fire detection greatly increases the chances of occupant survival. It is recommended to equip the new apartment buildings with fire alarm/detection systems and to equip existing apartment with at least domestic smoke alarm devices.

### **7.3 Domestic smoke and heat alarm devices**

Optical smoke detectors should be preferred in living areas, except in the kitchen where a heat alarm can be used. Domestic smoke alarm will comply with the EN 16004 standard.

According to the fire brigade and/or authorities, each domestic detector should be inter-connected in each apartment or the all building. In some case, the signal of detection could be first addressed to a responsible person (see 9.3) who will control the reality of a fire and alert the occupants.

Occupants may not remove or interfere with the operation of fire detectors; they usually are responsible for their maintenance.

### **7.4 Occupant notification and means of alarm**

In some case, in large or complex buildings, a fire alarm system should be provided to alert occupants of an emergency.

Apartment buildings will be mostly fitted with sound alarms or a voice alarm system, if needed completed by optical signals.

For inhabitants presenting a special risk, it may be appropriate to provide their dwelling unit with additional sound, optical or vibrating systems.

### **7.5 Emergency lighting**

An emergency lighting system should provide enough light to ensure an easily escape.



## 8 Extinguishing equipment

### 8.1 Facilities for fire and rescue service

The facilities for fire and rescue services depend of the size and complexity of the building.

#### 8.1.1 Access to fire vehicles

The access road to at least one face of the building has to support heavy fire vehicles. For high density occupation, high or complex buildings for example all external faces of the apartment building have to be accessible to the fire fighting vehicles.

Obstacles that can impede the access of the fire vehicles such as large trees, landscapedecoration, parking area should be avoided.

#### 8.1.2 Firefighting shafts

The fire fighting shaft contains: stairs, lifts, and lobby in protected enclosures.

#### 8.1.3 Firefighting lifts

Fire fighting lifts (following EN 81-72) are special elevators dedicated for fire fighting and emergency operations. They fulfil specific technical safety requirements, and are directly conducted by the fire-fighters.

#### 8.1.4 Private hydrants

In some case (for example if the building is located too far from the public fire hydrants), additional private fire hydrants and water supply may be required by the authorities.

#### 8.1.5 Wet and dry pipes

Fire hose can be directly connected to dry or wet pipes inside elevated buildings. Dry or wet pipes would be installed in firefighting shafts, and escape stairs. Their number, location, water supply and technical parameters are defined in national regulations and standards. Their state and water flow would be checked regularly.

In buildings fitted with dry fire pipes, an easy access for a pump appliance should be provided. The inlet connection must be easily visible and clearly marked.

### 8.2 Fire extinguishing equipment

First intervention extinguishing equipment can be helpful as they can be used by the witnesses, but they suppose a minimum knowledge to be used.

The user should only tackle a fire in its early stage, and never put his life in danger.

The fire risk analysis will set the needed, kind, size and quantity of fire extinguishing equipment. In some countries they are mandated in multi-storey buildings or with high occupancy.

#### 8.2.1 Fire extinguishers

Each apartment should be equipped with an appropriate extinguisher. Fire extinguishers (type and size) will be appropriate to the risk. Foam or powder extinguishers are mostly recommended in



welling's and apartment buildings.

Portable fire extinguisher should hang in the hall and landings of a staircase, be visible, easily accessible and maintained in good state.

Fire extinguishers shall be in accordance with the European standard EN 3.

### **8.2.2 Fire hose reels**

Fire hose reels would be located in the hall and on the landing of a staircase.

Where provided, hose reels should be in accordance with the European standard EN 671, and supply with the national regulations and recommendations on water supply.

### **8.2.3 Fire blankets**

A fire blanket is recommended in dwelling's kitchens.

Fire blankets have to be in accordance with the European standard EN 1869.

### **8.2.4 Residential sprinkler systems**

Apartment buildings should be fitted with approved and supervised residential sprinkler systems. Units for disabled and elderly people should be provided with residential sprinklers

## **9 Emergency plans**

An emergency plan (See Guideline 25 F) tells occupants what to know and to do in case of emergency.

To be efficient, emergency plans have to be practiced by everybody and regularly updated. An emergency plan shall include:

- procedures for reporting of emergencies;
- occupant and staff response to emergencies;
- design and conduct of fire drills;
- type and coverage of the apartment building fire protection systems;
- items required by the local authorities.

The emergency plan should be reviewed and updated as required by them.

### **9.1 Escape organization**

In small apartment buildings, the evacuation can be simultaneous (everybody escape in the same time).

In high rise or complex buildings where each storey is a fire compartment, a phased evacuation would be mostly recommended. The surrounding apartments and floors (above and below the fire) will be first evacuated; others have to wait safely the recommendation of the fire brigade in their apartment or refuge.

However, in all case, the simultaneous and full evacuation should be taken into account into the calculation of the escape routes.





### **9.2 Procedure in case of fire**

A procedure "In case of fire" should describe all steps to be undertaken by the occupants and witnesses in case of emergency.

Residents must be notified and familiar with this emergency procedure. It should be widely diffused and displayed in the places of passage such as in each lobbies and stairs landings. The procedure will be practical, easily legible and visible.

### **9.3 Emergency response people**

The need and role of emergency response people would be evaluated in accordance with of the design and occupation of the building.

### **9.4 Fire drills**

Fire drills are designed to train the occupants with the fire safety features, available escape, extinguishing facilities, and the appropriated procedures. Fire brigades or prevention institutes can assist people to organize fire drills.

Drills should be organized in cooperation with the local authorities, and frequent enough to create a routine (minimum once a year). All the residents should be included in a drill that should simulate a real emergency.

A responsible person (for example: the owner, the managing agent or the caretaker) should report the results of the drill and take actions to solve the possible problems and obstacles.

## **10 Housekeeping, maintenance, inspection and testing**

To eliminate fire hazards a good housekeeping inside and outside the building should be strictly maintained by the occupants, owners or owners corporation.

### **10.1 Maintenance**

All safety equipment's must remain in good state, operational and efficient through a regular maintenance under the responsibility of the owners or owner's corporation. These equipment's cannot be removed or reduced without being replaced by a protection of the same safety level. Maintenance would be done according to the different technical prevailing standards or manufacturers specifications.

### **10.2 Inspection and testing**

Any device, equipment, system any other feature requiring periodic testing or inspection should be tested or controlled according to the different technical prevailing regulations, standards or manufacturers.

The inspection service would be qualified and competent in the appropriate field of fire protection (in accordance with EN ISO/IEC 1720 - as a type A inspection body in the appropriate field of fire protection/prevention).



### **10.3 Responsible person**

Maintenance, inspection, and testing should be performed under the supervision of a responsible person (for example: the owner, the managing agent or the caretaker) who shall ensure that maintenance, testing, and inspection should be done at in accordance with the national regulations, standards or manufacturers specifications.



## 11 European guidelines

### *Fire*

- Guideline No1:2015 F -Internal fire protection control
- Guideline No2:2018 F -Panic & emergency exit devices
- Guideline No3:2011 F -Certification of thermographers
- Guideline No4:2010 F -Introduction to qualitative fire risk assessment
- Guideline No5:2016 F -Guidance signs, emergency lighting and general lighting
- Guideline No6:2021 F -Fire safety in care homes
- Guideline No7:2011 F -Safety distance between waste containers and buildings
- Guideline No8:2004 F -Preventing arson – information to young people
- Guideline No9:2012 F -Fire safety in restaurants
- Guideline No10:2008 F -Smoke alarms in the home
- Guideline No11:2015 F -Recommended numbers of fire protection trained staff
- Guideline No12:2012 F -Fire safety basics for hot work operatives
- Guideline No13:2006 F -Fire protection documentation
- Guideline No14:2019 F -Fire protection in information technology facilities
- Guideline No15:2012 F -Fire safety in guest harbours and marinas
- Guideline No16:2016 F -Fire protection in offices
- Guideline No17:2014 F -Fire safety in farm buildings
- Guideline No18:2013 F -Fire protection on chemical manufacturing sites
- Guideline No19:2009 F -Fire safety engineering concerning evacuation from buildings
- Guideline No20:2012 F -Fire safety in camping sites
- Guideline No21:2012 F -Fire prevention on construction sites
- Guideline No22:2012 F -Wind turbines – Fire protection guideline
- Guideline No23:2010 F -Securing the operational readiness of fire control system
- Guideline No24:2016 F -Fire safe homes
- Guideline No25:2010 F -Emergency plan
- Guideline No26:2010 F -Fire protection of temporary buildings on construction sites
- Guideline No27:2011 F -Fire safety in apartment buildings
- Guideline No28:2012 F -Fire safety in laboratories
- Guideline No29:2019 F -Protection of paintings: transports, exhibition and storage
- Guideline No30:2013 F -Managing fire safety in historic buildings
- Guideline No31:2013 F -Protection against self-ignition and explosions in handling and storage of silage and fodder in farms
- Guideline No32:2014 F -Treatment and storage of waste and combustible secondary raw materials
- Guideline No33:2015 F -Evacuation of people with disabilities
- Guideline No34:2015 F -Fire safety measures with emergency power supply
- Guideline No35:2015 F -Fire safety in warehouses
- Guideline No36:2017 F -Fire prevention in large tents
- Guideline No37:2018 F -Photovoltaic systems: recommendations on loss prevention
- Guideline No38:2021 F -Fire safety recommendations for short-term rental accommodations



*Natural hazards*

- Guideline No1:2012 N -Protection against flood
- Guideline No2:2013 N -Business resilience – An introduction to protecting your business
- Guideline No3:2013 N -Protection of buildings against wind damage
- Guideline No4:2013 N -Lighting protection
- Guideline No5:2020 N -Managing heavy snow loads on roofs
- Guideline No6:2016 N -Forest fires
- Guideline No7:2018 N -Demountable / Mobile flood protection systems

*Security*

- Guideline No1:2010 S -Arson document
- Guideline No2:2010 S -Protection of empty buildings
- Guideline No3:2010 S -Security systems for empty buildings
- Guideline No4:2010 S -Guidance on keyholder selections and duties
- Guideline No5:2012 S -Security guidelines for museums and showrooms
- Guideline No6:2014 S -Security guidelines emergency exit doors in non residential premises
- Guideline No7:2016 S -Developing evacuation and salvage plans for works of art and  
-heritage buildings
- Guideline No8:2016 S -Security in schools
- Guideline No9:2016 S -Recommendation for the control of metal theft
- Guideline No10:2016 S -Protection of business intelligence
- Guideline No11:2018 S -Cyber security for small and medium-sized enterprises