

# FIRE PROTECTION

Home Safety Handbook

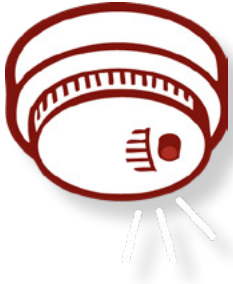


**[ELDVARNA]**  
**bandalagið**

Fire Protection Association

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# 1. Smoke detectors save lives

Loss of life and injuries often occur in fires while people are asleep. It is a matter of priority in fire safety in the home, therefore, to ensure that residents become aware of any fire and smoke as soon as possible. Working smoke detectors are a simple and cheap way to do so. According to building regulations, there should be smoke detectors and fire extinguishers in every home. Detectors that sense heat, gas and carbon monoxide further increase safety where appropriate.

## Types of smoke detectors

There are two types of smoke detectors suitable for homes:

**Ionisation smoke detectors** are quick to react to smoke and are good general smoke detectors in most areas in the home. They are, however, sensitive to humidity, heat and cooking fumes and are not, therefore, appropriate in laundry rooms and kitchens.

**Photoelectric smoke detectors** are also quick to react to smoke but are not as sensitive to other changes. They are, therefore, suitable for use in kitchens and laundry rooms. Photoelectric detectors are good general smoke detectors and can generally be recommended for use.

It is possible to connect a number of smoke detectors together. This is preferable in larger buildings, as all the detectors will sound the alarm as soon as one is set off. Linked detectors are usually either wireless or connected by cables. It is also possible to have a monitored fire detection system.



## Location

Smoke detectors should be placed as close to the centre of the ceiling and never nearer than 30 cm to a wall or light.

The best option is to have a detector in all areas. They should be installed in front of or in each sleeping area and on each floor of the house. Long corridors should have a detector at each end. Televisions and computers are common in the bedrooms of children and youngsters, and smoke detectors should be installed in such rooms.

The same rules on the use and location of smoke detectors apply for summer cottages. Particular care must be taken to ensure that persons sleeping in lofts receive adequate warning to be able to exit the building in the event of a fire.

Garages should have a smoke detector. If the garage is attached to the residence, it is best to link the garage detector to the smoke detector in the apartment. There is a risk that exhaust fumes can set off the smoke detector if cars are stored in the garage. In such cases, it is better to use a heat sensor. They are installed in the ceiling in the same manner as smoke detectors.

## Maintenance and renewal

Smoke detectors must be tested at least four times a year. For instance on 1 December, at Easter, when returning from summer holidays and when schools begin in the autumn. Press the testing button until you hear the warning alarm. It is a good idea to allow everyone in the home to hear the sound of the detector.

Always test the smoke detector when arriving at a summer cottage, particularly if it has been standing empty for a while.

If a short sound signal can be heard from the detector about once a minute, the battery needs to be changed. The battery must be renewed once a year, and it is best to always do so on the same date, e.g. 1 December. The smoke detector must be tested when the battery has been changed.

Smoke detectors have a lifetime of about ten years. It is a good idea to write down the date of its installation on the back. The detector lasts for longer if it is vacuumed on the inside each time the battery is changed.

There are smoke detectors available that have batteries that last up to ten years, in which case the smoke detector is replaced at the end of such time.

Information must accompany all sold smoke detectors. You should read all such information. Advice may also be sought from salespersons.



## 2. Escape routes and plans

The family must prepare an escape plan detailing how they will escape from the house in the event of a fire. Such plan can make all the difference as to whether everyone can get out. If possible, close the area where the fire is. This will delay the spread of fire and smoke.

The whole family should take part in preparing the plan and then try it out. Parents and guardians are, of course, responsible for the evacuation of the apartment and must avoid discussing fire prevention with children in such a manner that they become afraid. Young children, moreover, must be made aware of the importance of not hiding inside closets or under beds. There are many examples of firemen finding it difficult to save children from burning buildings due to this.

**When preparing an escape plan, the following must be kept in mind:**

- There must be two clear exits from the apartment and the building. Install emergency stairs where needed.
- Make sure that everyone knows that they are to leave as soon as fire is detected. Call the fire brigade by dialling **112** as soon as possible.
- Decide in advance upon a location where everyone is to meet as soon as they have exited. This will allow you to check whether everyone has gotten out.

### Escape routes and evacuation of multi-apartment buildings

If the fire department issues instructions to evacuate, such instructions must be followed. It is important to close the door to the stair-

well when exiting a burning apartment. Otherwise, the stairwell will fill up with smoke and residents will not be able to evacuate.

Escape routes in multi-apartment buildings are its stairwells and balconies. Access to balcony doors must be clear and doors must be easy to open. Escape routes must be openable from the inside without using a key. Do not use stairwells as storage areas.

Lifts may never be used during a fire, as they may stop on the floor where the fire is and become filled with smoke. Each apartment is a separate fire compartment. If there is smoke in the stairwell, it is safer to remain in the apartment and let others know where you are by a window or on a balcony. This can be done by e.g. hanging a light-coloured cloth out the window or on the balcony.



### 3. Firefighting equipment

It is sometimes possible to respond and put a fire out before it becomes unmanageable. As a result, fire extinguishers and fire blankets are necessary equipment in every home.

#### Fire extinguishers

Fire extinguishers for home use are suitable for different types of fires that are classed as being A, B and C:

- Class A: Fire in solids such as furniture and interior fittings.
- Class B: Fire in flammable liquids.
- Class C: Gas fires.

**Powder extinguishers** (A, B, C) are powerful and extremely effective against fire in solids, oil and gas and are, therefore, extremely suitable for homes and in cars. They are also recommended for summer cottages that are unheated, as the powder can withstand considerable frost. 6 kg powder extinguishers are increasingly being recommended for homes in the Nordic countries. The greatest disadvantage of powder extinguishers, however, is that the powder is dispersed over a large area.

**Foam extinguishers** (léttvatn) (A, B) are also good extinguishers. These are not suitable for gas however.

## Use of fire extinguishers

Instructions for use should be on the extinguisher. You should read all such information. Minor fires can be put out using hand-held extinguishers. The material should be directed at the base of the fire. You should stand at least one metre away when pointing an extinguisher at a fire in an electrical appliance. Emphasis, however, should always be placed on:

- 1 Making sure that you do not put yourself or others at risk.
- 2 Always calling 112 and requesting the assistance of the fire brigade.
- 3 Making sure that children exit the premises and do not try to extinguish the fire.

If it is not possible to put out the fire, it is extremely important to exit the area and to close it if possible.

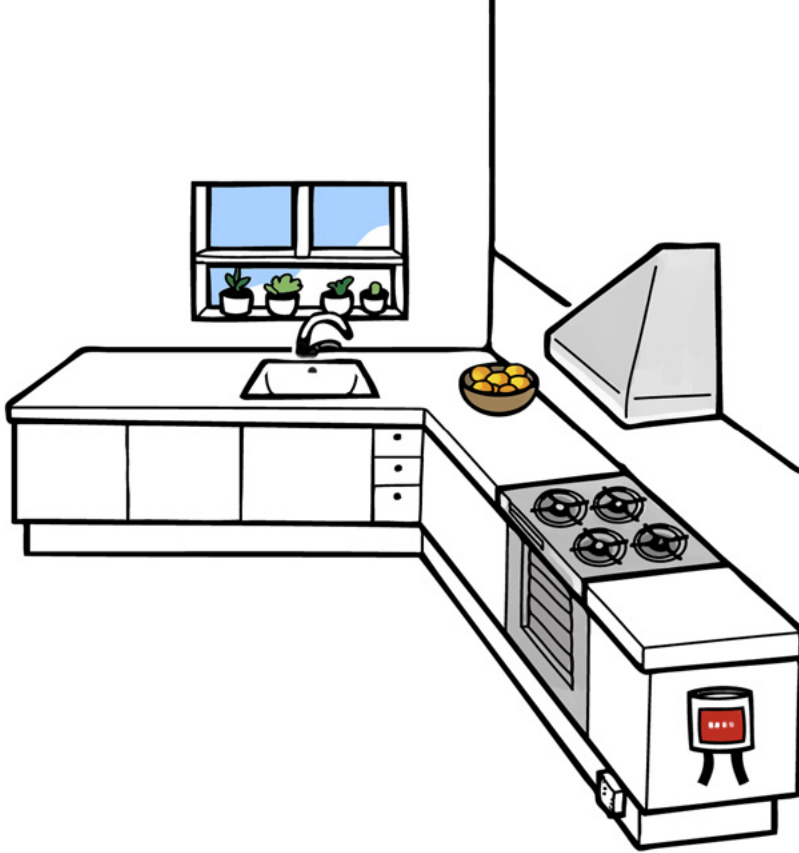
## Location of extinguishers

Extinguishers are to be fixed to the wall with the appropriate equipment so that they are easy to remove for use. The handle should be approximately 80–90 from the floor. The extinguishers should be located by an escape route and as close to the exit as possible. Extinguishers are safety devices. They must, therefore, be visible and accessible when moving about the apartment so that everyone knows where they are if it proves necessary to use them.

## Renewal and maintenance

Extinguishers have a limited lifetime and must be overhauled regularly. Instructions for renewal and maintenance should be on the extinguisher. Information on renewal and maintenance can also be obtained from the seller.



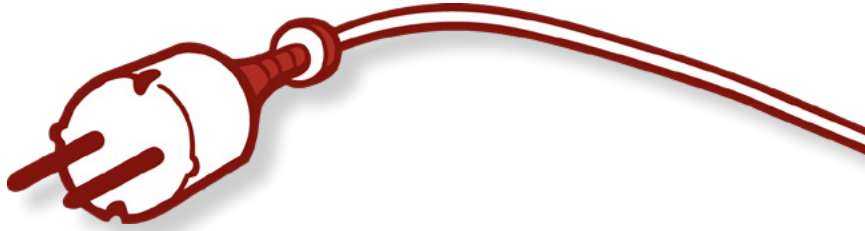


## Fire blankets

There is considerable risk of fire when using oil and fat in the kitchen. Make sure you have a fire blanket in the kitchen. In the event of a fire in oil or in a pot, it is important to respond correctly.

- Do not pour water onto the fire. This will cause an explosion.
- Do not try to carry to the outside a pot/pan that is on fire.
- Lay the fire blanket or a pot lid on a pot/pan that is on fire and seal it until the fire has gone out. Protect your hands from the heat as much as you can.
- Turn the heat off if you can. If the cook-stove has a flat surface, the pot/pan can be slid off to one side.

Fire blankets should be located in a visible and accessible location in the kitchen, but they should not be so close to the stove that it could be difficult to access them if there is a fire in a pot or a pan.



## 4. Electricity and electric devices

Approximately half of all residential housing fires can be traced to electricity and electric devices. For the most part, two things must be first and foremost kept in mind as regards electricity and its use: on the one hand the electrical system itself and on the other, electrical devices and their use.

### Electricity system

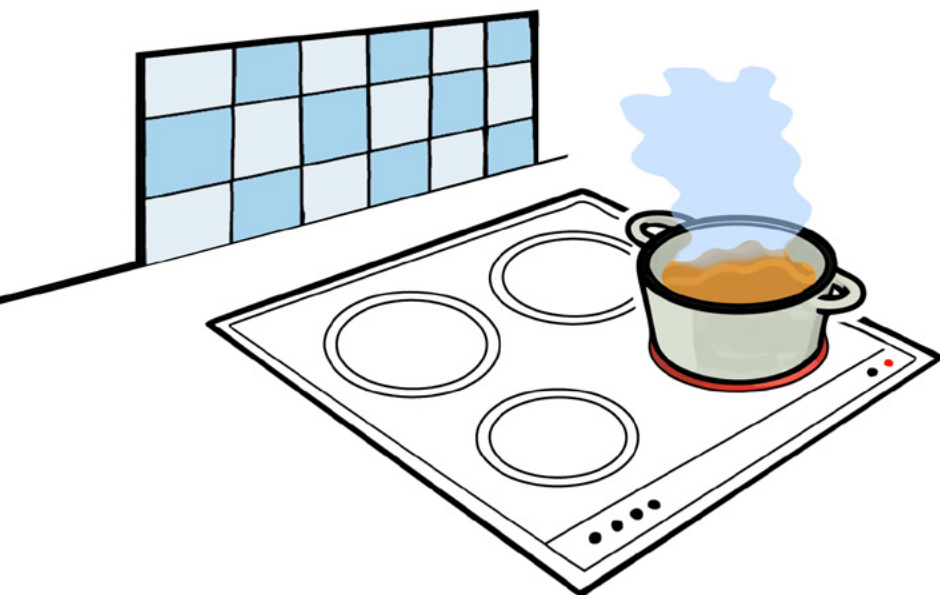
If there is any suspicion that the electricity system is not in order, a certified electrician must be called in to examine the issue and perhaps even carry out a detailed examination of the system. Botched repairs can prove costly and cause considerable damage.

**The fuse box** is the heart of the electricity system in each house. The fuses in the box are intended to make sure that excessive loads or short circuits do not cause damage. Older boxes contain fuse plugs that need to be replaced when they give out. Newer boxes contain circuit breakers that disconnect in the event of malfunctions or excessive loads. Old and poorly maintained fuse boxes can be dangerous, not least if they are made of wood or located in cabinets where there is a surfeit of combustible materials. In such cases, it is important to have a certified electrician examine the condition of the box and make improvements. Fuse boxes are to contain clear labels that show what fuses belong to each building part and how strong they are.

**The residual current switch** is the primary safety device of the electricity system. In the event of electrical discharge in the electrical system, e.g. due to malfunctions in an earthed device, the switch should automatically activate and cut off all power. The residual current switch will not work as it should unless the electrical system is earthed.

Sockets are to be properly affixed and plugs are to fit properly in sockets, as a lack of proper connection can cause overheating. Replace broken socket covers immediately to prevent people from coming into contact with electricity.

**Cables and electrical plugs.** Avoid connecting power-hungry electrical appliances into the same multiple-socket outlet and linking many multiple-socket outlets together. It is also highly dangerous to transmit electricity over large distances using a slender extension cord. It is important that this electrical equipment is not damaged. Broken plugs and cords with damaged insulation are highly dangerous.



## Electrical appliances

Electrical appliances can cause fires, both due to incorrect use and malfunction, as well as to equipment degeneration.

**Cookers.** Do not leave cookers unattended while preparing meals, and remember to turn off hobs when no longer in use. Flammable materials must never be placed on top of the cooker. Regularly replace the filters in the hood. Hoods accumulate fats that can cause considerable fires if caught alight.

There are cookers available in the market that sound alarms and turn off the cooker if unnaturally high temperatures form in the vicinity of the cooker. Persons with diminished memory due to senile dementia or brain damage are refunded 50% of the purchase price of such equipment from Sjúkratryggingar Íslands (Iceland Health Insurance).

**Televisions.** Televisions should be disconnected from the electricity supply when leaving the home for extended periods. Turning the television off by using the remote is not sufficient. The device should be disconnected from the power supply or the multiple socket turned off. Ensure that the reverse side of the television is well ventilated.

**Washing machines, driers and dishwashers.** In addition to the risk of fire, washing machines and dishwashers pose the risk of water damage. As a result, these appliances should never be in operation when you are away or asleep. All lint (fibre) that accumulates in driers should be cleaned out.

**Lights.** If a bulb in one light socket needs to be replaced more often than in another, this might indicate a malfunction. Have a certified electrician examine the problem to find the cause. The incorrect size or type of bulb can cause a fire. Do not have combustible materials located too near lights.

**Computers and telephones.** It is a good idea to turn off computers when not in use and unmonitored, such as when asleep. Do not leave laptops or tablets on soft surfaces, such as sofas or beds. This poses a risk of overheating.

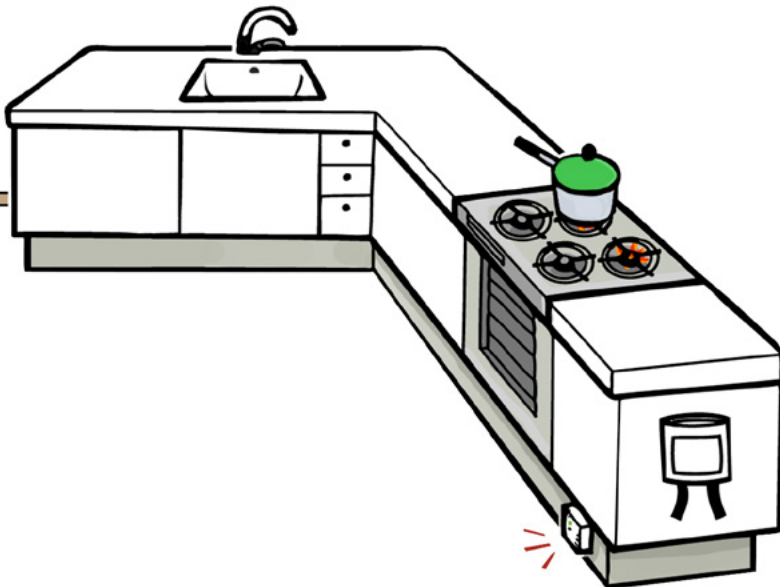
**Other devices.** Experience has shown that almost all electrical devices used in the home can cause a fire. Turn them off when not in use and have them repaired or dispose of them if they show any signs of malfunction or degeneration.

## 5. Gas



### Equipment

Gas sensors must be installed where gas is used indoors. Such sensors are to be installed on skirting in kitchens or comparable locations in other areas in the apartment. Gas is heavier than air and, as a result, sinks toward the floor. Select approved equipment and engage a professional to install it. Hoses need to be replaced every five years. Other equipment should be examined at the same time. A range of equipment to increase the safety of gas use is available, such as devices that block the flow of gas if a hose malfunctions. Do not play around with gas!



## Gas storage

Gas containers should be stored in well-ventilated locations. If gas is stored in closed cabinets, ventilation must be ensured both above and at floor level. The best place to store gas is outside in locked and labelled cabinets.

A maximum of one 11 kg gas cylinder may be inside a residential apartment, garage or summer cottage. Storage units with the appropriate ventilation in multi-apartment buildings may contain a maximum of one 5 kg gas cylinder.

In areas where there are gas cylinders or equipment connected thereto indoors, it is extremely important to install a gas sensor near the floor close to the equipment or cylinder. Gas cylinders must stand upright on a stable surface.

Motor homes and RVs may have two 11 kg gas cylinders, one in use and one spare. Areas where gas cylinders are in use should be unlocked to ensure that external parties are able to turn the gas off in emergencies.



## Labelling of premises that store gas

Specialist shops provide labels to label premises in which gas cylinders are stored. In the event of a fire, it is important that firemen can see whether there are gas cylinders in the premises, as there is considerable risk of explosions. Place the sticker next to the bottom hinge of the door or low down on the frame of the exterior door of the building in which the gas cylinder is stored. The sticker may also be placed prominently where the gas cylinder is kept, such as on storages, garden sheds, cabinets and chambers.

## Outdoor barbeques

Be watchful when grilling and respond promptly before excessive fires form in the barbeque. Take care to keep the barbeque away from wooden walls or windows with large glass panes. Turn the gas off when finished.



## 6. Fire and inflammable materials

### Candles and candle decorations

- Attach the candles securely to a non-flammable and stable surface.
- Do not have them too close to a heat source, such as a radiator or television. Lit candles should not stand on top of an electrical device.
- Do not place them close to items that can easily catch fire.
- The safest option is to use candle holders, electric candles, self-extinguishing candles or candle extinguishers for candle decorations. If that is not possible, the safest options are to ensure that decorations are not in contact with the candle, the decoration is treated with fire retardant and the candle doused in good time.
- Never leave a lit candle unattended, and never allow children access to fire-starters or lit candles.

### Fireplaces

The permission of the building authorities must be sought before installing a fireplace.

- Select approved equipment, engage a professional for the installation and finish and follow the instructions for use.
- The inflow of fresh air must be ensured to control the fire and to prevent the lack of oxygen from posing any risk. Install carbon dioxide sensor in ceiling.
- Avoid contact with the hot elements of the apparatus. Wooden stoves and pipes should be insulated as far as possible.



- Use safety and spark lattices.
- Clean or have the apparatus cleaned regularly. A good rule of thumb is that if the apparatus is used daily, then it needs to be cleaned once a year.
- Douse any embers before going to sleep or leaving the premises.
- Do not burn any items that emit noxious smoke, such as plastics or rubber items.

## Ethanol fireplaces

Ethanol fireplaces burn ethanol in open bowls. The use of these poses considerable risk of fire and accidents, and Eldvarnabandalagið, therefore, cannot recommend their use. If they are, however, used, the instructions of the manufacturer as regards their installation and use must be followed.

- The fireplace must be hung on or stand on a stable and non-flammable surface.
- Distance from flammable materials may not be less than 1 m.
- The room may not be smaller than 3 m<sup>2</sup>. The bigger the fireplace and the greater the volume of fuel, however, the larger the room needs to be. The fireplace may not be used in basements or bedrooms.
- Sufficient ventilation is of the greatest importance.

### **A few suggestions regarding the use of ethanol fireplaces:**

- The fireplace may only be moved when empty of fuel.



- The fireplace should not be lit except in the presence of adults.
- Fuel other than that recommended by the manufacturer may not be used. All fuel containers must be child-proof and stored in a secure location.
- The fuel may only be extinguished using the appropriate turn-off mechanisms, where installed. Otherwise, the fuel must be allowed burn itself out. Water may not be used to extinguish fires supplied by ethanol.
- Under no circumstances may ethanol be added while there is fire in the fireplace.

## Smoking

There is extensive risk of fire from smoking indoors, not least when alcohol, drugs or medications are involved as well. In addition, there is considerable risk if persons with limited mobility smoke indoors when alone. Smoking in circumstances where people can fall asleep while smoking, such as in bed or lying on a sofa, is extremely dangerous. There are numerous examples of serious fires and deaths under such circumstances. Always make sure that there are no embers in ashtrays before they are emptied. It is safer to pour water into them before emptying. The safest option, however, is to smoke outdoors.

## Waste

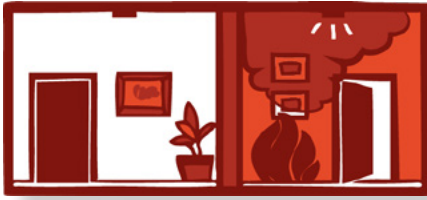
Locate outdoor waste containers so that fire from them cannot enter buildings through windows or doors.

## Flammable materials

Various flammable materials are used in homes, such as gas, petrol, turpentine, etc. Gas is discussed in Section 5. Store petrol and other flammable materials in a garage or outside storage unit. Do not store large volumes of such materials within the home.

## Risk of auto-ignition

Wood, food and massage oils in rags, sponges or other application equipment can catch on fire. There is no risk of ignition in packaging or surfaces that have been treated, only in the application equipment used. Wet with water and place in receptacle with lid or in a plastic bag and close.



## 7. Fire compartmentation

The purpose of compartmentation is to keep fire and smoke where the fire originated and prevent escape routes from filling up with smoke. Proper compartmentation can make all the difference in the success of firefighting and rescue work.

### Delay the spread of fire and smoke

Compartmentation is usually built into walls and floor divisions and is intended to ensure that such walls and floor divisions can withstand fire for 60 to 90 minutes. Doors in these walls should be able to withstand fire for at least 30 minutes.

**Detached houses, terraced houses and semi-detached houses** have simple compartmentation. A wall that can withstand fire for 90 minutes must be between apartments. If there is a garage attached to the building, it must be a separate compartment that can withstand fire for 60 minutes. If there is an access from the apartment to the garage, the door must withstand fire for 30 minutes, be smoke-tight and have a pneumatic door closer.

Each apartment in **multi-apartment dwellings** must be compartmented to withstand fire for 90 minutes. Doors must withstand fire for 30 minutes, be smoke-tight and have a pneumatic door closer. In addition, corridors and stairwells must be compartmented so that they withstand fire for 60 minutes with adjacent doors such as are in apartments.

### Do not compromise fire compartments

It is important that there are pneumatic door closers on all fire compartmenting doors and that the doors are not locked in an open position. There is a risk that doors to storage corridors and laundry rooms are left open if they do not have pneumatic door closers. The smoke-tightness of doors and door frames tends to deteriorate over time. Care must also be taken to ensure that there are no leaks past utility pipes, etc. that pass through fire compartmenting walls and floors. This must be done using specialised sealing materials.



## **8. Fire safety in shared premises of multi-apartment buildings**

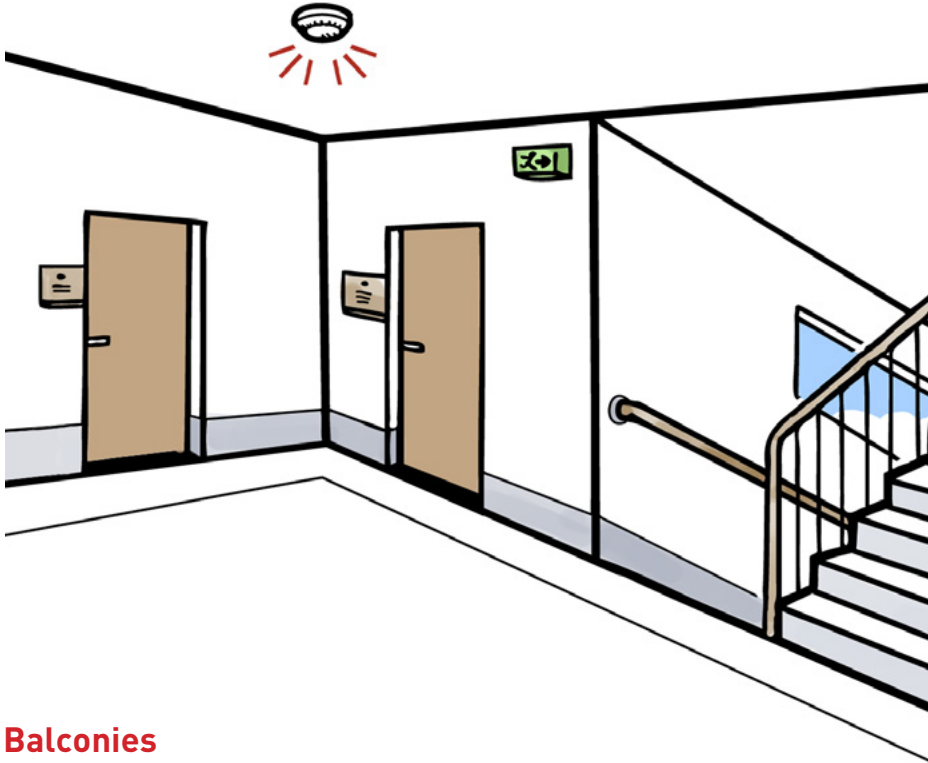
Fire safety in shared premises of multi-apartment buildings is the responsibility of residents' associations. There are instances where the fire brigade will offer to carry out an examination of fire prevention conditions in shared premises free of charge. Residents' associations are advised to see if such services are on offer from their local fire brigade.

### **Stairwells**

Ceiling and wall cladding are to be made of non-flammable materials such as plasterboard. Doors to apartments are to withstand fire for 30 minutes, while doors between shared areas (storage and laundry rooms) and stairwells must withstand fire for 60 minutes. All these doors must have pneumatic door closers and smoke seals. Floor materials are to be fire resistant. Windows that can be opened for clearing smoke must be on every floor. Windowless stairwells must have a window or hatch at the top floor that can be opened from the bottom floor. Escape routes from stairwells must be openable from the inside without using a key.

### **Waste disposal areas**

Ceiling and wall cladding are to be made of non-flammable materials. Doors must be locked, and there should not be any direct access to stairwells or apartments. Waste chutes shall extend beyond the roof and be fire protected for 60 minutes over their entire length. Waste chute covers are to be carefully closed with fire-proof doors.



## Balconies

Balconies are escape routes. Access to balcony doors must be clear, and the doors must be easy to open. Balconies that have been closed off may not prevent escape from the apartment.

## Safety equipment

There must be smoke detectors on all floors in the stairwell and in storage room corridors. Linking the detectors in the stairwell and storage room corridors is recommended. There should be gas sensors where gas is stored. There should be exit signs and emergency lighting in corridors and stairwells.

## Fire brigade rescue area

Numerous multi-apartment buildings have fire brigade rescue areas as required by the Fire Chief. These are to be properly marked and always accessible for the rescue equipment of fire brigades.



## 9. Fire insurance

### Mandatory fire insurance

By law, property owners are under obligation to insure all real property against fire. The insurance amount is based on the fire insurance valuation and covers all items covered by the fire insurance valuation, i.e. the property itself and all wall-attached fittings such as interior fittings, cabinets and washroom facilities. The fire compensation valuation is intended to cover the rebuilding cost of the property in the event of total loss. As a result, it is important that the valuation is examined and a re-evaluation requested from Þjóðskrá Íslands (Registers Iceland) if e.g. any improvements are made to the property. The insurance companies offer their clients additional fire insurance if they are of the opinion that the fire valuation is insufficient.

### Household contents insurance

Household contents insurance is an optional insurance that compensates for loss or damage of general and specific household contents in accordance with the terms and conditions of the insurance companies and is applicable to the location specified in the insurance policy. The insurance amount is stated in the insurance policy. It is important that the insurance amount covers the entire household contents, as it is quite common for such contents to be undervalued. This is clearly shown when people suffer loss or damage and do not receive sufficient compensation for their loss.

Loss or damage to vehicles subject to mandatory registration which are located inside a garage or the storage unit of the property are compensated by a comprehensive insurance policy, if in effect. Camping trailers, trailer tents and the like are not considered household contents and must be separately insured.