


Free University of Bozen
Libera Università di Bolzano
Free University of Bozen - Bolzano

Training for staff responsible for managing evacuations

Art. 37 and Art. 43 of Italian Legislative Decree 81/08



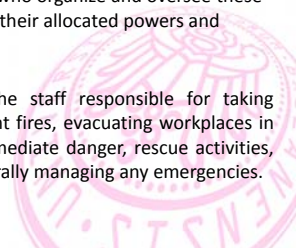
SicurEtica

STAFF RESPONSIBLE FOR MANAGING EMERGENCIES

Italian Legislative Decree 81/2008
Italian Ministerial Decree of 10/03/1998

Art. 18 Section 1 Part b

1. The employer, who conducts the activities described in article 3, and the managers, who organize and oversee these activities in accordance with their allocated powers and responsibilities, must:
 - b) **designate in advance** the staff responsible for taking measures to prevent and fight fires, evacuating workplaces in the event of serious and immediate danger, rescue activities, performing first aid and generally managing any emergencies.



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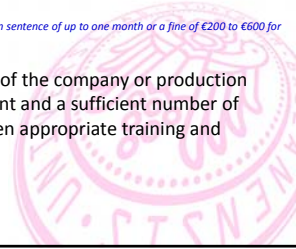
STAFF RESPONSIBLE FOR MANAGING EMERGENCIES

Italian Legislative Decree 81/2008
Italian Ministerial Decree of 10/03/1998

Art. 18 Section 1 and Art. 43 Section 3

- ✓ 3. Members of staff may only refuse to accept their role if they have a justifiable reason
(refusing is an offence that is punishable by a prison sentence of up to one month or a fine of €200 to €600 for the member of staff).

The size and the specific risks of the company or production unit must be taken into account and a sufficient number of members of staff must be given appropriate training and equipment.




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STAFF RESPONSIBLE FOR MANAGING EMERGENCIES
Italian Legislative Decree 81/2008
Italian Ministerial Decree of 10/03/1998

Art. 46 Sections 1 and 2

- ✓ 1. **Fire prevention** is a function of the highest public interest that falls under the sole jurisdiction of the State. By applying standardized criteria throughout the country, it seeks to preserve human lives, ensure that people are not harmed and protect property and the environment.
- ✓ 2. **In workplaces** in which the present legislative decree applies, appropriate measures must be taken to prevent fires and protect staff from harm.

(failure to do so can result in a prison sentence of two to four months or a fine of €1,200 to €5,200 for the employer/manager)





Ministerial Decree of 10/03/98 GENERAL MATTERS


Art. 3

Preventive, protective and precautionary operating measures

- ✓ 1. Having seen the outcome of a fire risk assessment, the employer must take measures to:
 - ✓ a) reduce the probability of a fire starting, in accordance with the criteria in enclosure II.




WHAT IS FIRE SAFETY?



In theory, it is “the effort that must be made at work to eliminate hazards”.

Technically, it is “the activity of seeking to minimize all work-related risks and prevent harm to the health of workers”.




FIREFIGHTERS

✓ In the Province of Bolzano, there are **two branches** of firefighters:

FULL-TIME (only in Bolzano)


VOLUNTARY (throughout the province)

- They can all be contacted by **telephoning 115**, which will allow you to talk to a Bolzano-based operator.



FIRE SAFETY

| | |
|--|---|
| <p>PREVENTION</p> <p>✓ Make it less likely that a fire will occur</p> | <p>PROTECTION</p> <p>✓ Ensure that people are not harmed and limit any damage</p> <p>✓ <u>Protection can be</u></p> <p>Active Passive</p> |
|--|---|




FIRE SAFETY

Prevention is:

PRIMARILY for the protection of human lives

SECONDARILY for the protection of property




PROTECTIVE MEASURES

LIMIT the consequences with
PROTECTIVE MEASURES

➤ **PASSIVE**

➤ **ACTIVE**




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FIRE PREVENTION

PASSIVE PROTECTION measures

- ✓ Fire barriers and safe distances
- ✓ Fire resistant structures (REI structures)
- ✓ Compartmentalization
- ✓ Smoke extraction and ventilation systems
- ✓ Escape route systems




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FIRE PREVENTION

ACTIVE PROTECTION measures


- ✓ Firefighting equipment – extinguishers and hoses
- ✓ Automatic fire suppression systems
- ✓ Automatic detection systems
- ✓ Safety markings
- ✓ Escape routes
- ✓ Organization and training
- ✓ In-house action teams
- ✓ Emergency plans



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COMBUSTION

- ✓ Combustion is a chemical reaction between a fuel and oxygen that is accompanied by the development of heat, flames, smoke and light.
- ✓ Combustion is an **"oxidation reaction"** of an organic material which can occur with or without the development of flames on the surface.

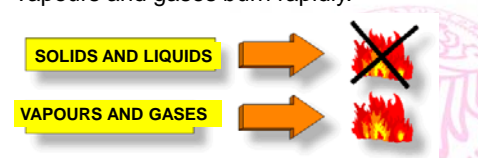


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COMBUSTION

The state of matter plays an important part in the combustion of a material because:

- solids and liquids **never** burn;
- vapours and gases burn rapidly.




In order to burn, a solid or liquid must first be vaporized by heat.

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FIRE

Fire is a **"chain reaction of particle combustion"** of a material



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IGNITION SOURCES

When searching for possible causes of fires, it is essential to pick out potential ignition sources, which can involve:

- ✓ Direct ignition
- ✓ Indirect ignition
- ✓ Friction
- ✓ Spontaneous combustion or heating



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THE PRODUCTS OF COMBUSTION

The products of combustion can be divided into four categories:

- ✓ Flames
- ✓ Smoke
- ✓ Heat
- ✓ Combustion gases



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THE PRODUCTS OF COMBUSTION

In addition to smoke and heat, gases are another major hazard in fires.

Of all the products of combustion, **smoke** is definitely the most dangerous.




- ✓ **Smoke** is basically produced if there is a lack of oxygen during combustion or there are large amounts of water in the fuel that is burning.

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THE PRODUCTS OF COMBUSTION

IN ADDITION

- ✓ **Smoke** is the main cause of reduced visibility and panic. It leads to confusion among people involved in fires.
- ✓ **Heat** is the main cause of fires spreading. It increases the temperature of all exposed materials and items, leading to damage and eventually complete destruction.




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THE PRODUCTS OF COMBUSTION

The main combustion gases are:

- Carbon monoxide** – An odourless, colourless and highly poisonous gas – 4,000 mg/m³ can kill in less than one hour.
- Carbon dioxide** – An odourless, colourless gas that is dangerous in concentrations of over 5,000 mg/m³.
- Hydrogen sulphide**
- Sulphur dioxide** – At a concentration of 30 mg/m³ it can cause severe irritation to the eyes, nose and throat.
- Hydrogen cyanide** – It is produced when polyurethane burns and it can kill in a few seconds.




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THE PRODUCTS OF COMBUSTION

The main combustion gases are:

- Acrolein** – It is produced when Formica burns and it is classified as possibly carcinogenic.
- Phosgene** – It is produced when polystyrene burns and it is normally highly toxic.
- Ammonia** – It is a powerful irritant.
- Nitrogen oxide and peroxide** – They react with the haemoglobin in the human body.
- Hydrochloric acid** – It is produced from chlorine and it is toxic.



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THE PRODUCTS OF COMBUSTION

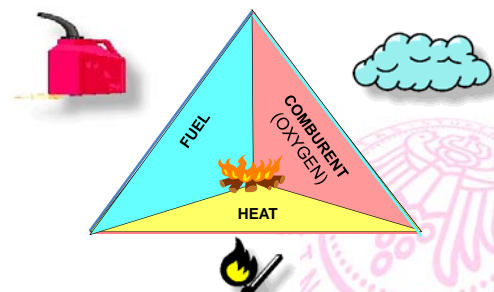
The main combustion **gases**

Warning!


All fireproofed products come under this category because they are treated with substances known as **BFRs** which are **NEUROTOXIC**.



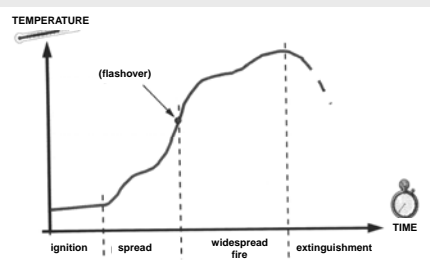
FIRE




NB If one of these elements is missing, fire cannot exist.

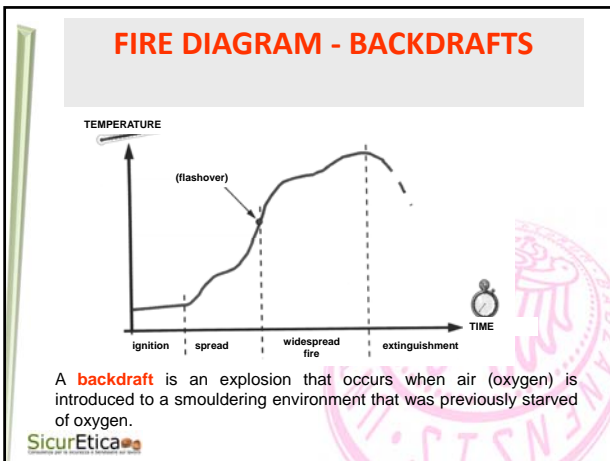


FIRE DIAGRAM FLASHOVERS



A **flashover** occurs when a fire suddenly grows and spreads to all of the materials present upon reaching a temperature of approximately 600°C.





FIREFIGHTING OPTIONS

✓ **Separation or depletion:**
This is achieved by separating any fuel that has yet to catch fire from the burning materials. Guards, non-inflammable barriers and mechanical equipment can be used to do this.


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FIREFIGHTING OPTIONS

✓ **Choking:**
This involves separating the fuel and the comburent. It can be done by covering a fire with a fire blanket, sand or other suitable materials.

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FIREFIGHTING OPTIONS



✓ **Cooling:**
This involves cooling the burning materials to below the ignition temperature. It can be done with water, foam or CO₂, which take heat away from the flame.

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HOW CAN I LOCATE FIREFIGHTING EQUIPMENT?




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FIREFIGHTING EQUIPMENT

The following devices can be used to distribute extinguishing substances:

- ✓ **EXTINGUISHERS**
- ✓ **HOSES**



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FIREFIGHTING EQUIPMENT

✓ Fires are divided into four main classes, which are based on the physical state of the combustible materials. There is also an additional category that covers the unique characteristics of electrical fires.

CLASS



A



B



C



D




E

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EXTINGUISHERS

THEY MAY CONTAIN:

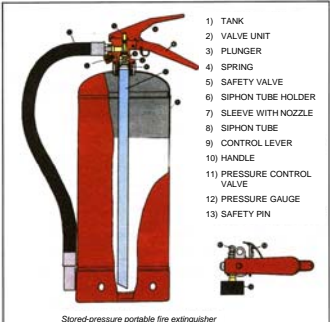
- ✓ **POWDER**
- ✓ **CARBON DIOXIDE (CO₂)**
- ✓ **WATER**
- ✓ **FOAM**
- ✓ **HALON**



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EXTINGUISHER

Parts



- 1) TANK
- 2) VALVE UNIT
- 3) PLUNGER
- 4) SPRING
- 5) SAFETY VALVE
- 6) SIPHON TUBE HOLDER
- 7) SLEEVE WITH NOZZLE
- 8) SIPHON TUBE
- 9) CONTROL LEVER
- 10) HANDLE
- 11) PRESSURE CONTROL VALVE
- 12) PRESSURE GAUGE
- 13) SAFETY PIN

Stored-pressure portable fire extinguisher

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EXTINGUISHER
Instructions for use

ESTINTORE
6 kg. POLVERE ABC TOR 89 B-C

1. Togliere la spina di sicurezza
2. Impugnare la lancia di comando e dirigere il getto alla base delle fiamme
3. Premere a fondo la leva di comando e dirigere il getto alla base delle fiamme

UTILIZZABILE SU APPARECCHI IN TENSIONE
NON ESPORSI AI GAS E AI FUMI.
DOPO UTILIZZAZIONE IN LOCALI CHIUSI, AREARE

RICARICARE DOPO L'USO ANCHE PARZIALE
• PER POLVERE ABC • AQUE
• CODICE DI IDENTIFICAZIONE CEI/EN 12013 (M3)
• COSTRAZIONE APPROVATA NEL 1997 PER POLVERE ABC
• TEMPERATURE LIMITI DI UTILIZZAZIONE: -20°C - +40°C

C.M.A.
SISTEMI ANTINCENDIO
BRENO (VI) - Tel. 0445/220289 - Fax 320487

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EXTINGUISHERS

THEY MUST BE:

- ✓ of a sufficient number to cater to the **fire risk** and the **size of the company**;
- ✓ **positioned** appropriately;
- ✓ **easy to use**;
- ✓ **appropriately marked** to make them easy to identify;
- ✓ **efficient** and **properly maintained**;
- ✓ marked with **clear information** about how to use them properly.

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EXTINGUISHERS

THINGS TO REMEMBER:

- ✓ They must not be **tampered with**;
- ✓ They must not be **moved**;
- ✓ They must not be exposed to **sunlight**;
- ✓ They must not be **banged or bumped**;
- ✓ They must not be **exposed to temperatures** of over 50°C or under 0°C;
- ✓ During routine maintenance, **substitute** extinguishers must be provided.

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TYPES OF EXTINGUISHER

Italian Ministerial Decree of 10/03/98

| Type of extinguisher | | Surface area protected by the extinguisher | | |
|----------------------|-------|--|--------------------|--------------------|
| | Dist. | Low risk | Medium risk | High risk |
| 13A – 89 B | 20 m | 100 m ² | - | - |
| 21A – 113B | 20 m | 150 m ² | 100 m ² | - |
| 34A – 144B | 20 m | 200 m ² | 150 m ² | 100 m ² |
| 55A – 233B | 20 m | 250 m ² | 200 m ² | 200 m ² |

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EXTINGUISHERS

POWDER

These extinguishers contain a **powder** (a saline compound) that **cannot absorb water** and is broken down by fire.

It is sprayed using carbon dioxide or nitrogen as propellants.

The principle behind the process is **choking the fire**.

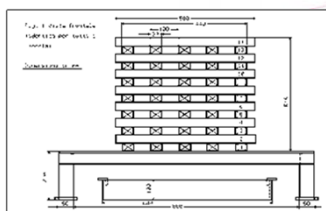
One advantage that they offer is that they can be used **at a greater distance than other extinguishers**.



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FIRE CLASS "A"

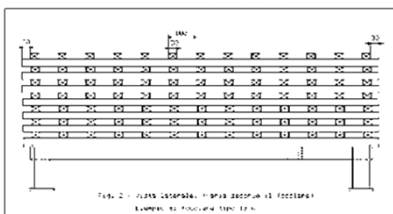
- ✓ Standard class "A" test fires consist of a stack of wooden sticks on a metal base, with the following dimensions: width 500 mm, with a number of layers of 39 mm cuts of wood making up the height.



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FIRE CLASS "A"

✓ The standard class "A" test fire is the same length in decimetres as the number on the extinguisher (e.g. 13A = 13 dm = 130 cm).



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EXTINGUISHERS

CARBON DIOXIDE (CO₂)

They contain **liquid** carbon dioxide.

When the carbon dioxide **changes** into a gas, it immediately **lowers the temperature** (-78°C).

In addition, CO₂ is heavier than air, so it **displaces oxygen from the fire.**



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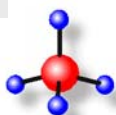
EXTINGUISHERS

HALON

They contain a liquid, which is usually **HALON 1301**.

When this liquid comes into contact with fire, it releases **vapour that is heavier than the air**, which **chokes** the flame catalytically (chemically).


It is dangerous to use this substance, as at high temperatures it produces toxic elements and pollutes the atmosphere (harming the ozone layer).



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FIRE CLASS "B"

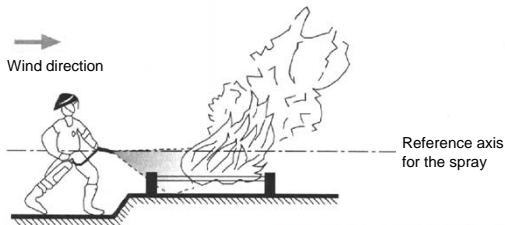
- ✓ Standard class "B" test fires are made from a number of welded steel cylindrical containers. The volume of the liquids contained appears before the letter B in the name of these test fires (e.g. 233B).
- ✓ There is water at the bottom of these containers and the proportion of the contents is as follows:
1/3 water, 2/3 petrol + diesel.



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REMEMBER THAT

Extinguishers are not for putting out big fires, just small fires in the early stages. What should you do with an extinguisher when faced with a fire of this kind?



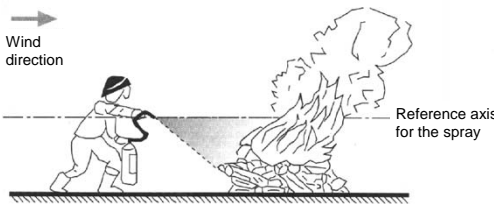
Wind direction

Reference axis for the spray

IT IS NECESSARY TO HAVE THE RIGHT TRAINING.

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USING AN EXTINGUISHER



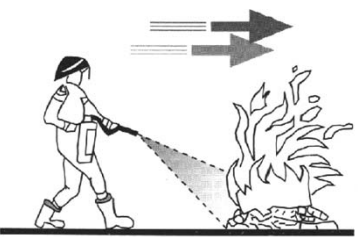
Wind direction

Reference axis for the spray

Rather than the smoke and the flames, aim extinguishers and hoses directly at the base of the fire and the items that are burning.

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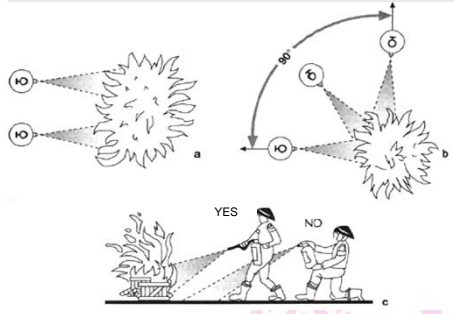
USING AN EXTINGUISHER



Move in a single direction and always stay upwind. Keep extinguishers as close to each other as possible and try to aim in such a way as to prevent the flames from spreading and/or jumping elsewhere.

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USING AN EXTINGUISHER



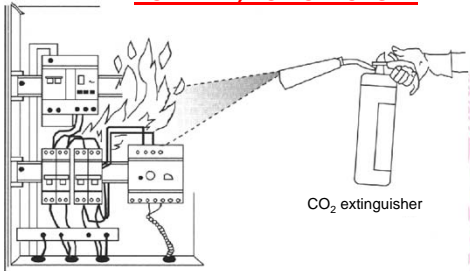
Approach the fire from different angles but always stay within 90° of each other.

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USING AN EXTINGUISHER

Remove any easily ignitable materials from the area of the fire or prevent them from igniting by cooling them with water.

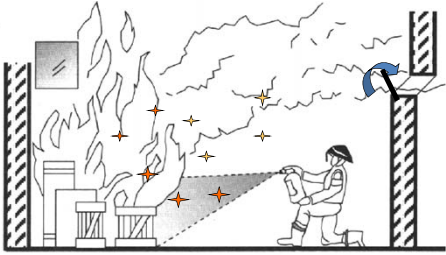
HOWEVER, DO NOT FORGET:



CO₂ extinguisher

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USING AN EXTINGUISHER



In the event of a shower of wind-borne sparks, **close** all openings. Pay particular attention to doors and windows in buildings at risk, especially in lofts. **Clear the way to make the work of the emergency services easier and follow their instructions.**



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HOSES

FIRE HOSES and/or HOSE REELS are essential for fighting **large fires**.

They must only be used by **specialty trained staff**.

If they spray water, they must **not** be used on electrical systems or inflammable liquids.



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ALARMS

Emergencies may also be signalled by alarms.



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Film

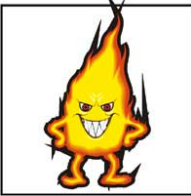


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EMERGENCIES

Emergency: “a situation that arises unexpectedly and requires urgent action”.

✓ Having seen the outcome of a fire risk assessment, employers must take the necessary organizational measures and describe them in a detailed emergency plan.

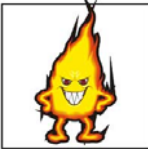


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COMPANY EMERGENCY PLANS

✓ **OBJECTIVES OF THE PLANS:**
Reduce the dangers for people
Provide aid for people
Control and contain any situations that arise



✓ **CHARACTERISTICS:**
Precision
Clarity and conciseness
Flexibility
Practicability
Revisions and updates



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EMERGENCY PLANS


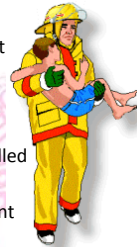
- ✓ An **Emergency Plan** must be drawn up for all structures in an effort to prevent fires and manage emergencies in general. In the simplest cases with the lowest risks, this plan will take the form of basic instructions to follow in the event of an emergency.
- ✓ In the event of an emergency, it is essential for everybody to know what they must and must not do.
- ✓ The action and alarm procedures and priorities must be **clear, tried, tested and well known to everybody**.



EMERGENCY PLANS

✓ **The objectives of a plan are as follows:**




- ✓ **The staff** with designated responsibility must be informed and take action in good time.
- ✓ **The people** must be saved and protected (rescue, first aid, evacuation).
- ✓ **The situation** must be contained and controlled rapidly.
- ✓ **The damage** to property and the environment must be kept to a minimum.



EMERGENCY PLANS

In addition to the normal instructions to follow in the event of an emergency, it is necessary to establish **meeting places** where guides can tell people to congregate when the order to evacuate is given.

Meeting places must be allocated for every exit and they must be marked on special plans positioned in halls and corridors.



EMERGENCY COORDINATOR



This person has the following responsibilities:

IN THE EVENT OF A SMALL FIRE

The coordinator must go to the scene to assess the situation and if necessary call out the team and coordinate the extinguishing measures in accordance with the established procedures.


IF THE FIRE IS WIDESPREAD

or if it gets out of hand, the coordinator must set off – or tell someone to set off – the general evacuation alarm for all of the people present.




EMERGENCY COORDINATOR

IN THE EVENT OF HEALTH EMERGENCIES




Having seen or been informed of a person who is injured or unwell, the coordinator must go to them and coordinate the actions of the first aid providers.

If the action taken is not effective, the coordinator must give precise instructions to the person responsible for emergency communications and have them call an ambulance on **118**.




There is no need to evacuate during an emergency of this kind.




EMERGENCY COORDINATOR

IN THE EVENT OF WATER LEAKS




The coordinator must call out the specially trained staff members to cut off the main water supply. As a precautionary measure, the coordinator must temporarily cut off the electricity supply to the sector affected by the leaks.

If necessary, they must ask for the general electricity system to be cut off.



EMERGENCY COORDINATOR

IN THE EVENT OF FLOODING



In the event of sudden flooding due to overflowing rivers or other reasons, the coordinator must sound the general alarm and ensure that all those present go to the upper floors of their buildings, taking with them the first-aid kits, their ID papers and any electric torches that are available.

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EMERGENCY COORDINATOR

IN THE EVENT OF GAS LEAKS OR EARTHQUAKES

In the event of a gas leak, the coordinator must immediately have the main supply cut off and give the pre-alarm signal.

In the event of an earthquake, once it is over, the coordinator must assess whether it is necessary to evacuate the premises or the area, then immediately give out the order if appropriate and have the gas and electricity supplies cut off.


The coordinator must go to the meeting place and take a register of those present, then wait for the emergency services to arrive.

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THE EMERGENCY TEAM

EMERGENCY: fire and first aid

- ✓ The team is responsible for taking **immediate, initial action** in the event of an emergency.
- ✓ **Its members are workers** who have been given the task of taking action to rescue people, prevent fires, fight fires and manage emergencies.
- ✓ **The number of members must be in keeping** with the size of the company and its specific risks. They must be provided with **appropriate equipment and the necessary training.**




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THE EMERGENCY TEAM

Must ensure that:

- ✓ the **emergency exits** are suitable, efficient and accessible;
- ✓ the **fire prevention systems** are efficient and effective;
- ✓ the **firefighting equipment is always available** for the designated teams and people;
- ✓ the **extinguishers are always efficient** and suitably positioned.




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THE EMERGENCY TEAM

Must do the following in the event of a fire:

- ✓ **Identify the burning materials** in order to select the extinguishing equipment.
- ✓ **Interrupt the fuel supply**, if possible.
- ✓ Take the necessary precautions to **avoid the risk of poisoning and asphyxiation** caused by the gases and fumes produced by the fire.

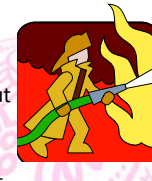


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THE EMERGENCY TEAM

The tasks of each member of the fire prevention team include:

- ✓ Ensuring that the protective equipment and devices provided remain **perfectly efficient**.
- ✓ Playing an **active part in the training** about the prevention, health and safety regulations.
- ✓ **Being ready and able** at any time whilst at work to **take part in firefighting action**.



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STAFF RESPONSIBLE FOR MANAGING EVACUATIONS

When they hear the emergency signal, the staff responsible must:

- ✓ Perform their duties in accordance with the established procedures.
(Essentially, office and teaching staff must only ensure that everybody leaves their designated premises and reaches the chosen meeting place).
- ✓ Anyone who is in charge of helping disabled people must go to their allocated person and ensure that they reach the meeting place.
- ✓ At the meeting place, the staff responsible must take a register of those present, then wait for the emergency services to arrive.

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PANIC

The first rule is to keep calm, so as to avoid creating an additional problem

- ✓ Panic is an **emotional, irrational** and sometimes **violent** form of behaviour that occurs when **danger is close at hand**.
- ✓ It leads to a state of **profound anxiety**.
- ✓ It may cause **loss of movement** or dangerous convulsive reactions.



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EFFECTS OF PANIC

Physical problems during escape for people threatened by fire

- ✓ Heart rate
- ✓ The effects of carbon monoxide
- ✓ The importance of 90 seconds
- ✓ The influence of the width of the corridors
- ✓ The flow of people
- ✓ Limit distances

Problems caused by smoke

- ✓ Darkness
- ✓ Light dispersion effects

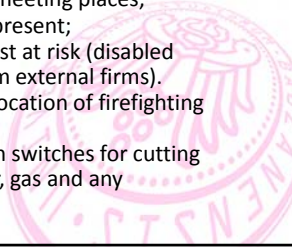


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THE EMERGENCY PLAN

It is essential to be aware of:

- ✓ The characteristics of the workplaces;
- ✓ The zones that are particularly at risk;
- ✓ The escape routes and meeting places;
- ✓ The number of people present;
- ✓ The people who are most at risk (disabled people, contractors from external firms).
- ✓ The type, number and location of firefighting equipment.
- ✓ The location of the main switches for cutting off the electricity, water, gas and any dangerous liquids.

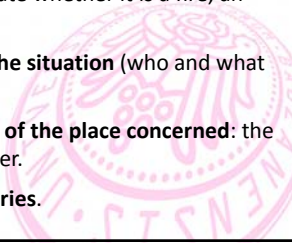


EMERGENCY CALLS

115 – 118 – 113



- ✓ Provide details about **yourself** and the organization.
- ✓ **Describe the situation** (state whether it is a fire, an explosion, etc.).
- ✓ State the **seriousness of the situation** (who and what has been involved, etc.).
- ✓ Provide the exact **address of the place concerned**: the location, street and number.
- ✓ Provide details of any **injuries**.



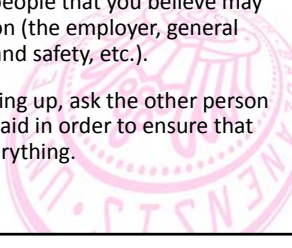
EMERGENCY CALLS

115 – 118 – 113



- ✓ **Wait** in the road for the emergency vehicles, thus ensuring that no precious time is wasted.
- ✓ **Immediately inform** the people that you believe may be affected by the situation (the employer, general manager, head of health and safety, etc.).


IMPORTANT: before hanging up, ask the other person to repeat what you have said in order to ensure that they have understood everything.



BEHAVIOUR

In the event of an **emergency**, people instinctively tend to leave along their normal entrance routes.

It is important to organize **drills** to make people aware of **alternative** ways out that are safer than their normal entrance routes.




SicurEtica

BEHAVIOUR

DURING A FIRE:

- **Smoke** conceals signs and slows down staff evacuations, thus increasing the risk of asphyxiation.
- It hampers efforts to rescue people and identify the core parts of the fire, thus hindering the attempts to extinguish it.
- It contains asphyxiant and toxic gases.




SicurEtica

BEHAVIOUR

DURING A FIRE:

- If there is **smoke** present, crawl along on all fours because it is better to breathe the air at the bottom of the room.
- Go down the stairs backwards, on your knees.
- Women should make it easier for them to escape by removing any shoes with high heels.




SicurEtica

BEHAVIOUR

DURING AN EARTHQUAKE:

- ✓ Stay calm.
- ✓ Stay where you are rather than running outside.
- ✓ Find shelter under a table or a door frame, or near a load-bearing wall.
- ✓ Do not use lifts or hoists.
- ✓ Move away from windows and furniture with glass in it.
- ✓ Move outside calmly and quietly between one tremor and the next.
- ✓ Move away from the perimeter of the building.
- ✓ Wait for instructions.



SicurEtica

HOW CAN I LOCATE THE EMERGENCY EXITS?




Meeting place

SicurEtica

THE ESCAPE ROUTES

MUST:

- ✓ be suitably protected;
- ✓ have sufficient signs and markings;
- ✓ be kept clear at all times.
- ✓ The separation structures must be fire resistant.
- ✓ The meeting places must be at an appropriate distance from the potential locations of a fire.



SicurEtica

EVACUATION CAPABILITIES OF A CROWD

AVERAGE SPEED OF PEOPLE WITH DIFFICULTIES MOVING AROUND



| Characteristics | Speed on flat ground | Going down stairs | Going up stairs |
|--------------------------|----------------------|-------------------|-----------------|
| Electric wheelchair | 0.89 m/s | | |
| Manual wheelchair | 0.69 m/s | | |
| Crutches | 0.94 m/s | 0.22 m/s | 0.22 m/s |
| Walking stick | 0.81 m/s | 0.32 m/s | 0.34 m/s |
| Walking stick or support | 0.51 m/s | | |
| No assistance | 0.93 m/s | | 0.41 m/s |
| No disability | 1.24 m/s | 0.70 m/s | 0.70 m/s |

Taken from the Society of Fire Protection Engineers (SFPE) Task Group on Human Behaviour - 2003

Over a flat route of 45 metres with a maximum time of 60 seconds, the average time of a group would be:

$45/60 = 0.75 \text{ m/sec}$



This is the minimum speed of a group containing elderly people and children. In actual fact, on average the walking pace of a group will be higher because it will bunch together and fill up empty spaces.

FIRE'S IMPACT ON HEALTH

Fire can affect people's health in two ways


- ✓ **BURNS**
- ✓ **POISONING**

BURNS

If a person gets burnt:



- ✓ Take them away from the fire.
- ✓ Use a cloth or a blanket to pat out the flames, rather than using water.
- ✓ Call an ambulance immediately.
- ✓ In the meantime, do not attempt to pull or tear the clothes off the person.
- ✓ Do not use products of any kind on the burns and do not attempt to pop any blisters.
- ✓ Keep the person's head below their knees, to promote the blood flow to their brain and heart.



POISONING

During fires, poisoning is much more common than burns. It is caused by inhaling:

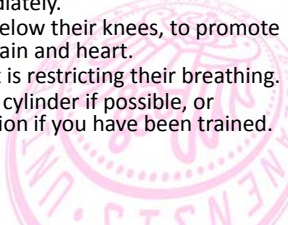

- ✓ **Noxious gases** resulting from the combustion of chemical substances (for example phosgene gas from plastics);
- ✓ **Carbon monoxide (CO)**, which causes people to turn bright red.



POISONING

If a person is poisoned:

- ✓ Do not go into the place where the toxic gas is found without appropriate breathing apparatus.
- ✓ Having taken suitable precautions, remove the person from the place where the gas is found.
- ✓ Call an ambulance immediately.
- ✓ Keep the person's head below their knees, to promote the blood flow to their brain and heart.
- ✓ Remove any clothing that is restricting their breathing.
- ✓ Give them oxygen from a cylinder if possible, or perform artificial respiration if you have been trained.



SAFETY SIGNS



