



# Risk Management Considerations for Fire Safety

## What is fire safety and why is it important?

Fire safety is the prevention or reduction in the likelihood of a fire. When you incorporate fire safety strategies, you alert persons residing, working or visiting a building to the presence of a fire and educate those persons on how to survive in a fire and evacuate safely from the building. Fire safety helps to prevent fires, preserve human life and avoid unwarranted property loss due to fire.

The main principals of fire safety include:

- Preventing fires
- Detection of smoke and fire
- Safe evacuation of the building

## Define the key fire safety terms

**Fire Prevention:** educate persons to take precautions to prevent fires and to be educated about how to survive them. Fire prevention is a proactive method of reducing the occurrence of fires and the resulting damage.

**Fire Protection:** fire protection improves the safety of occupants and reduces hazards associated with fires. Fire protection is constantly evolving and it studies the behavior of fires and occupants, suppression methods and the investigation of the occurrence of fires.

**Noncombustible Construction:** is a type of construction in which the degree of fire safety is attained by the use of noncombustible construction materials for structural members and other building assemblies. Examples include masonry and steel construction.

**Combustible Construction:** is a type of construction that does not meet the requirements for noncombustible construction. Examples include wood frame construction.

**Firewall:** is a fire separation of noncombustible construction that divides a building or separates attached buildings to resist the spread of fire. A firewall has a pre-determined fire-resistance rating based on the occupancy as specified by the Building Code. The fire wall must have the structural stability to remain intact under fire conditions for the specified fire resistant time period. Examples include 1/2, 1, 2, 3 and 4 hour firewall ratings.

**Fire Separation:** is a construction assembly that acts as a barrier against the spread of fire.

**Fire Door:** is a door with a fire-resistance rating to reduce the spread of fire or smoke between compartments and to enable safe egress from a building.

**Fire Stop:** means a draft-tight barrier within or between construction assemblies that prevents the passage of smoke and or fire.

**Fire Extinguishers:** a storage container for an agent like water or chemicals that is designed to extinguish small fires. The proper placement, training and type of extinguisher are important factors in their use. Examples include ABC multi-purpose, Class D, Class K and Special Agent. Consult your local fire department to ensure the proper extinguishers are in place.

**A Standpipe System:** is a system of water pipes that is typically distributed throughout multiple storey buildings that is connected to valves and fire hoses. The fire hoses can be utilized by trained personnel or fire departments to apply water to the fire.

**Automatic Sprinkler System:** is a system of water piping distributed throughout a building with automatic sprinklers connected to the piping. The sprinkler heads have a predetermined activation temperature and automatically apply water to the fire area upon activation. Sprinkler systems can be installed to protect almost every type of occupancy.

**Smoke Alarm:** is a combined smoke detector and audible alarm device that is designed to sound an alarm to alert occupants within the room or suite in which it is located when the presence of smoke is detected.

**Smoke Detector:** is a fire detector designed to operate when the concentration of airborne combustion products exceeds a predetermined level.

**Heat Detector:** is a fire detector designed to operate at a predetermined temperature or rate of temperature rise.

**Fire Detector:** is a device which detects a fire condition and automatically initiates an electrical signal to actuate an alert signal or alarm signal and includes heat detectors and smoke detectors.

**Means of Egress:** is a continuous path of travel provided for the escape of persons from any point in a building. Means of egress includes both exits and access to exits.

**Exit:** is a part of a means of egress, including doorways, exterior doors exiting the building and doorways that lead from the floor area it serves.

**Exit Sign:** is a device in a public building identifying the location of the closest emergency exit in case of fire or other emergency. Building and fire codes require exit signs to be permanently illuminated when the building is occupied.

**Emergency Lights:** a battery-backed up lighting device that comes on automatically when a building experiences power failure.

**Flammable Liquid:** a liquid having a flash point below 37.8°C. Examples include gasoline, toluene, lacquers and lacquer thinners.

**Combustible Liquid:** any liquid having a flash point at or above 37.8°C and below 93.3°C. Examples include diesel fuel, paint thinners, home heating oils, cooking and motor oils.

**Fire Safety Plans:** a fire safety plan provides information on:

- Safe and calm evacuation from the facility
- Effective use and maintenance of the fire protection equipment
- Controlling fire hazards in the facility

You should consult your local fire department to review the requirements for your facility and any special requirements they may have.

## What are the Key References and Regulations for Fire Safety?

Contact your local fire or building department to determine the requirements for your facility, business or residence. In addition you can consult the list of organizations below for fire safety related information, courses, codes and standards.

- The National and Provincial Fire Codes
- The National and Provincial Building Codes

## Organizations

- NFPA – National Fire Protection Association  
[www.nfpa.org/](http://www.nfpa.org/)
- CFSA – Canadian Fire Safety Association  
[canadianfiresafety.com](http://canadianfiresafety.com)
- ULC – Underwriters Laboratories of Canada  
[www.ul.com/canada](http://www.ul.com/canada)
- CFAA – Canadian Fire Alarm Association  
[www.cfaa.ca](http://www.cfaa.ca)
- CASA – Canadian Automatic Sprinkler Association  
[www.casa-firesprinkler.org](http://www.casa-firesprinkler.org)
- SFPE – Society of Fire Protection Engineer's  
[www.sfpe.org/](http://www.sfpe.org/)
- Home Fire Sprinkler Coalition  
[www.homefiresprinkler.org](http://www.homefiresprinkler.org)
- The Council of Canadian Fire Marshals and Fire Commissioners [www.ccfmfc.ca](http://www.ccfmfc.ca)

## Common Hazards Inspectors See

**Exit Signs:** the common hazards associated with exit signs include, exit signs not illuminated, obstructed from view or not in place at all.

**Exits:** exits and access leading to exits are often obstructed by storage and debris inside and outside the building. It is imperative that the access to exits is maintained free of obstructions and or storage of any items to permit easy egress from the building.

**Storage:** storage space within buildings and residences is always at a premium. Storage should always be well organized in such a way as not to prevent egress or safe travel throughout any area. Only store items in designated areas and avoid storing items in mechanical, electrical and fire protection rooms. Storage in these areas could impede access to important equipment in an emergency situation or contribute to a fire situation. From time to time storage areas and arrangements should be reviewed and unwanted or unneeded items should be discarded and removed from the building to minimize combustible loading.

**Flammable and Combustible Liquids:** the storage of flammable and combustible liquids throughout building is a common hazard. These products can contribute to a fire situation and increase the intensity of a fire dramatically. Consideration should be given to storing these types of products in approved fire rated cabinets, specifically designed storage rooms or exterior to the building.

**Housekeeping:** keep all areas of the building organized and free of debris to help eliminate combustible loading and ensure safe evacuation from the building.

**Maintenance of Equipment:** maintain fire protection systems to ensure they operate as designed when required. This will help increase the lifespan of the systems and prevent breakdowns or malfunctions. The regular maintenance and inspection of these life safety systems will help to protect the occupants and the building. Consult your local fire department to ensure the inspection and testing frequency of your fire protection systems is being completed as required.