

# 4 COMMON TYPES OF WORKPLACE FIRE HAZARDS



## INTRODUCTION

According to stats released by the Fire Safety Engineering Guideline for Informal Settlements, it shows that in 2018, 15-30 fires occurred daily in South Africa, accounting for at least one death per day. This reveals that fire is not a toy which children may play with, if it goes out of hand, it is deadly and dangerous. Therefore anything that may result into dangerous fire, is to be attended to with high priority. A Hazard is commonly defined as a process, phenomenon or human activity that may cause loss of life, injury or other health impacts, property damage, social and economic disruption or environmental degradation. It is to be noted that fire hazards are found, almost, everywhere. This include homes, schools, hospitals, churches, industrial workplaces, mining workplaces, etc. In this article the focus will be in the

workplace. Therefore, we will look at the four (4) common types of workplace fire hazards and then the conclusion with recommendations will be presented.

## 4 COMMON TYPES OF WORKPLACE FIRE HAZARDS

### 1. Electrical hazards



An Electrical Hazard can be defined as a serious workplace hazard that exposes workers to burns, electrocution, shock, arc flash / arc blast, fire, or explosions. By identifying these hazards, and understanding how they happen, we can take steps to protect ourselves.

Types of electrical hazard situations and what to be aware of:

#### *Contact with Energized Sources*

Hazards regarding contact with energized sources are electrical shock and burns. Electrical shock occurs when the body becomes part of the electric circuit (when an individual comes in contact with both wires of an electrical circuit, one wire of an energized circuit and the ground, or a metallic part that has become energized by contact with an electrical conductor).

### *Contact with Power Lines*

Overhead and buried power lines are hazardous because they carry extremely high voltage. Fatalities are possible as electrocution is the main risk; however, burns and falls from elevations are also hazards that workers are exposed to while working in the vicinity of high voltage power lines.

### *Improper Use of Extension and Flexible Cords*

Normal wear and tear on extension and flexible cords can loosen or expose wires, creating a hazardous condition. Hazards are created when cords, cord connectors, receptacles, and cord- and plug connected equipment are improperly used and maintained. If the electrical conductors become exposed, there is a danger of shocks, burns, or fire.

**BE SAFE!** Electrical hazards expose workers to the following:

***Burns:*** Three types; electrical, arc flash, or thermal contact.

***Electrocution:*** Electrocution is fatal; it means to kill with electricity.

***Shock:*** A response to electric current passing through the body.

***Arc Flash/Blast:*** Emits heat and intense light that causes burns.

***Fire:*** Occurs with faulty outlets, old wiring, cords, and switches.

***Explosions:*** When electricity ignites explosive material in the air.

### **How to Protect Yourself:**

- Inspect all electrical tools and equipment PRIOR to use.
- GFCIs are required on temporary electricity and wet locations.
- Never use anything that is damaged.
- Treat all electrical wires as if they were energized.
- Maintain a 10 FT clearance from all overhead lines.
- Allow only Qualified Electricians to perform electrical work.
- Keep at least 3 feet from all electrical panels.
- Ensure all tools and wiring are properly grounded.

- Require the proper PPE for the work being performed.
- NEVER work on hot electrical equipment, always de-energize.
- Follow the NEC and other Electrical Safe Work Practices.
- Train others on basic electrical safety and hazard recognition.

## 2. Chemical hazards



A substance produced by or used in a chemical process. Then a hazard in this context will be any substance produced by or used in a chemical process that has potential of causing harm, damage or death to people or property.

In the event of a fire, combustible chemicals can release toxic fumes and cause explosions, exacerbating the situation and putting people and property at risk.

### Types of fire chemical hazards

**Flammable liquids:** These are liquids that ignite easily and burn quickly, such as gasoline, diesel fuel, and alcohol. They pose a significant risk of fire and explosion, particularly in industrial and commercial settings where they are commonly used as solvents or fuels.

**Combustible dusts:** Fine particles of solids that are easily ignited and burn quickly, such as sugar, wood, and grain. Combustible dusts can ignite from a spark or static electricity and can cause explosions, particularly in industries that process these materials.

**Oxidizers:** These are chemicals that release oxygen when they catch fire, intensifying the fire and making it harder to control. Examples of oxidizers include peroxide, nitrates, and chlorine.

**Toxins:** In the event of a fire, chemicals can release toxic fumes that can cause serious health problems, such as respiratory problems, chemical burns, and even death. Some common toxins include carbon monoxide, hydrogen cyanide, and sulphur dioxide.

#### Preventing Fire Chemical Hazards

**Proper Storage:** Store flammable liquids and combustible dusts in fire-resistant containers and away from heat sources, sparks, and flames. Make sure containers are properly labelled and stored in a well-ventilated area.

**Safe Handling:** When handling flammable liquids and combustible dusts, always follow proper safety procedures, such as wearing protective clothing and using fire-resistant materials. Keep a fire extinguisher nearby in case of an emergency.

**Maintenance:** Regularly inspect and maintain equipment that is used to store or handle combustible chemicals, such as tanks, pipes, and valves, to ensure they are functioning properly and free of leaks.

### 3. Combustible material hazards

Many workplaces have materials that are highly combustible, such as paper and wood. These materials should be stored properly, away from ignition sources. It is essential to keep all combustible materials away from clutter and debris, as well as to regularly inspect for any potential fire hazards. Any materials that are not needed should be discarded properly to reduce the risk of fire.

Smoking materials, such as cigarettes, are a leading cause of workplace fires. To prevent fires caused by smoking materials, employers should implement a no-smoking policy and provide designated smoking areas that are away from combustible materials. All smoking materials should be disposed of properly, and employees should be made aware of the proper disposal methods. It's also essential to ensure that all smoking materials are properly extinguished before being disposed of.

#### ***4. Cooking equipment hazards***

Kitchens and other areas where food is prepared are at risk for fires caused by cooking equipment such as stoves, ovens and grills.

To prevent fires, make sure that cooking equipment is properly maintained, and that employees are properly trained in the safe use of the equipment. Any flammable materials should also be kept away from the cooking area. Cooking equipment should be cleaned regularly to prevent a build-up of grease and oil, which can be a significant fire hazard. Additionally, it is essential to have fire extinguishers readily available in the kitchen area, and to ensure that all employees know how to use them.

#### **CONCLUSION**

Finally, hazards should not be underestimated on the damage they can cause in the workplace. If they are left undetected or uncontrolled there will be a serious loss to the organisation, and even worse, to the family where the employees come from. Therefore, control measures are to be in place to deal with such hazards.