

## Fire Prevention

**Every 20 seconds, a fire department responds to a fire somewhere in the U.S. On average, there are more than half a million structure fires each year, resulting in over 3000 deaths and \$8.7 billion in direct property loss annually.<sup>1</sup>**

Few incidents cause as much loss and destruction as fire. Each year fire kills more Americans than all natural disasters combined. And, according to the U.S. Fire Administration, many of those fires could be prevented.

### The Fire Triangle

The most effective way to fight a fire is to keep it from starting in the first place. To guard against potential fire hazards, it is important to understand the basic characteristics of fire.

Fire needs three fundamental components to start and keep burning:

**Oxygen:** A fire needs air to keep burning.

**Fuel:** A fire cannot exist without something to burn. Any combustible or flammable material—solid, liquid or gas—will do.

**Heat:** A fire needs a source of ignition to start burning. This could be anything from a lit match to a static electricity spark. Some substances can auto-ignite when the surrounding temperature gets high enough; certain others can auto-ignite at normal room temperatures.

<sup>1</sup> These averages do not reflect the events of September 11, 2001.



Combustion can only take place when oxygen, heat and fuel are present at the same time. Therefore, basic fire prevention boils down to this: control the three components of the fire triangle—and keep them apart.

### Controlling Fire Hazards

Fuel supply and heat source hazards can be controlled by good housekeeping and responsible habits.

Ordinary combustible materials—like wood, paper and cloth—are common fuel supplies at home and in the workplace. Fire risk increases when large volumes of materials are stored closely together. Potential fire hazards, both inside and outdoors, include overflowing trash

bins, stockpiles of paper goods and other combustibles in storage areas, and the accumulation of discarded boxes, newspapers and wood scraps.

Other fuel sources include combustible gases like propane and natural gas. All fittings, hoses, and clamps on these containers should be tight and sealed. Flammable or combustible liquids such as gasoline, kerosene and paint can also provide fuel for a fire. These liquids should be stored properly in a ventilated room, in approved, air-tight containers. Oily rags should be placed in designated metal containers and properly disposed of regularly.

Heat or ignition sources can be as varied as the sun shining on a container of flammable liquid to the spontaneous combustion of oily rags.

Other sources include:

- open flames
- heat-producing equipment or machinery
- damaged or flawed electrical wiring and circuits
- welding, cutting and grinding operations that produce sparks—these can ignite ultra-fine dust particle accumulations
- uncontrolled smoking and careless disposal of smoking materials

Since oxygen is always present in the air, not much can be done to control its supply.

However, some materials—like compressed gas cylinders and chemicals called “oxidizers”—can increase the amount of oxygen in a fire and cause it to burn hotter and more rapidly.

Oxidization hazards should be identified and carefully monitored.

## Vigilance and Reporting

Fire safety also involves identifying and correcting hazards that can help fires spread or may hamper quick evacuation. These include:

- boxes stacked too close to the ceiling, which may lessen the effectiveness of sprinkler systems
- loose or missing ceiling tiles, which may allow fire to spread to other areas
- fire extinguishers that are missing, broken, or out of date
- exits that are blocked by boxes, furniture, signs—anything that gets in the way of people trying to get out quickly and safely

Effective fire prevention requires vigilance and reporting. Watchfulness can help identify potential fire hazards. And reporting can lead to the correction of hazardous situations.

## Fire in the Workplace

Most non-residential structure fires take place in storage facilities, with the highest percentage occurring in parking garages. This is not surprising: parking garages are enclosed structures housing gasoline-filled vehicles, and vehicles left alone are attractive arson targets.

In fact, the leading cause of fires in businesses is arson. More than half of non-residential structure fires are started deliberately, the majority of which follow acts of vandalism or burglary.

Securitas security officers can help prevent fires at client sites by vigilantly patrolling facilities—including parking structures— and reporting fire hazards. They also can help control access to the area and remain alert for suspicious persons or other conditions that might put the site at risk for arson.

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