



PORTLAND FIRE & RESCUE



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Top Fire Causes and Quiz

In 2012, Portland Fire & Rescue (PF&R) responded to 2,109 fires, many of which were determined by PF&R investigators to be accidental and preventable. This document explores the fire causes that are collectively associated with the majority of fire related deaths, injuries, and property damage in Portland. After reading these fire prevention tips, take the quiz to see how much you've learned!

Cooking Safety

Cooking is the #1 cause of home fires in Portland, and unattended cooking is the top contributing factor. Additionally, many cooking fire injuries occur when people respond to kitchen fires with inappropriate actions.

Observe the following “Do’s and Don’ts” to avoid these common fires and fire injuries.

DO:

- Attend to your cooking.
- Keep handles of stovetop pots and pans turned in.
- Keep things that catch fire away from your stovetop.

If you have a cooking fire:

- Smother the fire by sliding a lid over the pan.
- Turn off the burner.
- For an oven fire, turn off the heat and keep the door closed.
- For a microwave fire, unplug or cut off the power and keep the door closed.

DON'T:

- Never pour water on a grease fire!
- Never discharge a portable extinguisher into a cooking pan – it will spread the fire.
- Do not try to carry the pot or pan of grease outside – this can lead to scalds and burns.

Cigarettes

Cigarettes are the leading cause of fire deaths on a city, state, and national level. The fires victims include not only the smokers but their families, friends and neighbors. Most cigarette fires are caused by improperly discarded smoking material (cigarettes, cigars, pipes, etc). These fires often start outside, then move to a structure. Other common ignition factors include falling asleep while smoking and smoking with medical oxygen.

Fires from smoking material can be prevented by following these tips:

- Do not smoke in bed or anywhere that you might fall asleep.
- If you smoke, smoke outside.
- Do not discard cigarettes in potted plants, landscaping vegetation or bark dust – they can easily catch fire.
- Use a deep, sturdy ashtray or a non-combustible container that cannot be tipped over.

- Before throwing away butts or ashes, douse in water or sand.
- Never smoke in a home where oxygen is used.

Electrical Safety

Electrical problems are one of the top causes of structure fires and fire deaths. In the U.S. from 2007-2011, roughly half of home electrical fires involved electrical wiring or lighting equipment; and roughly half involved equipment such as washers and dryers, fans, and space heaters.

Electrical safety tips:

- Avoid overloading outlets. Plug only one high-wattage appliance into each outlet at a time.
- Never use an extension cord with a major appliance or space heater – it can be easily overloaded. Plug appliance directly into a wall outlet.
- If a fuse blows or a circuit breaker trips often, lights flicker or dim, or outlets or switches feel warm, have a qualified electrician inspect and fix the problem.
- Use lamp bulbs that match the lamp's recommended wattage (there is usually a sticker on the lamp).
- Power strips with circuit breakers can be useful tools to temporarily plug several items into an electrical outlet, but if used incorrectly they can cause a fire. The use of power strips and multi-plug outlets increases the draw of electricity through your home's wiring. Before creating additional electrical demand, ensure that your wiring is in good repair and capable of carrying the additional load.
- Make sure your home has ground fault circuit interrupters (GFCIs) in the kitchen, bathroom(s), laundry, basement, and outdoor areas, to reduce the risk of electric shock.
- Arc-fault circuit interrupters (AFCIs) should be installed in your home to protect electrical outlets, and prevent fires due to arcing.
- Avoid running extension cords under carpets – the carpet can heat up and cause a fire.
- Replace or repair damaged or loose electrical cords.

Home Heating Equipment

Home heating equipment is responsible for 1 in 4 Oregon winter fires and is a leading cause of home fire deaths. In a recent U.S. study, space heaters accounted for four out of five (80%) home heating fire deaths.

Some simple steps can prevent most heating-related fires:

- Keep anything that can burn at least three feet away from heating equipment (e.g. fireplace, wood stove, baseboard or portable space heater).
- Do not use extension cords with portable space heaters – plug directly into outlet.
- Space heaters should have a switch that shuts off when the unit tips over.
- Have heating equipment and chimneys cleaned and inspected every year by a qualified professional.
- Fireplaces should have a sturdy screen to stop sparks from flying into the room.
- Dispose of ashes in a covered, non-combustible container and douse with water.
- Make sure all fuel-burning equipment (e.g. gas furnaces and ranges, wood stoves and fireplaces) are vented to the outside to avoid carbon monoxide (C.O.) poisoning.

Candle Safety

Candles, although appealing for the ambiance they can create, are a significant cause of home fires – and one of the leading causes of home fire deaths. More than one-third of home candle fires start in the bedroom, and more than half of all candle fires start when things that can burn are too close to the candle.

If you burn candles, observe these safety tips...

- Use candle holders that are sturdy and won't tip over easily.
- Keep candles at least 12" away from anything that can burn.
- Blow out candles when you leave the room or go to bed; avoid the use of candles in rooms where people may fall asleep.
- Never burn a candle if medical oxygen is used in the home.
- Consider using battery powered, flameless candles.

Spontaneous Combustion

Spontaneous combustion occurs when a material generates its own heat, and increases in temperature without drawing heat from its surroundings. If the material reaches its ignition temperature, spontaneous combustion occurs. Examples of materials that are prone to spontaneous combustion include: oily rags, hay, and other agricultural products.

In home structure fires, oily rags are the most common item ignited by spontaneous combustion and the garage is the most common area of fire origin. Oily rags left clumped together can heat up and catch fire. To prevent these fires in the home, store oily rags in a non-combustible (e.g. metal) container with lid closed. Prior disposal, soak in water then spread them out in a safe outdoor area to dry.

References:

- www.nfpa.org/education
- Oregon Office of the State Fire Marshal Data Unit
- Portland Fire & Rescue Incident System

Take PF&R's Preventable Fire Cause Safety Quiz

Test your knowledge of the most common preventable fire causes in Portland with this 10-question fire safety quiz.

1. Kitchen fires are the most common type of fire in a home. This is because:
 - a. Stoves are dangerous
 - b. Cooking is left unattended
 - c. Children knock things over
 - d. Smoke alarms are not in kitchens
2. The best way to control a fire in a pan on a stove is to:
 - a. Use your garden hose to spray it out
 - b. Fan it with a towel until it goes out
 - c. Carry the flaming pan to the nearest trash can
 - d. Smother it with a lid that fits the pan
3. Microwave oven fires can be put out by:
 - a. Keeping the door closed and unplugging or cutting off power to the oven
 - b. Carrying the entire oven outside
 - c. Opening the oven door and filling the oven with water
 - d. Doing nothing, microwave ovens are self-extinguishing
4. Candles are dangerous because:
 - a. The smell puts people to sleep
 - b. Hot wax will catch things on fire
 - c. People leave them unattended or fall asleep and the candle burns down, igniting things around it
 - d. They cannot be made safe
5. Smoking materials cause fires from:
 - a. Spontaneously igniting
 - b. Being carelessly thrown away
 - c. Radiant heat transmission
 - d. Being rubbed together
6. Portable heaters can cause fires when:
 - a. They are placed too close to things that can burn
 - b. Things that can burn are piled on top of them
 - c. They tip over and do not shut off (because they do not have a tip over switch)
 - d. All of the above
7. Devices with electrical cords:
 - a. Should be thrown away when the cord is cracked, frayed, or discolored
 - b. Should be hung up by the cord when not in use
 - c. Should be covered up with towels and/or blankets at all times
 - d. Should be immersed in water while plugged in
8. Spontaneous combustion can occur when:
 - a. Grease is used for cooking
 - b. Portable heaters tip over onto a carpet
 - c. Candles are used without a glass cover
 - d. Oil soaked rags are left clumped together or left without soaking in water
9. Smoke alarms:
 - a. Are your best protection against death from fire
 - b. Can only work if you keep a good battery in them
 - c. Must be tested every month to ensure they are working
 - d. All of the above
10. Replace power strip electrical cords when:
 - a. You've used every outlet on them
 - b. They show any sign of discoloring
 - c. They have been on the floor for more than a month
 - d. You change your smoke alarm battery

Answers: 1 (b), 2 (d), 3 (a), 4 (c), 5 (b), 6 (d), 7 (a), 8 (d), 9 (d), 10 (b)