

# Chimney & Vent Inspections

## Introduction

A wood burning or gas log fireplace is a common amenity in many homes. With the rising price of heating oil, natural gas and propane, many residents are more likely to rely on alternative heat sources like fireplaces and wood stoves to supplement the heating systems in their homes during colder months.

The National Fire Protection Association (NFPA) estimates that chimneys and chimney connectors are the direct cause of nearly 40% of all home heating fires. Failure to clean the chimney is a contributing factor in 64% of these fires. As the use of alternative heat sources grows these figures are likely to rise as well. Clogged chimneys or vents are also a contributing factor in many carbon monoxide poisonings as well.

The two basic purposes of chimneys and vents are to create a draft for proper combustion and to provide a pathway for the safe removal of combustion byproducts to the exterior of the building.

Masonry and prefabricated metal chimneys are the most common chimneys used to vent fireplaces in residential buildings. A less common type of chimney is the single wall metal “smokestack” used on some wood stoves.

By taking a few simple precautions, you can minimize the chance of a chimney fire or carbon monoxide poisoning in your community.

### What CAU Recommends:

- > Conduct annual fireplace and chimney inspections and cleanings by a Chimney Safety Institute of America (CSIA) certified chimney sweep
- > Install chimney caps and spark arrestors on all chimneys
- > Install hard wired smoke and CO detectors and test them monthly
- > Keep a portable fire extinguisher on hand
- > Keep the area around the fireplace clear of combustible furniture and other materials
- > Burn only seasoned firewood
- > Make sure ashes are completely extinguished and dispose of them outdoors in a noncombustible container

### Need More Information?

Additional information on chimney and vent inspections is available through the Chimney Safety Institute of America ([www.csia.org](http://www.csia.org)), the Consumer Product Safety Commission ([www.cpsc.gov](http://www.cpsc.gov)) and other sources.

Associations may also request additional information on this topic by contacting CAU's Loss Control Department.



### What are the Hazards?

Chimney fires and accidental carbon monoxide (CO) poisonings are the predominant hazards associated with chimneys and vents.

Burning wood or other solid fuels in a fireplace or stove produces smoke, water vapor, gases and unburned wood particles. As these byproducts rise into the cooler chimney, they condense and form creosote, a dark, tarry residue left on the inner walls of the chimney. Creosote is a highly combustible material and once ignited will provide the fuel for a chimney fire.

Natural gas and propane are common fuels for fireplaces with gas log sets. There are two types of gas logs on the market, “yellow flame” and “blue flame” The yellow flame log sets simulate wood logs and produce an equivalent amount of heat. The blue flame log sets burn hotter and cleaner than yellow flame log sets but the flame is not as attractive. Yellow flame log sets produce more carbon and soot that will collect in the chimney than blue flame log sets. Though both types of log sets do not produce visible smoke like wood burning appliances, they do deposit corrosive substances inside the chimney.

CO is a combustion byproduct produced through incomplete burning of carbon based fuels such as wood, natural or liquefied petroleum gas or propane. A build up of CO can happen when a fuel burning appliance malfunctions or there is a leak or blockage in the vent for the appliance. A build up of CO within a building can lead to an accidental carbon monoxide poisoning.

CO is undetectable by the senses because it is odorless, tasteless, and colorless. The initial symptoms of CO poisoning will often mimic those of the flu but without the associated fever. Symptoms may include headache, nausea, dizziness, shortness of breath and fatigue. As the concentration of CO increases in an enclosed space, the symptoms of CO poisoning will appear sooner. In addition, and more importantly, a person may lose consciousness sooner as well.

### Chimney & Vent Inspections

All fireplaces, chimneys and vents should undergo an annual inspection by a certified chimney sweep. The chimney sweep should then perform any needed cleaning, maintenance or repairs based on the

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inspection results. The NFPA defines three levels of chimney and vent inspections. The circumstances that give rise to the inspection determine the level of inspection required.

A Level 1 inspection is the most common and least invasive inspection and involves examination of the readily accessible areas of the chimney, fireplace and flue to look for obstructions and creosote deposits.

A Level 2 inspection is required whenever there is a change in the fuel or heat producing appliance connected to the chimney or when installing an additional heat producing appliance.

A Level 3 inspection is the most comprehensive type of chimney inspection. This inspection is only required after a chimney fire has caused damage to the chimney or the building or if all requirements of a Level 1 or 2 inspection cannot be completed due to lack of access to concealed spaces. This level of inspection may involve removal of building and chimney components to gain access to concealed areas.

### Signs of Trouble

A loud roar in the chimney, creosote flakes on the ground, roof or gutter, visible cracks in the chimney, smoke escaping through cracks or into the attic are all signs that a chimney fire has happened or may be burning.

CO detectors will detect elevated levels of CO and sound an alarm to alert occupants of a potential poisoning risk. Many newer homes are equipped with CO detectors, but the majority of older homes may not have this safety device installed. Every home that has fuel burning appliances, fireplaces or an attached garage should also have CO detectors installed on every level of the home and in a central location outside each sleeping area.

If a resident discovers that their chimney is on fire, or they begin to experience the symptoms of CO poisoning they should evacuate their residence and call the fire department. In multi-residential buildings, they should also activate the building fire alarm or take other steps to alert other building residents.

An annual inspection, maintenance and cleaning program for chimneys, vents and fireplaces is a sound risk management measure that will reduce the chance of a chimney fire or accidental carbon monoxide poisoning.