

Fireplaces and Wood Stoves Safety – Fire Prevention Measures

The chimneys that serve fireplaces and wood stoves have the job of expelling the byproducts of combustion – the substances produced when wood burns. These include smoke, water vapor, gases, unburned wood particles, hydrocarbon volatile, tar fog and assorted minerals.

As these substances exit the fireplace or wood stove, and flow up into the relatively cooler chimney, condensation occurs. The resulting residue that sticks to the inner walls of the chimney is called creosote. Creosote is black or brown in appearance. It can be crusty and flaky, tar-like, drippy and sticky, or shiny and hardened. Often, all forms will occur in one chimney system. Whatever form it takes, creosote is highly combustible. If it builds up in sufficient quantities and catches fire inside the chimney flue instead of the firebox of the fireplace or wood stove, the result will be a chimney fire. Although any amount of creosote can burn, sweeps are concerned when creosote builds up in sufficient quantities to sustain a long, hot, destructive chimney fire.

Certain conditions encourage the buildup of creosote. Simply put, restricted air supply, unseasoned wood and cooler-than normal chimney temperatures are all factors that can accelerate the buildup of creosote on chimney flue walls. Air supplies on fireplaces may be restricted by closed glass doors or by failure to open the damper wide enough to move heated smoke up the chimney rapidly (the longer the smoke's "residence time" in the flue, the more likely is it that creosote will form). A wood stove's air supply can be limited by closing down the stove damper or air inlets too soon and too much, and by improperly using the stovepipe damper to restrict air movement. Burning unseasoned wood, because so much energy is used initially just to drive off the water trapped in the cells of the logs, keeps the resulting smoke cooler, as it moves through the system, than if dried seasoned wood is used.

In the case of wood stoves, fully packed loads of wood (that give large cool fires and eight (8) or ten (10) hour burn times) also contribute to creosote buildup. Cool flue temperatures speed creosote production, too. Condensation of the unburned byproducts of combustion occurs more rapidly in an exterior chimney, for example, than in a chimney that runs through the center of a house and exposes only the upper reaches of the flue to the elements.

Before you light that fire, make sure you know your fireplace, wood burning stove and/or chimney is clean and in a safe working condition. Please ensure your chimney is cleaned regularly to reduce a build-up of creosote.

“Keep you and your family safe”