Where does the moisture come from?

Did you know that for every cubic foot of gas burned, two cubic feet of water vapor is created? That is a lot of water! How can this water vapor affect your chimney?

Water vapor always travels up your chimney - it is only when flue gases drop to 120°F that condensation begins. When water vapor condenses, rain clouds form and it literally rains in your chimney! Countless drops of acidic moisture soak the flue. This is more of a problem now than it was in the past due to modern, high-efficiency furnaces. High-efficiency furnaces, as their name indicates, extract more heat from a given amount of fuel than conventional furnaces, and less heat is sent up the chimney.

However, since less heat is sent up the chimney, the temperature in the flue is often below 120°F. The acidic "rain" happens frequently, and the flue seldom has a chance to dry out. Herein lies the side effect of high-efficiency furnaces: excessive acidic moisture in the flue. In turn, this acidic moisture wreaks havoc on terra-cotta flues and masonry.

What is the big deal with a few cracked flue tiles?

It happens thousands of times each year. Damaged chimneys equal disaster. Carbon monoxide quietly leaks undetected through cracks in the flue tiles. The flame, heat and smoke can use even small cracks as an escape route. Damaged chimneys equal disaster.

FREQUENTLY ASKED QUESTIONS

WHY IS MY CHIMNEY BREAKING DOWN?

The primary culprit in chimney breakdown is the acidic moisture that comes from condensed flue gases. This acidic moisture attacks the chimney from the inside.

That's why a chimney may look good on the outside, but the inside can be a totally different story. Years of normal use with hot and cold cycles and seasonal weather conditions all take their toll on a chimney.

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Where does the moisture come from?

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RHINO RIGID™ RELINING SYSTEM

the solution for every chimney

SMOOTHER STRONGER SAFER
DANGEROUS CHIMNEYS

The Furnace’s Flue

High-efficiency furnaces do not waste energy by sending heat up a chimney. As a result, there is not enough heat to produce condensation. This water condenses with acids in the flue to create acid rain. Chimney fires are particularly vulnerable to this acid, causing damage.

The Fireplace’s Flue

It may have undergone a chimney fire, or have partially or completely collapsed. A damaged flue brings the dangers of furnaces and carbon monoxide poisoning.

Carbon Monoxide

The Furnace's Flue

Excessive soot in oil furnace flues

Carbon Monoxide

The Fireplace's Flue

Excessive or glazed creosote.

Chimney Fires happen when creosote buildup is fed by the flames. These fires can rage for hours, and still be ignited at a later date. It may have undergone a chimney fire, or have partially or completely collapsed. A damaged flue brings the dangers of furnaces and carbon monoxide poisoning.

Furnaces and chimneys may have been connected to an improperly vented appliance, misused wood stove, or other solid fuel appliance. A damaged or cracked flue can bring surrounding materials to the flash point, and ignite your home. Also, sparks from the chimney can find their way through small cracks in the flue pipe, and quickly turn a chimney fire into a structure fire.

A damaged flue can block the flue, and quickly fill the chimney causing staining and chimney exterior damage to home interior. This can lead to carbon monoxide leakage and a higher risk to the home and chimney structure.

THE HOME: Danger Zone

The Furnace’s Flue

Gas or oil heating appliance.

Flue tiles not aligned properly

Fireplace and Stove Flue

Flaking plaster and/or peeling wallpaper

Excessive or glazed creosote.

Flue tiles not aligned properly

Furnace Flue Problems

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