

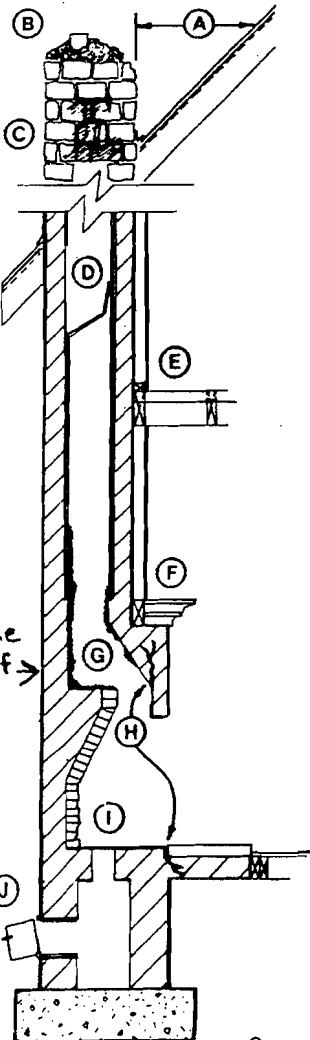
Airtight Stoves and Masonry Chimneys

It is important for safe and satisfactory performance of your airtight woodstove that fireplace chimneys are well constructed and meet minimum code requirements. The chimney flue should have a code approved liner made of masonry pre-cast refractory tiles, straight or flexible stainless steel pipe. Even the tile lined masonry chimney in perfect condition is poorly matched to the airtight woodstove. The cool walls of the masonry chimney never warm up to the same temperatures of the flue gases. This temperature difference results in a continual condensation of creosote on all of the inner walls of the chimney. More creosote means more maintenance and potential chimney fires. Often this creosote becomes glazed on and cannot be removed by ordinary sweeping and when sweeping is done on a masonry chimney it is an involved and awkward job requiring the removal of the stove or insert and cleaning behind the damper.

DISADVANTAGES OF AN UNLINED CHIMNEY

***Lack of Safety:** Masonry chimneys create more creosote and are prone to a more violent chimney fire. The masonry cannot withstand the sudden extreme temperatures and will crack or shatter. The masonry surface can also conduct the high temperatures through to the combustible materials it is in contact with, most of which is hidden within your walls. Creosote can also seep through the cracked inner walls and become ignited during a chimney fire.

***NFPA Codes:** The National Fire Protection Association codes call for a chimney pipe liner to run from the stove to the existing tile liner to bypass the smoke shelf. This improves the safety but cannot offer nearly the safety and advantages of running the liner from the appliance to the top of the chimney.



***Masonry Smoke Shelf:** Masonry chimneys have an oversized and hard to reach smoke shelf. When the chimney is cleaned, the area must be removed as well as any adaptor plates to get access to the smoke shelf. This is why chimney sweeps charge from \$8 to \$140 to sweep this type of installation as compared to \$98 to clean a pipe lined chimney.

***Draft:** The oversized smoke shelf and flue reduce the draft to your woodstove making it slower to start up and reducing your ability to operate the stove to its highest capacity. NFPA codes require that no stove be installed to a chimney with a liner more than three times the area of the stove flue pipe. The standard 12"x16" tile liner is too large for proper draft.

LOOK FOR THESE DEFECTS:

- A) Improper chimney height and roof clearance. Check local building codes for proper specs.
- B) Chimney cap deterioration; should be rebuilt.
- C) Creosote stains indicate flue damage; should be rebuilt.
- D) Blockage within the flue; must be removed.
- E) Improper clearance between chimney and combustible materials. Generally, a clearance of 2" is required to all combustible walls and framing members. Check codes.
- F) Improper clearance between smoke chamber and adjacent framing members. Check codes.
- G) Creosote accumulation; chimney needs thorough cleaning.
- H) Structural deterioration of the fireplace; must be repaired.
- I) Loose or broken bricks or mortar; replace and remortar.
- J) Loose or broken clean-out door; repair or replace.

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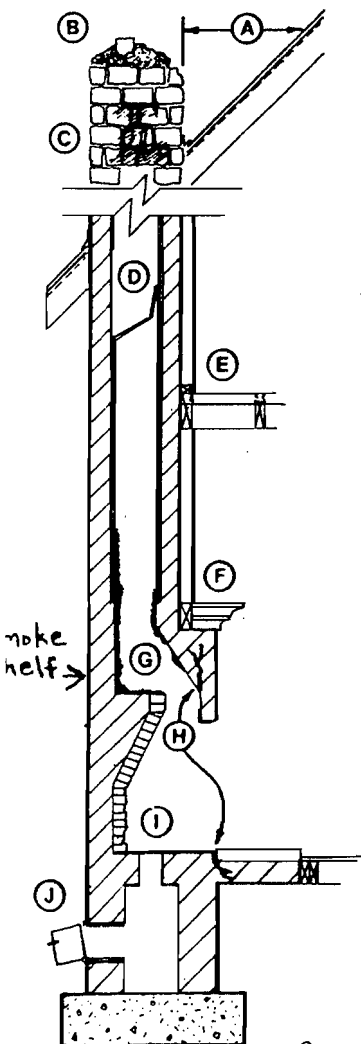
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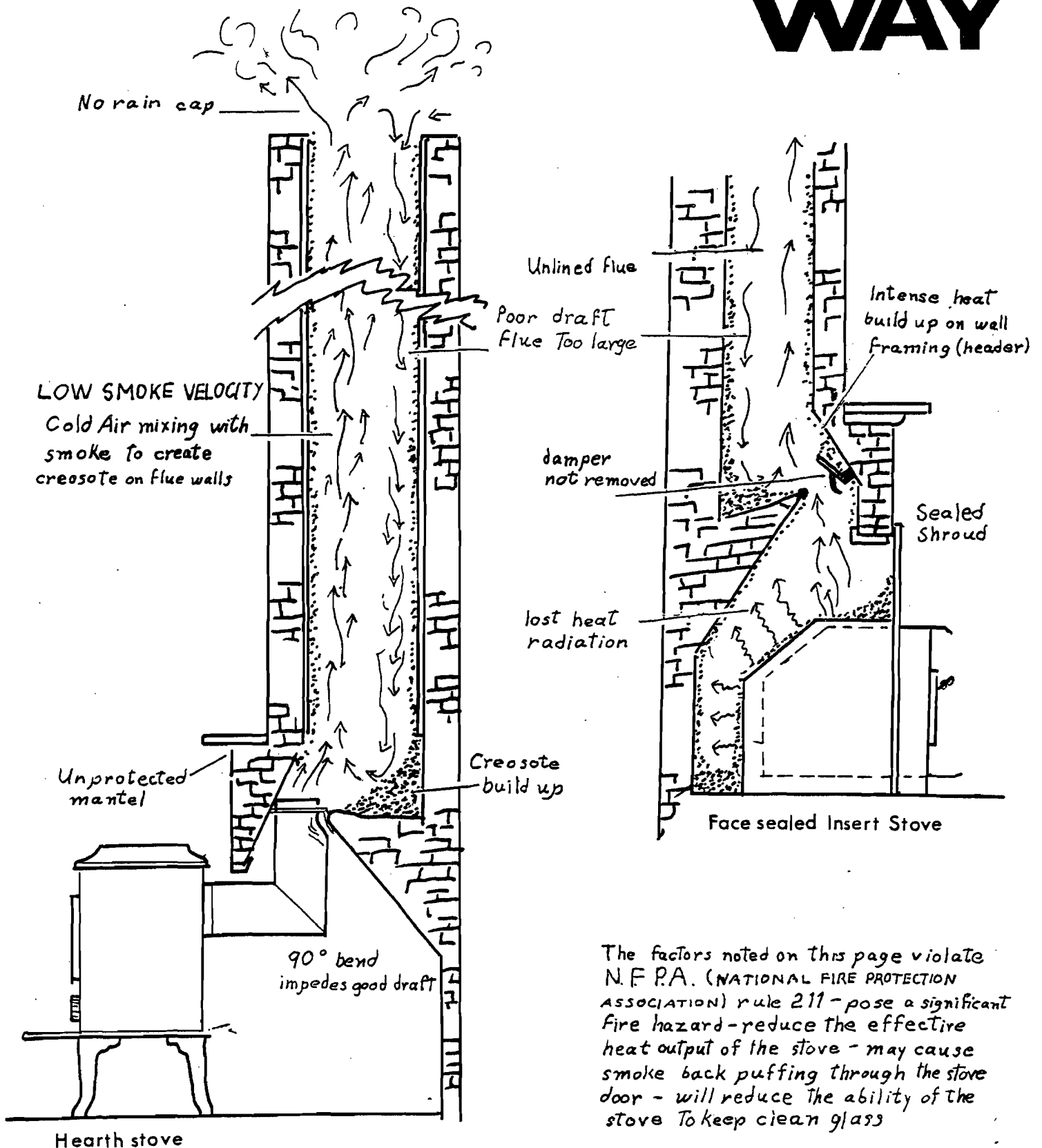
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THE WRONG WAY



The factors noted on this page violate N.F.P.A. (NATIONAL FIRE PROTECTION ASSOCIATION) rule 211 - pose a significant fire hazard - reduce the effective heat output of the stove - may cause smoke back puffing through the stove door - will reduce the ability of the stove to keep clean glass

Chimney liner

Retrofitting your fireplace for a stove

Chimney liners. Add them to your vocabulary if you plan to fit a woodburning stove into a fireplace.

A flexible stainless steel pipe that runs from the bottom to the top of the chimney, a liner is "one of the trends coming on strongly in the market," according to Jay Fenton of Richmond, president of the California-Nevada chapter of an industry organization known as the Wood Energy Institute.

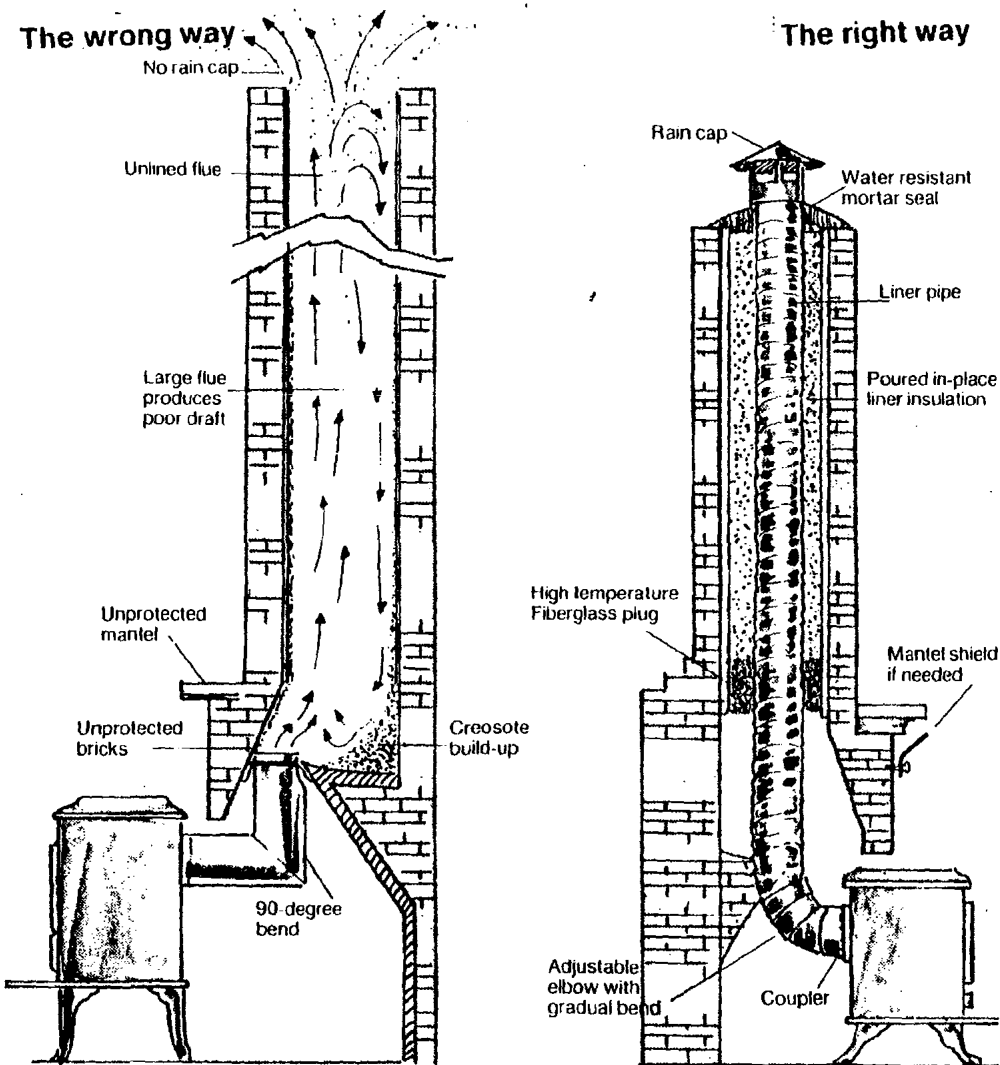
They are of particular interest in the Sacramento area, where dealers report heavy sales in recent years of fireplace inserts and hearth stoves.

Both are woodburning appliances designed to duct smoke out an existing chimney. An insert fits flush with the front of the fireplace and has a face that seals off the opening between the insert and the fireplace. A hearth stove projects into a room and is partially in and out of the fireplace opening. With both, a stove pipe runs at least part way up the masonry chimney.

"The state of the art of woodburning is changing dramatically," Fenton says. "We're now able to provide woodburning stoves with up to 80 percent efficiency — a marked improvement over an open fireplace, for example, which has zero to 10 percent efficiency or a conventional woodburning stove that has 30 to 50 percent efficiency."

Many who already have a fireplace in their homes are opting to install a woodburning appliance that uses an existing fireplace chimney to exhaust the smoke.

"A lot of people don't understand the difference between a fireplace and a stove," says Paul Biondi, partner in Solar Syndicate in Old Sacramento. "They say they have had their fireplace for 20 years and never had it cleaned, so why do they have to clean



A chimney liner system, right, eliminates many of the problems — including fire hazards — associated with fireplace inserts and hearth stoves that exhaust smoke up an existing chimney.

a stove chimney every year?

"The difference is that the open fireplace is sucking all that air into the opening and burning very hot and therefore burning up all the gases in the fire. All the heat is going up the chimney so the chimney is very hot. The fire is so hot you're getting complete combustion of the gases. You are not getting much heat (in the house), but you are burning everything up."

The result: little creosote buildup in the chimney.

By contrast, Biondi says, a stove produces great heat transfer to warm a room, "but you are not burning up the gases in the fireplace."

The result: creosote buildup in the chimney, the cause of flue fires.

"With a chimney lining system, people give their stove a proper sized chimney the way up with stainless steel pipe," Biondi says. "It gives good draft, the stove performs better, eliminates smoke problem, creates more turbulence in the fireplace which mixes air with gases to get a more complete combustion."

A liner system, which includes a stainless steel pipe, poured-in-place insulation, fiberglass plug at the bottom and rain cap at top, costs from \$650 to \$1,000 installed, according to Biondi. Hearth stove prices range from \$650 upward; inserts from at \$1,200.

Another advantage of a chimney liner, Biondi says, is that in the case of an insert the stove doesn't have to be removed for annual cleaning. The homeowner can clean the liner with a brush from the roof, or hire a chimney sweep for about \$40 for the cleaning, he says.