
A HOMEOWNER'S FIELD GUIDE TO CHIMNEYS AND FIREPLACES

*Understanding your system, spotting warning signs,
and making sound repair decisions*

CHRISTOPHER ALBERT AUMILLER



A HOMEOWNER'S FIELD GUIDE TO CHIMNEYS AND FIREPLACES

*Understanding your system, spotting warning signs, and making
sound repair decisions*

CHRISTOPHER ALBERT AUMILLER

IN GRATITUDE

This book is dedicated to my grandfather, Albert Mark Keane, who owned a Sinclair Oil heating oil business in Harrisburg, Pennsylvania. Heating homes was his trade, and he taught my uncle, James, how to be a chimney sweep.

Uncle James, in turn, taught me. Everything I know about keeping a home warm and safe began with what my grandfather passed down, and every chimney I sweep carries a little of his work forward.

Thank you, Grandpa. Thank you, Uncle James.

Christopher Albert Aumiller

A Homeowner's Field Guide to Chimneys and Fireplaces

First edition • September 2026

Copyright © 2026 Christopher Albert Aumiller. All rights reserved.

Illustrations in this book are illustrative images and schematics. They do not document any particular inspected or approved installation.

Published by Christopher A. Aumiller, Chimney Sweep Master

426 Lloyd Street # B1, Cary, IL 60013 • 847-516-4139 • goodchimney.com

Contents

Before You Begin	5
1 Know What You Own	6
<i>Code Reference: The IRC and NFPA 211</i>	<i>7</i>
2 Your First Safety Decisions	9
3 Burning Wood With Less Smoke	10
4 The Inspection That Answers a Question	12
5 What a Cleaning Can and Cannot Do	14
6 Water Enters From the Top and the Roof	16
7 Smoke, Draft, and the House	18
<i>Wind and Chimney Height</i>	<i>18</i>
<i>Summer Reverse Draft</i>	<i>19</i>
8 Gas Fireplaces and Vented Appliances	21
9 Animals, Blockages, and Odors	23
10 Repair Proposals and Contractor Questions	24
11 A Practical Annual Care Plan	25
12 Understanding the Hearth and Firebox	26
13 Stoves and Inserts	27
14 After a Chimney Fire	29
15 Common Questions	30
Appendix A: Homeowner Observation Log	31
<i>When to Stop Using the System</i>	<i>31</i>
Appendix B: Questions to Take to an Inspection	33
Sources	34

Before You Begin

This guide is for homeowners who want to understand the fireplace and chimney they own, recognize trouble early, and talk with a service professional without guessing. It covers wood-burning fireplaces, stoves, gas hearth systems, venting, moisture, inspection reports, and common decisions about repair. It is educational; it cannot determine whether your particular system is safe from a photograph or a description.

Do not use a fireplace or appliance that has been flagged unsafe, has unexplained smoke entering the room, shows evidence of a chimney fire, or has a suspected vent blockage. Leave inspection, roof access, gas work, structural repair, and flue repair to qualified people. For an active fire or a carbon monoxide alarm, get everyone out and call emergency services. Manufacturer instructions, the locally adopted code, and an onsite evaluation govern an individual installation.

CHAPTER 1

Know What You Own



Original illustrative image of a masonry fireplace. It does not document an inspected or approved installation.

A chimney is a pathway for combustion byproducts. The visible brick stack is only one part of a system that may also include a firebox, smoke chamber, damper, liner, connector, cap, crown, flashing, and one or more appliances. The first useful question is not “Does it need cleaning?” It is “What appliance is connected, and where does its exhaust go?”

A site-built masonry fireplace has a firebox and a chimney constructed at the house. A factory-built fireplace is a listed assembly with components specified by its manufacturer. A wood stove or insert may vent through a connector or a liner within a masonry chimney. A gas fireplace can be direct

vent, natural vent, or another listed configuration. A gas furnace or water heater may also share a masonry stack through a separate flue or an approved vent arrangement. These are different systems with different instructions.

Look for a manufacturer label and keep the installation manual. Never assume that a decorative glass door, grate, liner, or cap fits every fireplace. Before buying a replacement part, record the model and serial number if available and ask the technician to identify the appliance and vent route. A house sale, remodel, fuel conversion, or new appliance is a good time to establish a baseline record.

Keep one folder with the appliance manual, inspection reports, photographs, invoices, repair proposals, and the date of the last use. The folder makes it easier to distinguish a new crack or stain from an old documented condition. A simple record can also prevent the same investigation from being repeated by each new contractor.

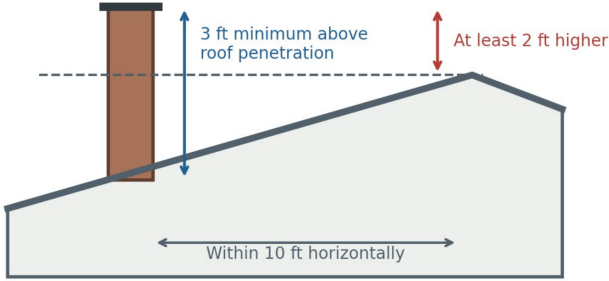
Code Reference: The IRC and NFPA 211

Two references should be kept distinct. The International Residential Code (IRC) is a model code that a jurisdiction may adopt by ordinance, often with local amendments. Its Chapter 10 addresses chimneys and fireplaces; other chapters address appliances and fuel gas. NFPA 211 is a separate standard for chimneys, fireplaces, vents, and solid fuel-burning appliances. It is widely used by chimney professionals, including for inspection terminology. A referenced standard applies only as the adopted code and its specific cross-references provide. Do not assume that adoption of an IRC edition makes every provision of every edition of NFPA 211 local law.

In Illinois, the Capital Development Board says municipalities and counties are not required to adopt a building code, though an adopted local code must satisfy statutory minimum structural requirements. A local code directory identifies reported editions and amendments. For work on an existing house, ask the village or county building department which adopted code and edition apply, whether a permit is required, and how it treats an existing fireplace. The model IRC is a starting reference, not a substitute for that answer.

For example, the model IRC masonry-chimney termination provision is commonly cited as R1003.9. It calls for the chimney to extend at least 3 feet above the roof where it passes through and at least 2 feet higher than any part of the building within 10 feet horizontally. The 10 feet is measured horizontally,

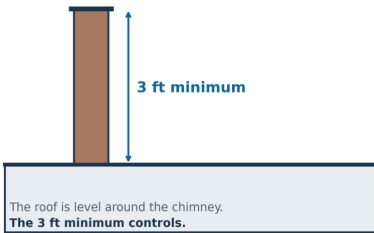
not up the roof slope. This is a minimum geometry check, not a promise of good draft in every wind condition. Factory-built systems and appliance listings may have their own instructions.



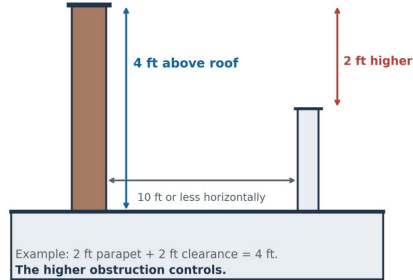
IRC R1003.9 model rule • illustrative geometry, not to scale • check adopted edition and appliance listing

The 3-2-10 rule illustrated. Dimensions and roof geometry are schematic; verify the adopted IRC section and the appliance listing.

A Plain flat roof



B Two foot parapet within ten feet



Conceptual model IRC R1003.9 masonry chimney termination. Not to scale. Check the adopted code, local amendments and appliance listing.

Flat roof examples: 3 feet on an unobstructed roof; 4 feet in this example because a 2-foot parapet is within 10 feet horizontally.

When a report cites a code, ask for the adopted edition, exact section, the condition observed, and any local amendment. When it cites NFPA 211, ask whether the citation is an adopted legal requirement, a referenced provision, an inspection standard, or a professional recommendation. That distinction makes the report easier to understand and defend.

CHAPTER 2

Your First Safety Decisions

A working fireplace is a controlled fire inside a building. It deserves the same deliberate routine every time you use it. Make sure the damper or operating control is in the correct position for your appliance; keep combustible items away from the opening and hearth; use a fitted screen where the system calls for one; and supervise children and pets around hot surfaces.

The U.S. Fire Administration recommends keeping combustible items at least three feet from a fireplace or stove, having the chimney inspected and cleaned each year by a professional, and placing cooled ashes in a lidded metal container outdoors at least ten feet from the house. Follow the appliance manual when it calls for a greater clearance or a different procedure. Do not leave a fire burning when you go to bed or leave home.

Install and maintain smoke and carbon monoxide alarms according to current manufacturer instructions and local requirements. Carbon monoxide has no smell or color. A headache, dizziness, weakness, nausea, chest pain, or confusion can be a warning, especially when more than one person in the home feels sick. If a CO alarm sounds or exposure is suspected, move everyone to fresh air and call emergency services; do not reenter until responders say it is safe.

If you hear a roaring chimney, see flames or sparks at the chimney top, or notice an unusually hot wall or connector, treat it as a possible chimney fire. Get people out and call 911. Even if the event stops, do not use the system again until it has been inspected. Heat can damage parts you cannot see from the living room.

CHAPTER 3

Burning Wood With Less Smoke

Dry wood is the homeowner's best starting point. EPA guidance says wood burns best below 20 percent moisture content. Split a fresh face and measure with a wood moisture meter according to its instructions; the outside of a log can be misleading. Store firewood outdoors, raised off the ground, with the top covered and the sides open to air. Buy locally cut wood where possible to avoid moving invasive pests.

Build a fire that lights promptly and burns steadily. Use dry kindling and an appropriate natural starter. Do not use gasoline, kerosene, charcoal lighter fluid, treated lumber, painted wood, plastics, or household trash. For a stove or insert, operate the air controls as the manufacturer directs. Closing air too far to make a long, smoldering burn can increase smoke and deposits. Do not overfire in an effort to burn deposits away.

Smoke tells you something. A little smoke during lighting may occur, but regular smoke in the room or persistent smoke from a warmed system calls for investigation. Wet wood, a blocked flue, an improperly sized or configured system, house pressure, and weather can all contribute. Changing fire-building habits may help one cause but cannot repair a damaged liner or blocked vent.

Artificial logs and starters are not interchangeable across appliances. Some products are meant only for open fireplaces. Read both the product directions and the fireplace or stove manual. Keep the opening protected against escaping embers, and let ashes cool fully before transferring them to the metal container.



Original illustrative photo of split wood and a moisture meter. Test a freshly split face according to the meter instructions.

CHAPTER 4

The Inspection That Answers a Question

An inspection should answer a defined question: Is this system suitable for continued use as it stands? What caused the smoke or stain? Did a chimney fire cause damage? What changed after a new appliance was installed? Tell the inspector why you called and what you observed, including the date and the conditions under which it happens.

The U.S. EPA's archived Burn Wise guidance says fire officials recommend professional inspection of a wood-burning appliance, chimney, and vent each year. The annual visit checks the condition of the system; the amount and type of deposits help determine the cleaning needed. Annual inspection is the baseline even when the fireplace has seen little use.

An annual routine evaluation is commonly a Level 1 inspection when the system and use have not changed. A Level 2 inspection may be appropriate after a chimney fire, a significant event, a change in appliance or venting, or for other circumstances described by the applicable standard. Access and the scope differ. Ask which level is proposed, what is included, whether the flue interior will be camera scanned, and what limitations will remain.

Soot and creosote can hide cracks, missing mortar, gaps, and other defects in a liner or smoke chamber. An inspector can identify visible buildup first, but cannot claim to have fully examined a surface hidden behind it. If deposits block the view, the affected areas must be cleaned before their condition can be meaningfully assessed; the inspector should then examine them again. Document what could not be seen before cleaning and any defects revealed afterward.

Ask for a written report that identifies each appliance and flue, records observed defects and inaccessible areas, and distinguishes urgent safety concerns from routine maintenance. If a repair is recommended, ask the

inspector to show the specific evidence and explain why the proposed work addresses it. Keep the original report even if you seek another opinion.

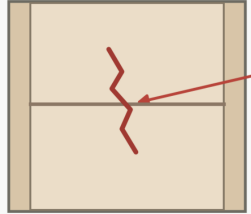
WHY CLEANING CAN BE NECESSARY BEFORE A COMPLETE VISUAL INSPECTION

BEFORE CLEANING



Deposits obscure the liner

AFTER CLEANING



Defect visible for assessment

Illustration only • A clean flue still needs an appropriate inspection.

Conceptual section of one flue: deposits can hide a liner defect; cleaning exposes the surface for closer inspection. It does not by itself establish safe operation.



Original illustrative photo of an inspection. A real report must identify the actual system and findings.

CHAPTER 5

What a Cleaning Can and Cannot Do

Sweeping removes accumulated soot and creosote from accessible parts of the venting path using methods suited to the system. It can also expose hidden surfaces for inspection. It does not fix a cracked flue, missing clearance, water leak, incorrectly installed appliance, or pressure problem in the house.

Creosote is a combustible deposit associated with wood smoke. Its texture and amount vary. A serious accumulation or glazed deposit may require a different professional approach from routine brushing. Do not rely on a “cleaning log” or chemical additive as a replacement for a professional evaluation. Material released from the flue still has to go somewhere, and an inspection may reveal defects a product cannot detect.

Ask what areas were cleaned: the firebox, smoke chamber, connector, liner, and cleanout may not all be included in the same quoted service. A sweep should protect the room, explain the findings, and tell you if access, damage, or deposits prevented a complete result. “Swept” and “safe to use” are separate conclusions. Get the conclusion in writing rather than inferring it from a clean hearth.

Cleaning frequency depends on use and condition, while yearly professional inspection remains the baseline recommended in the EPA’s archived Burn Wise guidance. A heavily used stove can accumulate deposits faster than an occasional-use fireplace. A fireplace unused for years can still have an obstruction, deterioration, or animal nesting. The calendar alone cannot tell you whether the flue is clean or sound.



Original illustrative photo of removed deposits. Appearance alone does not establish the condition of a flue.

CHAPTER 6

Water Enters From the Top and the Roof

Water can make a chimney look like an interior fireplace problem. It may enter at the crown, a missing or damaged cap, porous or deteriorated masonry, an open joint, a flashing defect where the stack meets the roof, or an adjacent roof detail. The stain inside is the end of the path, not necessarily the entry point.

A proper investigation follows the path from the roof and chimney top toward the room. Photograph the location of staining, note which rain or wind conditions precede it, and look for spalling brick, efflorescence, rust, soft mortar, or dampness at the firebox. Do not climb onto the roof to gather evidence. A roofer and chimney specialist may need to coordinate when the flashing and masonry meet.

Chimney flashing is a system of roof and wall metal details, not simply a bead of caulk around a stack. Surface sealant can fail as materials move and weather. Likewise, coating every brick with water repellent cannot substitute for diagnosing a failed crown, flashing, or mortar joint. A repair proposal should identify the entry point or explain what still needs testing.

The right repair depends on the condition found. Repointing sound surrounding masonry, replacing damaged units, rebuilding a failed crown, correcting flashing, or rebuilding a severely deteriorated portion each solves a different problem. Ask how the new work will shed water and where old and new materials will meet. Document the roof and chimney before work begins, then photograph the completed details.



Original illustrative photo of weathered masonry and flashing. It is not a diagnosis of a particular leak.

CHAPTER 7

Smoke, Draft, and the House

A chimney drafts because warm exhaust rises and is replaced by air entering the building. That simple idea becomes complicated when the chimney is cold, the house is tight, the flue is obstructed, the fire is weak, or a kitchen hood, bath fan, dryer, or other appliance changes indoor pressure. Wind and chimney height can also affect performance.

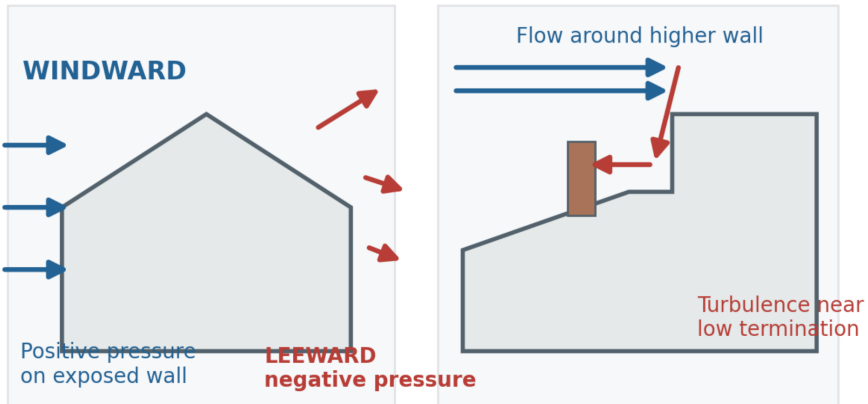
Write down when smoke spills: at lighting, only after the fire warms, when a certain fan runs, when a door opens, or only in a particular wind. Record whether the fireplace is on a lower level and whether another appliance is operating. Those observations help the inspector separate a pressure issue from a vent defect.

Opening a nearby window briefly may change the symptom, but it is a diagnostic clue, not proof that the chimney is safe or a permanent fix. Do not remove a damper, enlarge an opening, install an exhaust fan, or modify the flue based on a guess. The professional should assess the appliance, flue, termination, combustion air, and competing exhaust devices as a system.

If smoke enters the room repeatedly, stop using the fireplace until the cause is determined. The goal is not merely to make the smell less noticeable. It is to understand why combustion products are entering occupied space.

Wind and Chimney Height

Wind creates pressure where it strikes a building and suction on many sides and behind it. The windward wall is usually a positive-pressure zone; the leeward side is usually negative. Flow over a ridge, taller wall, nearby building, or trees can curl down into a turbulent area. A chimney terminating in that area can see gusts that oppose the upward flow in its flue. Wind can also act through leaks in the house and change room pressure, so the cap is not always the whole problem.



Schematic only: direction, roof form, leaks and wind speed change the actual pressure field.

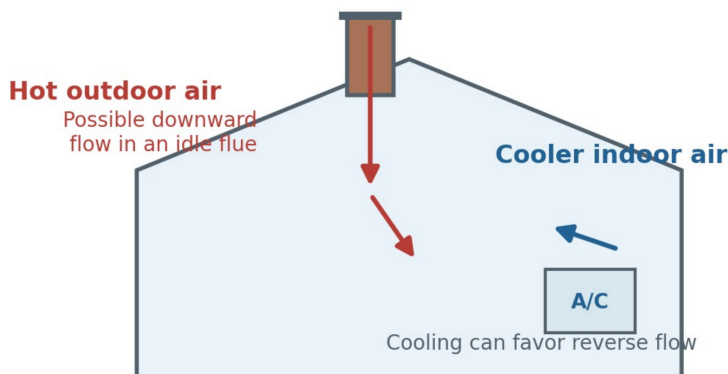
Original schematic of wind around a house and a low chimney near a higher wall. Pressure zones vary with wind direction and building details.

The IRC height rule is a minimum, and meeting it does not prove adequate draft. If smoke appears only with wind from one direction, record the direction, speed if known, windows open, fans running, fire intensity, and whether the fireplace is below a taller part of the house. The inspector may evaluate termination location, cap design, flue and appliance configuration, and house pressure. Adding a decorative cap or raising a chimney without diagnosing the pressure field can fail to solve the symptom.

A windward opening may pressurize a room while a leeward opening may depressurize it. The effect can change as gusts shift. Do not assume that an open window always supplies makeup air. If there is smoke spillage or a combustion-appliance concern, stop use and have the full venting system evaluated.

Summer Reverse Draft

On a hot day with the air conditioner running, the house may be much cooler than outdoors. In an idle, unheated chimney, temperature and density differences can favor downward airflow instead of the upward flow seen during a fire. That incoming air can carry a creosote odor into the room. The condition is sometimes called reverse stack effect. It is possible, not automatic: chimney temperature, house height, openings, wind, and other airflows determine what actually happens.



Other pressure effects can add to or oppose this flow.

Original schematic of possible downward flow in an idle chimney when the house is cooled. It is a diagnostic concept, not a finding about a particular home.

An ordinary balanced central air conditioner primarily recirculates indoor air; merely switching it on does not prove it has depressurized the whole house. Leaky supply ducts in an attic, unbalanced returns, closed interior doors, a kitchen hood, bath fan, dryer, or other exhaust can create or intensify pressure differences. In some homes the cooling-related buoyancy effect is small compared with wind or mechanical imbalance.

To investigate, note the outdoor and indoor temperatures, whether the fireplace is cold, whether the A/C fan is running, which exhaust fans are on, and whether the odor or downward flow changes with those conditions. A technician can inspect for deposits or obstructions and evaluate pressure with the equipment operating. Keeping a damper correctly closed when the fireplace is idle may reduce odor for some systems, but it is not a repair for an unsafe vent or a substitute for combustion-air testing. Never close a damper while a fire or hot coals remain.

CHAPTER 8

Gas Fireplaces and Vented Appliances

Gas fireplaces can look simple because a switch starts the flame. Their burners, controls, glass, venting, and clearances still require the correct parts and maintenance. The manual matters more than the appearance. An unvented set, a direct-vent unit, and a vented decorative log set are not operated or inspected in the same way.

Do not use a gas appliance with damaged glass, persistent soot, an unusual flame pattern, unexplained odor, repeated shutdown, or a suspected vent obstruction. Shut it off according to the manual and arrange service. If you smell gas, leave the area and follow the gas utility's emergency instructions; do not operate switches or attempt repairs.

A gas furnace or water heater may rely on a chimney even when the living-room fireplace is never used. A change in heating equipment can change venting conditions. After replacing an appliance, ask the installer how the remaining appliances are vented and whether the existing chimney or liner is still suitable.

Keep the model information and service record. Only qualified personnel should work on gas connections, combustion adjustments, safety controls, venting, or listed replacement parts. Carbon monoxide alarms add an important layer of warning, but they do not replace correct installation and maintenance.



Original illustrative photo of a gas fireplace. Follow the actual appliance listing and manual.

CHAPTER 9

Animals, Blockages, and Odors

Birds and other animals can enter an uncapped or damaged chimney. Twigs, nests, leaves, masonry fragments, and a closed or stuck damper can restrict the passage. A cap that keeps rain and animals out must still be sized and installed so it does not interfere with the appliance's venting.

If you hear scratching, smell decay, see nest material, or notice smoke suddenly spilling from a previously working system, stop using it and request an inspection. Do not light a fire to drive an animal out. Wildlife work and chimney service may both be needed, especially if an animal is trapped or young are present. Applicable wildlife rules vary by location and species.

Odors can come from creosote, damp masonry, animal material, or a pressure reversal that draws air down a flue. A scented product may mask the smell while leaving the cause. Tell the technician when the odor appears: hot humid weather, after rain, when the air conditioner runs, or when a particular appliance is on.

Record observations without entering the flue or dismantling the appliance. A camera inspection, cleaning, roof assessment, or pressure evaluation may be needed. The diagnosis should explain both the source of the odor and why air is carrying it into the room.

CHAPTER 10

Repair Proposals and Contractor Questions

A good proposal connects evidence to work. It should identify the appliance or flue, the observed condition, the repair method, materials or product, access needs, exclusions, permit responsibility, and how completion will be documented. A price alone does not let you compare two very different scopes.

Ask what the proposed repair solves and what it does not. A new rain cap will not repair a failed roof flashing. A new liner will not automatically repair saturated masonry or a leaking crown. A waterproofing treatment cannot replace loose brick. Conversely, a dramatic recommendation to rebuild should come with photographs, measurements, and a reason a smaller repair is unsuitable.

Get model-specific and locally applicable requirements checked before approving work. Ask whether the contractor carries appropriate licensing and insurance for the actual scope, whether subcontractors will be used, and whether the work affects a roof warranty. For a gas appliance, ask who is qualified to test the completed system. For a chimney, ask what inspection or test will verify the repair.

If a chimney has been flagged unsafe, a second opinion can be useful, but do not use the system while opinions are being gathered. Seek a written explanation of the disagreement. The cheapest bid is expensive when it does not address the actual defect.

CHAPTER 11

A Practical Annual Care Plan

Before the heating season, schedule a professional chimney inspection, review prior recommendations, test alarms, locate the appliance manual, and check that the hearth area is clear. If you buy wood, order it early enough to measure and dry it. If you rarely use the fireplace, the inspection still matters because weather and wildlife continue to affect an unused chimney.

During the season, notice changes rather than treating them as normal. Log smoke spillage, a new smell, a stain after rain, falling masonry, a change in draft, or unusual soot on gas glass. Use only the fuel and accessories allowed for the appliance. Keep children and furnishings away from hot surfaces, and handle ashes conservatively.

After a storm or roof repair, check from the ground for a missing cap or visible damage and note new staining indoors. After a chimney fire or an alarm event, stop use until the system is evaluated. After any repair, save before-and-after photos, the invoice, warranty details, and the final report.

The point of this routine is confidence based on evidence. When you know what you own, record what changes, and ask direct questions, you make better decisions and can enjoy the fireplace without ignoring its risks.

CHAPTER 12

Understanding the Hearth and Firebox

The firebox is the chamber where the fuel burns. The hearth is the protected floor area in front of or beneath the opening. Behind the visible finish, the system has construction details that keep heat away from combustible framing. A decorative brick face is not proof that the hidden clearances are correct.

Examine only what is readily visible from the room. Cracked firebrick, missing mortar, a warped grate, damaged glass, a stuck damper, or a hearth surface that has separated should be recorded for a professional. A hairline surface mark and a structural defect do not have the same meaning; location and depth matter. Do not apply ordinary wall mortar or an unlisted sealer to a firebox and assume it is repaired.

Furniture layout can change the risk around a fireplace. A sofa, holiday decoration, rug, basket of logs, or television cable can migrate into a hot zone. Check the appliance manual and local requirements for the actual clearances. Screens help contain embers, but glass doors and screens also become hot and do not make nearby combustibles safe.

Before a remodel that changes the mantel, surround, floor covering, or hearth dimensions, have the installation requirements checked. A finish carpenter, tile installer, and chimney professional may each see only one piece of the system. The homeowner should make sure the proposed materials and dimensions work together.

CHAPTER 13

Stoves and Inserts

A wood stove is a heating appliance with its own controls, connector, and vent. An insert is installed in an existing fireplace, usually with a liner system specified for the installation. Both depend on correct venting, clearances, hearth protection, and operation. A beautiful appliance can still be connected incorrectly.

Keep the manufacturer manual and note the model. It tells you what fuel to burn, how to operate the air controls, when to service a catalytic component if present, and which replacement parts are acceptable. A generic gasket or baffle may fit physically while changing performance. Ask a qualified technician to verify replacements.

With an insert, ask how the liner connects from the appliance to the chimney top and how the space around it was handled. With a freestanding stove, ask how the connector passes through a wall or ceiling and where the listed chimney begins. These are inspection questions, not homeowner installation instructions.

If the stove starts smoking into the room, a door seal fails, the connector glows, or the appliance behaves differently from normal, stop using it and obtain service. Do not cure a draft complaint by permanently leaving the door ajar or making an unapproved change to the air supply. Record the symptoms and conditions for the inspection.



Original illustrative photo of a wood stove. It does not establish that the pictured clearances meet a local code or listing.

CHAPTER 14

After a Chimney Fire

A chimney fire may announce itself with loud roaring, crackling, a strong hot odor, or flames at the top. Some events are less obvious. Either way, move people out and call 911 if the event is occurring. Do not climb onto the roof or pour water into a hot chimney. Follow emergency responders' directions.

Once the immediate event is over, keep the system off. A post-event evaluation should look for heat damage, liner cracks or displacement, damaged metal components, and effects on adjacent structure. The scope may need to be more detailed than a routine annual inspection. Photograph visible exterior changes from the ground and save the fire department report if one was made.

An inspection report should describe what was observed and what could not be seen. If repair is proposed, ask whether the entire vent path and connected appliance were considered. A new liner may be part of a solution, but the chimney top, masonry, clearance, and appliance can matter too.

If an insurance claim is involved, preserve the scene and records before demolition, except for emergency stabilization. Separate the professional's factual observations from any conclusion about insurance coverage. The policy, cause investigation, and carrier decision are separate questions.

CHAPTER 15

Common Questions

“I never use the fireplace. Do I still need an inspection?” Yes, periodically, and especially before returning it to service. Weather, animals, and deterioration do not wait for a fire. An annual check is the safety guidance used in this book.

“My chimney was just swept. Is it safe?” Cleaning is a service, not a blanket certification. Ask for the inspection findings and any limitations. A clean liner can still have a crack or an unsuitable connection.

“Why does the room smell smoky in summer?” Warm weather and household pressure can pull air down a flue. Deposits or moisture can add odor. The cause needs evaluation; masking the smell does not correct the airflow or source.

“Should I waterproof the brick?” First identify how water is entering. Flashing, the crown, joints, and the cap need evaluation. A coating may have a role in a particular repair plan, but it is not a substitute for repairing a defect.

“Can I add a new gas log set to my old fireplace?” Compatibility depends on the appliance, vent, fuel, listing, condition, and local requirements. Have the complete system evaluated and follow the new product’s instructions.

“What is the most useful thing I can do before the technician arrives?” Gather the previous report and appliance manual, photograph the symptom, write down when it occurs, and avoid using a system that may be unsafe.

Appendix A: Homeowner Observation Log

Use one line for each event. This log helps a professional reproduce an intermittent problem.

Date and weather	Appliance and event	Other fans or appliances	Photo or report reference

When to Stop Using the System

- Smoke or fumes repeatedly enter the room.
- A carbon monoxide alarm sounds or anyone has possible CO symptoms.
- You suspect a chimney fire or see loose or falling flue material.

- A professional has identified a condition requiring repair before use.
- A vent may be blocked by an animal, nest, debris, or collapsed material.

Appendix B: Questions to Take to an Inspection

- Which appliance and flue did you inspect, and which areas could you not reach?
- What level of inspection did you perform and why?
- Was cleaning needed to see the liner or other surfaces?
- Can you show the location of each finding in a photograph or video?
- Is the system suitable for use now? If not, what specific condition prevents use?
- What are the repair options, and how will the completed repair be checked?
- Does the roof flashing, crown, cap, or nearby masonry need separate evaluation?
- What record should I keep, and when should I schedule the next inspection?

Sources

This manuscript uses independent safety, code, and building-science references. No source photograph or diagram has been copied. Code text is summarized; check the adopted edition, local amendments, and manufacturer listing for an actual project.

- Chimney Safety Institute of America, Level 1 Inspection of a Masonry Chimney, revised April 5, 2019. https://web.csia.org/external/wcpages/wcmedia/documents/CSIA_Level1_MasonryChimney%20Revision%20Final.pdf
- Chimney Safety Institute of America, consumer guidance and Preventing Chimney Fires. <https://www.csia.org/latest-news/preventing-chimney-fires>
- U.S. Environmental Protection Agency, Best Wood-Burning Practices. Historical Burn Wise guidance, last updated November 2025. <https://www.epa.gov/burnwise/best-wood-burning-practices>
- U.S. Environmental Protection Agency, Wood-Burning Installation and Maintenance, Annual Inspections. Archived Burn Wise program guidance; last updated November 2025. <https://www.epa.gov/burnwise/wood-burning-installation-and-maintenance>
- U.S. Fire Administration, Fireplace and Wood Stove Safety. https://www.usfa.fema.gov/downloads/pdf/publications/fireplace_woodstove_safety_card.pdf
- Centers for Disease Control and Prevention, Carbon Monoxide Poisoning Basics, January 2026. <https://www.cdc.gov/carbon-monoxide/about/index.html>
- International Code Council, 2024 International Residential Code, Chapter 10, Chimneys and Fireplaces, especially R1003.9; Chapter 44, Referenced Standards. <https://codes.iccsafe.org/content/IRC2024P1/chapter-10-chimneys-and-fireplaces>
- National Fire Protection Association, NFPA 211, 2024 edition, free access. <https://link.nfpa.org/free-access/publications/211/2024>
- Illinois Capital Development Board, Illinois Codes FAQ and local code directory. <https://cdb.illinois.gov/business/codes/illinois-codes-faq.html>
- Wood Heat Organization, How Wind Affects Chimney Performance. <https://www.woodheat.org/wind-chimney.html>
- Building Science Corporation, BSI-075 How Do Buildings Stack Up. <https://buildingscience.com/documents/insights/bsi-075-how-do-buildings-stack-up>

- Building Science Corporation, BSD-107 Understanding Ventilation in Hot-Humid Climates. <https://buildingscience.com/documents/digests/bsd-107-understanding-ventilation-in-hot-humid-climates>