



CHIMNEY - FIREPLACE INSPECTION



02/11/2026

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SUMMARY



3.6.1 Chimney #1 and Lower Level Fireplace - Hearth Deficiencies: Hearth Extension does not meet size, clearance from combustibles requirements



3.6.2 Chimney #1 and Lower Level Fireplace - Hearth Deficiencies: Cracks and/or gaps in mortar between hearth extension and the hearth



3.7.1 Chimney #1 and Lower Level Fireplace - Combustion Chamber/Firebox Deficiencies: Combustion exterior air intake is not installed



3.7.2 Chimney #1 and Lower Level Fireplace - Combustion Chamber/Firebox Deficiencies: Firebrick in firebox is deteriorated, cracked or broken



3.7.3 Chimney #1 and Lower Level Fireplace - Combustion Chamber/Firebox Deficiencies: Firebrick or metal firebox is not sealed with the face of the fireplace



3.7.4 Chimney #1 and Lower Level Fireplace - Combustion Chamber/Firebox Deficiencies: Grate is damaged or deteriorated



3.8.1 Chimney #1 and Lower Level Fireplace - Damper Deficiencies: Damper is damaged, or deteriorated and does not close off air flow or open fully



3.9.1 Chimney #1 and Lower Level Fireplace - Ash Dump: Ash Dump cleanout door is located in the firebox of the lower level fireplace.



3.10.1 Chimney #1 and Lower Level Fireplace - Smoke Chamber Deficiencies: Smoke chamber brick are not parged smooth



3.10.2 Chimney #1 and Lower Level Fireplace - Smoke Chamber Deficiencies: Voids or gaps observed in the smoke chamber



3.11.1 Chimney #1 and Lower Level Fireplace - Crown & Caps Deficiencies: Chimney Crown (aka Cap or Wash) lacks a proper drip edge



3.11.2 Chimney #1 and Lower Level Fireplace - Crown & Caps Deficiencies: Crown Lacks expansion joint between crown and the flue liner



3.11.3 Chimney #1 and Lower Level Fireplace - Crown & Caps Deficiencies: Crown has minor hairline cracks (Crown aka: Cap or wash)



3.12.1 Chimney #1 and Lower Level Fireplace - Flue Liner Deficiencies: Flue is undersized for the fireplace opening area



3.12.2 Chimney #1 and Lower Level Fireplace - Flue Liner Deficiencies: Flue Liner is not sealed or fully supported at the intersect with the smoke chamber



3.12.3 Chimney #1 and Lower Level Fireplace - Flue Liner Deficiencies: Hairline or small gaps and cracks in the joints between the flue liner sections



3.12.4 Chimney #1 and Lower Level Fireplace - Flue Liner Deficiencies: Significant cracks and/or gaps in the joints of the clay flue liner



3.12.5 Chimney #1 and Lower Level Fireplace - Flue Liner Deficiencies: Flue liner joints are not smooth



3.13.1 Chimney #1 and Lower Level Fireplace - Exterior Masonry Deficiencies: Masonry is deteriorated, Spalled, Cracked, Missing Brick and Mortar



3.13.2 Chimney #1 and Lower Level Fireplace - Exterior Masonry Deficiencies: Efflorescence visible at the side of the chimney



3.14.1 Chimney #1 and Lower Level Fireplace - Cleaning and Maintenance Recommendation Resources: Information on the use and care of your fireplace



4.4.1 Main Level Fireplace - Hearth Deficiencies: Hearth Extension does not meet size, clearance from combustibles requirements



4.4.2 Main Level Fireplace - Hearth Deficiencies: Hearth Extension is not an integral part of the fireplace foundation



4.4.3 Main Level Fireplace - Hearth Deficiencies: Wood forms for constructing the hearth have not been removed. Combustible material in contact with underside of hearth



4.7.1 Main Level Fireplace - Ash Dump: Ash Dump - Combustible materials in the ash dump



4.8.1 Main Level Fireplace - Smoke Chamber Deficiencies: Smoke chamber brick are not parged smooth



4.8.2 Main Level Fireplace - Smoke Chamber Deficiencies: Voids or gaps observed in the smoke chamber



4.10.1 Main Level Fireplace - Flue Liner Deficiencies: Flue is undersized for the fireplace opening area



4.10.2 Main Level Fireplace - Flue Liner Deficiencies: Flue Liner is not sealed or fully supported at the intersect with the smoke chamber



4.10.3 Main Level Fireplace - Flue Liner Deficiencies: Hairline or small gaps and cracks in the joints between the flue liner sections



4.10.4 Main Level Fireplace - Flue Liner Deficiencies: Flue liner joints are not smooth



4.12.1 Main Level Fireplace - Cleaning and Maintenance Recommendation Resources: Information on the use and care of your fireplace

1: GENERAL

Information

Basic Inspection Subject Information: Inspector/Camera Operator
 Benjamin Currie-Walls CSIA # 11130

Basic Inspection Subject Information: Occupancy
 Not Occupied

Basic Inspection Subject Information: Building Type
 Residential, Single Family

Basic Inspection Subject Information: Number of Levels/Stories (Including Basement)
 Three

Basic Inspection Subject Information: Levels with Fireplaces Present
 One, Two

Basic Inspection Subject Information: Number of Chimneys with Multiple Flues
 1

Basic Inspection Subject Information: Number of Flues Inspected
 2

Level II NFPA 211 Inspection Conducted by a CSIA Certified Inspector

This chimney inspection was performed in accordance with NFPA 211 (2019 Edition). See the Definitions and Scope Details section at the end of this report for details.

General Description:

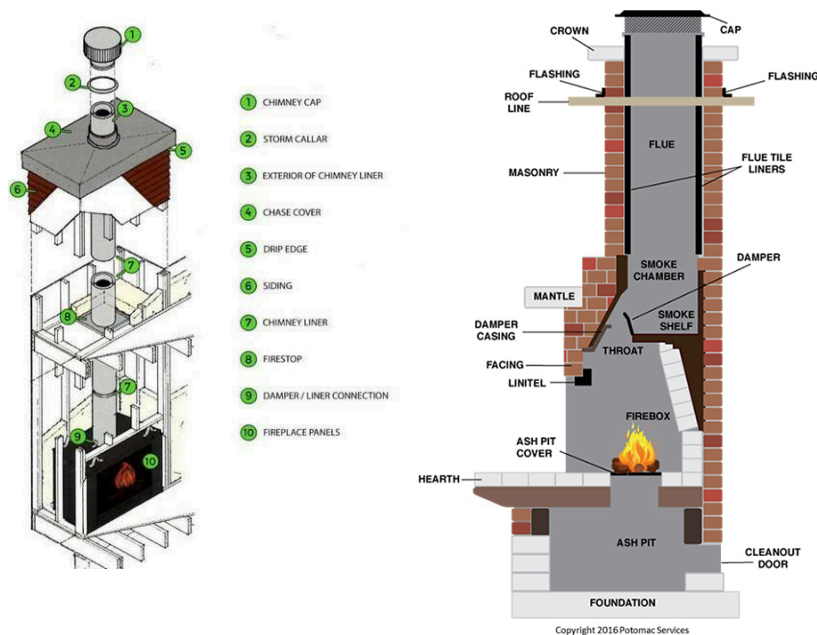
Level II CHIMNEY INSPECTION (NFPA STANDARD) – This inspection uses a camera to fully inspect the inside the flue liner of the chimney. If there’s anything that presents a concern – any voids, gaps or cracks in the lining – our technician will take pictures and review them with you. You will also receive a full video of the inside of the flue liner and smoke chamber. The accessible areas of the chimney exterior, including the chimney crown and flashing will be inspected and photographed. If height, pitch or snow cover limit physical access, a pole camera will be used to view the roof areas of the chimney. A Level II inspection should be performed if you are buying a new house, if you suspect there’s been a chimney fire or if there has been some kind of structural change to the chimney itself (i.e. the chimney was struck by lightning). (If cleaning is required to view/inspect the interior of the chimney flue and additional \$125.00 fee will be charged)

Fireplace Components Reference Image

This diagram will help with terminology used in the report.

Pre-Fabricated

Custom Masonry site build



Limitations

General

ROOF WAS NOT SAFELY ACCESSIBLE DUE TO

Steep Pitch

2: FROM YOUR INSPECTOR - SUMMARY STATEMENT

Information

**Video of Flue Interior - Fireplace
#1: Video of Chimney Flue
Interior #1**

[View Video
Here](#)

**Video of Flue Interior - Fireplace
2/Main Floor: Video of Chimney
Flue Interior #1**

[View Video
Here](#)

******* A summary statement of the overall condition *******

Please note: The entire report including videos must be reviewed to fully understand the condition of the chimney/fireplace system.

*The inspector's summary is a tool to help you understand the condition of your chimney and fireplace. To fully understand and appreciate the significance of the information in the report, **all of the report and all of the video must be reviewed.** Depending on your experience in chimneys, this may require additional consultation with a chimney repair professional.*

Suitability for Use: (Firebox and flue liner) C

Fireplace is not safe for use due to conditions of the firebox and/ or flue/flue liner. Please see details below.

Crown Condition A

The crown requires minor maintenance, i.e. caulking/sealing. Recommend annual inspection of the crown. Please see details below.

Very rough estimate of Cost of repairs C

Significant Cost exceeding \$5,000.00 - (Costs can vary significantly by vendor and method of repairs chosen)

! Important !

These are rough price ranges for chimney/fireplace repairs in general. These are not specific to your property. See details in the report to determine which of these (if any) are required.

Chimney Repairs: (Very Rough Estimate Ranges)

- Minor Repairs (Cracks, Loose Bricks): \$200 - \$800
- Chimney/Roof Flashing Repair/Replacement: \$300 - \$1,500
- Chimney Cap Repair/Replacement: \$150 - \$500
- Chimney Crown Repair/Replacement: \$200 - \$3,000
- Chimney Flue Repair/Relining: \$2,500 - \$7,000
- Chimney Stack Rebuild/Replacement: \$4,000 - \$15,000
- Chimney Rebuild: \$4,000 - \$15,000

Fireplace Repairs:

- Fireplace Hearth Repair: \$150 - \$800
- Fireplace Mantel Repair: \$150 - \$1,000
- Fireplace Mortar Repair: \$200 - \$900
- Fireplace Crack Repair: \$150 - \$800
- Fireplace Rebuild/Remodel: \$390 - \$2,000
- Prefabricated Fireplace Removal: \$600 - \$2,500
- New Prefabricated Fireplace Installation: \$700 - \$7,200

Additional Resources for Estimates, Repairs and Recommendations

Homefax Services is an independent inspection company. We do not perform repairs and therefore we can provide an unbiased evaluation of the condition of the fireplace and chimney. Since we do not perform repairs we are unable to give cost estimates. Below are a few companies that can provide estimate, repairs and additional recommendations.

They have good reputations and and positive online reviews. (Note: Homefax Services does not receive any referral fees, commissions or any other form of compensation from these companies)

Blue Sky Chimney Services and Sweeps - 952-944-1744 www.mplsblueskychimneysweeps.com

Jack Pixley Chimney Sweeps & Masonry - 763-422-0481 www.jackpixleysweeps.com

Chimney Doctors - 952-888-5252 * www.chimneydoctorsmn.com

2nd Generation Chimney - 612-2559891 * www.2ndgenerationchimneys.com

3: CHIMNEY #1 AND LOWER LEVEL FIREPLACE

Information

Photos Exterior: Close up of Crown and Caps



Chimney Exterior and Roof View
Comments: General Condition of the exterior of the chimney
Fair

Chimney Exterior and Roof View
Comments: Are objects attached to the chimney exterior?
No

Chimney Exterior and Roof View
Comments: Does the chimney appear to be free of debris and obstructions, as viewed from the roof?
Yes

Chimney Exterior and Roof View
Comments: Is the flue liner free from signs of spalling or deterioration, as viewed from the roof?
Yes

Chimney Exterior and Roof View
Comments: Is there a chimney cap visible from the exterior?
Yes

Chimney Exterior and Roof View
Comments: Is there a spark arrestor installed?
Yes

Chimney Exterior and Roof View
Comments: Does the crown appear to be free from cracks and defects?
Some Design Defects, Some minor issue(s)

Chimney Exterior and Roof View
Comments: Is there an expansion joint between the liner and the crown?
No

Chimney Exterior and Roof View
Comments: Type of roof covering
Asphalt Shingles

Chimney Exterior and Roof View
Comments: Is there a cricket, if the chimney structure is over 30" parallel to the ridgeline?
Not Present Chimney < 30"

Chimney Exterior and Roof View
Comments: Is there counter flashing present?
Yes

Chimney Exterior and Roof View
Comments: Does the flashing appear intact, and sealed as viewed from the roof?
Yes

Chimney Exterior and Roof View
Comments: Are there any noticeable efflorescence, water stains or discoloration to the chimney structure?
Yes

Chimney Exterior and Roof View
Comments: Does the chimney extend at least 3' from the roof line?
Yes

Chimney Exterior and Roof View
Comments: Is the chimney at least 2' higher than anything within 10'?
Yes

Chimney Exterior and Roof View
Comments: Are there any visible structural defects?
No

Photos Interior: Interior Photos - General



Photos Interior: Damper Area and Smoke Chamber Close Up



General - Interior: Chimney Location

East

General - Interior: Interior Firebox Material

Firebrick

General - Interior: Is there an outside air inlet for this masonry fireplace?

No

General - Interior: Does steel firebox or masonry display deterioration when viewed from the hearth?

Yes

General - Interior: Fireplace Type

Masonry Fireplace

General - Interior: Number of Sides Open on Fireplace

1

General - Interior: Type of Material on Fireplace Face

Brick

General - Interior: Is there a grate?

Not in functional condition

General - Interior: Does the firebox have a depth of 20"?(Exclude Rumford Style)

No

General - Interior: Year of the Chimney/Home Construction

1950

General - Interior: Is there smoke staining around the face of the fireplace opening?

No

General - Interior: Are there glass doors or screen(s) in place?

Yes - Other

General - Interior: Is the firebox sealed to the fireplace face?

No

General - Interior: Is there an ash dump?

No

General - Interior: Is there a damper in place?

Yes - Bottom Damper

General - Interior: Does the smoke chamber have an offset?

Yes

General - Interior: Does the chimney appear to be free of debris and obstructions, as viewed from the hearth?

Yes

General - Interior: Are clearance to combustible personal property adequate? (rugs, baskets, stockings, etc)

Yes

General - Interior: Is the damper open area equal to or greater than the cross sectional area of the liner?

Yes

General - Interior: Is the smoke chamber parged or smooth?

No

General - Interior: What is the flue liner material?

Vitreous Clay

Gas Lighter or Gas Log Set: Is there a gas lighter?

No

General - Interior: Are there any voids in the smoke shelf?

Not Visible

General - Interior: Is the smoke chamber smooth with a tight transition to the chimney liner without voids, as viewed from the hearth?

No

General - Interior: Does the flue liner have any readily visible defects, distortions or spalling, as viewed from the hearth?

No

Gas Lighter or Gas Log Set: Does the fireplace have a gas log set

No

Mfr. of log set:

Model #:

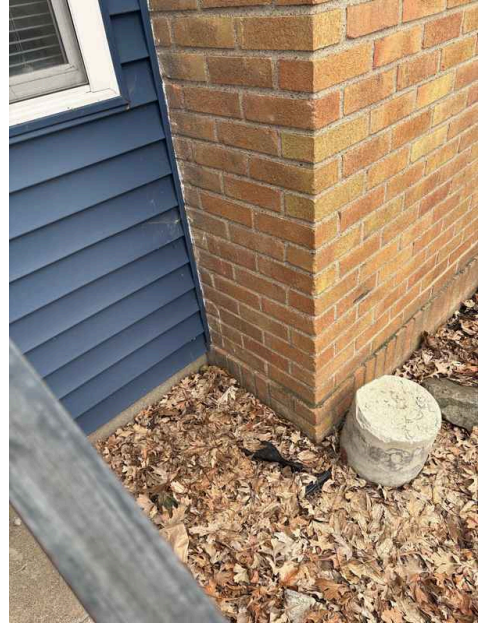
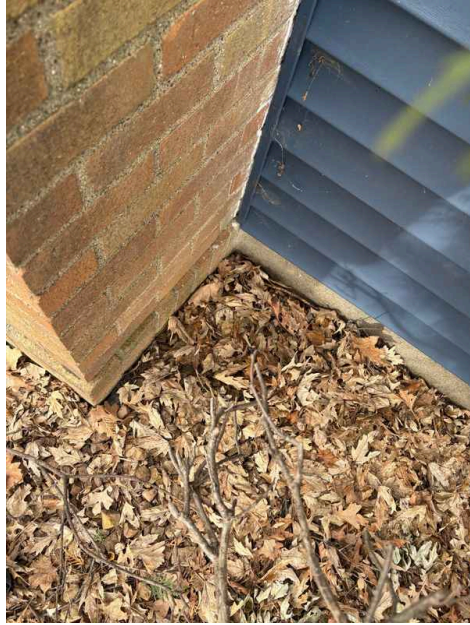
Serial #

Photos Exterior: Exterior Photos - General

Reference Photos



Photos Exterior: Base/Foundation of Chimney (interior/exterior)



Photos Exterior: Roof Top View of Chimney



Photos Exterior: Close up of Roof Flashing and Cricket



Chimney Exterior and Roof View Comments: Crown, Cap and Flue Liner dimensions

See Below

Crown

Crown Width = 21 ; Crown Length = 48 ; Between Flues = 3

#1 Flue Liner Inside Dimensions

Length x Width = Actual Flue Liner Sq In: 77

Height above crown: 9

#2 Flue Liner Inside Dimensions

Length x Width = Actual Flue Liner Sq In: 77

Height above crown: 9

#3 Flue Liner Inside Dimensions

Length x Width = Actual Flue Liner Sq In: 77

Height above crown: 9

For Required Min Flue Liner Sq In. : See General Interior Section

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Photos Interior: Firebox and Hearth Extension Close Ups



General - Interior: Dimensions - Fireplace, Hearth Extension and Flue Liner

See Below

All dimensions in inches

Heart Ext Left: 16 Heart Ext Right: 16 Heart Ext Front: 11.25

Depth: 22 Firebox Rear: 24

Opening Height: 26.5 Opening Width: 32.75 Opening Area: 868 sq. in.

Does Hearth Extension Meet Requirement? **NO**

Flue Actual Cross Sectional Area: 77 sq. in.

Recommended Flue Cross Sectional Area: **87 sq. in.** 12 to 1 Ratio Recommended 10 to 1 Ratio Recommended | 8 to 1 Ratio Recommended Rumford style & special designs - 20 to 1 opening to flue ratio**Is Flue Size Acceptable?:** **NO**

Damper L X W = Area: 180

Is damper at least 8" above fireplace opening? Yes

Is Damper Size area equal to or greater than flue cross sectional Area? Yes

Smoke Chamber Height: 24"

Is smoke chamber height \leq the width of the fireplace opening?: Yes

Flue Height (Top smoke chamber to top of flue Liner): 25 ft (approximately)

Chimney Height (Hearth to top of flue liner): 30 ft (approximately)

Ratio per NFPA 211 (2019):

*Recommended hearth extension is 16" in front and 8" on each side for openings less than 864 square inches.**Recommended hearth extension is 20" in front and 12" on each side for openings greater than 864 square inches.*

Flue Size Requirements:

*Flue size recommendation standard (NFPA 211)**Liner size recommendation based on fireplace opening to flue cross sectional area for:**Round liners - 12 to 1 opening to flue ratio**Rectangular or oval liners with < 2 to 1 length to width - 10 to 1 opening to flue ratio**Rectangular or oval liners with > 2 to 1 length to width - 8 to 1 opening to flue ratio**Rumford style and special designs - 20 to 1 opening to flue ratio***General - Interior: Is there a hearth extension in place?**

Yes - NOT COMPLIANT (See details in observations)

Recommended extension is 16" in front and 8" on each side for openings less than 864 square inches.

Recommended extension is 20" in front and 12" on each side for openings greater than 864 square inches.

Some Additional Hearth Extensions Requirements:

* Must be 2" thick and wholly supported by the chimney structure

* Must have 4" clearance below Heart Extension, Support shall be structural slab or corbeled brickwork.

General - Interior: Is there evidence of a floating hearth when viewed from the front (see description of floating hearth below)?

No

Today a masonry fireplace hearth must have a solid masonry footer below it to properly support it. But back in the day, hearths were often constructed with a sand pan base. A wooden box was recessed into the floor and filled with sand, then the hearth was laid on top of this base. The problem is that as the decades go by and the house settles, the wood base and the sand in it can shift or trickle out below, causing two problems.

First, this settling will cause the tiles, brick, marble etc resting on this base to crack and become unsightly.

Secondly, and of most concern due to safety issues, the outer hearth can separate from the floor of the fireplace and leave gaps where sparks and heat transfer can cause pyrolysis (decomposition) of the wood framing below that's brought about high temperatures. Pyrolysis can cause the wood below and surrounding the house to ignite at lower temperatures and cause a house fire.

If you burn solid fuel in your historic fireplace then it's imperative that you keep in mind how your hearth is built and its potential dangers. If your hearth is cracked then it's an indication that you can have the problem as seen in the photograph above where the wood is already charred and ready to ignite from a subsequent fire. Such a fire can burn down an old house swiftly!

General - Interior: Is the flue lined?

Yes

Definition: The flue is the opening or channel for smoke and heat to escape through the chimney

General - Interior: Are clearances to combustables appropriate to the size of the fireplace opening, such as mantal and fireplace face (Excluding hearth extension requirements)?

Yes

Wood trim and other combustible materials shall not be place within 6" of the fireplace opening.

Combustible materials placed at the top of the fireplace opening and projecting more than 1.5" shall not be place less than 12" from the top of the fireplace opening.

Limitations

Photos Exterior

ATTIC NOT ACCESSIBLE AT THE TIME OF THE INSPECTION

At the time of the inspection the attic was not accessible to review the details and clearances. A followup inspection may be warranted when access is made available.

Photos Exterior

ROOF NOT ACCESSIBLE DUE TO SAFETY CONSTRAINTS

Safety Constraints:

Pitch exceeds safe limits for walking

Height exceeds safe limits

Roof covering not safe to walk

Roof surface wet or snow/ice covered

Rain prevented use of pole camera

Chimney Exterior and Roof View Comments

ATTIC NOT ACCESSIBLE FOR VIEWING

The attic section of the chimney was not available to inspect for condition, clearances to combustibles and other potential hazards

Observations

3.6.1 Hearth Deficiencies

 Safety Hazard

HEARTH EXTENSION DOES NOT MEET SIZE, CLEARANCE FROM COMBUSTIBLES REQUIREMENTS

Proper distances are required to help prevent fires from sparks escaping the fire box.

Recommended extension is 16" in front and 8" on each side for openings less than 864 square inches.

Recommended extension is 20" in front and 12" on each side for openings greater than 864 square inches.

Actual fireplace opening: 868 sq in

Front: " (Requires 20 ")

Left: O.K.

Right: O.K. or



3.6.2 Hearth Deficiencies

 Maintenance or Review Item

CRACKS AND/OR GAPS IN MORTAR BETWEEN HEARTH EXTENSION AND THE HEARTH



3.7.1 Combustion Chamber/Firebox Deficiencies

 Maintenance or Review Item

COMBUSTION EXTERIOR AIR INTAKE IS NOT INSTALLED

A combustion air inlet must be present, clean and/or clear of debris for proper draw or to prevent excessive amount of conditioned air from being drawn out of the home cause excessive intake of exterior air to be pulled into the home.



3.7.2 Combustion Chamber/Firebox
Deficiencies

 Maintenance or Review Item

FIREBRICK IN FIREBOX IS DETERIORATED, CRACKED OR BROKEN

Fireplace firebrick components must be maintain in good condition for safe operation. Damaged or deteriorated components compromises the safety of the fireplace.



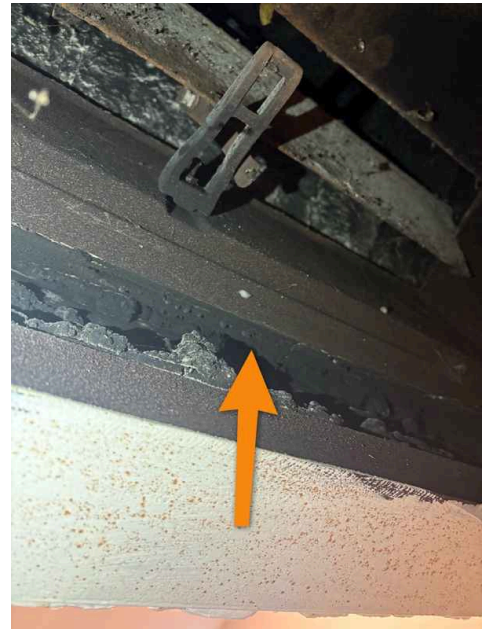
3.7.3 Combustion Chamber/Firebox
Deficiencies

 Recommended Action - More Significant Cost

FIREBRICK OR METAL FIREBOX IS NOT SEALED WITH THE FACE OF THE FIREPLACE

NFPA 211 States:

11.2.1.5 All joints and intersections between the hearth extension/fireplace facing and the fire chamber (firebox) shall be fully sealed with medium-duty refractory mortar (ASTM C199, Standard Test Method for Pier Test for Refractory Mortars). Gaps or voids at supporting lintels and joints between steel fireplace units and the fireplace face or between the frames of dampers and the fireplace face shall be sealed with the same material or with a high-temperature [2000°F (1093°C) service rating] insulating mortar.



3.7.4 Combustion Chamber/Firebox
Deficiencies

 Maintenance or Review Item

GRATE IS DAMAGED OR DETERIORATED



3.8.1 Damper
Deficiencies

 Recommended Action - More Significant Cost

DAMPER IS DAMAGED, OR DETERIORATED AND DOES NOT CLOSE OFF AIR FLOW OR OPEN FULLY



3.9.1 Ash Dump

ASH DUMP CLEANOUT DOOR IS LOCATED IN THE FIREBOX OF THE LOWER LEVEL FIREPLACE.

 Safety Hazard

Ash pit clean-out door for the upper level fireplace is located in the firebox of the lower level fireplace.



3.10.1 Smoke Chamber Deficiencies

SMOKE CHAMBER BRICK ARE NOT PARGED SMOOTH

 Recommended Action - More Significant Cost

NFPA 11.2.1.13 States: The inner surfaces of the smoke chamber shall be parge coated smooth, with an insulating refractory mortar, and not inclined more than 45 degrees from vertical.



3.10.2 Smoke Chamber Deficiencies

VOIDS OR GAPS OBSERVED IN THE SMOKE CHAMBER

The smoke chamber must be completely free of voids, gaps openings. It also must be sealed at the flue liner and the damper assembly

 Safety Hazard



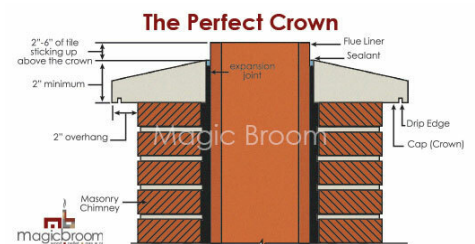
3.11.1 Crown & Caps Deficiencies

CHIMNEY CROWN (AKA CAP OR WASH) LACKS A PROPER DRIP EDGE

 Maintenance or Review Item

A proper drip edge is required to help prevent water from penetrating the brick, stone or wood chimney. The drip edge is not present Water penetration increases the potential for deterioration of the brick and other chimney components at the interior and exterior of the chimney. Damage may include: disintegration, cracks, and spalling.

R1003.9.1 Chimney caps. Masonry chimneys shall have a concrete, metal or stone cap, a drip edge and a caulked bond break around any flue liners in accordance with ASTM C1283. The concrete, metal or stone cap shall be sloped to shed water.

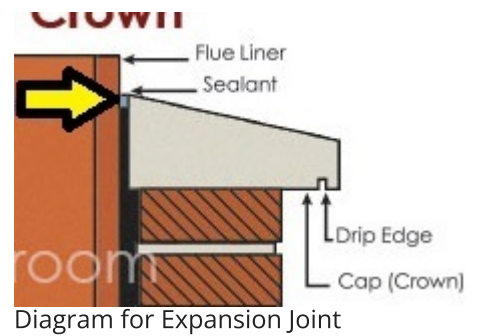


3.11.2 Crown & Caps Deficiencies

 Recommended Action - More Significant Cost

CROWN LACKS EXPANSION JOINT BETWEEN CROWN AND THE FLUE LINER

The required expansion joint to allow for movement between the flue liner and crown is not present. A properly seal expansion joint allows for the flue liner to move yet keep a water tight seal to prevent water infiltration. Lack of an expansion joint has the potential to cause cracks at the crown and the flue liner.



3.11.3 Crown & Caps Deficiencies

Maintenance or Review Item

CROWN HAS MINOR HAIRLINE CRACKS (CROWN AKA: CAP OR WASH)

Seal cracks to reduce the potential for water intrusion.

The crown is designed to keep water out of the chimney and shed the water away so it does no run down the chimney exterior. Water penetrating the crown has the potential to cause premature deterioration and spalling of the brick.



Example of damage from water

3.12.1 Flue Liner Deficiencies

Recommended Action - More Significant Cost

FLUE IS UNDERSIZED FOR THE FIREPLACE OPENING AREA

Dimensions:

Recommended flue cross sectional area **87**
 Actual flue **77**

Round chimney flues shall have a minimum net cross-sectional area of at least One-twelfth the fireplace opening

Square chimney flues or rectangular or oval flues with an aspect ration of less than 2 to 1 ratio shall have a minimum net cross-sectional area of at least One-tenth the fireplace opening

Rectangular or oval chimney flues with an aspect ratio greater than 2 to 1, shall have a minimum net cross-sectional area of at least one-eighth the fireplace opening.



3.12.2 Flue Liner Deficiencies

Safety Hazard

FLUE LINER IS NOT SEALED OR FULLY SUPPORTED AT THE INTERSECT WITH THE SMOKE CHAMBER

Clay flue liners must be fully supported the entire perimeter of the base with solid brick or core filled brick. The intersect between the liner and the smoke chamber must be sealed with a smooth transition.

NFPA 211 States:

7.1.2.6 Corbeled or solid masonry shall be provided in masonry chimneys to support the entire perimeter of flue liners.



3.12.3 Flue Liner Deficiencies

HAIRLINE OR SMALL GAPS AND CRACKS IN THE JOINTS BETWEEN THE FLUE LINER SECTIONS

 Maintenance or Review Item

Missing or cracked/deteriorated mortar in the joints of the clay flue liner. Without mortar in these joints, hot gases could enter between the clay sections and lead to a chimney fire. Have the chimney repaired by a CSIA Certified Chimney Sweep before using the fireplace.

The 2019 NFPA, Chapter 14.9 states: "If the flue liner in a chimney has softened, cracked, or otherwise deteriorated so that it no longer has the continued ability to contain the products of combustion (i.e., heat, moisture, creosote, and flue gases), the liner shall be either removed and replaced, repaired, or relined with a listed liner system or other approved material that will resist corrosion, softening, or cracking from flue gases at temperatures appropriate to the class of chimney service."



3.12.4 Flue Liner Deficiencies

SIGNIFICANT CRACKS AND/OR GAPS IN THE JOINTS OF THE CLAY FLUE LINER

 Recommended Action - More Significant Cost

Cracks in the joints of the clay flue liner. Even small gaps in these joints can allow hot gases enter between the clay sections and lead to a chimney fire. Have the chimney repaired by a CSIA Certified Chimney Sweep before using the fireplace.

The 2019 NFPA, Chapter 14.9 states: "If the flue liner in a chimney has softened, cracked, or otherwise deteriorated so that it no longer has the continued ability to contain the products of combustion (i.e., heat, moisture, creosote, and flue gases), the liner shall be either removed and replaced, repaired, or relined with a listed liner system or other approved material that will resist corrosion, softening, or cracking from flue gases at temperatures appropriate to the class of chimney service."



3.12.5 Flue Liner Deficiencies

FLUE LINER JOINTS ARE NOT SMOOTH

 Safety Hazard

The mortar in the flue liner joints are to be smooth to reduce turbulence, improve flow and reduce the accumulation of creosote. The joint(s) have rough, excessive or protruding mortar.



3.13.1 Exterior Masonry Deficiencies

MASONRY IS DETERIORATED, SPALLED, CRACKED, MISSING BRICK AND MORTAR

 Recommended Action - More Significant Cost

The chimney exterior is in general poor condition and requires extensive repair. Spalling is generally caused by moisture intrusion due to deteriorated mortar or deteriorated crown.

3.13.2 Exterior Masonry Deficiencies

EFFLORESCENCE VISIBLE AT THE SIDE OF THE CHIMNEY

 Recommended Action - More Significant Cost

There is efflorescence on the chimney masonry. This is typically the result of water penetration from an ineffective crown.

3.14.1 Cleaning and Maintenance Recommendation Resources

INFORMATION ON THE USE AND CARE OF YOUR FIREPLACE

 Maintenance or Review Item

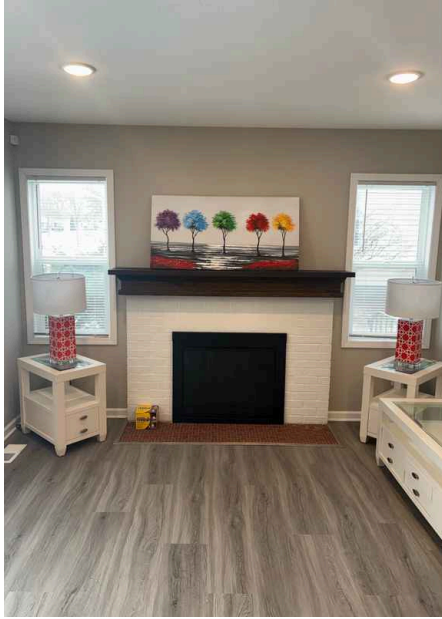
We have no affiliation with the company listed below. We simply found them online. James offers great advice on the use and care of fireplaces.

[How To Use and Maintain A Fireplace](#)

4: MAIN LEVEL FIREPLACE

Information

Photos Interior: Interior Photos - General



Photos Interior: Damper Area and Smoke Chamber Close Up



General - Interior: Fireplace Type Masonry Fireplace

General - Interior: Year of the Chimney/Home Construction
1950

General - Interior: Chimney Location
East

General - Interior: Number of Sides Open on Fireplace
1

General - Interior: Is there smoke staining around the face of the fireplace opening?
No

General - Interior: Interior Firebox Material
Firebrick

General - Interior: Type of Material on Fireplace Face
Brick

General - Interior: Are there glass doors or screen(s) in place?
Yes- Bi-fold

General - Interior: Is there an outside air inlet for this masonry fireplace?
No

General - Interior: Is there a grate?
Yes - In functional condition

General - Interior: Is the firebox sealed to the fireplace face?
No

General - Interior: Does steel firebox or masonry display deterioration when viewed from the hearth?
No

General - Interior: Does the firebox have a depth of 20"?
(Exclude Rumford Style)
No

General - Interior: Is there an ash dump?
Yes, combustible material present under. Not safe for use.

General - Interior: Is there a damper in place?
Yes - Bottom Damper

General - Interior: Is the damper open area equal to or greater than the cross sectional area of the liner?
Yes

General - Interior: Are there any voids in the smoke shelf?
Not Visible

General - Interior: Does the smoke chamber have an offset?
No

General - Interior: Is the smoke chamber parged or smooth?
No

General - Interior: Is the smoke chamber smooth with a tight transition to the chimney liner without voids, as viewed from the hearth?

No

General - Interior: Does the flue liner have any readily visible defects, distortions or spalling, as viewed from the hearth?

No

Gas Lighter or Gas Log Set: Does the fireplace have a gas log set

No

Mfr. of log set:

Model #:

Serial #

General - Interior: Does the chimney appear to be free of debris and obstructions, as viewed from the hearth?

Yes

General - Interior: Are clearance to combustible personal property adequate? (rugs, baskets, stockings, etc)

Yes

General - Interior: What is the flue liner material?

Vitreous Clay

Gas Lighter or Gas Log Set: Is there a gas lighter?

No

Photos Interior: Firebox and Hearth Extension Close Ups



General - Interior: Dimensions - Fireplace, Hearth Extension and Flue Liner

See Below

All dimensions in inches

Heart Ext Left: 18 Heart Ext Right: 18 Heart Ext Front: 15.75

Depth: 22.5 Firebox Rear: 24

Opening Height: 30.25 Opening Width: 34.5 Opening Area: 1044 sq. in.

Does Hearth Extension Meet Requirement? **NO**

Flue Actual Cross Sectional Area: 77 sq. in.

Recommended Flue Cross Sectional Area: **104 sq. in.** 12 to 1 Ratio Recommended 10 to 1 Ratio Recommended | 8 to 1 Ratio Recommended Rumford style & special designs - 20 to 1 opening to flue ratio**Is Flue Size Acceptable?:** **NO**

Damper L X W = Area: 192

Is damper at least 8" above fireplace opening? Yes

Is Damper Size area equal to or greater than flue cross sectional Area? Yes

Smoke Chamber Height: 28"

Is smoke chamber height \leq the width of the fireplace opening?: Yes

Flue Height (Top smoke chamber to top of flue Liner): 14 ft (approximately)

Chimney Height (Hearth to top of flue liner): 20 ft (approximately)

Ratio per NFPA 211 (2019):

*Recommended hearth extension is 16" in front and 8" on each side for openings less than 864 square inches.**Recommended hearth extension is 20" in front and 12" on each side for openings greater than 864 square inches.*

Flue Size Requirements:

*Flue size recommendation standard (NFPA 211)**Liner size recommendation based on fireplace opening to flue cross sectional area for:**Round liners - 12 to 1 opening to flue ratio**Rectangular or oval liners with < 2 to 1 length to width - 10 to 1 opening to flue ratio**Rectangular or oval liners with > 2 to 1 length to width - 8 to 1 opening to flue ratio**Rumford style and special designs - 20 to 1 opening to flue ratio***General - Interior: Is there a hearth extension in place?**

Yes - NOT COMPLIANT (See details in observations)

Recommended extension is 16" in front and 8" on each side for openings less than 864 square inches.

Recommended extension is 20" in front and 12" on each side for openings greater than 864 square inches.

Some Additional Hearth Extensions Requirements:

* Must be 2" thick and wholly supported by the chimney structure

* Must have 4" clearance below Heart Extension, Support shall be structural slap or corbeled brickwork.

General - Interior: Is there evidence of a floating hearth when viewed from the front (see description of floating hearth below)?

No

Today a masonry fireplace hearth must have a solid masonry footer below it to properly support it. But back in the day, hearths were often constructed with a sand pan base. A wooden box was recessed into the floor and filled with sand, then the hearth was laid on top of this base. The problem is that as the decades go by and the house settles, the wood base and the sand in it can shift or trickle out below, causing two problems.

First, this settling will cause the tiles, brick, marble etc resting on this base to crack and become unsightly.

Secondly, and of most concern due to safety issues, the outer hearth can separate from the floor of the fireplace and leave gaps where sparks and heat transfer can cause pyrolysis (decomposition) of the wood framing below that's brought about high temperatures. Pyrolysis can cause the wood below and surrounding the house to ignite at lower temperatures and cause a house fire.

If you burn solid fuel in your historic fireplace then it's imperative that you keep in mind how your hearth is built and its potential dangers. If your hearth is cracked then it's an indication that you can have the problem as seen in the photograph above where the wood is already charred and ready to ignite from a subsequent fire. Such a fire can burn down an old house swiftly!

General - Interior: Is the flue lined?

Yes

Definition: The flue is the opening or channel for smoke and heat to escape through the chimney

General - Interior: Are clearances to combustibles appropriate to the size of the fireplace opening, such as mantal and fireplace face (Excluding hearth extension requirements)?

Yes

Wood trim and other combustible materials shall not be place within 6" of the fireplace opening.

Combustible materials placed at the top of the fireplace opening and projecting more than 1.5" shall not be place less than 12" from the top of the fireplace opening.

Observations

4.4.1 Hearth Deficiencies



HEARTH EXTENSION DOES NOT MEET SIZE, CLEARANCE FROM COMBUSTIBLES REQUIREMENTS

Proper distances are required to help prevent fires from sparks escaping the fire box.

Recommended extension is 16" in front and 8" on each side for openings less than 864 square inches.

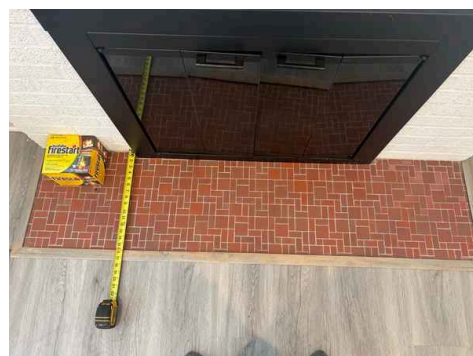
Recommended extension is 20" in front and 12" on each side for openings greater than 864 square inches.

Actual fireplace opening: 1044 sq in

Front: " (Requires 20")

Left: O.K.

Right: O.K. or



4.4.2 Hearth Deficiencies



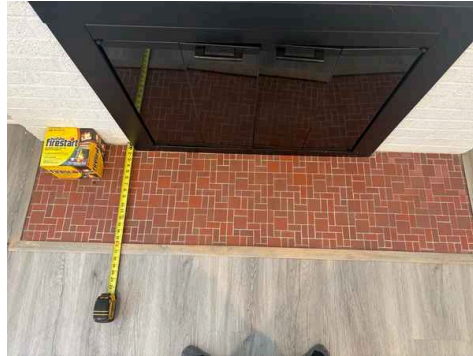
HEARTH EXTENSION IS NOT AN INTEGRAL PART OF THE FIREPLACE FOUNDATION

NFPA 211 States

11.3.1 Masonry fireplaces shall have hearth extensions of brick, concrete, stone, tile, or other approved noncombustible material wholly supported by and integral with the chimney structure, and a minimum 4 in. (102 mm) clearance shall be maintained directly below the underside.

11.3.1.1 Support for the hearth shall be provided by a structural slab or corbeled brickwork.

11.3.1.2 Wooden forms used during the construction of the hearth and hearth extension shall be removed when the construction is completed



4.4.3 Hearth Deficiencies

 Recommended Action - More Significant Cost

WOOD FORMS FOR CONSTRUCTING THE HEARTH HAVE NOT BEEN REMOVED. COMBUSTIBLE MATERIAL IN CONTACT WITH UNDERSIDE OF HEARTH

NFPA 211 States

11.3.1.2 Wooden forms used during the construction of the hearth and hearth extension shall be removed when the construction is completed



4.7.1 Ash Dump

ASH DUMP - COMBUSTIBLE MATERIALS IN THE ASH DUMP

 Safety Hazard



4.8.1 Smoke Chamber Deficiencies

 Recommended Action - More Significant Cost

SMOKE CHAMBER BRICK ARE NOT PARGED SMOOTH

NFPA 11.2.1.13 States: The inner surfaces of the smoke chamber shall be parged smooth, with an insulating refractory mortar, and not inclined more than 45 degrees from vertical.



4.8.2 Smoke Chamber Deficiencies

 Safety Hazard

VOIDS OR GAPS OBSERVED IN THE SMOKE CHAMBER

The smoke chamber must be completely free of voids, gaps openings. It also must be sealed at the flue liner and the damper assembly



4.10.1 Flue Liner Deficiencies

 Recommended Action - More Significant Cost

FLUE IS UNDERSIZED FOR THE FIREPLACE OPENING AREA

Dimensions:

Recommended flue cross sectional area 104
Actual flue 77

Round chimney flues shall have a minimum net cross-sectional area of at least One-twelfth the fireplace opening

Square chimney flues or rectangular or oval flues with an aspect ration of less than 2 to 1 ratio shall have a minimum net cross-sectional area of at least One-tenth the fireplace opening

Rectangular or oval chimney flues with an aspect ratio greater than 2 to 1, shall have a minimum net cross-sectional area of at least one-eighth the fireplace opening.



4.10.2 Flue Liner Deficiencies

 Safety Hazard

FLUE LINER IS NOT SEALED OR FULLY SUPPORTED AT THE INTERSECT WITH THE SMOKE CHAMBER

Clay flue liners must be fully supported the entire perimeter of the base with solid brick or core filled brick. The intersect between the liner and the smoke chamber must be sealed with a smooth transition.

NFPA 211 States:

7.1.2.6 Corbeled or solid masonry shall be provided in masonry chimneys to support the entire perimeter of flue liners.



4.10.3 Flue Liner Deficiencies

 Maintenance or Review Item

HAIRLINE OR SMALL GAPS AND CRACKS IN THE JOINTS BETWEEN THE FLUE LINER SECTIONS

Missing or cracked/deteriorated mortar in the joints of the clay flue liner. Without mortar in these joints, hot gases could enter between the clay sections and lead to a chimney fire. Have the chimney repaired by a CSIA Certified Chimney Sweep before using the fireplace.

The 2019 NFPA, Chapter 14.9 states: "If the flue liner in a chimney has softened, cracked, or otherwise deteriorated so that it no longer has the continued ability to contain the products of combustion (i.e., heat, moisture, creosote, and flue gases), the liner shall be either removed and replaced, repaired, or relined with a listed liner system or other approved material that will resist corrosion, softening, or cracking from flue gases at temperatures appropriate to the class of chimney service."



4.10.4 Flue Liner Deficiencies

FLUE LINER JOINTS ARE NOT SMOOTH

 Safety Hazard

The mortar in the flue liner joints are to be smooth to reduce turbulence, improve flow and reduce the accumulation of creosote. The joint(s) have rough, excessive or protruding mortar.



4.12.1 Cleaning and Maintenance Recommendation Resources

INFORMATION ON THE USE AND CARE OF YOUR FIREPLACE

 Maintenance or Review Item

We have no affiliation with the company listed below. We simply found them online. James offers great advice on the use and care of fireplaces.

[How To Use and Maintain A Fireplace](#)

5: DEFINITIONS, SCOPE DETAILS

Information

Level II NFPA 211 Inspection Conducted by a CSIA Certified Inspector\

NFPA 211 (2019 edition)

15.4* Level II Inspections. A Level II inspection is indicated when verification of the suitability of the chimney for new or changed conditions of service is needed or when a Level I inspection is not sufficient to determine the serviceability of the chimney.

15.4.1 Circumstances. A Level II inspection shall be conducted under the following circumstances:

1. Upon addition or removal of one or more connected appliances or upon replacement of an appliance with one or more of dissimilar type, input rating, or efficiency, unless the last connected appliance is removed and chimney use will be discontinued
2. Prior to relining of a flue or replacement of flue lining, in accordance with 7, 1.10
3. Upon sale or transfer of the property
4. After a building or chimney fire, weather or seismic event, or other incident likely to have caused damage to the chimney
5. At other times as indicated in Section 15.3

15.4-2 Scope and Access. Level II inspections shall include all accessible portions of the chimney exterior and interior, including the following:

1. Areas within accessible attics, crawl spaces, and basements
2. Accessible portions of the appliance and chimney connection

15.4.2.1 The inspection shall include examination of all areas covered in 15.3.2 for level I inspections.

15.4.2.2 All areas of the chimney and its surroundings that can be accessed without the removal or destruction of permanently attached portions of the chimney or building structure shall be inspected, including examination of the following:

1. Locations within attics
2. Crawl spaces
3. Basements that can be accessed through doors, hatches, or other openings that do not require removal of permanently attached parts of the building

15.4.2.3 The inspection shall include examination of accessible areas of all chimney flues and the internal surfaces of all flue liners incorporated within the chimney with video scanning equipment or other means used as necessary to observe those areas.

15.4.2.4 The inspection shall include verification of proper clearances from the chimney to combustibles at all locations that can be accessed as described in 15.3.2.2.

15.4.2.5 The inspection shall include evaluation of the proper type of flue lining material and flue sizing for the type and input rating of the connected appliances.

15.4.2.5.1 Sizing of flues for solid fuel—burning and pellet fuel—burning equipment shall be in accordance with this standard.

15.4.2.5.2 Sizing of flues for gas appliances shall be in accordance with NFPA 54.

15.4.2.5.3 Sizing of flues for liquid fuel appliances shall be in accordance with NFPA 31.

Level I Scope and Access included in Level II inspection

15.3.2 Scope and Access. Level I inspections shall include examination of readily accessible portions of the chimney and accessible portions of the connected appliance and chimney connection.

15.3.2.1 The following shall apply to the inspection of locations with panels, doors, or coverings:

1. The chimney exterior and surroundings shall be inspected at locations that can be accessed without removal of panels, doors, or coverings.
2. Where panels, doors, or coverings are opened as part of the performance of another task, such as chimney cleaning, such locations shall be examined as part of a Level I inspection.

15.3.2.2 Readily accessible areas of the chimney flue that can be observed through existing openings, such as a thimble, cleanout opening, or flue termination, shall be examined for the presence of a continuous flue liner, proper installation, and no damage or deterioration.

15.3.2.3 The following shall apply to inspection of flues:

1. Where an inspection is conducted in accordance with Section 14.2, the inspection shall include all flues within the chimney and connected appliances.

2. An inspection conducted during cleaning or appliance replacement shall include the flue or flues being cleaned and the appliance or appliances connected to each.

15.3-2.4 The inspection shall include verification that the flue or flues being inspected are free of combustible deposits and blockage or obstruction.

15.3.2.5 The connected appliance or appliances, their chimney connectors, and surroundings shall be examined for proper clearances, protection, damage or deterioration, and observable evidence of operating malfunction.

1.3.2.6 Chimney connector inspection shall meet the following criteria:

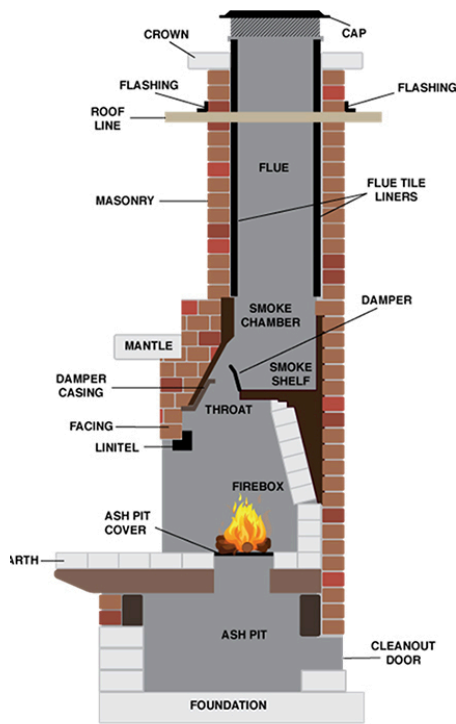
1. Connectors shall be examined for proper support and fastening of joints, pitch, and securement to the chimney.
2. Connectors shall be examined for damage, deterioration, internal blockage or obstruction, and freedom from combustible deposits.

15.3-2.7 Internal surfaces of fireplaces and smoke chambers shall be examined for damage and deterioration, combustible deposits, and evidence of operating malfunction.

15.3.2.7.1 Fireplace inserts, stoves, or accessories shall be removed from the fireplace as necessary to permit such examination.

15.3.2.7.2 The means of connecting a fireplace insert or stove to the chimney flue shall be examined for compliance with

15.3.2.7.3* Fireplace inserts, stoves, or accessories shall not be required to be removed when the venting system can be thoroughly cleaned without such removal.



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Fireplace Components for Reference