

Standard Operating Procedure

Level I Inspection

Masonry Fireplace

This Standard Operating Procedure (SOP) is promulgated by the Chimney Safety Institute of America (CSIA) solely as general guidance for chimney sweep professionals. Since all operations are different and since it is not possible to foresee all potential hazards, this SOP must be tailored to fit the needs of each particular operation. CSIA does not warrant in any way whatsoever that adhering to this SOP will reveal every possible defect in an appliance, fireplace, venting system or chimney. Accordingly, CSIA makes no guarantee, nor does it assume any responsibility, for any damage, claim, or legal action that may arise in connection with a chimney sweep professional's use of this SOP.

Introduction

NFPA 211 defines the inspection requirements for fireplaces and chimneys, and has defined three levels of inspection. A Level I inspection is the recommended Level of Inspection to use during routine chimney cleanings and annual inspections. It is also the appropriate Level of Inspection when replacing an existing appliance with a new appliance of a similar type. Level One is the appropriate inspection when “nothing is changing”. In other words, the fireplace will continue to be used as it has been without significant change such as the addition of a new appliance. A Level One inspection should include readily accessible portions of the fireplace and chimney and accessible portions of connected appliances and the chimney connection. *Readily Accessible* can be described as being quickly or easily reached for inspection, maintenance or repair. Readily accessible would not require the use of tools for opening or removal of any panel, door or other covering. Readily accessible also does not require the use of ladders. *Accessible* could first require the movement or removal of a panel, door or other covering. *Accessible* could require the use of ladders or common hand tools such as a screwdriver or wrench. Neither Readily Accessible nor Accessible would require removal of permanently attached components or destructive actions to the building.

The NFPA 211 three levels of inspection are used as the standard in the chimney service industry but may not be the code in effect in your area. Your service truck should have a copy of NFPA 211 and the codes that are in use where you perform your service. Many fireplaces do not conform to the construction requirements of the 211. References made in this document are to information found in the NFPA 211 with the understanding that the specifics of your local code may vary. Where there are differences between NFPA 211 and your local adopted code with regard to chimney and fireplace construction, you should follow local code but may elect to recommend requirements from NFPA 211 if they are stricter.

Design Considerations

A fireplace may be working well and still fall outside the design specifications found in the 211. A repair is not always required, but if there are defects, they should be noted on your job sheet. The information in a Level I inspection is documented with the understanding that no changes are planned. If the client does intend to alter the use of the fireplace, make specific notes regarding the change and recommend a Level 2

inspection. If the customer declines the recommendation for the more thorough inspection, record this on the job sheet.

Objective of a Level One Inspection

The Level I inspection is to be included with every sweep job. You must determine that the system is not blocked or significantly restricted and is capable of continued use as is. You are also expected to determine the overall cleanliness of the venting system. This will require opening the damper and using a light to look up the chimney and into the flue. If the chimney is dirty it will require sweeping. Sweep, or recommend sweeping, any chimney with 1/8th inch or greater buildup. This level of inspection applies to all readily accessible portions of the chimney exterior and accessible portions of the appliance and connector. You are also expected to determine that no blockage exists in the flue, which you may be able to determine through visual inspection of the flue. In some cases, such as a flue with offsets, it might be necessary to send a chimney brush through the system or do an internal camera inspection.

If you plan to video scan the chimney, set up the drop cloth and bring in the proper equipment. Take pictures of irregularities within the chimney and save them for future reference and comparison. Identify the photos with the date and location of the job. While the video scanning is not a mandatory part of a Level I inspection, many companies elect to provide the service in an effort to enhance the value of the inspection and to document their service.

Look at the Fireplace

Perform a visual inspection of the fireplace. Look for staining above the fireplace opening that would indicate that the fireplace has spilled smoke in the past. Make note of damaged accessories such as burned out grates, damaged screens or glass doors in poor condition. Look at the overall condition of the fireplace as well as the inner and outer hearth. If the fireplace does not use firebrick, make a note of that as well.

Hearth Sizing

Confirm the dimensions of the outer hearth are correct based on the size of the fireplace opening. If the fireplace opening is less than six square feet, the hearth extension should extend 16 inches to the front and 8 inches to each side. If the fireplace opening is 6 square feet or larger than the hearth extension should extend 20 inches to the front and 12 inches to each side.

Combustibles surrounding the Fireplace

Inspect clearances of wood trim and the mantel surrounding the fireplace opening. According to NFPA 211, any combustible trim and mantels should be at least 6 inches from the fireplace opening. Combustibles above the fireplace opening should be 12" above the opening if they project more than 1 1/2" from the fireplace face.

Steel Fireplace Units

Check that the damper is capable of opening fully. Steel fireplace units with tubes across the throat can be especially difficult when it comes to inspecting either the

smoke shelf or smoke chamber. It may be necessary to sweep this type of installation from the top. Check for rust and warped metal in the firebox and damper area. Some of these units use a masonry smoke chamber and some will use metal. In both, closely inspect the area where the chamber joins the bottom tile liner. Many of the steel fireplace units you will encounter will show signs of significant rust. Listed fireboxes must be installed in accordance with the listing.

Masonry Fireplace

Inspect the firebox of the fireplace and look for loose or missing mortar. Any cracked or damaged firebrick should be noted. Any loose brick, either inside the firebox or on the hearth should be noted on the job sheet. Is the firebox constructed with firebrick or common brick walls? NFPA 211 requires fireplace walls to be 8" thick when lined with a firebrick liner at least 2" thick. Fireplace walls without a firebrick liner should be 12" thick. (It is only necessary to determine the thickness of the fireplace walls during a Level Three inspection.) Look for a separation where the outer hearth joins the firebox and on the sides where the facing material is joined to the firebox. You may be able to look into the gap and see surrounding framing. Check the fireplace clearances to combustibles on the sides and rear if they are readily accessible.

Note also any gaps above the firebox opening where smoke could potentially move behind the profile. If you do see this gap at the lintel look where the fascia meets the ceiling to determine if smoke is actively moving through that space.

Check the damper for closure. Does it move freely? Does it open enough to provide sufficient space for the smoke to flow freely through it? Does the area immediately below the damper appear to be finished well? Note any broken, damaged, rusted or missing parts.

Look at the intersections between various components of the fireplace such as hearth to hearth extension, fireplace walls to profile (facing), fireplace to smoke chamber and smoke chamber to flue. All of these areas should be well sealed so smoke and heat cannot travel through the joints.

Smoke Chamber

What is the general condition of the smoke chamber? Smoke chamber walls should be parged smooth. Is the smoke chamber accessible for inspection and cleaning? Look for extreme offsets to the corbelled brick and the possibility for holes in the smoke chamber. Of particular concern are corner fireplaces as they often have extremely large smoke chambers. If you see exposed liners from a flue below the fireplace being used as a side wall for the smoke chamber, write it on the job sheet. This is often the case with a furnace or boiler flue located in the basement.

Look up to the top of the smoke chamber confirm that the flue liner is supported on all 4 sides. Also note if the transition from the smoke to flue area is smooth and sealed. If you can see all of the way out of the chimney, look closely at the tile liner. Make a note

of liners that show evidence of visible defects such as cracks or spalling. Make a note of offset tiles or missing mortar between the tiles.

To the extent they are Readily Accessible, determine if chimney liners are an appropriate type for the fireplace and that it is properly supported. In general, masonry fireplaces will require either a clay flue tile lining, a listed chimney liner system or a factory-built chimney with approved adaptor plate.

Sweeping

Once you have performed the initial inspection, begin the sweeping process. If the chimney is so dirty you cannot complete the inspection, you will have to sweep it before you can evaluate the condition of the flue liner. Make a note of the volume or nature of the deposits found in the chimney. Whether sweeping from the bottom or the top, listen for odd sounds that could indicate a break in a flue liner or some unusual construction in the flue.

If there are indications that there was a chimney fire, take pictures and document your findings before sweeping the flue. Recommend a level 2 inspection. If the client declines the recommendation, make a note on the job sheet.

Caps, Top Dampers and Draft Systems

Just as it is important to determine that the flue is not blocked and restricted, it is likewise important to determine that any accessories installed at the top of the chimney are not blocked or restricted. This includes chimney caps, spark arrestors, top dampers and mechanical draft systems. Check these accessories to see if they are free from rust or corrosion and that movable parts are operable.

Sweeping from the top

If you choose to sweep the chimney from the top you will be expected to look at the general condition of the chimney, crown and flashing. NFPA 211 requires a bond break that is rarely included in the original construction.

While you are at the top of the chimney determine if there appears to be sufficient space between multiple flues to provide for the required wythe. Proper chimney termination height can also be determined. While you are there, look down additional flues in the chimney. If you find any obvious damage in any of the flues, be sure to write this on the job sheet.

Delivering Your Report to the Client

After you have completed the inspection, you should discuss your findings with the client, provide them a copy of the report, and obtain their signature on the report. Without the client signature it is difficult to prove that you informed them of the conditions observed. You should maintain the inspection report in a permanent filing system.