

Standard Operating Procedure Level 2 Inspection Masonry Chimney Attached to a Building Heating Appliance

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

Masonry chimneys are site built and should conform to the requirements of local code. This document references the NFPA 211 but you must be familiar with requirements in your area. Be aware of any differences between the two.

Choice of Inspection Level

NFPA 211 defines the inspection requirements for fireplaces and chimneys, and has defined three levels of inspection. A Level Two inspection is recommended when the conditions of use are changing, such as adding a new appliance, or replacing an existing appliance with a dissimilar one (different fuel, efficiency or type) or if a Level 1 inspection is not sufficient to determine serviceability of the venting system. A Level 2 inspection is also recommended when the property is being sold; if you are planning on lining or relining the chimney or if there has been a building or chimney fire, weather or seismic event or any operating malfunction likely to have caused damage to the chimney. A Level Two inspection includes everything defined from the Level 1 inspection, with numerous additions. Review the CSIA SOP for Level One Inspection of a Masonry Chimney. Also keep in mind that a Level Two inspection should include all flues within a chimney and their connected appliances.

Access

A Level Two inspection should include all *Accessible* portions of the fireplace, chimney and connected appliance(s). Access could require the use of common tools to open or move panels or doors, and may require the use of ladders. A Level 2 inspection will require that you go on the roof to investigate the chimney and inspect the system within accessible attics, basements and crawl spaces. Inspectors should consider their personal safety prior to entering these areas (standing water, heat, confining spaces, etc.) If you are not able to access these areas, or the client requests that you don't, be sure to note those exceptions in your report and provide a reason.

Video Scan

In this level of inspection the primary focus is to determine if the chimney is suitable for continued use under new or changed conditions. Video scanning (or similar inspection) of the chimney interior is required during a Level Two inspection. If it is not possible to video scan the chimney interior due to size or multiple offsets, be sure to note that in your report. During the video scanning be on the lookout for any unused openings

(thimbles) into the flue and recommend that they be properly sealed if you encounter them. Check the chimney liner and report any cracks or gaps noted in the chimney liner. With the video scanner you should also be able to inspect the condition of offsets within the chimney. Note if the offset angles are excessive or if the flue area gets smaller within the offset.

Appliance

Look at the general condition of the appliance. This would include door gasketing, warped baffles, damaged glass, and cracks in the appliance, rust or anything else that could create problems in the operation. Make sure any dampers operate freely. Also make a note on the job sheet of damaged accessories such as burned out grates, catalytic combustors or firebrick in poor condition. If there is a barometric draft regulator, draft hood, stack damper or heat reclaimer inspect for proper operation.

Check the appliance clearance. For listed appliances you will need to consult the appliance installation manual or data plate for the requirements. For unlisted appliances the clearances should conform to local code requirements which is normally 36" from appliance to combustible material in all directions. If there is clearance reduction system used for the connector or the appliance, confirm that it is also appropriately designed and installed. If possible, have the homeowner provide you with the manufacturers' installation instructions for the appliance. This will help you to determine proper clearances from the appliance to combustibles as well as floor protection requirements. Often you will find a label attached to the appliance that contains this information.

Connector and Wall Pass-through

Check the wall pass-through for proper installation and adequate clearance to combustibles. A listed wall pass-through is preferred but field constructed pass-throughs are acceptable if properly installed. If there is a barometric draft regulator, draft hood, stack damper or heat reclaimer installed in the connector, inspect it for proper operation. Make sure the connector is of the proper thickness, secure, and that it maintains the proper incline. Look at the overall installation clearances. If there is a manifold connecting multiple appliances, confirm that it is designed, sized and installed correctly. Check where the connector joins the chimney to be certain that the connection is secure at the thimble. The connector should be as short and straight as possible.

Clearance and Clearance Reduction

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Floor Protection

For wood burning appliances measure the size of the floor protection. It should extend 18 inches beyond the stove in all directions unless listed otherwise. Describe the material on the job sheet. Make a note describing if it is site built or a listed product.

The Chimney

Make sure the chimney is appropriate for the appliance, and that the chimney walls are constructed with approved materials of proper thickness (to the extent they are accessible). It may be necessary to disconnect the connector in order to view the interior of the chimney flue. Look for signs of water entry or any other leakage at this connection. Closely inspect clean-out doors to confirm that they close securely. The material found in the clean-out can often provide you with information about the condition of the chimney interior. After the connector has been removed, closely inspect the installation of the clay thimble. Make sure the thimble and the clay tile liner surrounding it are undamaged.

Clean-Out

In some cases, you can open the clean-out door and see up the chimney to determine cleanliness and lack of obstructions. You must be able to see out the top to make this determination. Confirm that the flue is sized appropriately for the continued use. If changes are planned, provide the proper flue size and any other recommendations needed to properly vent the new installation. This may or may not represent a change in the present flue size.

Attic Inspection

Inspection within accessible attics is required in a Level 2 inspection. Once in the attic it should be possible to determine if clearances are met on interior installations as the chimney passes through the floor and roof. Look for any electrical wires in contact with the chimney and proper clearances as the chimney passes through the roof. Look for water damage anywhere it might be visible, especially just below the flashing.

Inspecting the Top

You will inspect the crown (wash) and the flashing. If there is a cricket installed, inspect it as well. NFPA 211 requires a bond break where the top tile passes through the crown to allow for vertical expansion of the flue.

Get an accurate measurement of the interior dimensions of the flue liner and make a determination as to whether it is properly sized based on the appliance requirements. Measure the height of the flue from the top of the chimney to the bottom of the liner. If there are offsets in the liner make a note of the degree of offset. Note the overall chimney condition and construction material. If there is a rain cap make sure it is not obstructed and does not create a restriction at the top of the chimney.

You should be able to 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 up there, look down the adjacent flues. If there is obvious damage, write it on the job ticket.

Outside the Chimney

Inspect the outside air supply if there is one installed. Look at the clean-out and confirm that the door closes tightly. Look for any irregularities in the construction where the chimney is joined the structure. Make note of any irregularities where the shoulder of the chimney tapers, such as staining or other indications of water entry.

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.