

1 CHIMNEYS

Heating II
MODULE

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► 1.0 OBJECTIVES

We have discussed various heating systems to this point. Most of these heating systems require a chimney or a vent. In this section we will concentrate on the chimneys and vents used to get exhaust gases out of the home.

We'll pick up the discussion from the vent connector, which we discussed with the individual heating systems. We will follow the chimney through until the exhaust gases are out of the house.

Our focus will be on:

- The function of and materials used in chimneys and vents
- What makes a chimney work well or poorly

By the end of this section you should be able to—

- describe in one sentence what the Standards require for a chimney inspection
- list seven functions of chimneys
- list five components of masonry chimneys
- list 25 common masonry chimney problems
- list 13 common metal chimney or vent problems
- describe in one sentence the implications of each of these problems
- describe in one sentence the causes of each of the problems
- describe the inspection procedure for chimneys in five sentences

*Not The
Last Word*

Our goal is not to turn you into a chimney and venting expert. Nor are we intending to give you installation skills. We are discussing chimneys and vents from the perspective of the home inspector who is a general practitioner. This section is designed to give you the skills to raise a red flag and call for a specialist, rather than diagnose and specify corrective actions in all cases.

As with all topics, there is additional material available. You may wish to go further into this topic and we encourage you to speak to local specialists and authorities to learn the issues specific to the area you will be working in.

Heating II

MODULE

STUDY SESSION 1

1. The first Study Session outlines the Scope of chimney inspections as set out in the ASHI® Standards of Practice.

Note: ASHI® stands for the American Society of Home Inspectors.

This session includes a general introduction to chimneys including some definitions, listing of fuels, and a discussion of chimney draft.

In this session, we also begin our discussion of masonry chimneys which includes a description of components and a list of the common problems. In this session, we discuss the first six common problems associated with chimneys including their causes, implications and inspection strategies.

2. At the end of this Study Session, you should be able to –
 - Describe in one sentence what has to be included in a chimney inspection according to the Standards
 - Define chimneys, vents and flues
 - List four common fuels
 - List six things that affect chimney drafts
 - List the five basic components of masonry chimneys
 - List 25 common chimney problems
 - Describe in one sentence the implications of the six chimney problems discussed
 - List at least two inspection strategies for each problem
3. This Study Session may take you roughly one hour to complete.
4. Quick Quiz 1 is included at the end. Answers can be written in your book.

5. Before starting this session, you should read the following Sections of the Home Reference Book:

- 3.0 Chimneys in the Exterior Chapter
- 3.0 Masonry Chimneys in the Structure Chapter
- 7.0 Chimney Liners in the Heating Chapter
- 14.17 and 14.18 Chimneys, Liners and Cleanout in the Heating Chapter

Key words:

- **Chimneys**
- **Flues**
- **Vents**
- **Vent connectors**
- **Draft**
- **Footing**
- **Foundation**
- **Walls**
- **Flue liner**
- **Cap**
- **Condensation**
- **Combustible clearance**
- **Settling**
- **Leaning**
- **Spalling**
- **Corbelling**
- **Cracking**
- **Deteriorated masonry**
- **Deteriorated mortar**
- **Efflorescence**

► 2.0 SCOPE AND INTRODUCTION

2.1 SCOPE

THE ASHI® STANDARDS OF PRACTICE

The following are excerpted from the ASHI® Standards of Practice, effective January 2000.

2. PURPOSE AND SCOPE

2.1 The purpose of these Standards of Practice is to establish a minimum and uniform standard for private, fee-paid home *inspectors* who are members of the American Society of Home Inspectors. Home *Inspections* performed to these Standards of Practice are intended to provide the client with information regarding the condition of the *systems* and *components* of the home as inspected at the time of the Home *Inspection*.

2.2 The Inspector shall:

A. *inspect*:

1. *readily accessible systems* and *components* of homes listed in these Standards of Practice.
2. *installed systems* and *components* of homes listed in these Standards of Practice.

B. *report*:

1. on those *systems* and *components* inspected which, in the professional opinion of the *inspector*, are *significantly deficient* or are near the end of their service lives.
2. a reason why, if not self-evident, the *system* or *component* is *significantly deficient* or near the end of its service life.
3. the *inspector's* recommendations to correct or monitor the reported deficiency.
4. on any *systems* and *components* designated for inspection in these Standards of Practice which were present at the time of the *Home Inspection* but were not inspected and a reason they were not inspected.

2.3 These Standards of Practice are not intended to limit *inspectors* from:

- A. including other inspection services, systems or components in addition to those required by these Standards of Practice.
- B. specifying repairs, provided the *inspector* is appropriately qualified and willing to do so.
- C. excluding *systems* and *components* from the inspection if requested by the client.

8. HEATING SYSTEM

8.1 The *inspector* shall:

A. *inspect*:

1. the *installed* heating equipment.
2. the vent systems, flues, and chimneys.

B. *describe*:

1. the energy source.
2. the heating method by its distinguishing characteristics.

8.2 The *inspector* is not required to:

A. *inspect*:

1. the interiors or flues or chimneys which are not *readily accessible*.
2. the heat exchanger.
3. the humidifier or dehumidifier.
4. the electronic air filter.
5. the solar space heating *system*.

B. determine heat supply adequacy or distribution balance.

12. FIREPLACES AND SOLID FUEL BURNING APPLIANCES

12.1 The *inspector* shall:

A. *inspect*:

1. the system components.
2. the vent systems, flues, and chimneys.

B. *describe*:

1. the fireplaces and *solid fuel burning appliances*.
2. the chimneys.

12.2 The *inspector* is NOT required to:

A. *inspect*:

1. the interiors of flues or chimneys.
2. the firescreens and doors.
3. the seals and gaskets.
4. the automatic fuel feed devices.
5. the mantles and fireplace surrounds.
6. the combustion make-up air devices.
7. the heat distribution assists whether gravity controlled or fan assisted.

B. ignite or extinguish fires.

C. determine draft characteristics.

D. move fireplace inserts or stoves or firebox contents.

13. GENERAL LIMITATIONS AND EXCLUSIONS

13.1 General limitations:

- A. Inspections performed in accordance with these Standards of Practice
 - 1. are not *technically* exhaustive.
 - 2. will not identify concealed conditions or latent defects.
- B. These Standards of Practice are applicable to buildings with four or fewer dwelling units and their garages or carports.

13.2 General exclusions:

- A. The *inspector* is not required to perform any action or make any determination unless specifically stated in these Standards of Practice, except as may be required by lawful authority.
- B. *Inspectors* are NOT required to determine:
 - 1. the condition of *systems* or *components* which are not *readily accessible*.
 - 2. the remaining life of any *system* or *component*.
 - 3. the strength, adequacy, effectiveness, or efficiency of any *system* or *component*.
 - 4. the causes of any condition or deficiency.
 - 5. the methods, materials, or costs of corrections.
 - 6. future conditions including, but not limited to, failure of *systems* and *components*.
 - 7. the suitability of the property for any specialized use.
 - 8. compliance with regulatory requirements (codes, regulations, laws, ordinances, etc.).
 - 9. the market value of the property or its marketability.
 - 10. the advisability of the purchase of the property.
 - 11. the presence of potentially hazardous plants or animals including, but not limited to wood destroying organisms or diseases harmful to humans.
 - 12. the presence of any environmental hazards including, but not limited to toxins, carcinogens, noise, and contaminants in soil, water and air.
 - 13. the effectiveness of any *system* installed or methods utilized to control or remove suspected hazardous substances.
 - 14. the operating costs of *systems* or *components*.
 - 15. the acoustical properties of any *system* or *component*.
- C. *Inspectors* are NOT required to offer:
 - 1. or perform any act or service contrary to law.
 - 2. or perform *engineering* services.
 - 3. or perform work in any trade or any professional service other than *home inspection*.
 - 4. warranties or guarantees of any kind.
- D. *Inspectors* are NOT required to operate:
 - 1. any *system* or *component* which is *shut down* or otherwise inoperable.
 - 2. any *system* or *component* which does not respond to *normal* operating controls.
 - 3. shut-off valves.

E. *Inspectors* are NOT required to enter:

1. any area which will, in the opinion of the *inspector*, likely be dangerous to the *inspector* or other persons or damage the property or its *systems* or *components*.
2. The *under-floor crawl spaces* or attics which are not *readily accessible*.

F. *Inspectors* are NOT required to *inspect*:

1. underground items including, but not limited to underground storage tanks or other underground indications of their presence, whether abandoned or active.
2. *systems* or *components* which are not *installed*.
3. *decorative* items
4. *systems* or *components* located in areas that are not entered in accordance with these Standards of Practice.
5. detached structures other than garages and carports.
6. common elements or common areas in multi-unit housing, such as condominium properties or cooperative housing.

G. *Inspectors* are NOT required to:

1. perform any procedure or operation which will, in the opinion of the *inspector*, likely be dangerous to the *inspector* or other persons or damage the property or its *systems* or *components*.
2. move suspended ceiling tiles, personal property, furniture, equipment, plants, soil, snow, ice, or debris.
3. *dismantle* any *system* or *component*, except as explicitly required by these Standards of Practice.

GLOSSARY OF ITALICIZED TERMS

Alarm Systems

Warning devices, *installed* or free-standing, including but not limited to; carbon monoxide detectors, flue gas and other spillage detectors, security equipment, ejector pumps and smoke alarms

Architectural Service

Any practice involving the art and science of building design for construction of any structure or grouping of structures and the use of space within and surrounding the structures or the design for construction, including but not specifically limited to, schematic design, design development, preparation of construction contract documents, and administration of the construction contract

Automatic Safety Controls

Devices designed and installed to protect *systems* and *components* from unsafe conditions

Component

A part of a system

Decorative

Ornamental; not required for the operation of the essential *systems* and *components* of a home

Describe

To *report* a *system* or *component* by its type or other observed, significant characteristics to distinguish it from other *systems* or *components*

Dismantle

To take apart or remove any component, device or piece of equipment that would not be taken apart or removed by a homeowner in the course of normal and routine home owner maintenance

Engineering Service

Any professional or creative work requiring engineering education, training, and experience and the application of special knowledge of the mathematical, physical and engineering sciences to such professional service or creative work as consultation, investigation, evaluation, planning, design and supervision of construction for the purpose of assuring compliance with the specifications and design, in conjunction with structures, buildings, machines, equipment, works or processes

Further Evaluation

Examination and analysis by a qualified professional, tradesman or service technician beyond that provided by the *home inspection*

Home Inspection

The process by which an *inspector* visually examines the *readily accessible systems* and *components* of a home and which *describes* those *systems* and *components* in accordance with these Standards of Practice

Household Appliances

Kitchen, laundry, and similar appliances, whether *installed* or free-standing

Inspect

To examine *readily accessible systems* and *components* of a building in accordance with these Standards of Practice, using *normal operating controls* and opening *readily openable access panels*

Inspector

A person hired to examine any system or component of a building in accordance with these Standards of Practice

Installed

Attached such that removal requires tools

Normal Operating Controls

Devices such as thermostats, switches or valves intended to be operated by the homeowner

Readily Accessible

Available for visual inspection without requiring moving of personal property, *dismantling*, destructive measures, or any action which will likely involve risk to persons or property