

GENERAL REQUIREMENTS FOR INSTALLATION
OF SOLID FUEL BURNING APPLIANCES AND CHIMNEYS

(REFERENCED FROM BOCA ONE & TWO FAMILY DWELLING CODE,
1976 EDITION AND NFPA 211)

1. GENERAL REQUIREMENTS

A. When permit is required

1. Installation of new appliance with new chimney
2. Installation of new solid fuel appliance into an existing chimney (stoves & inserts)

B. Types of Inspection

1. New Chimney and appliance installations
 - a. Footers – Before placement of concrete
 - b. Thimble connection – Before completion of chimney and after thimble connection has been set
 - c. Final – Clearances, smoke detectors
2. New appliance in existing chimneys
 - a. Final inspection – Clearances and smoke detectors

NOTE IT IS ADVISED THAT BEFORE ANY INSTALLATION IS STARTED, THAT AN APPOINTMENT BE MADE WITH THE BUILDING INSPECTOR SO THAT ANY QUESTIONS OR PROBLEMS CAN BE ANSWERED BEFORE WORK IS STARTED.

2. MATERIALS

A. Appliance

1. All stoves should have a U.L. or other type of certified inspection agency approval. An owners manual will be included with the directions on installation and distance requirements

B. Chimneys

1. Factory Built – All approved factory built chimneys should be installed according to manufacturers recommendations. The term “Zero Clearance” is often misleading to people. Most factory built installations require a two (2) inch minimum clearance from combustibles and are equipped with collars and spacers to provide this in installation.

2. Masonry Chimney

- a. Materials – All masonry units to be solid with full bed joints.
- b. Definitions
 1. Solid Masonry – A masonry unit whose net cross sectional area in every plane parallel to the bearing surface is 75% or more of its gross cross sectional area measured in the same plane.
 2. Full bed mortar joint – Mortar is set on entire surface of masonry unit, not just around the outer perimeter as done in walls and veneer.

3. CONSTRUCTION

A. Footer specifications (Masonry)

1. Footer depth – 30 inches below finished grade
2. Footer thickness – 12 inches of solid concrete

NOTE DEPTH OF FOOTINGS SHOULD BE DETERMINED BY CONDITION OF SOIL AROUND DWELLING. IT IS ADVISABLE, IN MANY CASES, TO EXTEND THE FOOTER TO A DEPTH EQUAL TO THE ORIGINAL HOUSE FOOTER IN ORDER TO OBTAIN PROPER BEARING.

B. Chimney construction and clearance (Masonry)

1. Four (4) inch with 5/8 inch liners (Standard type using either precast block or brick)
 - A. Exterior chimney – One inch airspace required on exterior wall or sheathing.
 - B. Interior chimney – Two (2) inch clearance to be maintained from all combustibles (Joist, Studs, Rafters and Wall and Ceiling Coverings). Flashing and gypsum board may be used to make fire break between floors.
 - C. Liners – Flue liners should have a minimum thickness of 5/8 inch and, as in all materials in chimney construction, should be in a sound and undamaged condition. The liners should be set with a mortar joint and left smooth on the inside. All liners should extend a minimum of eight (8) inches below the thimble inlet and a clear air space should be allowed between the liner and the masonry of the chimney.
 - D. Cleanouts – Cleanouts are recommended because of the amount of creosote deposits that build up in the chimney. Cleanouts should be located a minimum of 24 inches below the thimble connection and should be fitted with a tight metal door. Another good practice is to extend the liner all the way to the bottom of the chimney in order to facilitate heating.
 - E. Height termination – A chimney should extend a minimum of three (3) feet above the roofline and two (2) feet above the point of the roof within ten (10) feet of the chimney.
 - F. Flue liners to be supported on four (4) sides.

NOTE EIGHT (8) INCH MASONRY WITH 5/8 INCH LINER CLEARANCE MAY REDUCE CLEARANCE REQUIREMENTS TO ZERO INCHES FROM FRAMING MEMBERS.

C. Thimble connection through framing walls

1. Thimble size should be determined by the size of the appliance. It is not permitted to reduce the size of the pipe and thimble from the appliance (example-a stove with an eight (8) inch exhaust cannot be placed into a six (6) inch pipe and thimble).
2. Clearances – Clearances through combustible walls are a critical aspect in the construction of the chimney for solid fuel appliances. The most common method used is to cut out a hole of sufficient size to allow the passage of the thimble with a minimum of eight (8) inches of solid masonry extending from all sides of the thimble. In placing the passage for the thimble, remember that the pipe extending from the thimble must be 18 inches from the ceiling or combustible wall. A factory built thimble can be used but must be installed with a complete factory built chimney system placed according to manufacturer recommendation. Other methods of installation require opening of greater dimension (at least three (3) times the diameter of the thimble in all directions) and sufficient protection of exposed framing.
3. Thimble connection to flue – The thimble should not extend more than 1/8 inch into the flue of the chimney and should be laid solidly in place with sufficient mortar. Cracked or chipped liners and thimbles should be replaced by undamaged units.

4. PLACEMENT AND CLEARANCE REQUIREMENTS FOR SOLID FUEL APPLIANCES

- A. Clearances – All appliances should be listed by a certified inspection agency and should include a manual describing recommended operating procedures and clearance agreement for installation. If a manual is not included, the following is a list of standard clearance requirements for appliance placement from combustible protected and non-combustible walls.
1. Combustible wall clearances
 - a. Front – 36 inches
 - b. Rear – 36 inches
 - c. Sides – 36 inches
 2. From walls with approved protector and non-combustible walls
 - a. Rear – 18 inches
 - b. Sides – 18 inches

3. Stove pipe clearances
 - a. Rear – 18 inches
 - b. Sides – 18 inches

4. Stove pipe clearance from protected or non-combustible walls
 - a. Rear – 9 inches
 - b. Sides – 9 inches
 - c. Ceiling – 9 inches

5. WALL AND FLOOR PROTECTORS

A. Wall protectors – Wall protectors can be constructed of the types of materials listed below or can consist of a factory type shield with a U.L. Listing. A one- (1) inch air space between the protector and combustible wall must be maintained by the use of non-combustible spacers. These spacers can be glass insulators; pipe, fabricated metal brackets or a factory designed spacer kit which is often available from the retailer selling wood burning appliances.

1. Types of protectors (all with one (1) inch air space)
 - a. Four (4) inch brick (solid)
 - b. One – Fourth (1/4) inch asbestos millboard
 - c. Twenty-two (22) gauge sheet metal
 - d. One-fourth (1/4) inch asbestos millboard and 22 gauge sheet metal

NOTE WALL PROTECTORS SHOULD BE OF SUFFICIENT DIMENSION SO THAT NO COMBUSTIBLE MATERIALS WITHIN A 36 INCH RADIUS FROM THE OUTSIDE OF THE STOVE ARE EXPOSED. TYPE X OR FIRECODE DRYWALL, Z BRICK OR OTHER DECORATIVE VENEERS ARE NOT ACCEPTABLE.

B. Floor protectors – A floor protector should be of adequate size to provide eight (8) inches of protection on the sides and rear of the appliance and should extend at least 18 inches in front of the stove or its loading area. Floor protectors should be either a listed factory built type or one constructed of the materials listed below.

1. Floor protectors
 - a. Four (4) inch brick with mortar joints
 - b. Four (4) inch hollow masonry with cells parallel to floor
 - c. One-fourth (1/4) inch asbestos millboard with 22 gauge sheet metal
 - d. Four (4) inches of sand

6. SMOKE DETECTORS

A. Effective July 1, 1982, Maryland State Law now required that all residence be equipped with a smoke detector. Residences constructed prior to July 1, 1975

require at least 1 battery or electrically powered smoke detector. Homes constructed after July 1, 1975 must have a permanently wired electrical smoke detector. (Article 38A, Section 12A, Annotated Code of Maryland) The number and location of smoke detectors will be determined by the location of the appliance and the size and layout of the home. Smoke detectors near sleeping areas are essential.

7. MOBILE HOMES AND SOLID FUEL APPLIANCES

- A. Solid fuel burning appliances installed in a mobile home should be of a specialized design to allow for the limited space and combustion air requirements. The appliance should be listed as a unit designed specifically for mobile homes and should be installed with a factory type chimney kit or as suggested by the manufacturer.

APPLIANCE CLEARANCES

ATTENTION APPLICANT

MATERIAL DIMENSION FOR LOW HEAT APPLIANCE

DUE TO THE INADEQUATE SIZE OF STANDARD 8X8 INCH FLUE LINERS TO ACCOMMODATE BOTH 8 INCH AND 6 INCH ROUND CONNECTORS (THIMBLES), THIS DEPARTMENT WILL REQUIRE THAT THE MINIMUM SIZE OF FLUE LINER SHOULD BE 9 INCH BY 13 INCH WITH THE 13 INCH DIMENSION USED AS THE CONNECTING FACE. PLEASE ADVISE YOUR CONTRACTOR OF THIS REQUIREMENT AND BE AWARE OF THESE DIMENSIONS WHE ORDERING YOUR MATERIALS.

