

Figure 2109.4

Figure 2109.4
STOVE INSTALLATION CLEARANCES

Stove Components	Combustible Material	½" Asbestos Millboard Spaced Out 1" 2.	Concrete/Masonry Foundation Wall	Spaced Out 1" 4" Brick Veneer
Radiant Stove 1. —Front	36"	—	—	—
Circulating Stove 1. —Front	24"	—	—	—
A. Radiant Stove 3. —Side/Back/Top	36"	18"	6"	18"
A. Circulating Stove —Side/Back/Top	12"	8"	8"	8"
B. Single Wall Connector Pipe	18"	12"	6"	8"
B. Insulated Connector Pipe	2"	2"	2"	2"
C. Chimney Height (Metal or Masonry)	Three (3) feet above adjacent roof and two (2) feet above any roof ridge within 10 feet			
D. Damper	If a damper is not included in the stove construction, it must be installed in the connector pipe.			

1. Front: Fuel or ash access side.
 2. Non-combustible spacers required.
 3. Clearances on each side of a radiant stove with a heat shield shall be measured as if a circulating type.
- Note: Clearances shall be measured perpendicular to stove body.
Laboratory verified test clearances permitted.

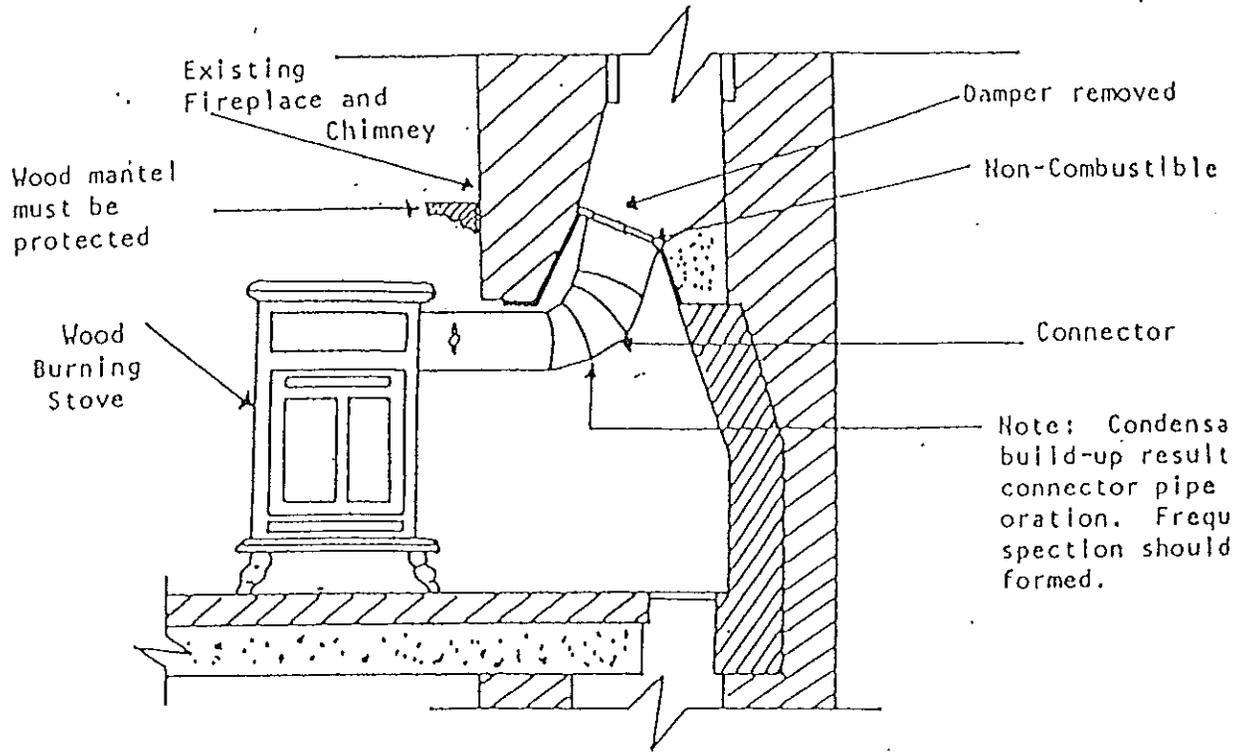


FIGURE 9.1
TYPICAL FIREPLACE STOVE CONNECTED INTO FIREPLACE DAMPER

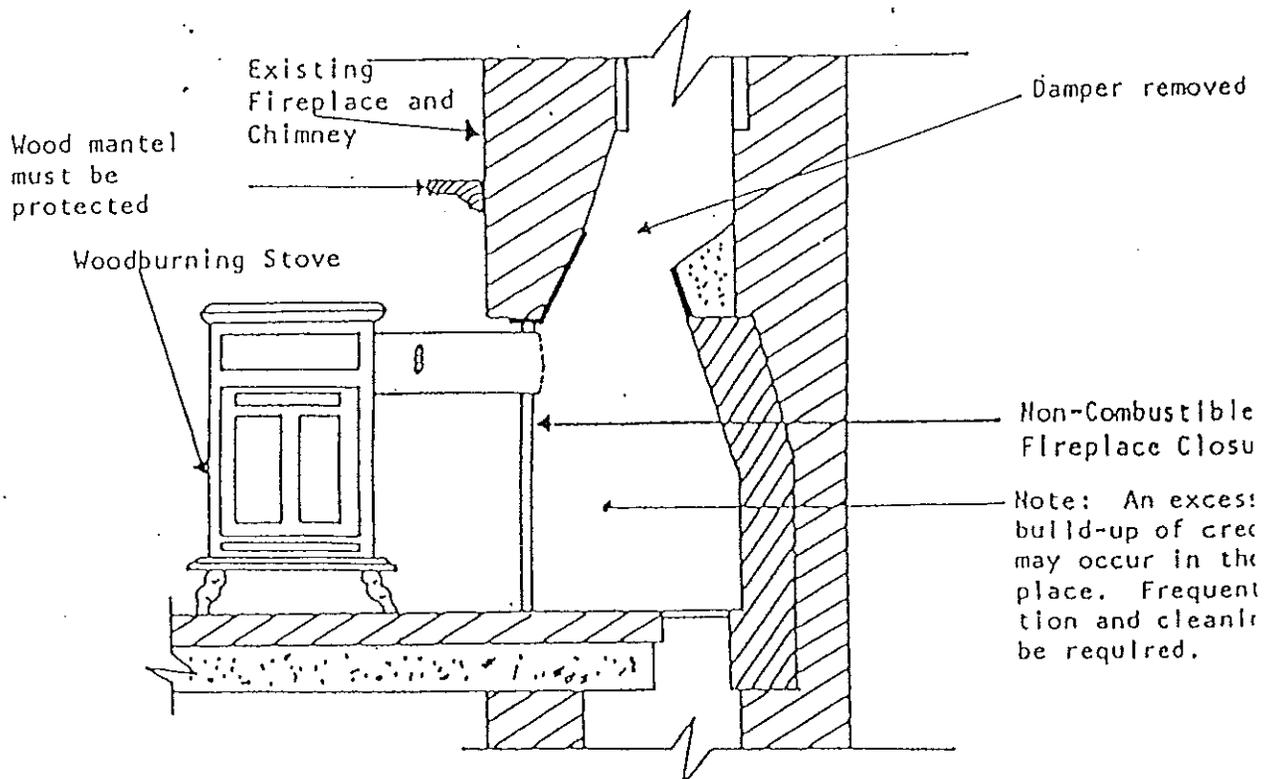


FIGURE 9.2
TYPICAL FIREPLACE STOVE CONNECTED INTO A FIREPLACE CLOSURE

WOOD STOVE INSTALLATION CHECKLIST

Permit

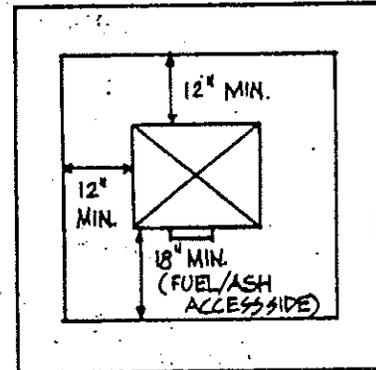
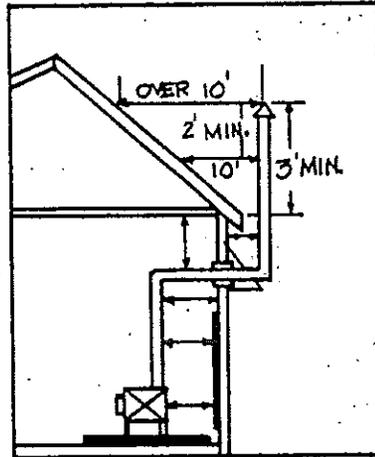
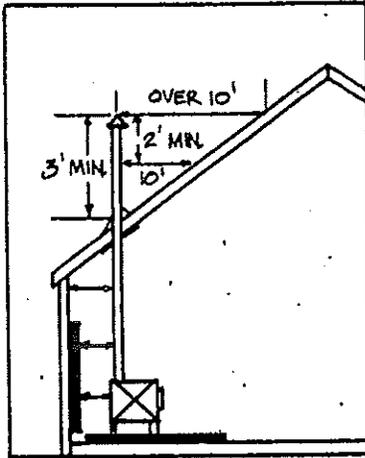
A building permit is required for the installation of any solid fuel burning appliance. The building permit and installation inspection are limited to the stove installation and not to the stove construction.

Stove

- A. New _____ Used _____
 B. Type/radiant _____ Circulating _____
 C. Manufacturer _____ Lab. No. _____
 Name/Model No. _____ Collar size _____
 Dimensions/Height _____ Length _____ Width _____

Chimney

- A. New _____ Existing _____
 B. Size (flue area) _____
 C. Other appliances attached to flue (Number and flue size) _____
 D. Prefab (Manufacturer—name and type) _____
 E. Masonry/Lined _____ Flue liner _____
 Unlined _____ (type & manufacturer)
 F. Height (refer to diagrams) _____ cap _____



HEARTH

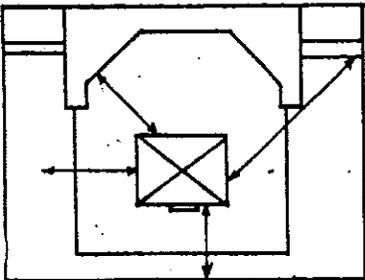
CHIMNEY HEIGHT

Hearth (non-combustible)

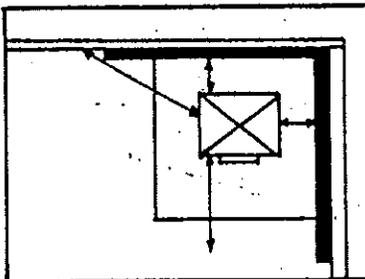
- A. Materials _____
 B. Sub-floor construction _____
 C. Minimum dimensions (refer to diagram)

Clearances and Wall Protection (see stove installation clearances chart)

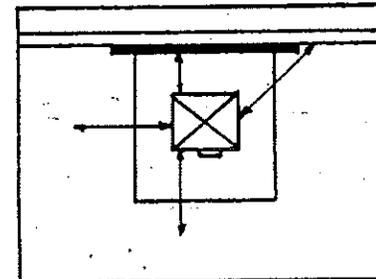
- A. Type of wall protection provided _____
 B. Clearances (refer to diagrams)



FIREPLACE



CORNER



WALL/CENTER



Town of Abington

OFFICE OF
BUILDING INSPECTOR
ABINGTON, MASS.

EXTERIOR BLOCK CHIMNEYS

Guide lines for inspection

Please be informed that you must call the inspector at the following times:

1. When hole is excavated to proper depth of 48" below grade.
2. When thimble has been placed and prior to any further work in that area, or the extension of the chimney.
3. At the completion of chimney which includes the attachment of the device to the chimney.

WINTER FIRE SAFETY TIPS FOR THE HOME

The high cost of home heating fuels and utilities have caused many Americans to search for alternate sources of home heating. The use of wood burning stoves is growing and space heaters are selling rapidly, or coming out of storage. Fireplaces are burning wood and man-made logs.

All of these methods of heating may be acceptable. They are however, a major contributing factor in residential fires. Many of these fires can be prevented. The following fire safety tips can help you maintain a fire safe home this winter.

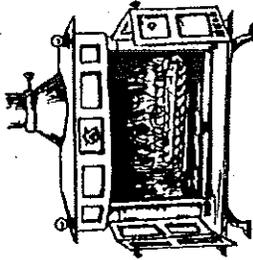
KEROSENE HEATERS

- Be sure your heater is in good working condition. Inspect exhaust parts for carbon buildup. Be sure the heater has an emergency shut off in case the heater is tipped over.
- Never use fuel burning appliances without proper room venting. Burning fuel (kerosene, coal or propane, for example) produces deadly fumes.
- Use **ONLY** the fuel recommended by the heater manufacturer. **NEVER** introduce a fuel into a unit not designed for that type fuel.
- Keep kerosene, or other flammable liquids stored in approved metal containers, in well ventilated storage areas, outside of the house.
- **NEVER** fill the heater while it is operating or hot. When refueling an oil or kerosene unit, avoid overfilling. Use caution with cold fuel for it may expand in the tank as it warms up.

- Refueling should be done outside of the home (or outdoors).
- Keep young children safely away from space heaters--especially when they are wearing nightgowns or other loose clothing that can be easily ignited.
- When using a fuel burning appliance in the bedroom, be sure there is proper ventilation to prevent a buildup of carbon monoxide.

WOOD STOVES AND FIREPLACES

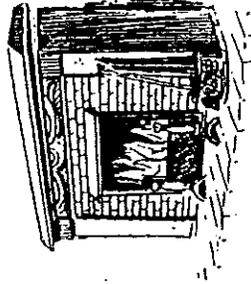
Wood stoves and fireplaces are becoming a very common heat source in homes. Careful attention to safety can minimize their fire hazard.



To use them safely:

- Be sure the stove or fireplace is installed properly. Woodstoves should have adequate clearance (36") from combustible surfaces, and proper floor support and protection.
- Woodstoves should be of good quality, solid construction and design, and should be UL listed.
- Have the chimney inspected annually and cleaned if necessary, especially if it has not been used for some time.
- Do not use flammable liquids to start or accelerate any fire.

- Keep a glass or metal screen in front of the fireplace opening, to prevent embers or sparks from jumping out, unwanted material from going in, and help prevent the possibility of burns to occupants.



- The stove should be burned hot twice a day for 15-30 minutes to reduce the amount of creosote buildup.
- Don't use excessive amounts of paper to build roaring fires in fireplaces. It is possible to ignite creosote in the chimney by overbuilding the fire.
- Never burn charcoal indoors. Burning charcoal can give off lethal amounts of carbon monoxide.
- Keep flammable materials away from your mantel. A spark from the fireplace could easily ignite these materials.
- Before you go to sleep, be sure your fireplace fire is out. **NEVER** close your damper with hot ashes in the fireplace. A closed damper will help the fire to heat up again and will force toxic carbon monoxide into the house.
- If synthetic logs are used, follow the directions on the package. Never break a synthetic log apart to quicken the fire or use more than one log at a time. They often burn unevenly, releasing higher levels of carbon monoxide.

THE MASSACHUSETTS STATE BUILDING CODE

780 CMR 6007 SOLID FUEL-BURNING APPLIANCES

6007.1 Solid Fuel-fired Appliances, General. Solid fuel-fired appliances employed for comfort heating include, but are not limited to, room heaters and stoves, fireplace inserts, furnaces and boilers; additionally, the fuel for such appliances includes, but is not limited to wood and wood pellets, coal and various other solid fuels such as nut shells and corn, etc. Solid fuel-burning appliances shall be tested and listed by approved agencies and installed, operated and maintained in accordance with such listing, the manufacturers' requirements and otherwise conform to the requirements of 780 CMR 6007

Notes:

1. No solid fuel-burning appliance shall be installed in Massachusetts unless such appliance conforms to all applicable requirements of 780 CMR 6007, including the testing and listing of all clearances to combustibles and identification of required floor protection.

2. In the absence of explicit requirements of 780 CMR 6007, the applicable requirements of NFPA 211, as listed in Appendix A, shall apply.

6007.1.1 Listing Standards, Room Heaters, Stoves and Fireplace Inserts. Room heaters, stoves and fireplace stoves (inserts), employed for comfort heating shall be listed and tested to UL 1482 and/or ANSI/UL 737 as found in Appendix A and as applicable; all such appliances shall bear labeling as required in 780 CMR 6007.2 or 6007.3, as applicable.

6007.1.2 Listing Standards, All Pellet Fueled Solid Fuel-burning Appliances. All pellet solid fuel-burning appliances sold for use in Massachusetts shall be tested and listed to ASTM E 1509 as found in Appendix A and shall bear such labeling as required in 780 CMR 6007.2.

6007.2 Solid Fuel-burning Appliance Labeling (Not Central Heating Appliances). Every solid fuel-burning appliance utilized for comfort heating shall bear a permanent and legible factory-applied label supplied to the manufacturer and controlled by an approved testing agency; such label shall contain the following information:

1. Manufacturer's name and trademark;
2. Model and/or identification number of the appliance;
3. Type(s) of fuel(s) approved;
4. Testing laboratory's name or trademark and location;
5. Date tested;
6. Clearances to combustibles:
 - (a) Above top
 - (b) From front

(c) From back

(d) From sides

7. Floor protection;
8. National test (listing) standard(s); and
9. Label serial number.

6007.3 Solid Fuel-burning Central Heating Appliance Labeling. Every solid fuel-burning boiler or warm air furnace shall bear a permanent and legible factory-applied label supplied to the manufacturer and controlled by an approved testing agency; such label shall contain the following information:

1. Manufacturer's name and trademark;
2. Model and/or identification number of the appliance;
3. Type(s) of fuel(s) approved;
4. Testing laboratory's name or trademark and location;
5. Date tested;
6. Clearances to combustibles:
 - (a) Above top
 - (b) From front
 - (c) From back
 - (d) From sides
7. Floor protection, if applicable;
8. National test standard(s);
9. Label serial number;
10. Type of appliance (boiler or warm air furnace);
11. Every boiler, pressure vessel or pressure relief device must be stamped in accordance with the requirements of the ASME Boiler and Pressure Vessel Code. ASME stamping shall also be required for boilers, pressure vessels and pressure relief devices produced outside the United State of America. Where required by the ASME Boiler and Pressure Vessel Code, ASME stamping may be affixed directly to the appliance in lieu of on the data plate.

6007.4 Hazardous Locations. Solid fuel-burning appliances shall not be installed in hazardous locations (any location considered to be a fire hazard for flammable vapors, dust, combustible fibers or other highly combustible substances).

Exception: Solid fuel-fired appliances listed for such locations.

6007.5 Air for Combustion and Ventilation. Solid fuel-burning appliances shall be installed in a location and manner to assure satisfactory combustion of fuel, proper chimney draft and maintenance of safe operating temperatures. Combustion air may be obtained from interior spaces when the interior space containing the appliance has a volume, in cubic feet equal to $1/20$ of the output Btu rating of all fuel-burning appliances in the space. When buildings are so tight as to preclude adequate infiltration, provisions shall be made to introduce outside air for combustion and ventilation.

780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS

CHIMNEYS, FIREPLACES AND SOLID FUEL-BURNING APPLIANCES

6007.6 Chimney Connection. All solid fuel-burning appliances shall be connected to chimneys in accordance with their listing, the manufacturer's requirements and the requirements of 780 CMR 60.00, as applicable.

Exception: Solid fuel-burning appliances listed for exhaust vent termination other than through a chimney shall be vented in accordance with the manufacturer's requirements.

6007.6.1 Chimney Connector Clearance to Combustibles - Solid Fuel-burning Appliances Only. Refer to 780 CMR Table 6007.6.1.

780 CMR TABLE 6007.6.1^{1,2}
CHIMNEY AND/OR VENT CONNECTOR
CLEARANCES TO COMBUSTIBLE
MATERIALS/SOLID FUEL-BURNING
APPLIANCES ONLY

DESCRIPTION OF APPLIANCE	CONNECTOR TYPE	MINIMUM CLEARANCE (in)	MINIMUM CLEARANCE (mm)
Residential-type appliances	Single-wall metal pipe connector	18	457
Residential-type appliances	Type L vent piping connector	9	229
Low-heat appliances boilers, furnaces, water heaters	Single-wall metal pipe connector	18	457
Medium-heat appliances	Single-wall metal pipe connector	36	914
High-heat appliances	Masonry or metal connector	Note 3	Note 3

1. For greater detail and guidance, refer to NFPA 211, Section 6-5.
2. For chimney connectors tested and listed for other clearances to combustibles, such tested, listed clearances shall apply.
3. Clearances shall be based on engineering calculations and good engineering practice. Refer to NFPA 211, Section 6-5.6007.7 Chimney flue size. For solid fuel-burning comfort heating appliances for one- and two-family use, the cross-sectional area of the flue shall not be less than the cross-sectional area of the appliance flue collar. The cross-sectional area of the flue shall not be more than three times the cross-sectional area of the flue collar of the appliance.

6007.8 Connection to Masonry Fireplaces. A solid fuel-burning appliance such as a stove or fireplace insert shall be permitted to use a masonry fireplace flue where the following conditions are met:

1. There is a connector that extends from the appliance to the flue liner;
2. The cross-sectional area of the flue is no more than three times the cross-sectional area of the flue collar of the appliance but never less

than the appliance exhaust collar cross-sectional area;

3. If the appliance vents directly through the chimney wall above the smoke chamber of the fireplace, there shall be a noncombustible seal below the entry point of the connector, sealing the fireplace from the appliance;
4. The installation shall be such that the chimney system can be inspected and cleaned; and
5. Means shall be provided to prevent dilution of combustion products in the chimney flue with air from the habitable space.

6007.9 Mounting (Placing) of Residential Solid Fuel-burning Appliances. Residential type solid fuel-burning appliances shall be tested and listed by approved agencies and such appliances, when mounted (placed) on combustible or noncombustible materials, shall be installed in accordance with their listing and the manufacturer's requirements.

Exceptions: See NFPA 211, Section 9-5.1.1.1 (all such exceptions pertain to placing of such appliances on well supported concrete bases, concrete slabs, properly stabilized, noncombustible soils or on approved, noncombustible assemblies of two hour fire resistance with floors constructed of noncombustible materials).

6007.10 Floor Protection. Floor protection shall satisfy all listing requirements.

6007.10.1 Floor Protectors-Definition. Floor protectors are noncombustible surfacing applied to the combustible or noncombustible floor area underneath and extending in front, to the sides and to the rear of a heat producing appliance. For purposes of 780 CMR 6007.9, floor protectors must be noncombustible and have the necessary thermal conductivity to satisfy the appliance tested/listing floor protection requirements.

Notes:

1. Refer to Appendix W (780 CMR 120.W) for information on floor protector thermal conductivity calculations
2. Various "hearth rugs," "mats," "tile board," "hearth board" and similar products sold as floor protectors may be noncombustible but may not satisfy thermal conductivity requirements to comply with 780 CMR 6007 and manufacturer's requirements.

780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS
THE MASSACHUSETTS STATE BUILDING CODE

780 CMR TABLE 6007.11.1.1
STANDARD CLEARANCES TO COMBUSTIBLES FOR SOLID FUEL-BURNING APPLIANCES

APPLIANCE TYPE	CLEARANCE ABOVE TOP OF APPLIANCE (inches)	CLEARANCE FROM FRONT OF APPLIANCE (inches)	CLEARANCE FROM BACK OF APPLIANCE (inches)	CLEARANCE FROM SIDES OF APPLIANCE (inches)
Room heaters; fireplace stoves; combination	36	36	36	36

For SI: 1 inch = 25.4 mm.

1. For reduced clearance requirements, see 780 CMR 6007.11.1
2. Adequate clearance for maintenance and cleaning shall be provided.
3. Provisions for solid fuel storage—solid fuel shall not be stored any closer than 36 inches from the sides, front or back of the solid fuel-burning appliance.

6007.11 Appliance Clearances. Solid fuel-burning appliances shall be installed in accordance with the manufacturer's tested, listed clearances (also see 780 CMR 6007.14.1 for used solid fuel-burning appliance clearance requirements).

6007.11.1 Clearance Reductions. Tested, listed clearances to combustibles shall only be permitted to be reduced in accordance with the requirements of NFPA 211, Sections 9-6.1 and 9-6.2.

Note that an engineered protection system is required to achieve a reduced clearance installation except when appliances are installed in rooms that are large in comparison to the size of the appliance (see NFPA 211, Section 9-6.1).

6007.12 Supply Ducts. When a solid fuel-burning appliance utilizes supply ducts such ducts conveying heated air shall be fabricated of noncombustible materials.

Exception: Combustible ducts specifically tested and listed for such purpose.

6007.12.1 Supply Duct Clearance to Combustibles. Supply ducts conveying heated air shall have a clearance to combustibles of not less than 12 inches (305 mm) for the first ten feet (3048 mm) of distance from the appliance plenum/bonnet.

Exception: Ducts specifically tested and listed for such purpose.

6007.13 Multiple Flue Connections. A solid fuel-burning appliance and a fossil fuel-burning appliance shall not be vented into a common flue of a masonry chimney unless such common connection is allowed by 248 CMR or 527 CMR as applicable and otherwise by 780 CMR 6007 generally. If allowed, the common flue shall be of such size to serve all appliances connected if such appliances were operated simultaneously.

Note that 248 CMR and 527 CMR are enforced by gas inspectors and the heads of fire departments, respectively.

6007.13.1 Multiple Flue Connections Not Allowed with Solid Fuel Appliances. A solid fuel-burning appliance shall not share a common flue with a working fireplace nor with

another solid fuel-burning appliance.

6007.14 Used Solid Fuel-burning Appliances — Installation Inspection. Used solid fuel-burning appliances that predate the listing requirements set forth in this code may be utilized but the installation of such appliances shall otherwise conform to the requirements of 780 CMR 60.00, as applicable and such installations shall be inspected by the building official (or fire official in such towns that utilize the fire official for such inspection purposes).

6007.14.1 Used Solid Fuel-burning Appliance Clearances to Combustibles. In the absence of tested, listed clearances and floor protection requirements, used solid fuel-burning appliances shall be required to be installed in accordance with the clearances of 780 CMR 6007.11. Floor protection requirements shall be evaluated by engineering methods or otherwise four inches (102 mm) of millboard having a thermal conductivity of:

$$k = 0.84 \text{ (Btu) (inch)/(foot}^2\text{) (hour) (}^\circ\text{F)}$$

or an equivalent noncombustible floor protector of the same overall thermal conductivity shall be required (also see 780 CMR 6007.10.1).

Exceptions:

1. If tested, listed clearances and/or floor protection requirements are documentable for the specific used appliance being installed, then such clearances and/or floor protection may be utilized.
2. If known tested, listed clearances are greater than those of 780 CMR 6007.11, then such clearances must be maintained.
3. If existing floor protection can be demonstrated to have been adequate for previous installations of said used solid fuel-burning appliances, then such previously utilized floor protection shall be allowed. If calculations demonstrate that the existing floor protection has a thermal conductivity lower than that set by 780 CMR 6007.14.1 and adequacy has otherwise been demonstrated, then the existing floor protection must be maintained.