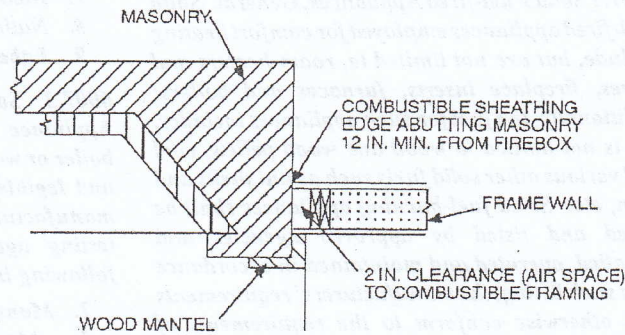


780 CMR FIGURE 6003.2
CLEARANCE FROM COMBUSTIBLES



For SI: 1 inch = 25.4 mm.

780 CMR 6004 FACTORY-BUILT FIREPLACES

6004.1 General. Factory-built fireplaces shall be listed and labeled and shall be installed in accordance with the conditions of the listing. Factory-built fireplaces shall be tested in accordance with UL 127.

6004.2 Hearth Extensions. Hearth extensions of approved factory-built fireplaces shall be installed in accordance with the listing of the fireplace. The hearth extension shall be readily distinguishable from the surrounding floor area.

6004.3 Decorative Shrouds. Decorative shrouds shall not be installed at the termination of chimneys for factory-built fireplaces except where such shrouds are listed and labeled for use with the specific factory-built fireplace system and installed in accordance with the manufacturer's installation instructions.

6004.4 Unvented Gas Log Heaters. An unvented gas log heater shall not be installed in a factory-built fireplace unless *acceptable in accordance with the requirements of M.G.L. c. 148, § 25A, 527 CMR 30, the heater manufacturer's requirements and otherwise the fireplace system has been specifically tested, listed and labeled for such use in accordance with UL 127.*

780 CMR 6005 EXTERIOR AIR SUPPLY

6005.1 Exterior Air. Factory-built or masonry fireplaces covered in 780 CMR 60.00 shall be equipped with an exterior air supply to assure proper fuel combustion unless the room is mechanically ventilated and controlled so that the indoor pressure is neutral or positive.

6005.1.1 Factory-built Fireplaces. Exterior combustion air ducts for factory-built fireplaces shall be a listed component of the fireplace and shall be installed according to the fireplace manufacturer's instructions.

6005.1.2 Masonry Fireplaces. Listed combustion air ducts for masonry fireplaces shall be installed according to the terms of their listing and manufacturer's instructions.

6005.2 Exterior Air Intake. The exterior air intake shall be capable of providing all combustion air from the exterior of the dwelling or from spaces within the dwelling ventilated with outside air such as no mechanically ventilated crawl or attic spaces. The exterior air intake shall not be located within the garage or basement of the dwelling nor shall the air intake be located at an elevation higher than the firebox. The exterior air intake shall be covered with a corrosion-resistant screen of ¼-inch (6.4 mm) mesh.

6005.3 Clearance. Unlisted combustion air ducts shall be installed with a minimum one-inch (25.4 mm) clearance to combustibles for all parts of the duct within five feet (1524 mm) of the duct outlet.

6005.4 Passageway. The combustion air passageway shall be a minimum of six square inches (3870 mm²) and not more than 55 square inches (0.035 m²), except that combustion air systems for listed fireplaces shall be constructed according to the fireplace manufacturer's instructions.

6005.5 Outlet. The exterior air outlet is permitted to be located in the back or sides of the firebox chamber or within 24 inches (610 mm) of the firebox opening on or near the floor. The outlet shall be closeable and designed to prevent burning material from dropping into concealed combustible spaces.

780 CMR 6006 MASONRY HEATERS

6006.1 Installation. A masonry heater shall be installed according to one of the following:

1. The terms of its listing; or
2. ASTM E 1602.

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.

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^{1,2,3}
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.

CHIMNEYS, FIREPLACES AND SOLID FUEL-BURNING APPLIANCES

780 CMR 6008 FIREPLACE STOVES

6008.1 General. Fireplace stoves shall be listed, labeled and installed in accordance with the terms of the listing. Fireplace stoves shall be tested in accordance with UL 737.

6008.2 Hearth Extensions. Hearth extensions for fireplace stoves shall be installed in accordance with the listing of the fireplace stove. The supporting structure for a hearth extension for a

fireplace stove shall be at the same level as the supporting structure for the fireplace unit. The hearth extension shall be readily distinguishable from the surrounding floor area.

780 CMR 6009 MASONRY HEATERS

6009.1 General. Masonry heaters shall be constructed in accordance with 780 CMR 6006.