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-  Solid vertical lines indicate technical changes from 2012 IMC.
-  Dashed vertical lines indicate technical changes in Seattle amendments.
-  Solid deletion arrow indicates IMC text has been deleted.
-  Hollow arrow indicates Seattle amendments have been deleted.

Text Markings

Underlining indicates Seattle amendments. ADULT FAMILY HOME.

Italics indicate a defined term. *A dwelling* licensed.

A strikethrough mark indicates Seattle deletions. (~~ADULT FAMILY HOME~~)

CHAPTER 8 CHIMNEYS AND VENTS

SECTION 801 GENERAL

801.1 Scope. This chapter shall govern the installation, maintenance, repair and approval of factory-built chimneys, chimney liners, vents and connectors. This chapter shall govern the utilization of masonry chimneys. Gas-fired appliances shall be vented in accordance with the *International Fuel Gas Code*.

801.2 General. Every fuel-burning appliance shall discharge the products of combustion to a vent, factory-built chimney or masonry chimney, except for appliances vented in accordance with Section 804. The chimney or vent shall be designed for the type of appliance being vented.

Exception: Commercial cooking appliances vented by a Type I hood installed in accordance with Section 507.

801.2.1 Oil-fired appliances. Oil-fired appliances shall be vented in accordance with this code and NFPA 31.

801.3 Masonry chimneys. Masonry chimneys shall be constructed in accordance with the *International Building Code*.

801.4 Positive flow. Venting systems shall be designed and constructed so as to develop a positive flow adequate to convey all combustion products to the outside atmosphere.

801.5 Design. Venting systems shall be designed in accordance with this chapter or shall be approved engineered systems.

801.6 Minimum size of chimney or vent. Except as otherwise provided for in this chapter, the size of the chimney or vent, serving a single appliance, except engineered systems, shall have a minimum area equal to the area of the appliance connection.

801.7 Solid fuel appliance flues. The cross-sectional area of a flue serving a solid-fuel-burning appliance shall be not greater than three times the cross-sectional area of the appliance flue collar or flue outlet.

801.8 Abandoned inlet openings. Abandoned inlet openings in chimneys and vents shall be closed by an approved method.

801.9 Positive pressure. Where an appliance equipped with a forced or induced draft system creates a positive pressure in the venting system, the venting system shall be designed and listed for positive pressure applications.

801.10 Connection to fireplace. Connection of appliances to chimney flues serving fireplaces shall be in accordance with Sections 801.10.1 through 801.10.3.

801.10.1 Closure and access. A noncombustible seal shall be provided below the point of connection to prevent entry of room air into the flue. Means shall be provided for access to the flue for inspection and cleaning.

801.10.2 Connection to factory-built fireplace flue. An appliance shall not be connected to a flue serving a factory-built fireplace unless the appliance is specifically listed for such installation. The connection shall be made in accordance with the appliance manufacturer's installation instructions.

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801.10.3 Connection to masonry fireplace flue. A connector shall extend from the *appliance* to the flue serving a masonry fireplace such that the flue gases are exhausted directly into the flue. The connector shall be provided with access or shall be removable for inspection and cleaning of both the connector and the flue. *Listed* direct connection devices shall be installed in accordance with their listing.

801.11 Multiple solid fuel prohibited. A solid fuel-burning *appliance* or fireplace shall not connect to a *chimney* passageway venting another *appliance*.

801.12 Chimney entrance. Connectors shall connect to a *chimney* flue at a point not less than 12 inches (305 mm) above the lowest portion of the interior of the *chimney* flue.

801.13 Cleanouts. Masonry *chimney* flues shall be provided with a cleanout opening having a minimum height of 6 inches (152 mm). The upper edge of the opening shall be located not less than 6 inches (152 mm) below the lowest *chimney* inlet opening. The cleanout shall be provided with a tight-fitting, noncombustible cover.

Exception: Cleanouts shall not be required for *chimney* flues serving masonry fireplaces, if such flues are provided with access through the fireplace opening.

801.14 Connections to exhauster. *Appliance* connections to a *chimney* or vent equipped with a power exhauster shall be made on the inlet side of the exhauster. Joints and piping on the positive pressure side of the exhauster shall be *listed* for positive pressure applications as specified by the manufacturer's installation instructions for the exhauster.

801.15 Fuel-fired appliances. Masonry chimneys utilized to vent fuel-fired *appliances* shall be located, constructed and sized as specified in the manufacturer's installation instructions for the *appliances* being vented.

801.16 Flue lining. Masonry chimneys shall be lined. The lining material shall be compatible with the type of *appliance* connected, in accordance with the *appliance* listing and manufacturer's installation instructions. *Listed* materials used as flue linings shall be installed in accordance with their listings and the manufacturer's instructions.

801.16.1 Residential and low-heat appliances (general). Flue lining systems for use with residential-type and lowheat appliances shall be limited to the following:

1. Clay flue lining complying with the requirements of ASTM C 315 or equivalent. Clay flue lining shall be installed in accordance with the *International Building Code*.
2. *Listed* and *labeled* chimney lining systems complying with UL 1777.
3. Other *approved* materials that will resist, without cracking, softening or corrosion, flue gases and condensate at temperatures up to 1,800°F (982°C).

801.17 Space around lining. The space surrounding a flue lining system or other vent installed within a masonry *chimney* shall not be used to vent any other *appliance*. This shall not prevent the installation of a separate flue lining in accordance with the manufacturer's installation instructions and this code.

801.18 Existing chimneys and vents. Where an *appliance* is permanently disconnected from an existing *chimney* or vent, or where an *appliance* is connected to an existing *chimney* or vent during the process of a new installation, the *chimney* or vent shall comply with Sections 801.18.1 through 801.18.4.

801.18.1 Size. The *chimney* or vent shall be resized as necessary to control flue gas condensation in the interior of the *chimney* or vent and to provide the *appliance* or *appliances* served with the required draft. For the venting of oil-fired *appliances* to masonry chimneys, the resizing shall be in accordance with NFPA 31.

801.18.2 Flue passageways. The flue gas passageway shall be free of obstructions and combustible deposits and shall be cleaned if previously used for venting a solid or liquid fuel-burning *appliance* or fireplace. The flue liner, *chimney* inner wall or vent inner wall shall be continuous and shall be free of cracks, gaps, perforations or other damage or deterioration which would allow the escape of *combustion* products, including gases, moisture and creosote.

Where an oil-fired *appliance* is connected to an existing masonry *chimney*, such *chimney* flue shall be repaired or relined in accordance with NFPA 31.

801.18.3 Cleanout. Masonry chimneys shall be provided with a cleanout opening complying with Section 801.13.

801.18.4 Clearances. Chimneys and vents shall have airspace *clearance* to combustibles in accordance with the *International Building Code* and the *chimney* or vent manufacturer's installation instructions.

Exception: Masonry chimneys without the required airspace *clearances* shall be permitted to be used if lined or relined with a *chimney* lining system *listed* for use in chimneys with reduced *clearances* in

accordance with UL 1777. The *chimney clearance* shall be not less than permitted by the terms of the *chimney* liner listing and the manufacturer's instructions.

801.18.4.1 Fireblocking. Noncombustible fireblocking shall be provided in accordance with the *International Building Code*.

801.19 Multistory prohibited. Common venting systems for appliances located on more than one floor level shall be prohibited, except where all of the appliances served by the common vent are located in rooms or spaces that are accessed only from the outdoors. The *appliance* enclosures shall not communicate with the occupiable areas of the building.

801.20 Plastic vent joints. Plastic pipe and fittings used to vent appliances shall be installed in accordance with the *appliance* manufacturer's installation instructions.

SECTION 802 VENTS

802.1 General. Vent systems shall be *listed* and *labeled*. Type L vents and pellet vents shall be tested in accordance with UL 641.

802.2 Vent application. The application of vents shall be in accordance with Table 802.2.

TABLE 802.2
VENT APPLICATION

802.3 Installation. Vent systems shall be sized, installed and terminated in accordance with the vent and *appliance* manufacturer's installation instructions.

802.4 Vent termination caps required. Type L vents shall terminate with a *listed* and *labeled* cap in accordance with the vent manufacturer's installation instructions.

802.5 Type L vent terminations. Type L vents shall terminate not less than 2 feet (610 mm) above the highest point of the roof penetration and not less than 2 feet (610 mm) higher than any portion of a building within 10 feet (3048 mm).

802.6 Minimum vent heights. Vents shall terminate not less than 5 feet (1524 mm) in vertical height above the highest connected *appliance* flue collar.

Exceptions:

1. Venting systems of direct vent *appliances* shall be installed in accordance with the *appliance* and the vent manufacturer's instructions.
2. Appliances *listed* for outdoor installations incorporating integral venting means shall be installed in accordance with their listings and the manufacturer's installation instructions.
3. Pellet vents shall be installed in accordance with the *appliance* and the vent manufacturer's installation instructions.

802.7 Support of vents. All portions of vents shall be adequately supported for the design and weight of the materials employed.

802.8 Insulation shield. Where vents pass through insulated assemblies, an insulation shield constructed of not less than No. 26 gage sheet metal shall be installed to provide *clearance* between the vent and the insulation material. The *clearance* shall be not less than the *clearance* to combustibles specified by the vent manufacturer's installation instructions.

Where vents pass through attic space, the shield shall terminate not less than 2 inches (51 mm) above the insulation materials and shall be secured in place to prevent displacement.

Insulation shields provided as part of a *listed* vent system shall be installed in accordance with the manufacturer's installation instructions.

802.9 Door swing. Appliance and equipment vent terminals shall be located such that doors cannot swing within 12 inches (305 mm) horizontally of the vent terminals. Doorstops or closers shall not be installed to obtain this clearance.

SECTION 803 CONNECTORS

803.1 Connectors required. Connectors shall be used to connect *appliances* to the vertical *chimney* or vent, except where the *chimney* or vent is attached directly to the *appliance*.

803.2 Location. Connectors shall be located entirely within the room in which the connecting *appliance* is located, except as provided for in Section 803.10.4. Where passing through an unheated space, a connector shall not be constructed of single-wall pipe.

803.3 Size. The connector shall not be smaller than the size of the flue collar supplied by the manufacturer of the *appliance*.

Where the *appliance* has more than one flue outlet, and in the absence of the manufacturer's specific instructions, the connector area shall be not less than the combined area of the flue outlets for which it acts as a common connector.

803.4 Branch connections. Branch connections to the vent connector shall be made in accordance with the vent manufacturer's instructions.

803.5 Manual dampers. Manual dampers shall not be installed in connectors except in *chimney* connectors serving solid fuel-burning *appliances*.

803.6 Automatic dampers. Automatic dampers shall be *listed* and *labeled* in accordance with UL 17 for oil-fired heating appliances. The dampers shall be installed in accordance with the manufacturer's instructions. An automatic vent damper device shall not be installed on an existing *appliance* unless the *appliance* is *listed* and *labeled* and the device is installed in accordance with the terms of its listing. The name of the installer and date of installation shall be marked on a label affixed to the damper device.

803.7 Connectors serving two or more appliances. Where two or more connectors enter a common vent or *chimney*, the smaller connector shall enter at the highest level consistent with available headroom or *clearance* to combustible material.

803.8 Vent connector construction. Vent connectors shall be constructed of metal. The minimum thickness of the connector shall be 0.0136 inch (0.345 mm) (No. 28 gage) for galvanized steel, 0.022 inch (0.6 mm) (No. 26 B & S gage) for copper, and 0.020 inch (0.5 mm) (No. 24 B & S gage) for aluminum.

803.9 Chimney connector construction. *Chimney* connectors for low-heat *appliances* shall be of sheet steel pipe having resistance to corrosion and heat not less than that of galvanized steel specified in Table 803.9(1). Connectors for medium-heat *appliances* and high-heat appliances shall be of sheet steel not less than the thickness specified in Table 803.9(2).

803.10 Installation. Connectors shall be installed in accordance with Sections 803.10.1 through 803.10.6.

803.10.1 Supports and joints. Connectors shall be supported in an *approved* manner, and joints shall be fastened with sheet metal screws, rivets or other *approved* means.

803.10.2 Length. The maximum horizontal length of a single-wall connector shall be 75 percent of the height of the *chimney* or vent.

803.10.3 Connection. The connector shall extend to the inner face of the *chimney* or vent liner, but not beyond. A connector entering a masonry *chimney* shall be cemented to masonry in an *approved* manner. Where thimbles are installed to facilitate removal of the connector from the masonry *chimney*, the thimble shall be permanently cemented in place with high-temperature cement.

803.10.4 Connector pass-through. *Chimney* connectors shall not pass through any floor or ceiling, nor through a fire-resistance-rated wall assembly. *Chimney* connectors for domestic-type *appliances* shall not pass through walls or partitions constructed of combustible material to reach a masonry *chimney* except where one of the following apply:

1. The connector is *labeled* for wall pass-through and is installed in accordance with the manufacturer's instructions.
2. The connector is put through a device *labeled* for wall pass-through.
3. The connector has a diameter not larger than 10 inches (254 mm) and is installed in accordance with one of the methods in Table 803.10.4. Concealed metal parts of the pass-through system in contact with flue gases shall be of stainless steel or equivalent material that resists corrosion, softening or cracking up to 1,800°F (980°C).

TABLE 803.9(1)
MINIMUM CHIMNEY CONNECTOR THICKNESS FOR LOW-HEAT APPLIANCES

803.10.5 Pitch. Connectors shall rise vertically to the *chimney* or vent with a minimum pitch equal to one-fourth unit vertical in 12 units horizontal (2-percent slope).

803.10.6 Clearances. Connectors shall have a minimum *clearance* to combustibles in accordance with Table 803.10.6. The clearances specified in Table 803.10.6 apply, except where the listing and labeling of an *appliance* specifies a different *clearance*, in which case the *labeled clearance* shall apply. The *clearance* to combustibles for connectors shall be reduced only in accordance with Section 308.

**TABLE 803.10.6
CONNECTOR CLEARANCES TO COMBUSTIBLES**

SECTION 804 DIRECT-VENT, INTEGRAL VENT AND MECHANICAL DRAFT SYSTEMS

804.1 Direct-vent terminations. Vent terminals for *directvent appliances* shall be installed in accordance with the manufacturer's instructions.

804.2 Appliances with integral vents. *Appliances* incorporating integral venting means shall be installed in accordance with their listings and the manufacturer's installation instructions.

804.2.1 Terminal clearances. *Appliances* designed for natural draft venting and incorporating integral venting means shall be located so that a minimum *clearance* of 9 inches (229 mm) is maintained between vent terminals and from any openings through which *combustion* products enter the building. *Appliances* using forced draft venting shall be located so that a minimum clearance of 12 inches (305 mm) is maintained between vent terminals and from any openings through which *combustion* products enter the building.

804.3 Mechanical draft systems. Mechanical draft systems of either forced or induced draft design shall be listed and labeled in accordance with UL 378 and shall comply with Sections 804.3.1 through 804.3.7.

**TABLE 803.10.4
CHIMNEY CONNECTOR SYSTEMS AND CLEARANCES TO COMBUSTIBLE WALL MATERIALS FOR
DOMESTIC HEATING APPLIANCES**

804.3.1 Forced draft systems. Forced draft systems and all portions of induced draft systems under positive pressure during operation shall be designed and installed so as to be gas tight to prevent leakage of *combustion* products into a building.

804.3.2 Automatic shutoff. Power exhausters serving automatically fired *appliances* shall be electrically connected to each *appliance* to prevent operation of the *appliance* when the power exhauster is not in operation.

804.3.3 Termination. The termination of *chimneys* or vents equipped with power exhausters shall be located not less than 10 feet (3048 mm) from the lot line or from adjacent buildings. The exhaust shall be directed away from the building.

804.3.4 Horizontal terminations. Horizontal terminations shall comply with the following requirements:

1. Where located adjacent to walkways, the termination of mechanical draft systems shall be not less than ~~(7)~~ 10 feet (~~((2134))~~ 3048 mm) above the level of the walkway.
2. Vents shall terminate at least 3 feet (914 mm) above any forced air inlet located within 10 feet (3048 mm).
3. The vent system shall terminate at least 4 feet (1219 mm) below, 4 feet (1219 mm) horizontally from or 1 foot (305 mm) above any door, window or gravity air inlet into the building.
4. The vent termination point shall not be located closer than 3 feet (914 mm) to an interior corner formed by two walls perpendicular to each other.
5. The vent termination shall not be mounted directly above or within 3 feet (914 mm) horizontally from an oil tank vent or gas meter.
6. The bottom of the vent termination shall be located at least 12 inches (305 mm) above finished grade.

804.3.5 Vertical terminations. Vertical terminations shall comply with the following requirements:

1. Where located adjacent to walkways, the termination of mechanical draft systems shall be not less than ~~(7)~~ 10 feet (~~((2134))~~ 3048 mm) above the level of the walkway.

2. Vents shall terminate not less than 3 feet (914 mm) above any forced air inlet located within 10 feet (3048 mm) (~~horizontally~~).
3. Where the vent termination is located below an adjacent roof structure, the termination point shall be located not less than 3 feet (914 mm) from such structure.
4. The vent shall terminate not less than 4 feet (1219 mm) below, 4 feet (1219 mm) horizontally from or 1 foot (305 mm) above any door, window or gravity air inlet for the building.
5. A vent cap shall be installed to prevent rain from entering the vent system.
6. The vent termination shall be located not less than 3 feet (914 mm) horizontally from any portion of the roof structure.

804.3.6 Exhauster connections. An *appliance* vented by natural draft shall not be connected into a vent, *chimney* or vent connector on the discharge side of a mechanical flue exhauster.

804.3.7 Exhauster sizing. Mechanical flue exhausters and the vent system served shall be sized and installed in accordance with the manufacturer's installation instructions.

804.3.8 Mechanical draft systems for manually fired appliances and fireplaces. A mechanical draft system shall be permitted to be used with manually fired appliances and fireplaces where such system complies with all of the following requirements:

1. The mechanical draft device shall be listed and labeled in accordance with UL 378, and shall be installed in accordance with the manufacturer's instructions.
2. A device shall be installed that produces visible and audible warning upon failure of the mechanical draft device or loss of electrical power, at any time that the mechanical draft device is turned on. This device shall be equipped with a battery backup if it receives power from the building wiring.
3. A smoke detector shall be installed in the room with the *appliance* or fireplace. This device shall be equipped with a battery backup if it receives power from the building wiring.

SECTION 805 FACTORY-BUILT CHIMNEYS

805.1 Listing. Factory-built *chimneys* shall be *listed* and *labeled* and shall be installed and terminated in accordance with the manufacturer's installation instructions.

805.2 Solid fuel appliances. Factory-built *chimneys* installed in *dwelling units* with solid fuel-burning appliances shall comply with the Type HT requirements of UL 103 and shall be marked "Type HT" and "Residential Type and Building Heating *Appliance Chimney*."

Exception: *Chimneys* for use with open *combustion* chamber fireplaces shall comply with the requirements of UL 103 and shall be marked "Residential Type and Building Heating *Appliance Chimney*."

Chimneys for use with open *combustion* chamber appliances installed in buildings other than *dwelling units* shall comply with the requirements of UL 103 and shall be marked "Building Heating *Appliance Chimney*" or "Residential Type and Building Heating *Appliance Chimney*."

805.3 Factory-built chimney offsets. Where a factory-built chimney assembly incorporates offsets, no part of the chimney shall be at an angle of more than 30 degrees (0.52 rad) from vertical at any point in the assembly and the chimney assembly shall not include more than four elbows.

805.4 Support. Where factory-built *chimneys* are supported by structural members, such as joists and rafters, such members shall be designed to support the additional load.

805.5 Medium-heat appliances. Factory-built *chimneys* for medium-heat appliances producing flue gases having a temperature above 1,000°F (538°C) measured at the entrance to the *chimney* shall comply with UL 959.

805.6 Decorative shrouds. Decorative shrouds shall not be installed at the termination of factory-built *chimneys* except where such shrouds are *listed* and *labeled* for use with the specific factory-built *chimney* system and are installed in accordance with Section 304.1.

SECTION 806 METAL CHIMNEYS

806.1 General. Metal *chimneys* shall be constructed and installed in accordance with NFPA 211.