

**Attached are 2009 IMC Mechanical Code revisions from the existing 2006 Mechanical Code.**

Plain text has no changes from 2006 amendments.

**Highlighted text is additions or changes. Highlights will be removed with final edition of code.**

Line-outs are deleted text no longer needed (abedefg) and will be removed from final edition

**Lager texted with *italics* explains the whys** and will be removed from final edition

## **TITLE 5, CHAPTER 6**

### **MECHANICAL CODE**

#### **SECTION:**

**5-6-1: Adoption**

**5-6-2: Deletions**

**5-6-3: Amendments**

#### **5-6-1: Adoption:**

Section 5-6-1 of the Village Code of the Village of Orland Park is hereby amended to read in its entirety as follows:

**ADOPTION:** A certain document entitled "The International Mechanical Code/2009 edition, **Second Printing**, published by the International Code Council, 4051 West Flossmoor Road, Country Club Hills, Illinois, be and hereby is adopted as the "Mechanical Code" for the Village of Orland Park, for regulating the design, construction, quality of materials, erection, installation, alteration, repair, location, relocation, replacement, addition to, use or maintenance of mechanical systems in the Village of Orland Park as provided; and each and all of the regulations, provisions, penalties, conditions and terms of said "International Mechanical Code/2006" are adopted and made a part hereof, as if fully set out in this Code with the additions, insertions, deletions and changes prescribed in this Chapter.

A copy of the rules and regulations of the "International Mechanical Code/2009" printed in book form was on file in the office of the Village Clerk for more than thirty (30) days prior to the enactment of this Code, and has been and is available for inspection. Reference in this Chapter to "this Code" is a reference to the "International Mechanical Code/2009" and such reference includes that document and any amendments, or supplements thereto whether adopted concurrently or subsequently. References in this Code to "the mechanical code" shall mean the Village's Mechanical Code as set forth in Chapter 6 of this Title 5, as may be amended from time to time.

#### **5-6-2: Deletions**

**Table 403.3:** See Section 403.1.1 added to this code's amendments and only deletes the referenced smoking lounges noted in Table 403.3.

#### **5-6-3: Amendments:**

**101.1 Title.** These regulations shall be known as the *Mechanical Code* of Orland Park, Illinois, hereinafter referred to as "this code."

**106.5.2: Fee schedule.** The fees for mechanical work shall be as indicated in Title 5 chapter 2 of the Village Code

**106.5.3 Fee refunds.** The code official shall authorize the refunding of fees as follows.

1. The full amount of any fee paid hereunder which was erroneously paid or collected.

2. Not more than 75% (percent) of the permit fee paid when no work has been done under a permit issued in accordance with this code.
3. Plan reviews completed shall be charged the full fee designated in Title 5 Chapter 2 of the Village Code for work that has been canceled.

The code official shall not authorize the refunding of any fee paid, except upon written application filed by the original permittee not later than 180 days after the date of fee payment.

**108.4: Violation penalties.** Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter or repair mechanical work in violation of the approved construction documents or directive of the code official, or of a permit or certificate issued under the provisions of this code, shall be guilty of a Village Code offense, punishable by a fine of not more as specified in the Village Code. Each day that a violation continues after due notice has been served shall be deemed a separate offense. Mechanical work started or completed without 1<sup>st</sup> obtaining a mechanical permit shall be charged double the normal permit fees referenced in Title 5 Chapter 2 of the Village Code.

**109.2: Means of Appeal and Membership.** The board of appeals shall consist of the Board of Village Trustees.

**109.3: Notice of Meeting.** The Village Development Services Committee and Board of Trustees shall meet on periodic monthly schedules for the review of appeals upon notification from Building Code Official.

**306.5: Elevated Access and Service Space.**

Where equipment requiring access and appliances are installed on roofs or elevated structures at a height exceeding 10 feet, such access shall be provided by a permanent approved means of access. Equipment located on a roof shall be through the interior of the building using a roof hatch opening having a permanent ladder access as referenced below. The means of access shall be from grade or floor level to the equipment and appliances' level service space. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) high or walking on roofs having a slope greater than four units vertical in 12 units horizontal (33-percent slope). Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall. Permanent ladders installed to provide the required access shall comply with the following minimum design criteria:

1. The side railing shall extend above the parapet or roof edge not less than 30 inches (762 mm). Exception: interior ladders using a roof hatch.
2. Ladders shall have rung spacing not to exceed 14 inches(356 mm) on center.
3. Ladders shall have a toe spacing not less than 6 inches (152 mm) deep.
4. There shall be a minimum of 18 inches (457 mm) between rails.
5. Rungs shall have a minimum 0.75-inch (19 mm) diameter and be capable of withstanding a 300-pound (136.1kg) load.
6. Ladders over 30 feet (9144 mm) in height shall be provided with offset sections and landings capable of withstanding 100 pounds per square foot (488.2 kg/m<sup>2</sup>). Landing dimensions shall be not less than 18 inches (457mm) and not less than the width of the ladder served. A guard rail shall be provided on all open sides of the landing.
7. Ladders shall be protected against corrosion by approved means. Catwalks installed to provide the required access shall be not less than 24 inches (610 mm) wide and shall have railings as required for service platforms.

Exception: This section shall not apply to Group R-3 occupancies.

**Add new Section 403.1.1 below.**

**403.1.1: Smoking Rooms or Lounges.** Table 403.3 references ventilation rates for smoking areas under the headings for "Education", "Public spaces" and "Retail stores". Smoking is not permitted in public places as referenced in the Village Code (6-2-2-12) and shall take precedence.

**Section 603.5 Nonmetallic ducts** is amended to add the following language at the end of the section's sentence:

"Nonmetallic ducts shall not be used in a non-combustible plenum."

**Section 603.5.1 Gypsum Ducts:** This subsection as quoted in the adopted code is not amended and shall apply as written by the International Code Council. .

**Section 603.6.2.1 Connector length:** shall be amended to substitute "7 feet (2133.5 mm)" for "14 feet (4267 mm)" for a maximum length of the connector.

**A duct connector is of a lesser quality than a flexible duct**

**Section 702.1 Combustion Air:** Factory built or masonry fireplaces shall be provided with an adequate amount of exterior air (combustion air) as referenced in the Building Code and the Energy Conservation Code.

***This old 2006 code section 801.14 is now referenced in Section 804.3.1 of the 2009 Code and not required as an amendment***

~~Section 801.14 Chimney and Vent~~ connections to exhauster shall be amended to add the following subsections after 801.14

~~Section 801.14.1 Automatic Shutoff:~~ Power exhausters shall be electrically connected to each appliance to prevent the operation of the appliance when the power exhauster is not in operation.

~~Section 801.14.2 Termination:~~ The termination of chimneys or vents equipped with power exhausters shall be located a minimum of 10 feet from the lot line or from adjacent buildings. The exhaust shall be directed away from the building.

~~Section 801.14.3 Horizontal Vents:~~ Horizontal vents shall terminate in accordance with the following requirements:

1. Where located adjacent to walkways, the termination of mechanical draft systems shall be not less than 7 feet above the level of the walkway.
2. Vents shall terminate at least 3 feet above any forced air inlet located within 10 feet.
3. The venting system shall terminate at least 4 feet below, 4 feet horizontally from or 1 foot above any door, window or gravity air inlet into the building.
4. The vent termination point shall not be located closer than 3 feet 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 horizontally from an oil tank vent or gas meter.
6. The bottom of the vent termination shall be located at least 12 inches above finished grade.

**Section 801.18.4 Clearances** shall be amended to delete in its entirety the language therein and substitute the following:

**Clearances:** Any portion of a masonry chimney located within the exterior wall of the building shall have a minimum airspace clearance to combustibles of 2 inches. Chimneys located entirely outside the exterior walls of the building, including chimneys that pass through the soffit

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or cornice, shall have a minimum airspace clearance of 1 inch. The airspace shall not be filled except to provide firestopping as approved by the Code Official.

Clearances shall be provided in accordance with the International Building Code.

**Exception:** Masonry chimneys equipped with a chimney lining system tested and listed for installation in chimneys in contact with combustibles in accordance with UL 1777, and installed in accordance with the manufacturer's instructions, shall be required to have inch clearance between combustible materials and exterior surfaces of the masonry chimney. Noncombustible fireblocking shall be provided in accordance with the building code.

**Section 802.1.1 Fuel Gas Vents:** Fuel Gas appliances shall be vented to meet the requirement of the 2009 ICC "International Fuel Gas Code" as referenced in Chapter 15 of this Mechanical code.

***These old code sections below are referenced in the 2009 Fuel Gas Code and not required for amendments.***

**Section 802.1 General:** All vent systems shall be listed and labeled. Type B and BW vents shall be tested in accordance with UL 441. Type L vents and pellet vents shall be tested in accordance with UL 641. Plastic vents for Category IV gas fired appliances shall not be required to be listed and labeled where such vents are as specified by the appliance manufacturer and are installed in accordance with the appliance manufacturer's installation instructions.

**Section 802.2 Type BW Systems:** In addition to other requirements specified in this chapter, gas-burning vented wall furnaces requiring a Type BW gas vent shall be vented to comply with Items 1 through 9 as follows:

1. Type BW gas vents shall be attached to a solid header plate designed for the vented wall furnace installed. The attachment shall be made by a base plate furnished with the gas vent.
2. The stud space in which a Type BW gas vent is installed shall be free of obstructions, except for firestop spacers that are required for multistory Type BW gas vents. All ceiling plates and floor plates through which the gas vent passes shall be cut flush with the adjacent wall studs.
3. Clearance of Type BW gas vents from any material shall be the space provided by the base plate, ceiling plate spacer straps and firestop spacers, furnished with the gas vent. Where a Type BW gas vent is located in a stud space, clearances provided by spacers shall be maintained after application of wall coverings and other parts of the construction. An approved sheet metal barrier shall be installed between a BW gas vent located in a stud space and wall covering constructed of perforated lath, metal lath or building paper.
4. Type BW gas vents listed only for single-story use shall be installed only in a single-story building or on the top story of a multi-story building. Type BW gas vents listed for multi-story use shall be installed in single-story or multi-story buildings.
5. A stud space that contains a Type BW gas vent, that serves a vented wall furnace installed in a single-story building or in the top story of a multi-story building, shall be open to an attic space or to a ventilated roof flashing equipped with a storm collar.

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**Exceptions:** Where a Type BW gas vent extends into an attic space, a metal

~~sleeve not less than 0.016 inch (0.4 mm) (No. 26 Gage) steel, having the same area as the opening through the ceiling plate, shall extend around the gas vent from the top of the ceiling plate into the attic not less than 12 inches (305 mm) or to a point 2 inches (51 mm) below the roof sheathing, whichever is the lesser. The sleeve shall be securely fixed in position.~~

- ~~A. As an alternative to a ventilated roof flashing, a stud space shall be ventilated by providing an opening in the wall covering, within 12 inches (305 mm) of the upper portion of the stud space, opening into a room served by the wall furnace.~~
- ~~B. The metal sleeve is not required where firestop spacers are installed at ceiling plate in accordance with Item 6.~~

- ~~6. The stud space in which a vented recessed wall furnace is installed shall be ventilated at the first ceiling plate level above the furnace by the ceiling plate spacer furnished with the gas vent. Firestop spacers furnished with the gas vent shall be installed at each subsequent ceiling plate through which the gas vent passes.~~
- ~~7. An approved metal guard shall be installed at the floor line of each floor through which the gas vent passes to ensure the maintenance of the required clearance to combustible material and to prevent damage to the vent.~~
- ~~8. Where a Type BW gas vent is installed in an existing building, the wall covering on one side of the vent shall be completely open for installation and inspection.~~
- ~~9. Type BW gas vents shall extend from the header plate of the vented wall furnace to a point above the highest ceiling plate through which the vent passes, without offsets or crossovers therein. After a type BW gas vent passes through the highest ceiling plate above the furnace which it serves, the vent system shall be completed with a Type BW gas vent or a Type B gas vent of the same manufacturer, and offsets or breakovers shall be limited to those specified in this chapter.~~

**Section 802.3 Vent Application:** The application of vents shall be in accordance with Table 802.3.

**Section 802.4 Installation:** Vent systems shall be sized, installed and terminated in accordance with the vent and appliance manufacturer's installation instructions.

**Section 802.4.1 Type L, B and BW Gas vent terminations:** Shall be amended to add the following statements at the end of the section:

- ~~1. Where adjacent to walkways, the termination of mechanical draft systems shall be located not less than 7 feet above the level of the walkway.~~
- ~~2. Vents shall terminate at least 3 feet above any forced air inlet located within 10 feet.~~
- ~~3. Where the vent termination is located below an adjacent roof structure, the termination point shall be located at least 3 feet from such structure.~~
- ~~4. The vent shall terminate at least 4 feet below, 4 feet horizontally from, or 1 foot above any door, window, or gravity air inlet for the building.~~

**TABLE 802.3 – VENT APPLICATIONS:**

VENT TYPES	APPLIANCE TYPES
Type B gas vents	Listed and labeled gas appliances with draft hoods and other Category I gas appliances listed and labeled for venting with Type B vents.
Type BW gas vents	Vented wall furnaces listed and labeled for venting

	with Type BW vents.
Special gas vent systems	Category II, III and IV gas appliances listed and labeled for venting with special gas vent systems. Special gas vent systems shall be a type specified by the appliance manufacturer's instructions.
Type L oil vents	Oil burning appliances listed and labeled for venting with Type L vents; gas appliances listed and labeled for venting with Type B vents.
Pellet vents	Pellet fuel-burning appliances listed and labeled for venting with pellet vents.

**Section 802.3.1 Gas Vent Termination Cap Required:** Type B, BW and L vents shall terminate with a listed and labeled cap in accordance with the vent manufacturer's installation instructions.

**Section 802.6 Type B and BW Gas Vent Terminations:** Type B and BW gas vents, 12 inches (305 mm) in size and smaller, with listed vent caps, shall be terminated in accordance with Table 802.6, except where located less than 8 feet (2438 mm) from a vertical wall or similar obstruction. For vents located less than 8 feet (2438 mm) from a vertical wall or similar obstruction and vents larger than 12 inches (305 mm) in size, the termination height shall be 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).

TABLE 802.6 – VENT TERMINATION ABOVE ROOF

ROOF SLOPE	MINIMUM HEIGHT FROM HIGH POINT OF ROOF PENETRATION TO LOWEST DISCHARGE OPENING OF CAP
<b>Units Vertical/Units Horizontal</b>	<b>Feet/Inches</b>
Flat to 6/12	1-0
Over 6/12 to 7/12	1-3
Over 7/12 to 8/12	1-6
Over 8/12 to 9/12	2-0
Over 9/12 to 10/12	2-6
Over 10/12 to 11/12	3-3
Over 11/12 to 12/12	4-0
Over 12/12 to 14/12	5-0
Over 14/12 to 16/12	6-0
Over 16/12 to 18/12	7-0
Over 18/12 to 20/12	7-6
Over 20/12 to 21/12	8-0

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm

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**Section 802.6.1 Minimum Vent Heights:** Type BW gas vents serving a vented wall furnace shall terminate not less than 12 feet (3658 mm) vertically above the bottom of the furnace. All other vents shall terminate not less than 5 feet (1524 mm) in vertical height above the highest connected appliance draft hood outlet or 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.

**Table 803.10.4 Chimney Connector Systems and Clearances:** The diagrams which follow this page shall serve as illustrative examples of the systems described in, **Appendix A, Systems A, B, C and D**. The wording of the table and its footnotes shall remain as set forth.

***These 2006 IMC Masonry Fireplace terms are referenced in the 2009 International Building code and are not required for an amendment to the Mechanical Code.***

~~Section 902.1~~ shall be amended to delete the language therein in its entirety and substitute the following:

**Section 902.1 Masonry fireplaces, General:** Masonry fireplaces shall be constructed as follows:

1. **Clearance to Combustibles:** The exterior surface of fireplace walls shall have a minimum 4 inch clearance to combustibles. Combustible material, including framing and sheathing, shall have a minimum clearance of 2 inches from the exterior surface of smoke chamber walls. Combustible material attached to a fireplace face, such as trim and mantels, shall have a minimum clearance of 6 inches from a fireplace opening. Combustible material above and projecting more than 1 1/2 inches from a fireplace face shall have a minimum clearance of 12 inches above a fireplace opening.
2. **Hearth Extension:** Every fireplace shall be constructed with a hearth extension of brick, stone, tile or other non-combustible material. All fireplace openings shall have a hearth extension of not less than twelve (12) inches on each side of the opening and shall extend at least sixteen (16) inches in front. Such hearths shall be supported on trimmer arches of brick, stone, tile or concrete not less than 4 inches thick or other equally strong noncombustible and fire resistance rated materials. All combustible forms or centering shall be removed after completion of the supporting construction.
3. **Other Requirements:** ~~e~~

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**Section 1303 Piping Materials** (From the 1998 International Mechanical Code)

**Section 1303.12 Plastic Piping:** Plastic pipe or tubing and compatible fittings shall be installed only underground outside of buildings. Only polyethylene pipe shall be used with liquefied petroleum gases and such application shall comply with NFPA 58.

**Exception:** Plastic pipe shall be permitted to terminate above ground outside of buildings where installed in premanufactured anodeless risers or service head adapter risers that are installed in accordance with the manufacturer's installation instructions. (Ord. 3655, 7-1-02)

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