

**Recommended Amendments to the  
2000 International Mechanical Code**  
North Central Texas Council of Governments region

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**\*\*Section 102.8; change to read as follows:**

**102.8 Referenced codes and standards.** The codes and standards referenced herein shall be those that are listed in Chapter 15 and such codes, when specifically adopted, and standards shall be considered part of the requirements of this code to the prescribed extent of each such reference. Where differences occur between provisions of this code and the referenced standards, the provisions of this code shall apply. Whenever amendments have been adopted to the referenced codes and standards, each reference to said code and standard shall be considered to reference the amendments as well. Any reference to NFPA 70 or the ICC *Electrical Code* shall mean the *Electrical Code* as adopted.

(Reason: Legal wording to recognize locally adopted codes and amendments adopted with referenced codes.)

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**\*\*Section 302.3; change to read as follows:**

**302.3 Cutting, notching and boring in wood framing.** When permitted by the *International Building Code*, the ~~The~~ cutting, notching and boring of wood framing members shall comply with Sections 302.3.1 through 302.3.3.

(Reason: Reference IBC and its restrictions. Consistent with regional amendment to IFGC 302.3.)

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**\*\*Section 304.5; delete.**

(Reason: This provision does not reflect standard practice in this area. Consistent with regional amendment to IFGC 305.4.)

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**\*\*Section 304.8; change to read as follows:**

**304.8 Clearances from grade.** Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending above adjoining grade a minimum of 3 inches (76 mm) or shall be suspended a minimum of 6 inches (152 mm) above adjoining grade.

(Reason: Consistent with current local practice. Consistent with regional amendment to IFGC 305.5.)

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**\*\*Add Section 304.11 to read as follows:**

**304.11 Minimum burial depth.** Underground fuel piping systems shall be installed a minimum depth of 18 inches (458 mm) below grade.

(Reason: To provide increased protection to piping systems. Consistent with recommended amendments to IFGC Section 404.9 and IRC Section M1304.2.)

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**\*\*Section 306.3; change to read as follows:**

**306.3 Appliances in attics.** Attics containing appliances requiring access shall be provided . . . *{bulk of paragraph unchanged}* . . . side of the appliance. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches (508 mm by 762 mm), or larger where such dimensions are not large enough to allow removal of the largest appliance. As a minimum, access to the attic space of residential uses shall be provided by one of the following:

1. A permanent stair.
2. A pull down stair.
3. An access door from an upper floor level.

**Exception:** The passageway and level service space are not required where the appliance is capable of being serviced and removed through the required opening.

(Reason: To provide a safe means of accessibility to appliances in attics. Consistent with regional amendment to IFGC 306.3.)

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**\*\*Section 306.3.1; add a sentence to read as follows:**

Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

(Reason: To call attention to the need for care while installing lighting wiring in attic. Consistent with IFGC amendments.)

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**\*\*Section 306.4.1; add a sentence to read as follows:**

Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

(Reason: To call attention to the need for care while installing lighting wiring under floors. Consistent with IFGC amendments.)

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**\*\*Section 306.5; change to read as follows:**

**306.5 Equipment and appliances on roofs or elevated structures.** Where equipment and appliances requiring access are installed on roofs or elevated structures at a height exceeding 16 feet (4877 mm), such access shall be provided by a permanent approved means of access, ~~the extent of which shall be from~~ Permanent exterior ladders providing roof access need not extend closer than 8 feet (2438 mm) to the finish grade or floor level below and shall extend to the equipment and appliance's level service space. Such access shall . . . *{bulk of section to read the same}*. . . on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope).

A receptacle outlet shall be provided at or near the equipment and appliance location in accordance with the Electrical Code. Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

(Reason: To assure safe access to roof appliances. To provide access to electricity for maintenance of equipment. Consistent with IFGC amendments.)

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**\*\*Section 306.6; add a second paragraph to read as follows:**

A receptacle outlet shall be provided at or near the appliance location in accordance with the Electrical Code. Low voltage wiring of 50 Volts or less shall be installed in a manner to prevent physical damage.

(Reason: To provide access to electricity for maintenance of equipment. Consistent with IFGC amendments.)

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**\*\*Add Section 306.6.1 to read as follows:**

**306.6.1 Catwalk.** On roofs having slopes greater than 4 units vertical in 12 units horizontal, a catwalk at least 16 inches in width with substantial cleats spaced not more than 16 inches apart shall be provided from the roof access to the working platform at the appliance.

(Reason: To assure safe access to roof appliances. Consistent with IFGC amendments.)

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**\*\*Add Section 306.7 to read as follows:**

**306.7 Water heaters above ground or floor.** When the mezzanine or platform in which a water heater is installed is more than eight (8) feet (2438 mm) above the ground or floor level, it shall be made accessible by a stairway or permanent ladder fastened to the building.

**306.7.1** Whenever the mezzanine or platform is not adequately lighted or access to a receptacle outlet is not obtainable from the main level, lighting and a receptacle outlet shall be provided in accordance with Section 306.3.1.

(Reason: To provide safe access to water heaters and to provide lighting and receptacle for maintenance of equipment. Consistent with regional amendments to IFGC 306.7 and IPC 502.7.)

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**\*\*Section 307.2.1; modify second sentence to read as follows:**

**307.2.1 Condensate disposal.** Condensate from all cooling coils and evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not discharge in a publicly exposed area such as into a street, alley, sidewalk or other areas so as to cause a nuisance.

(Reason: Greater specificity in prohibited locations for condensate discharge. Consistent with regional amendment to IPC 314.2.1.)

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**\*\*Section 307.2.2; add a second paragraph to read as follows:**

Condensate waste pipes from air-cooling coils may be sized in accordance with equipment capacity as follows:

<u>Equipment Capacity in tons of refrigeration</u>	<u>Minimum Condensate Pipe Inside Diameter</u>
<u>Up to 20 tons</u>	<u>3/4 inch</u>
<u>Over 20 to 40 tons</u>	<u>1 inch</u>
<u>Over 40 to 90 tons</u>	<u>1 1/4 inch</u>
<u>Over 90 to 125 tons</u>	<u>1 1/2 inch</u>
<u>Over 125 to 250 tons</u>	<u>2 inch</u>

The size of condensate waste pipes may be for one unit or a combination of units, or as recommended by the manufacturer. The capacity of waste pipes assumes a 1/8-inch-per-foot slope, with the pipe running three-quarters full.

(Reason: To provide guidance and increase uniformity in condensate waste pipe sizing. Consistent with regional amendment to IPC 314.2.2.)

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**\*\*Section 307.2.3; add item #4 to read as follows:**

4. Discharge, as noted, shall be to a conspicuous point of disposal to alert occupants in the event of a stoppage of the drain. However, the conspicuous point shall not create a hazard such as dripping over a walking surface or other areas so as to create a nuisance.

(Reason: To alert occupants to a condition needing corrective action. Consistent with regional amendment to IPC 314.2.3.)

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**\*\*Section 401.5; add a second exception to read as follows:**

Exceptions:

1. {existing exception unchanged}
2. Toilet room exhaust ducts may terminate in a warehouse or shop area when infiltration of outside air is present.

(Reason: Provide a more reasonable alternative in areas where a large volume of outside air is present.)

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**\*\*Section 403.2; add an exception to read as follows:**

**Exception:** Where the design professional demonstrates that an engineered ventilation system is designed in accordance with ASHRAE 62, the minimum required rate of outdoor air shall be permitted to be as specified in such engineered system design.

(Reason: Recognize the most commonly used standard as an alternate design method.)

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**\*\*Section 403.2.1; add an item #4 to read as follows:**

4. Toilet rooms within private dwellings that contain only a water closet, lavatory or combination thereof may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

(Reason: Consistent with common local practice. Consistent with regional amendment to IRC R303.3.)

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**\*\*Table 403.3, footnote g: change to read as follows:**

- g. Transfer air permitted in accordance with Section 403.2.2. Toilet rooms within private dwellings that contain only a water closet, lavatory or combination thereof may be ventilated with an approved mechanical recirculating fan or similar device designed to remove odors from the air.

(Reason: Consistent with common local practice.)

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**\*\*Section 501.3; add a second exception to read as follows:**

Exceptions:

1. *{existing exception unchanged}*
2. Toilet room exhaust ducts may terminate in a warehouse or shop area when infiltration of outside air is present.

(Reason: Provide a more reasonable alternative in areas where a large volume of outside air is present.)

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**\*\*Section 504.6; add a sentence to read as follows:**

The size of duct shall not be reduced along its developed length nor at the point of termination.

(Reason: To clarify size requirement. Consistent with regional amendment to IFGC 613.6.)

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**\*\*Section 504.6.1; change to read as follows:**

**504.6.1 Maximum length.** The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm) from the dryer location to the outlet terminal with not more than two bends. When extra bends are installed, the maximum length of the duct shall be reduced 2.5 feet (762 mm) for each 45-degree (0.79 rad) bend and 5 feet (1524 mm) for each 90-degree (1.6 rad) bend that occur after the first two bends, measuring in the direction of airflow.

*{Exception is unchanged}*

(Reason: To make more consistent with regional practice. Dryer technology has improved to the point where they should be capable of handling this. Consistent with regional amendment to IFGC 613.6.1.)

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**\*\*Section 506.3.11; change to read as follows:**

**506.3.11 Duct enclosure.** A grease duct serving a Type I hood that penetrates a ceiling, wall or floor shall be enclosed ...*{bulk of paragraph unchanged}*... through the use of weather-protected openings. The enclosure shall be separated from the duct by a minimum of 6 3/8 inches (168 mm) and a maximum of 12 inches (305 mm) and shall serve a single grease exhaust duct system.  
*{Exceptions remain unchanged.}*

(Reason: Consistent with common local practice.)

**\*\*Section 510.7; add a second exception to read as follows:**

- Exceptions:
1. *{existing exception unchanged}*
  2. Ducts where the largest cross-sectional diameter of the duct is less than 10 inches (254 mm).

(Reason: Recognize an exception in IFC 903.2.14.1.)

**\*\*Section 604.1; change to read as follows:**

**604.1 General.** Duct insulation shall conform to the requirements of Sections 604.2 through 604.1, Table 604.1 and the International Energy Conservation Code. Should there be any conflicts between this section and the energy code, the energy code shall take precedence.

(Reason: Reference to Table 604.1 is needed when adopted with these amendments. To clarify which code governs content of this section.)

**\*\*Add Table No. 604.1 to read as follows:**

**Table 604.1 - Insulation of Ducts**

Duct Location	Insulation Types Mechanically Cooled	Heating Zone <sup>1</sup>	Insulation Types Heating Only
On roof on exterior of building	C, V <sup>2</sup> and W	I II III	A and W B and W C and W
Attics, garages and crawl spaces	A and V <sup>2</sup>	I II III	A A B
In walls <sup>3</sup> , within floor-ceiling spaces <sup>3</sup>	A and V <sup>2</sup>	I II III	A A B
Within the conditioned space or in Basements; return ducts in air plenums	None required		None required
Cement slab or within ground	None required		None required

**Note:** Where ducts are used for both heating and cooling, the minimum insulation shall be as required for the most restrictive condition.

<sup>1</sup> Heating Degree Days:

- Zone I below 4,500 D.D.
- Zone II 4,501 to 8,000 D.D.
- Zone III over 8,000 D.D.

<sup>2</sup> Vapor retarders shall be installed on supply ducts in spaces vented to the outside in geographic areas where the summer dew point temperature based on the 2 ½ percent column of dry-bulb and mean coincident wet-bulb temperature exceeds 60° F. (15.4° C).

<sup>3</sup> Insulation may be omitted on that portion of a duct which is located within a wall- or a floor-ceiling space where:

- <sup>3.1</sup> Both sides of the space are exposed to conditioned air.
- <sup>3.2</sup> The space is not ventilated.
- <sup>3.3</sup> The space is not used as a return plenum.
- <sup>3.4</sup> The space is not exposed to unconditioned air.

Ceilings which form plenums need not be insulated.

**INSULATION TYPES<sup>4</sup> :**

A -- A material with an installed conductance of 0.48 [2.72 W/(m\*K)] or the equivalent thermal resistance of 2.1 [0.367 (m\*K)/W].

Example of materials capable of meeting the above requirements:

- 1-inch (25 mm), 0.60 lb./cu.ft. (9.6 kg/m<sup>3</sup>) mineral fiber, rock, slag or glass blankets.
- ½-inch (13 mm), 1.5 to 3 lb./cu.ft. (24 to 48 kg/m<sup>3</sup>) mineral fiber blanket duct liner.
- ½-inch (13 mm), 3 to 10 lb./cu.ft. (48 to 160 kg/m<sup>3</sup>) mineral fiber board.

B -- A material with an installed conductance of 0.24 [1.36 W/(m\*K)] or the equivalent thermal resistance of 4.2 [0.735 (m\*K)/W].

Example of materials capable of meeting the above requirements:

- 2-inch (51 mm), 0.60 lb./cu.ft. (9.6 kg/m<sup>3</sup>) mineral fiber blankets.
- 1-inch (25 mm), 1.5 to 3 lb./cu.ft. (24 to 48 kg/m<sup>3</sup>) mineral fiber blanket duct liner.
- 1-inch (25 mm), 3 to 10 lb./cu.ft. (48 to 160 kg/m<sup>3</sup>) mineral fiber board.

C -- A material with an installed conductance of 0.16 [0.9 W/(m\*K)] or the equivalent thermal resistance of 6.3 [1.1 (m\*K)/W].

Example of materials capable of meeting the above requirements:

- 3-inch (76 mm), 0.60 lb./cu.ft. (9.6 kg/m<sup>3</sup>) mineral fiber blankets.
- 1 ½-inch (38 mm), 1.5 to 3 lb./cu.ft. (24 to 48 kg/m<sup>3</sup>) mineral fiber blanket duct liner.
- 1 ½-inch (38 mm), 3 to 10 lb./cu.ft. (48 to 160 kg/m<sup>3</sup>) mineral fiber board.

V --Vapor Retarders: Material with a perm rating not exceeding 0.05 perm [29 ng/Pa\*s\*m<sup>2</sup>]. All joints to be sealed.

W - Approved weatherproof barrier.

<sup>4</sup> The example of materials listed under each type is not meant to limit other available thickness and density combinations with the equivalent installed conductance or resistance based on the insulation only.

(Reason: To reduce heating and/or cooling energy duct losses.)

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**\*\*Section 604.11; change to read as follows:**

**604.11 Vapor retarders.** Where ducts used for cooling are externally insulated, the insulation shall be covered with a vapor retarder in accordance with Table 604.1 having a maximum permeance of 0.05 perm [2.87 ng/(Pa · s · m<sup>2</sup>)] or aluminum foil having a minimum thickness of 2 mils (0.051 mm). Insulations having a permeance of 0.05 perms [2.87 ng/(Pa · s · m<sup>2</sup>)] or less shall not be required to be covered. All joints and seams shall be sealed to maintain the continuity of the vapor retarder.

(Reason: Match Table 604.1 amendment.)

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**\*\*Section 607.2.2; change to read as follows:**

**607.2.2 Hazardous exhaust ducts.** Hazardous exhaust duct systems shall extend directly to the exterior of the building and shall not extend into or through ducts and plenums. Penetration of structural elements shall conform to this section and the *International Building Code* except that fire dampers are not required at penetration of fire-resistance-rated assemblies for hazardous exhaust duct system shall comply with Section 510.

(Reason: To clarify requirements.)

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**\*\*Section 607.5.1; change to read as follows:**

**607.5.1 Fire Walls.** Ducts and transfer openings permitted in fire walls in accordance with Section 705.11 of the *International Building Code* shall be protected with approved fire dampers installed in accordance with their listing. Hazardous exhaust ducts shall not penetrate fire walls.

(Reason: Correspond with unamended IBC 715.5.1.)

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**\*\*Section 607.6.1; change to read as follows:**

**607.6.1 Through penetrations.** In occupancies other than Groups I-2 and I-3, penetrations by an air duct through a fire-resistive-rated floor/ceiling assembly that connects not more than two stories are permitted without shaft enclosure protection where a fire damper is installed at the floor line.

(Reason: To match wording in unamended IBC 715.6.1.)

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**\*\*Chapter 14; delete.**

(Reason: Solar systems can be adequately installed per manufacturer's instructions. Residential solar systems are addressed in IRC Chapter 23.)

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END