CHAPTER 21.1

INTERNATIONAL RESIDENTIAL CODE

ARTICLE 21.1-01

21.1-0101. Adoption of International Residential Code by Reference.--There is hereby adopted by reference by the Board of City Commissioners, for the purpose of prescribing regulations governing standards, relative to housing in the city of Fargo, that certain code known as the International Residential Code recommended and compiled by the International Conference of Building Officials, being particularly the 2003 Edition thereof, of which code not less than three copies of been filed and are now on file in the office of the City Auditor, and the same is hereby adopted and incorporated as fully as if set out in length herein, and from the date on which this ordinance shall take effect, the provisions thereof shall be controlling within the limits of the city.

Source: 4184 (2001), 4205 (2002), 4411 (2004).

21.1-0102. Amendment to International Residential Code.--The International Residential Code as adopted in Section 21.1-0101 is hereby changed and amended as follows:

Section R101.1 is hereby amended to read as follows:

R101.1 --Titles. These provisions shall be know as the Residential Code for One- and Two-Family Dwellings of the city of Fargo, and shall be cited as such and will be referred to herein as “this code.”

Section R104.8 is hereby amended to read as follows:

The building official, member of the board of appeals or employee charged with the enforcement of this code. While acting for the jurisdiction in food faith and without malice in the discharge of the duties required by this code or other pertinent law or ordinance, shall not thereby be rendered liable personally and is hereby relieved from personal liability for any damage accruing to persons or property as a result of any act or by reason of an act or omission in the discharge of official duties. Any suit instituted against an officer or employee because of an act or omission performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be afforded all the protection provided by the city’s insurance pool and immunities and defenses provided by other applicable state and federal laws and shall be defended by legal representative of the jurisdiction until the final termination of the proceedings.

The building official or any subordinate shall not be liable for cost in any action, suit or proceeding that is instituted in pursuance of the provisions of this code.

This code shall not be construed to relieve from or lessen the responsibility of any person owning, operating, or controlling any building or structure for any damages to persons or property caused by defects, nor shall the code enforcement agency or the city be held as assuming any such liability by reason of the inspection authorized by this code or any permits or certificates issued under this code.

Section R104.10.1 is hereby deleted in its entirety.

Section R105.2 is hereby amended to read as follows:

R105.2 -- Work exempt from permit……

Building:

1. One-story detached accessory structures, provided the floor area does not exceed 120 square feet.
2. Fences not over 8.5 feet high.

* * *

7. Swimming pools.
8. Swings and other playground equipment.
9. Window awnings supported by an exterior wall which do not require additional support.

Section R106.1.3 is hereby deleted in its entirety.

Section R112.2.1 is hereby deleted in its entirety.

Section R112.2.2 is hereby deleted in its entirety.

Section R201.3 is hereby amended to read as follows:

Section R201.3 – Terms defined in other codes. Where terms are not defined in this code such terms shall have meanings ascribed to them as in other code publications of the International Code Council. Wherever the term 'International Plumbing Code' and/or 'International Private Sewage Disposal Code' is used in the International Residential Code, it shall mean the North Dakota State Plumbing Code. Wherever the term 'ICC Electrical Code' is used in the International Residential Code, it shall mean the National Electrical Code together with the North Dakota State Wiring Standards. Wherever reference is made to flood plain requirements, it shall mean the Fargo Flood Plain Management Ordinance together with the Fargo Flood Proofing Code.

Section R301.2.4 is hereby deleted in its entirety.

Section R303.6.1 is hereby amended to read as follows:

Section R303.6.1 -- Light activation. The control for activation of the required interior stairway lighting shall be accessible at the top and bottom of each stairway having more than five risers without traversing any steps. The illumination of ……..

Section R307.1 is hereby amended to read as follows:

Section R307.1 – Space required. Fixtures shall be spaced as per Figure R307.2, with the exception of the clearance in front of water closets and bidets which shall be at least 24 inches.

Section R310.1 is hereby amended to read as follows:

Section R310.1 – Emergency escape and rescue required. Basements with habitable space and every sleeping room shall have at least one operable emergency escape and rescue opening. Where basements contain one or more sleeping rooms, emergency egress and rescue openings shall be required in each sleeping room, but shall not be required in adjoining areas of the basement. Where emergency escape and rescue openings are provided they shall have a sill height of not more than 44 inches (1118 mm) above the floor. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section 310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2.

Exception: Below grade emergency escape and rescue windows may have a maximum sill height of 48 inches.

Section R310.2.1 is hereby amended to read as follows:

Section R310.2.1 -- Ladder and steps. Window wells with a vertical depth greater than 44 inches (1118 mm) shall be equipped with a permanently affixed ladder or steps usable with the window in the fully open position or, install a minimum 30”x16” permanently attached platform in the window well, that will reduce the vertical depth of the window well to no more than 42: below the top of the window well and that will not impede the operation of the window. Ladders or steps required by this section shall not be required to comply with Sections R311.5 and R311.6. Ladders or rungs shall have a inside width of at least 12

inches (305 mm), shall project at least 3 inches (76 mm) from the wall and shall be spaced not more than 18 inches (457 mm) on center vertically for the full height of the window well.

Exception: Terraced window wells with a maximum of 24" per vertical rise and minimum of 12" horizontal projections on each level shall also be allowed in accordance with Figures 310.2.1(1) and 310.2.1(2).

Section R311.5.3.1 is hereby amended to read as follows:

Section R311.5.3.1 -- Riser height. The maximum riser height shall be 8 inches. The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Section R311.5.3.2 is hereby amended to read as follows:

Section R311.5.3.2 -- Tread depth. The minimum tread depth shall be 9 inches the tread depth shall be measured……..

Section R311.5.4 is hereby amended to read as follows:

Section R311.5.4 -- Landings for stairways. There shall be a floor or landing at the top and bottom of each stairway.

Exceptions: 1. A floor or landing is not required at the top of an interior flight of stairs, provided a door does not swing over the stairs.
2. A floor or landing is not required at the exterior side of sliding doors and in-swinging doors opening onto a patio and in-swinging doors opening into an attached garage.

Section R312.1 is hereby amended to read as follows:

Section R312.1 -- Guards required. Porches, balconies, ramps or raised floor surfaces……

Section R313.1 is hereby amended to read as follows:

Section R313.1 -- Smoke alarms. Smoke alarms shall be installed in the following locations:

* * *

3. On each additional story of the dwelling, including basements but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level. In dwelling units where the ceiling height of a room open to the hallway serving the bedrooms exceeds that of the hallway by 24 inches (610 mm) or more, smoke detectors shall be installed in the hallway and in the adjacent room.

Section R323 is hereby deleted in its entirety.

Table R403.1 is hereby deleted in its entirety.

Section R403.1.4.1, Exceptions 1 and 2, are hereby amended to read as follows:

Section R403.1.4.1 -- Frost protection.

Exceptions: 1. Freestanding accessory structures with an area of 400 square feet (37 m^2) or less shall not be required to be protected.
2. Decks need not be provided with footings that extend below the frost line.

Section R404.1.1 is hereby amended to read as follows:

Section R404.1.1 -- Masonry foundation walls. Concrete masonry and clay masonry foundation walls shall be constructed as set forth in Tables R404.1.1(1), R404.1.1(2), or Tables R404.1.1(3) and Figures 404.1(1) and 404.1(2) and shall also comply with the provisions of Sections R606, R607 and R608.

Section R404.1.2 is hereby amended to read as follows:

Section R404.1.2 -- Concrete foundation walls. Concrete foundation walls shall be constructed as set forth in Tables R404.1.1(1), R404.1.1(2), and R404.1.1(3), and Figures R404.1(1) and R404.1(2) and shall also comply with the provisions of this section and the applicable provisions of Section R402.2.

Table R404.1.1(2) is hereby amended as shown:

Table R404.1.1(2)
Foundation Wall Reinforcing

Active Pressure = 45pcf

Minimum Reinforcement for Concrete Foundation Walls		
Wall Height (h) feet	Wall Thickness (t) inches	Vertical Reinforcing
8	8	#4 @ 24” o.c. #5 @ 40” o.c.
	10	#4 @30” o.c. #5 @ 50” o.c.
9	8	#4 @ 18” o.c. #5 @ 28” o.c.
	10	#4 @ 24” o.c. #5 @ 36” o.c.
10	10	#4 @ 16” o.c. #5 @ 26” o.c.

Notes:

1. Chart is based on an active soil pressure of 45 pounds per cubic foot (pcf).
2. Reinforcing steel shall be ASTM A615 Fy – 60,000 pounds per square inch (psi).
3. The vertical reinforcing bars are to be located on the inside face.
4. Minimum concrete strength Fc^1 = 3,000 pounds per square inch (psi).
5. Backfill shall not be placed until first floor framing and sheathing is installed and fastened or adequately braced and the concrete floor slab is in place or the wall is adequately braced.

Table R404.1.1(3) is hereby amended as shown:

Table R404.1.1(3)
Foundation Wall Reinforcing

Active Pressure = 65 pcf

Minimum Reinforcement for Concrete Foundation Walls		
Wall Height (h) Feet	Wall Thickness (t) inches	Vertical Reinforcing
8	8	#4 @ 18”” o.c. #5 @ 26” o.c. #6 @ 40” o.c.
	10	#4 @ 24” o.c. #5 @ 36” o.c.

		#6 @ 52” o.c.
9	8	#4 @ 12” o.c. #5 @ 18” o.c. #6 @ 26” o.c.
	10	#4 @ 16” o.c. #5 @ 24” o.c. #6 @ 36” o.c.
10	10	#4 @ 12” o.c. #5 @ 18” o.c. #6 @ 24” o.c.

Notes:

1. Chart is based on an active soil pressure of 65 pounds per cubic foot (pcf).
2. Reinforcing steel shall be ASTM A615 Fy – 60,000 pounds per square inch (psi).
3. The vertical reinforcing bars are to be located on the inside face.
4. Minimum concrete strength Fc^1 = 3,000 pounds per square inch (psi).
5. Backfill shall not be placed until first floor framing and sheathing is installed and fastened or adequately braced and the concrete floor slab is in place or the wall is adequately braced.

Table R404.1.1(4) is hereby deleted in its entirety.

Figures R404.1(1) and R404.1(2) are adopted as shown:

FIGURE R404.1(1)

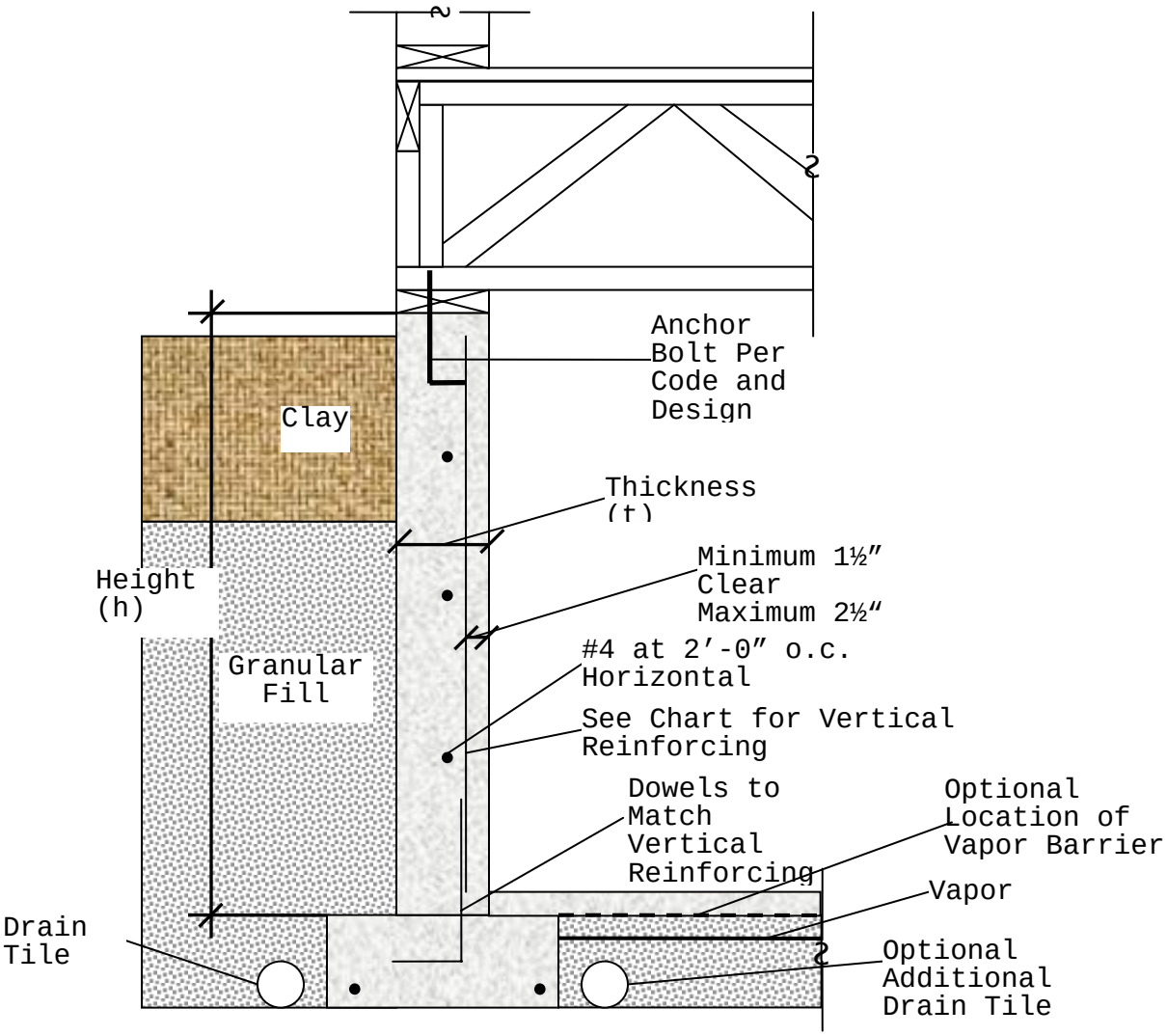
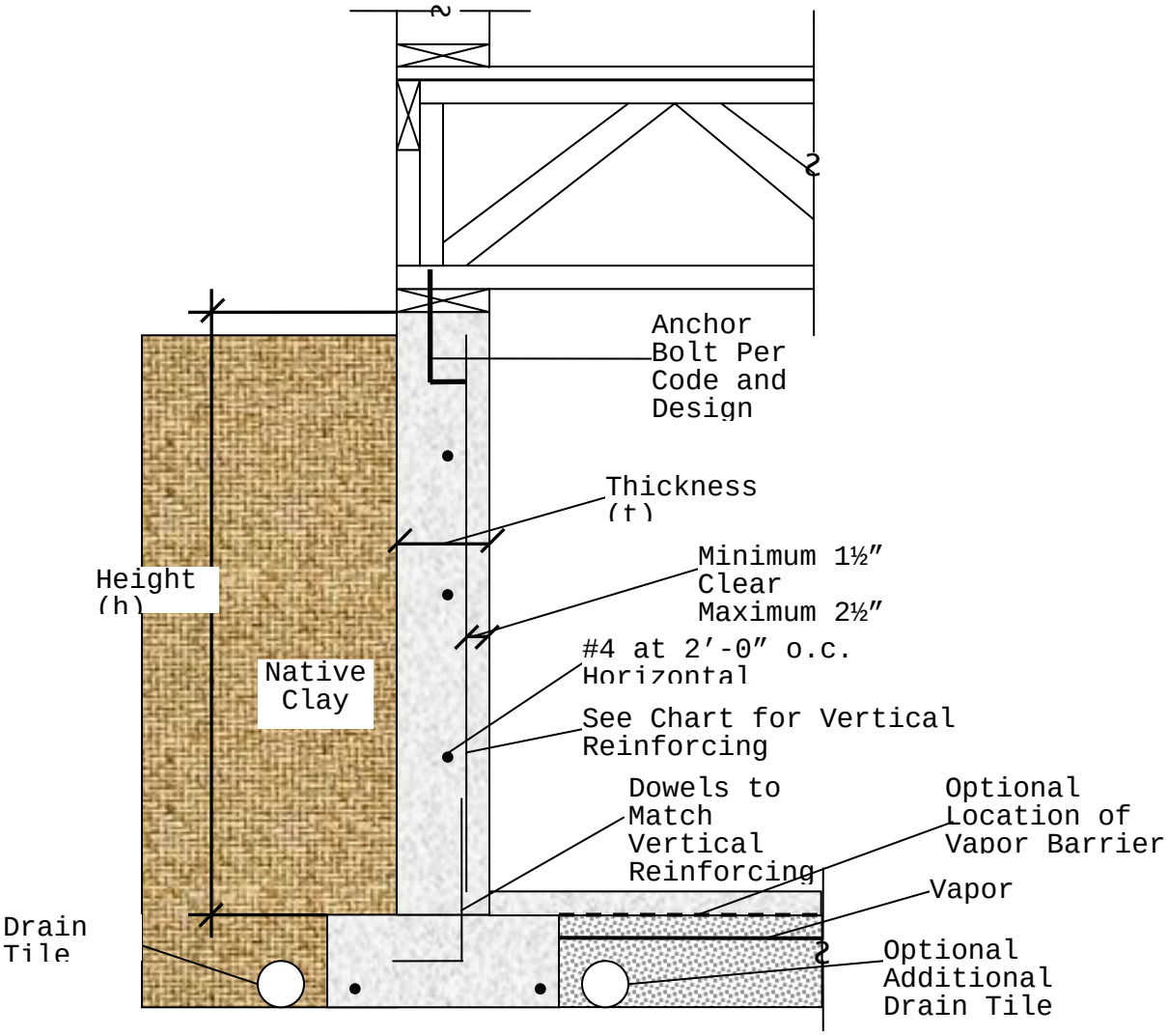


FIGURE R404.1(2)



Section R405.2.3 is hereby amended to read as follows:

Section R405.2.3 -- Drainage system. In other than Group I soils, a sump shall be provided to drain the porous layer and footing. The sump shall be at least 18 inches in diameter or 16 inches square, shall extend at least 24 inches (610 mm) below the bottom of the basement floor and shall be capable of positive gravity or mechanical drainage to remove any accumulated water. The drainage system shall discharge into an approved sewer system or to daylights.
Section R408.6 is hereby deleted in its entirety.

Section R506.2.3 is hereby amended to add an exception 4 to read as follows:

Exceptions:

* * *

4. Attached garages.

Section R703.6.2 is hereby amended to read as follows:

Section R703.6.2 – Plaster. Plastering with portland cement plaster shall be not less than three coats when applied over metal lath or wire lath and shall be not less than two coats when applied over masonry, concrete or gypsum backing. If the plaster surface is completely covered by veneer or other facing material or is completely concealed, plaster application need be only two coats, provided the total thickness is as set forth in Table R702.1(1). Approved decorative coatings applied to a concrete or masonry surface shall be installed in accordance with the manufacturer's installation instructions.

Section R808.1, the final sentence is hereby amended to read:

Section R808.1 -- Combustible insulation.

…. Recessed lighting fixtures installed in the building thermal envelope shall meet the requirements of the National Electrical Code and North Dakota State Wiring Standards.

Section R905.2.5 is hereby amended to read as follows:

Fasteners for asphalt shingles shall be galvanized steel, stainless steel, aluminum or copper roofing nails, minimum 12 gage [0.105 inch (2.67 mm)] shank with a minimum 3/8 inch (9.5 mm) diameter head, ASTM F 1667, of a length to penetrate through the roofing materials and a minimum of ¾ inch (19.1 mm) into the roof sheathing or other fasteners as approved by the building official and shingle manufacturer. Where the roof sheathing is less than ¾ inch (19.1 mm) thick, the fasteners shall penetrate through the sheathing. Fasteners shall comply with ASTM F 1667.

Section R907 is hereby deleted in its entirety and relocated to the Appendices as Appendix M.

Chapter 11 is hereby deleted in its entirety.

Section M1301.1.1 is hereby deleted in its entirety.

Section M1401.5 is hereby deleted in its entirety.

Section M1501.3 is hereby amended to read as follows:

Section M1501.3 -- Length limitation. The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm), including two 90-degree elbows, from the dryer location to the wall or roof termination. The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each additional 45-degree (0.79 rad) bend and 5 feet (15224 mm) for each additional 90-degree bend. The maximum length of the exhaust duct does not include the transition duct. …

Section M1601.3.1 is hereby amended as follows:

Section M1601.3.1 Joints and seams. When located outside of conditioned space, joints of duct systems shall be made substantially airtight by means of tapes, mastics, gasketing, or other approved closure systems. ….

Section M1601.3.4 is hereby amended to add item number 4 as follows:

Section M1601.3.4 -- Duct insulation.

4. All portions of the air distribution system shall be installed in accordance with Section M1601 and be insulated to an installed R-4.2 when system components are located within the building but outside of conditioned space, and R-8 when located outside of the building. When located within a building envelope assembly, at least R-8 shall be applied between the duct and that portion of the assembly furthest from conditioned space.

Section M1601.3.8 is hereby deleted in its entirety.

Section M1603 is hereby amended to read as follows:

M1603 -- Minimum Duct Size

M1603.1 General**.** The minimum unobstructed total area of supply and return air ducts from a warm-air furnace shall be in accordance with the manufacturer's installation instructions, but shall not be less than 2 square inches (1290 MM sq) for each 1,000 Btu/h (293W) output rating of the furnace. The minimum unobstructed total area of the supply and return air ducts from a central air-conditioning unit and/or heat pump shall be in accordance with the manufacturer's installation instructions, but shall be not less than 6 square inches (3870 mm sq) for each 1,000 Btu/h (293W) nominal cooling output rating. Dampers, grilles, or registers installed for the purpose of controlling the supply airflow shall not be considered as obstructions.

Section M1701.6 is hereby deleted in its entirety.

Section M1703.2 is hereby amended to read as follows:

Section M1703.2 -- Two openings or ducts. Outside combustion air shall be supplied through openings or ducts, as illustrated in Figures M173.2(1), M1703.2(2), M1703.2(3) and M1703.2(4). One opening shall be within 12 inches (305mm) of the top of the enclosure, and one within 12 inches (305mm) of the bottom of the enclosure. Openings are permitted to connect to spaces directly communicating with the outdoors, such as ventilated crawl spaces. The same duct or opening shall not serve both combustion air openings. The duct servicing the upper opening shall be level or extend upward from the appliance space.

Section M1703.3 is hereby deleted in its entirety.

Figures M1703.2(3), M1703.2(4) and M1703.3 are hereby deleted in their entirety.

Section M1801.1 is hereby amended to read as follows:

Section M1801.1 -- Venting required. Fuel-burning appliances shall be vented to the outside in accordance with their listing and label and manufacturer's installation instructions. …..

Section M2001.4 is hereby deleted in its entirety.

Section M2101.3 is hereby amended to read as follows:

Section M2101.3 -- Protection of potable water. The potable water system shall be protected from backflow in accordance with the provisions listed in the North Dakota State Plumbing Code.

Section M2101.10 is hereby amended to read as follows:

Section M2101.10 -- Tests. New hydronic piping shall be isolated and tested hydrostatically at a pressure of not less than 100-pounds per square inch (psi) (689 kPa) for a duration of not less than 15 minutes.

Section M2201.6 is hereby deleted in its entirety.

Section G2404.7 is hereby deleted in its entirety.

Section G2406.2 is hereby amended to delete exceptions 3 and 4.

* * *

Figures G2407.6.1(1) AND G2407.6.1(2) are hereby deleted in their entirety.

Figure G2407.6.2 is hereby amended to delete the reference to an alternate opening location.

Section G2407.11 is hereby amended to delete item number 5 and renumber subsequent items.

Section G2417.4.1 is hereby amended to read as follows:

Section G2417.4.1 (406.4.3) -- Test pressure. The test pressure to be used shall not be less than one and on half times the proposed maximum working pressure, but not less than 25 psig, irrespective of design pressure. Where the test pressure exceeds 125 psig, the test pressure shall not exceed a value that produces a hoop stress in the piping greater than 50 percent of the specified minimum yield strength of the pipe.

Section G2419.2 is hereby amended to read as follows:

Section G2419.2 -- Drips. Where wet gas exists, a drip shall be provided at any point in the line of pipe where condensate could collect.

Section G2425.8 is hereby amended by deletion of item number 7.

Section G2425.12 is hereby amended to read as follows:

Section 2425.12 Residential and low-heat appliances flue lining systems. Flue lining systems for use with residential-type and low-heat appliances shall be limited to the following:

1. Clay flue lining complying with the requirements of ASTM C 315 or equivalent when each appliance connected into the masonry chimney has a minimum input rating greater than 400,000 Btu/h. Clay flue lining shall be installed in accordance with Chapter 10.
2. Listed chimney liner 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 1800 F (982 C).
    a. Aluminum (1100 or 3003 alloy or equivalent) not less than 0.032 inches thick up to 8 inches in diameter.
    b. Stainless steel (304 or 430 alloy or equivalent) not less than 26 gauge (0.018 inches thick) to 8 inches in diameter or not less than 24 gauge (0.024 inches thick) 8 inches in diameter and larger.

    When a metal liner is used other than a listed chimney liner a condensation drip tee shall be installed and supported in an approved manner.

Section G2427.5.2 is hereby amended to read as follows:

G2427.5.2 -- Masonry chimneys. Masonry chimneys shall be built and installed in accordance with this code and shall be lined with approved clay flue lining, a listed chimney lining system, or other approved material that will resist corrosion, erosion, softening or cracking from vent gases at temperatures up to 1,800 F (982 C). Masonry chimneys shall be lined in accordance with Section G2425.12.

Section G2439.5.1 is hereby amended to read as follows:

Section G2439.5.1 (614.6.1) -- Maximum length. The maximum length of a clothes dryer exhaust duct shall not exceed 25 feet (7620 mm), including two 90-degree elbows, from the dryer location to the wall or roof termination. The maximum length of the duct shall be reduced 2.5 feet (762 mm) for each additional 45-degree (0.79 rad) bend and 5 feet (15224 mm) for each additional 90-degree bend. The maximum length of the exhaust duct does not include the transition duct.
* * *

Section G2442.6 is hereby amended to read as follows:

Section G2442.6 (618.6) -- Screen. Required outdoor air inlets shall be covered with a screen having ¼ inch (6.4 mm) openings. Required outdoor air inlets serving a nonresidential portion of a building shall be covered with screen having openings larger than ¼ inch (6.4 mm) and not larger than ½ inch (25 mm).

Section G2445 is hereby deleted in its entirety.

Source: 4184 (2001), 4205 (2002), 4305 (2003), 4411 (2004), 4431 (2004).