MINNESOTA RULES, CHAPTER 1309
ADOPTION OF THE ~~2006~~ 2012 INTERNATIONAL RESIDENTIAL CODE

1309.0010 ADOPTION OF INTERNATIONAL RESIDENTIAL CODE (IRC) BY REFERENCE.

Subpart 1. **Generally.** The ~~2006~~ 2012 edition of the International Residential Code (IRC) as promulgated by the International Code Council (ICC), Falls Church, Virginia, is incorporated by reference and made part of the Minnesota State Building Code except as qualified by the applicable provisions in Minnesota Rules, chapter 1300, and as amended in this chapter. The IRC is not subject to frequent change and a copy of the IRC, with amendments for use in Minnesota, is available in the office of the commissioner of labor and industry. Portions of this chapter reproduce text and tables from the IRC. The IRC is copyright ~~2006~~ 2011 by the ICC. All rights reserved.

Subp. 2. **Mandatory chapters.** The ~~2006~~ 2012 IRC Chapters 2 through 10, 44, 2012 IRC Section P2904, and ~~43~~ Appendix K must be administered by any municipality that has adopted the code, except as qualified by the applicable provisions in Minnesota Rules, chapter 1300, and as amended by this chapter.

Subp. 3. **Replacement chapters.** The following ~~2006~~ 2012 IRC chapters are being deleted and replaced with the provisions listed below:

A. Chapter 1 of the ~~2006~~ 2012 IRC and any references to code administration in this code are deleted and replaced with Minnesota Rules, chapter 1300, Minnesota Administration Code.

B. Chapter 11 of the ~~2006~~ 2012 IRC and any references to energy in this code are deleted and replaced with ~~Minnesota Statutes, section 326B.115~~ Minnesota Rules, chapter 1322 and 1323[r1].

C. Chapters 12 through 24 of the ~~2006~~ 2012 IRC and any references to mechanical matters in this code are deleted and replaced with Minnesota Rules, chapter 1346, Minnesota Mechanical Code.

D. Chapters 25 through ~~32~~33 of the ~~2006~~ 2012 IRC and any references to plumbing in this code are deleted and replaced with Minnesota Rules, chapter 4715, Minnesota Plumbing Code.

E. Chapters ~~33~~34 through ~~42~~43 of the ~~2006~~ 2012 IRC and references to electrical matters in this code, other than Section ~~R313~~ R314 Smoke Alarms, are deleted and replaced with Minnesota Rules, chapter 1315, Minnesota Electrical Code.

Subp. 4. **[REPEAL]~~Seismic or earthquake provisions.~~** ~~Any seismic or earthquake provisions and any references to them are deleted and are not included in this code~~[r2].

Subp. 5. **Flood hazard or floodproofing provisions.** Any flood hazard or floodproofing provisions in the IRC, and any reference to those provisions, are deleted in their entirety. Requirements for floodproofing are located in chapter 1335, floodproofing regulations.

Subp. 6. **Elevator and platform lift provisions.** Any elevator and platform lift provisions in the IRC and any reference to those provisions are deleted in their entirety. Requirements for elevators or platform lifts are located in chapter 1307, elevators and related devices.

1309.0020 REFERENCES TO OTHER ICC CODES.

Subpart 1. **Generally.** References to other codes and standards promulgated by the ICC in the ~~2006~~ 2012 IRC are modified in subparts 2 to 11.

Subp. 2. **Building code.** References to the International Building Code in this code mean the Minnesota Building Code, adopted pursuant to Minnesota Rules, chapter 1305, and Minnesota Statutes, section 326B.106, subdivision 1.

Subp. 3. **Residential code.** References to the IRC in this code mean the Minnesota Residential Code, adopted under Minnesota Rules, chapter 1309, and Minnesota Statutes, section 326B.106, subdivision 1.

Subp. 4. **Electrical code.** References to the ICC Electrical Code in this code mean the Minnesota Electrical Code, Minnesota Rules, chapter 1315, adopted under Minnesota Statutes, section 326B.35.

Subp. 5. **Fuel gas code.** References to the International Fuel Gas Code in this code mean the Minnesota Mechanical Code, Minnesota Rules, chapter 1346, adopted under Minnesota Statutes, section 326B.106, subdivision 1.

Subp. 6. **Mechanical code.** References to the International Mechanical Code in this code mean the Minnesota Mechanical Code, Minnesota Rules, chapter 1346, adopted under Minnesota Statutes, section 326B.106, subdivision 1.

Subp. 7. **Plumbing code.** References to the International Plumbing code in this code mean the Minnesota Plumbing Code, Minnesota Rules, chapter 4715, adopted under Minnesota Statutes, section 326B.106, subdivisions 1 and 2.

Subp. 8. **Private sewage disposal code.** References to the International Private Sewage Disposal Code in this code mean the Minnesota Pollution Control Agency's minimum standards and criteria for individual sewage treatment systems in Minnesota Rules, chapter 7080, adopted under Minnesota Statutes, chapters 103F, 103G, 115, and 116.

Subp. 9. **Energy conservation code.** References to the International Energy Conservation Code in this code mean the Minnesota Energy Code, ~~adopted under Minnesota Statutes, section 326B.115~~ Minnesota Rules, chapter 1322 and 1323[r3].

Subp. 10. **Property maintenance code.** References to the International Property Maintenance Code in this code do not apply.

Subp. 11. **Accessibility code.** References to accessibility in this code mean the Minnesota Accessibility Code, Minnesota Rules, chapter 1341.

1309.0030 ADMINISTRATIVE PROCEDURE CRITERIA.

Procedures relating to the administration and enforcement of this code under Minnesota Statutes, section ~~16B.57~~ 326B.101, are contained in Minnesota Rules, chapter 1300, Minnesota Administration Code. Minnesota Rules, chapter 1300, governs the application of this code.

1309.0040 VIOLATION.

A violation of this code is a misdemeanor under Minnesota Statutes, section 326B.82.

1309.0100 CHAPTER 1, ADMINISTRATION.

Subpart 1. **IRC chapter 1.** IRC chapter 1 is deleted and replaced with the following:

CHAPTER 1

ADMINISTRATION

This code shall be administered according to Minnesota Rules, chapter 1300.

Subp. 2. **Existing buildings and structures.** Additions, alterations, or repairs to existing buildings and structures meeting the scope of the International Residential Code shall be exempt from Minnesota Rules, chapter 1311, ~~Minnesota Conservation Code~~ The 2012 International Existing Building Code ~~for Existing Buildings~~.

Additions, alterations, or repairs to existing one and two family dwellings including townhouses may be made without requiring the existing building or structure to comply with all the requirements of this code provided that any addition or alteration conforms to this code. Repairs to existing buildings or structures may be made that are nonstructural and do not adversely affect any structural member or required fire resistive element with the same methods and materials of which the building or structure is constructed[r4].

Exception: The installation or replacement of glass shall be as required for new installations in accordance with IRC Section R308.

1309.0201 SECTION R201, GENERAL.

IRC Section R201.4 is amended to read as follows:

R201.4 Terms not defined. Where terms are not defined through the methods authorized by this chapter, the Merriam-Webster Collegiate Dictionary, available at www.m-w.com, shall be considered as providing ordinarily accepted meanings. The dictionary is incorporated by

reference, is subject to frequent change, and is available through the Minitex interlibrary loan system.

1309.0202 SECTION R202, DEFINITIONS.

Subpart 1. **Modifications.** IRC Section R202 is amended by modifying the following definitions:

DWELLING.

SINGLE FAMILY. Any building that contains one dwelling unit used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or occupied for living purposes.

TWO FAMILY. Any building that contains two separate dwelling units with separation either horizontal or vertical on one lot that is used, intended, or designed to be built, used, rented, leased, let or hired out to be occupied, or occupied for living purposes.

TOWNHOUSE. A single family dwelling unit constructed in a group of two or more attached units in which each unit extends from the foundation to the roof and having open space on at least two sides of each unit. Each single family dwelling unit shall be considered to be a separate building. Separate building service utilities shall be provided to each single family dwelling unit when required by other chapters of the State Building Code[r5].

Subp. 2. **Additional definitions.** IRC Section R202 is amended by adding the following definitions:

~~**CONNECTOR.** A device for fastening together two or more pieces, members, or parts including anchors, fasteners, and wall ties.~~

CRAWL SPACE. ~~Areas or rooms with less than 7 feet (2134 mm) ceiling height measured to the finished floor or grade below.~~ A shallow unfinished space beneath the first floor with a ceiling height from grade or finished floor to the floor above of less than 6 feet four inches[r6].

DAMPPROOFING. Treatment of a surface or structure located below grade to resist the passage of water in liquid form, in the absence of hydrostatic pressure.

~~**FASTENER.** A device for holding together two or more pieces, parts, or members.~~

FLASHING. Approved corrosion resistive material provided in such a manner as to deflect and resist entry of water into the construction assembly.

KICK OUT FLASHING. Flashing used to divert water where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding.

OCCUPANCY CLASSIFICATIONS

IRC 1 Single family dwelling
IRC 2 Two family dwellings

IRC 3 Townhouses
IRC 4 Accessory structures:

a. Garages;
b. Storage sheds; and
c. Similar structures.

~~**PAN FLASHING.** A type of corrosion resistive flashing that is integrated into the building envelope at the base of a window or door rough opening that diverts incidental water to the exterior surface of a weather resistive barrier[r7].~~

Sill. The lowest part of the window opening of an operable window[r8].

~~**STAIR.** A change in elevation, consisting of one or more risers[r9].~~

~~**STORY ABOVE GRADE PLANE.** Any story having its finished floor surface entirely above grade plane, except a basement, shall be considered as a story above grade where the finished surface of the floor above the basement is:~~

~~1. more than 6 feet (1829 mm) above grade plane;~~

~~2. more than 6 feet (1829 mm) above the finished ground level for more than 50 percent of the total building perimeter; or~~

~~3. more than 12 feet (3658 mm) above the finished ground level at any point[r10].~~

WATERPROOFING. Treatment of a surface or structure located below grade to resist the passage of water in liquid form, under hydrostatic pressure and bridges nonstructural cracks.

1309.0300 SECTION R300, CLASSIFICATION.

IRC Chapter 3 is amended by adding a new section to read as follows:

R300.1 Occupancy classification. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups in accordance with Table R300.1.

Table R300.1

Occupancy Classifications

IRC-1	Dwelling, single family
IRC-2	Dwelling, two family
IRC-3	Townhouse
IRC-3	Accessory structures

1309.0301 SECTION R301, DESIGN CRITERIA

Subpart 1. .[REPEAL] ~~**IRC Section R301.1.4.** IRC Section R301.1 is amended by adding a section to~~[r11] ~~read as follows:~~

~~**R301.1.4 Automatic sprinkler systems (general).** All IRC 2 and IRC 3 buildings shall be provided with an automatic sprinkler system.~~

~~**Exception:**~~

~~IRC 2 and IRC 3 buildings less than or equal to 9,250 square feet of floor area. Floor area shall include all floors, basements, and garages.~~

~~**R301.1.4.1 State licensed facilities.** IRC 1, IRC 2, and IRC 3 buildings containing facilities licensed by the state of Minnesota shall be provided with a fire suppression system as required by the applicable licensing provisions or this section, whichever is more restrictive~~[r12]~~.~~

~~**R301.1.4.2 Installation requirements.** Where an automatic sprinkler system is required in an IRC 2 and IRC 3 building, it shall be installed in accordance with NFPA 13D 2002 edition and the following:~~

~~Attached garages are required to have automatic sprinklers with a minimum of one dry head, located within five lineal feet of each door installed in the common wall separating the dwelling unit and the attached garage.~~

~~Attached covered patios, covered decks, covered porches, and similar structures are required to have automatic sprinklers with a minimum of one dry head for every 20 lineal feet of common wall between the dwelling unit and the covered patios, covered decks, covered porches, and similar structures.~~

~~**Exception:**~~

~~Attached roofs of covered patios, covered decks, covered porches, and similar structures that do not exceed 40 square feet of floor area.~~

~~For the purposes of this section, fire resistance rated floor, wall, or ceiling assemblies separating dwelling units of IRC 2 and IRC 3 buildings shall not constitute separate buildings.~~

Subp. 2. **Table R301.2(1).** IRC Table R301.2(1) is amended to read as follows[r13]:

~~Table R301.2(1)~~

~~Climatic and Geographic Design Criteria~~

~~Roof Snow Load[d]~~	~~Wind Speed[e] (mph)~~	~~Subject to Damage From Weathering[a]~~	~~Frost Line Depth[b]~~	~~Flood Hazards~~
~~$p_f=0.7 \times p_g$~~	~~90~~	~~Severe~~	~~See M.R. part 1310.1600~~	~~See M.R. chapter 1335~~

~~For SI: 1 pound per square foot = 0.0479 kN/m.02,1 mile per hour = 1.609 km/h~~

~~a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirement of this code. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216, or C 652.~~

b. ~~The frost line depth may require deeper footings than indicated in Figure R403.1(1) See Minnesota Rules, chapter 1303.1600 Footing Depth for Frost Protection to verify whether the county requires Zone I or Zone II frost protection.~~

~~c. Wind exposure category shall be determined on a site specific basis in accordance with Section R301.2.1.4.~~

~~d. The ground snow loads to be used in determining the design snow loads for buildings and other structures are given in Minnesota Rules, chapter 1303.~~

TABLE R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

~~Ground~~ ROOF SNOW LOAD [f]	WIND DESIGN		SEISMIC DESIGN CATEGORY[l]	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP[e]	ICE BARRIER UNDERLAYMENT REQUIRED[h]	FLOOD HAZARDS[g]	AIR FREEZING INDEX[i]	MEAN ANNUAL TEMP[j]
	Speed[d] (mph)	Topographic effects[k]		Weathering[a]	Frost line depth[b]	Termite[c]					
p_f=0.7 x p_g	90	YES	A	Severe	See MR 1303.1600	See Footnote "c"	See MR 1323	Yes	See MR 1335	See Table R403.3(2)	41.16

For SI: 1 pound per square foot = 0.0479 kPa, 1 mile per hour = 0.447 m/s.

a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled in with the weathering index (i.e., "negligible," "moderate" or "severe") for concrete as determined from the Weathering Probability Map [Figure R301.2(3)]. The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216 or C 652.

b. See Minnesota Rules, chapter 1303.1600 – Footing Depth for Frost Protection to verify whether the county requires Zone I or Zone II frost protection.

c. The jurisdiction shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.

d. The jurisdiction shall fill in this part of the table with the wind speed from the basic wind speed map [Figure R301.2(4)A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.

e. See Minnesota Rules, chapter 1323.0642 – Load Calculations, Table 6.4.2.1 Outdoor Design Conditions to verify by county.

f. The ground snow loads to be used in determining the design snow loads for buildings and other structures are given in Minnesota Rules, chapter 1303.1700 – Ground Snow Load to verify by county. The roof snow load is a uniform load on the horizontal projection of the roof[r14].

g. See Minnesota Rules, chapter – Flood Proofing Regulations.

h. In accordance with Sections R905.2.7.1, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming.

i. The jurisdiction shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)" at www.ncdc.noaa.gov/fpsf.html.

j. The jurisdiction shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table "Air Freezing Index-USA Method (Base 32°F)" at www.ncdc.noaa.gov/fpsf.html. The mean annual temperature shown at: http://www.esrl.noaa.gov/psd/data/usclimate/tmp.state.19712000.climo

l. Assigned to allow the application of the least restrictive provisions of the code.

Subp. 3. **Figure R301.2(5).** IRC Figure R301.2(5), Ground Snow Loads, Pg, for the United States (lb/ft2), is deleted in its entirety.

Subp. 4. **[REPEAL]~~Table R301.5.~~** ~~IRC Table R301.5 is amended to read as follows:~~

~~Table R301.5~~

~~Minimum Uniformly Distributed Live Loads~~
~~(in pounds per square foot)~~

~~Use~~	~~Live Load~~
~~Attics with limited storage[b,g,h]~~	~~20~~
~~Attics without storage[b]~~	~~10~~
~~Decks[e]~~	~~40~~
~~Exterior balconies~~	~~60~~
~~Fire escapes~~	~~40~~
~~Guardrails and handrails[d]~~	~~200[i]~~
~~Guardrails in fill components[f]~~	~~50[i]~~
~~Passenger vehicle garages[a]~~	~~50[a]~~
~~Rooms other than sleeping rooms~~	~~40~~
~~Sleeping rooms~~	~~30~~
~~Stairs~~	~~40[e]~~

~~For SI: 1 pound per square foot = 0.0479 kPa, 1 square inch = 645 mm2, 1 pound = 4.45 N.~~

~~a. Elevated garage floors shall be capable of supporting a 2,000 pound load applied over a 20 square inch area.~~

~~b. Attics without storage are those where the maximum clear height between joist and rafter is less than 42 inches, or where there are not two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high by 2 feet wide, or greater, located within the plane of the truss. For attics without storage, this live load need not be assumed to act concurrently with any other live load requirements.~~

~~c. Individual stair treads shall be designed for the uniformly distributed live load or a 300 pound concentrated load acting over an area of four square inches, whichever produces the greater stresses.~~

~~d. A single concentrated load applied in any direction at any point along the top.~~

~~e. See Section R502.2.1 for decks attached to exterior walls.~~

~~f. Guard in fill components (all those except the handrail), balusters and panel fillers shall be designed to withstand a horizontally applied normal load of 50 pounds on an area equal to one square foot. This load need not be assumed to act concurrently with any other live load requirement.~~

~~g. For attics with limited storage and constructed with trusses, this live load need be applied only to those portions of the bottom chord where there are two or more adjacent trusses with the same web configuration capable of containing a rectangle 42 inches high or greater by 2 feet wide or greater, located within the plane of the truss. The rectangle shall fit between the top of the bottom chord and the bottom of any other truss member, provided that each of the following criteria is met:~~

~~1. The attic area is accessible by a pull down stairway or framed opening in accordance with Section R807.1;~~

~~2. The truss has a bottom chord pitch less than 2:12; and~~

~~3. Required insulation depth is less than the bottom chord member depth.~~

~~The bottom chords of trusses meeting the above criteria for limited storage shall be designed for the greater of the actual imposed dead load or ten pounds per square foot, uniformly distributed over the entire span.~~

~~h. Attic spaces served by a fixed stair shall be designed to support the minimum live load specified for sleeping rooms.~~

~~i. Glazing used in handrail assemblies and guards shall be designed with a safety factor of 4. The safety factor shall be applied to each of the concentrated loads applied to the top of the rail, and to the load on the in fill components. These loads shall be determined independent of one another, and loads are assumed not to occur with any other live load.~~

1309.0302 SECTION R302, ~~EXTERIOR WALL LOCATION~~ FIRE-RESISTANT CONSTRUCTION [r15]~~:~~

R302.1 Exterior walls. Construction, projections, openings, and penetrations of exterior walls of dwellings and accessory buildings shall comply with Table 302.1. These provisions shall not apply to walls, projections, openings, or penetrations in walls that are perpendicular to the line used to determine the fire separation distance. Projections beyond the exterior shall not extend more than 12 inches (305 mm) into areas where openings are prohibited.

Exceptions:

1. Detached garages accessory to a dwelling located within 2 feet (610 mm) of a lot line are permitted to have eave projections not exceeding 4 inches (103 mm).

2. Foundation vents installed in compliance with this code are permitted.

Table R302.1

Exterior Walls

	Exterior Wall Element	Minimum Fire-Resistance Rating	Minimum Fire Separation Distance
Walls	(Fire-resistance rated)	1 hour with exposure from both sides	0 feet
	(Not fire-resistance rated)	0 hours	5 feet
Projections	(Fire-resistance rated)	1 hour on the underside[a]	4 feet
	(Not fire-resistance rated)	0 hours	5 feet
Openings	Not allowed	N/A	\AF\a3 feet
	25% Maximum of Wall Area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R317.4	\AF\a5 feet
		None required	5 feet

N/A= Not Applicable

[a] 1 hour on the underside equates to one layer of 5/8" type X gypsum sheathing. Openings are not allowed.

R302.11.1.1 Batts or blankets of mineral or glass fiber. Batts or blankets of mineral or glass fiber or other approved nonrigid materials shall be permitted for compliance with the 10-foot

~~(3048 mm) horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs.~~

Subpart 1. Section R302.2. Section R302.2 is amended to read as follows:

R302.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire resistance rated wall assemblies meeting the requirements of Section R302.1 for exterior walls.

Exception: A common 1-hour fire-resistance-rated wall assembly tested in accordance with ASTM E 119 or UL 263 is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations shall be installed in accordance with Minnesota Rules, chapter 1315. Penetrations of electrical outlet boxes shall be in accordance with Section R302.4.

R302.2.1 Continuity. The fire-resistance-rated wall or assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, roof deck, or roof slab. The fire-resistance-rating shall extend the full length of the wall or assembly, including wall extensions through and separating attached enclosed accessory structures. Separation shall extend through enclosed soffits, overhangs, and similar projections[r16].

R302.2.2 Parapets. Parapets constructed in accordance with Section R302.2.3 shall be constructed for townhouses as an extension of exterior walls or common walls in accordance with the following:

1. Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces.

2. Where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is not more than 30 inches (762 mm) above the lower roof, the parapet shall extend not less than 30 inches (762 mm) above the lower roof surface.

   Exception: A parapet is not required in the two cases above when the roof is covered with a minimum class C roof covering, and the roof decking or sheathing is of noncombustible materials or approved fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of $^{5}/_{8}$-inch (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by a minimum of nominal 2-inch (51 mm) ledgers attached to the sides of the roof framing members, for a minimum distance of 4 feet (1219 mm) on each side of the wall or walls and there are no openings or penetrations in the roof within 4 feet (1219 mm) of the common walls.

3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the

higher roof deck shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.

TABLE R302.1(1) EXTERIOR WALLS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	Not fire-resistance rated	0 hours	≥ 5 feet
Projections	Fire-resistance rated	1 hour on the underside[a]	≥ 2 feet to < 5 feet
	Not fire-resistance rated	0 hours	≥5 feet
Openings in walls	Not allowed	N/A	< 3 feet
	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable.

[a] 1 hour on the underside equates to one layer of 5/8" type X gypsum sheathing. Openings are not allowed

TABLE R302.1(2) EXTERIOR WALLS—DWELLINGS WITH FIRE SPRINKLERS

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	Fire-resistance rated	1 hour—tested in accordance with ASTM E 119 or UL 263 with exposure from the outside	0 feet
	Not fire-resistance rated	0 hours	3 feet
Projections	Fire-resistance rated	1 hour on the underside[a]	2 feet
	Not fire-resistance rated	0 hours	3 feet

Openings in walls	Not allowed	N/A	< 3 feet
	Unlimited	0 hours	3 feet[a]
Penetrations	All	Comply with Section R302.4	< 3 feet
		None required	3 feet[a]

For SI: 1 foot = 304.8 mm.

N/A = Not Applicable

[a] 1 hour on the underside equates to one layer of 5/8" type X gypsum sheathing. Openings are not allowed[r17]

R302.2.3 Parapet construction. Parapets shall have the same fire-resistance rating as that required for the supporting wall or walls. On any side adjacent to a roof surface, the parapet shall have noncombustible faces for the uppermost 18 inches (457 mm), to include counterflashing and coping materials. Where the roof slopes toward a parapet at slopes greater than 2 units vertical in 12 units horizontal (16.7-percent slope), the parapet shall extend to the same height as any portion of the roof within a distance of 3 feet (914 mm), but in no case shall the height be less than 30 inches (762 mm).

R302.2.4 Structural independence. Each individual townhouse shall be structurally independent.

Exceptions:

1. Foundations supporting exterior walls or common walls.
2. Structural roof and wall sheathing from each unit may fasten to the common wall framing.
3. Nonstructural wall and roof coverings.
4. Flashing at termination of roof covering over common wall.
5. Townhouses separated by a common 1-hour fire-resistance-rated wall as provided in Section R302.2.

R302.2.5 Sound transmission. Townhouses constructed in accordance with Section R302.2 shall comply with the sound transmission requirements of Appendix K[r18].

Subp. 2. Section R302.3. Two family dwellings. Section 302.3 is amended by adding a subsection to the end of the section to read as follows:

R302.3.2 Sound transmission. Two-family dwellings constructed in accordance with Section R302.3 shall comply with the sound transmission requirements of Appendix K[r19].

Subp. 3. Section R302.5.1. Section R302.5.1 is amended to read as follows:

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than $1^3/_8$ inches (35 mm) in thickness, solid or honeycomb-core steel doors not less than $1^3/_8$ inches (35 mm) thick, or 20-minute fire-rated doors[r20].

1309.0305 SECTION R305, CEILING HEIGHT.

IRC Section R305.~~1~~ is amended to read as follows:

R305.1 Minimum height. Habitable space ~~rooms~~, hallways, ~~corridors,~~ bathrooms, toilet rooms, laundry rooms, and portions of basements containing these spaces shall have a ceiling height of not less than 7 feet (2134 mm). ~~The required height shall be measured from the finish floor to the lowest projection from the ceiling[r21]. Areas or rooms with ceiling heights less than 7 feet (2134 mm) are considered crawl spaces.~~

Exceptions:

1. For rooms with sloped ceilings, at least 50 percent of the required floor area of the room must have a ceiling height of at least 7 feet (2134 mm) and no portion of the required floor area may have a ceiling height of less than 5 feet (1524 mm).
   ~~Beams and girders spaced not less than 4 feet (1219 mm) on center may project not more than 6 inches (152 mm) below the required ceiling height.~~

2. For existing or altered bathrooms, bathrooms shall have a minimum ceiling height of 6 feet 8 inches (2032 mm) at the center of the front clearance area for water closets or bidets. The ceiling height above fixtures shall be such that the fixture is capable of being used for its intended purpose. A shower or tub equipped with a showerhead shall have a minimum ceiling height of 6 feet 8 inches (2032 mm) above a minimum area 30 inches (762 mm) by 30 inches (762 mm) at the showerhead. ~~Not more than 50 percent of the required floor area of a room or space is permitted to have a sloped ceiling less than 7 feet (2134 mm) in height with no portion of the required floor area less than 5 feet (1524 mm) in height[r22].~~

3. For existing basements, basement alterations shall have a ceiling height of not less than 6 feet 4 inches (1931 mm).

R305.1.1 Basements.
Portions of new basements that do not contain habitable space, hallways, bathrooms, toilet rooms, and laundry rooms shall have a ceiling height of not less than 6 feet 8 inches (2032 mm).

Exceptions:

1. Beams, girders, ducts, or other obstructions may project to within 6 feet 4 inches (1931 mm) of the finished floor.
2. Basement alterations shall have a ceiling height of not less than 6 feet 4 inches (1931 mm[r23]).

1309.0307 SECTION R307, TOILET, BATH AND SHOWER SPACES.

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

R307.1 Space required. Fixtures shall be installed in accordance with the Minnesota Rules, Chapter 4715, Minnesota Plumbing Code[r24].

1309.0309 SECTION R309, GARAGES AND CARPORTS.

Subpart 1. **IRC Section ~~R309.3~~ R309.1.** IRC Section ~~R309.3~~ R309.1 is amended to read as follows:

~~R309.3~~ R309.1 Floor surface. Garage floor surfaces may be concrete, asphalt, sand, gravel, crushed rock, or natural earth[r25].

Subp. 2. **IRC Section ~~R309.4~~ R309.2.** IRC Section ~~R309.4~~ R309.2 is amended to read as follows:

~~R309.4~~ R309.2 Carports. Carports shall be open on at least two sides. Carport floor surfaces may be concrete, asphalt, sand, gravel, crushed rock, or natural earth. Carports not open on at least two sides shall be considered a garage and shall comply with the provisions of this section for garages[r26].

Subp. 3. **IRC Section ~~R309.6~~ R309.4.** IRC Section ~~R309.6~~ R309.4 is amended to read as follows:

~~R309.6~~ R309.4 Automatic garage door opening systems. All automatic garage door opening systems that are installed, serviced, or repaired for garages serving residential buildings must comply with the provisions of Minnesota Statutes, sections 325F.82 and 325F.83[r27].

Subp. 4. **IRC Section R309.5.**

IRC Section R309.5. Fire sprinklers is deleted in its entirety[r28].

1309.0310 SECTION R310, EMERGENCY ESCAPE AND RESCUE OPENINGS.

IRC Section 310.1. IRC Section R310.1 is amended to read as follows:

R310.1 Emergency escape and rescue required. Basements, habitable attics 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 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) measured from the finished floor to the bottom of the clear opening. 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 R310.3. 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. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way.

Exceptions:
1. Basements used only to house mechanical equipment and not exceeding total floor area of 200 square feet (18.58 m^2);

2. Emergency escape and rescue openings are not required from basements or basement bedrooms when the building is protected with an automatic sprinkler system installed in accordance with Section P2904 of this code or NFPA 13D.

3. Emergency escape and rescue openings are not required from basements or basement bedrooms constructed prior to August 1, 2008 that undergo an alteration or repair when the entire basement area, all portions of the means of egress to the level of exit discharge, and all areas on the level of exit discharge open to the means of egress are protected with an automatic sprinkler system in accordance with Section P2904 of this code or NFPA 13D.

R310.1.1 Minimum opening area.
All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (0.530 m^2).

Exception: Grade floor openings shall have a minimum net clear opening of 5 square feet (0.465 m^2).

R310.1.2 Minimum opening height.
The minimum net clear opening height shall be 24 inches (610 mm).

R310.1.3 Minimum opening width.
The minimum net clear opening width shall be 20 inches (508 mm).

R310.1.4 Operational constraints.
Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools or special knowledge.

Exception: Window opening control devices approved and installed in accordance with ASTM F 2090 that do not require the use of keys or tools to operate[r29].

R310.1.5 Replacement windows. Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the maximum sill height requirements of Sections R310.1 and Sections R310.1.1, R310.1.2, and R310.1.3 if the replacement window meets the following conditions:

1. The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for ~~a~~ an equal or greater window opening area than the existing window;

2. ~~The rooms or areas are not used for any Minnesota state licensed purpose requiring an egress window; and~~ Building uses that are required to be licensed or registered by the State of Minnesota shall have emergency escape and rescue replacement windows installed to comply with the requirements of the **agency that licenses or registers** ~~agency~~ **the use** or the provisions of part ~~Section~~ 1309.0310 Section R310.1.5, whichever is more restrictive.

3. ~~The window is not required to be replaced pursuant to a locally adopted rental housing or rental licensing code~~[r30].

~~**R310.1.5 Replacement windows.** Replacement windows installed in buildings meeting the scope of the International Residential Code shall be exempt from the requirements of Sections R310.1, R310.1.1, R310.1.2, and R310.1.3 if the replacement window meets comply with the following conditions:~~

1. ~~The replacement window is the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for a an equal or greater window opening area than the existing window; For dwellings and structures constructed on or after to July 1, 1972:~~

   A. ~~The minimum **net clear opening** width shall be 20 inches (508 mm).~~
   B. ~~The minimum **net clear opening** height shall be **20** inches (508 mm).~~
   C. ~~Shall have a minimum **net clear opening** of 648 square inches (4.5 square feet)~~
   D. ~~Maximum of 48 inches from the floor to the sill opening; or~~

2. ~~The rooms or areas are not used for any Minnesota state licensed purpose requiring an egress window; and For dwellings and structures constructed prior to July 1, 1972:~~

   ~~The replacement window is shall be the manufacturer's largest standard size window that will fit within the existing frame or existing rough opening. The replacement window shall be permitted to be of the same operating style as the existing window or a style that provides for a an equal or greater window opening area than the existing window. The replacement windows shall be exempt from the maximum sill height requirements of Minnesota Rule 1309.0310 Section R310.1 and subsections R310.1.1, R310.1.2, and R310.1.3;~~

3. ~~Facilities that are required to be licensed or registered by the State of Minnesota shall have emergency escape and rescue replacement windows installed to comply with the requirements of the licensing or registering agency or the provisions of Minnesota Rule 1309.0310 Section R310.1.5, whichever is more restrictive.~~

3. ~~The window is not required to be replaced pursuant to a locally adopted rental housing or rental licensing code~~[r31].

1309.0311 SECTION R311, MEANS OF EGRESS.

Subp. 1. **IRC Section R311.3.2, Floor elevations for other exterior doors.** IRC Section 311.3.2 is amended to read as follows:

R311.3.2 Floor elevations for other exterior doors. Doors other than the required egress door shall be provided with landings or floors not more than 7 ¾ inches (196 mm) below the top of the threshold.

Exception: A landing is not required where a stairway that is less than 30 inches (762 mm) in height is located on the exterior side of the door, provided the door does not swing over the stairway. The stairway height shall be measured vertically from the interior floor surface to the finished grade[r32].

~~**R311.4.3 Landings at doors.** Except as provided in this section, there shall be a floor or landing on each side of each exterior door. The width of the landing shall not be less than the door served. The landing shall have a minimum dimension of 36 inches (9114 mm) measured in the direction of travel.~~

~~**R311.4.3.1 Landings at the exterior exit door required by Section R311.4.1.**~~

~~1. The floor or landing at the exit door required by Section R311.4.1 shall not be more than 1.5 inches (38 mm) below the top of the threshold, regardless of door swing.~~

~~2. The exterior landing shall be up to 7 3/4 inches (196 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the exterior landing.~~

~~**R311.4.3.2 Landings or floors at exterior doors other than those required by Section R311.4.1.**~~

~~1. The exterior landing shall be permitted to be no greater than 7 3/4 inches (196 mm) below the top of the threshold, provided the door, other than an exterior storm or screen door, does not swing over the exterior landing.~~

~~2. Landings in this subsection are not required for the exterior side of a door when a stairway that is less than 30 inches (762 mm) in height is located on the exterior side of the door. The stairway height shall be measured vertically from the interior floor surface to the finished grade.~~

2. ~~An exterior landing is not required at a doorway when only a storm or screen door is installed which does not swing over the exterior landing~~[r33].

Subp. 2. **IRC Section R311.7.1, Stairways.** IRC Section R311.7.1 is amended to read as follows:

R311.7.1 Stairways. All stairways serving a dwelling or accessory structure or any part thereof shall comply with this section. This shall include exterior stairs from a dwelling or garage to grade and those stairs serving decks, porches, balconies, sun rooms, and similar structures.

Exceptions:

1. Stairs serving attics or crawl spaces.
2. Stairs that only provide access to plumbing, mechanical, or electrical equipment[r34].

Subp. 3. **IRC Section R311.7.2. Headroom.** IRC Section R311.7.2 is amended to read as follows:

R311.7.2 Headroom. The minimum headroom in all parts of the stairway shall not be less than 6 feet 8 inches (2032 mm) measured vertically from the sloped line adjoining the tread nosing or from the floor surface of the landing or platform on that portion of the stairway.

Exceptions:

1. Where the nosings of treads at the side of a flight extend under the edge of a floor opening through which the stair passes, the floor opening shall be allowed to project horizontally into the required headroom a maximum of $4^3/_4$ inches (121 mm).
2. The minimum headroom of a stairway leading to a basement alteration shall not be less than 6 feet 4 inches (1931 mm[r35]).

1309.0312 [Repealed, 32 SR 12]

1309.0312 SECTION R312, GUARDS AND WINDOW FALL PROTECTION.

Subpart 1. **IRC Section R312.1.1, Where required.** IRC Section R312 is amended as follows:

R312.1.1 Where required. Guards shall be located along the open sides of floors, stairs, ramps, and landings that are located more than 30 inches (762 mm) measured vertically to the floor or grade below. Insect screening shall not be considered as a guard[r36].

Subp. 2. **IRC Section R312.2, Window fall protection.** IRC Section R312.2 is amended to read as follows:

R312.2 Window fall protection. Window fall protection shall be provided in accordance with Section R312.2.1 and R312.2.2

R312.2.1 Window sills. In dwelling units, where the lowest part of the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the window ~~clear~~ opening ~~of the window~~ shall be a minimum of ~~24~~ 36 inches (~~610~~ 914 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4-inch (102 mm) sphere where such openings are located within ~~24~~ 36 inches (~~610~~ 914 mm) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.
2. Openings that are provided with window fall prevention devices that comply with ASTM F 2090.

3. Windows that are provided with window opening control devices that comply with Section R312.2.2
4. Replacement windows.

R312.2.2 Window opening control devices. Window opening control devices shall comply with ASTM F 2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section R310.1.1[r37].

~~**R312.2 Window fall protection.** Window fall protection shall be provided in accordance with Section R312.2.1 and R312.2.2:~~

~~**R312.2.1 Window sills.** In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4-inch (102 mm) sphere where such openings are located within 24 inches (610 mm) of the finished floor.~~

~~**Exceptions:**~~

~~1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the window is in its largest opened position.~~
~~2. Openings that are provided with window fall prevention devices that comply with~~
~~ASTM F 2090.~~
~~3. Windows that are provided with window opening control devices that comply with Section R312.2.2 .~~
~~4. Replacement windows. **DLI APPROVED REQUIRED**~~

~~**R312.2.2 Window opening control devices.** Window opening control devices shall comply with ASTM F 2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section R310.1.1[r38].~~

~~**R312.2.3 Building additions; addition or replacement of windows.** When building additions occur or when windows are added or replaced requiring a permit, windows must comply R312.2.1 and R312.2.2. **DLI APPROVED REQUIRED(deleted by committee**[r39]~~)~~

1309.0313 SECTION R313, ~~SMOKE ALARMS~~ AUTOMATIC FIRE SPRINKLER SYSTEMS.

IRC Section ~~R313.2.1~~ R313 is amended ~~by adding a new subsection to the end of the section~~ to read as follows:

R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in townhouses.

Exception: An automatic residential fire sprinkler system shall not be required ~~when~~ if additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

R313.1.1 Design and installation. Automatic residential fire sprinkler systems for townhouses shall be designed and installed in accordance with Section P2904.

R313.2 One-and-Two-family dwellings automatic fire systems. An automatic residential fire sprinkler system shall be installed in one- and two-family dwellings.

Exceptions:

1. Detached ~~Single~~ One-family dwelling less than 4,500 square feet of floor area. Floor area shall include all floors and basements, excluding garages.

2. An automatic residential fire sprinkler system shall not be required ~~for~~ if additions, alterations or repairs are made to existing buildings that do not have ~~are not already provided with~~ an automatic residential sprinkler system installed.

R313.2.1 Design and installation. Automatic residential fire sprinkler systems shall be designed and installed in accordance with Section P2904, ~~or~~ NFPA 13D, or other approved equivalent sprinkler system.

R313.3 Installation requirements. When an automatic sprinkler system is required in one-and-two-family dwellings ~~single-family, two-family~~, it shall be installed in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system. ~~and~~ Townhouse buildings, ~~it~~ shall be installed in accordance with Section P2904~~, NFPA 13D,~~ or other approved equivalent sprinkler system. ~~2002 edition~~ Automatic sprinkler systems ~~is~~ required in one-and-two-family dwellings and townhouse buildings shall be installed in accordance with and the following:

Attached garages are required to have ~~automatic sprinklers with a minimum of~~ one dry head sprinkler, located within five lineal feet of each door installed in the common wall separating the dwelling unit and the attached garage.

Attached covered patios, covered decks, covered porches, and similar structures are required to have automatic sprinklers with a minimum of one dry head for every 20 lineal feet of common wall between the dwelling unit and the covered patios, covered decks, covered porches, and similar structures.

Exception:

Attached roofs of covered patios, covered decks, covered porches, and similar structures that do not exceed 40 square feet of floor area.

~~For the purposes of this section, fire resistance rated floor, wall, or ceiling assemblies separating dwelling units of two-family dwelling and townhouse buildings shall not constitute separate buildings.~~

R313.4 State licensed facilities. ~~Single~~ One-and ~~family and~~ two-family dwellings, and townhouse buildings containing licensed facilities by the State of Minnesota shall be provided with ~~a fire suppression~~

an automatic sprinkler system as required by the applicable licensing provisions or this section, whichever is more restrictive[r40].

~~**R313.3 State licensed facilities.** IRC-1, IRC-2, and IRC-3 buildings containing facilities licensed by the State of Minnesota shall be provided with an automatic residential fire sprinkler system as required by the applicable licensing provisions or this section, whichever is more restrictive[r41].~~

~~**R313.2.1 Alterations, repairs, or additions.** When alterations, repairs, or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings, and the smoke alarms shall be interconnected and hardwired.~~

~~**Exceptions:**~~

~~1. Interconnection and hardwiring of smoke alarms in existing areas shall not be required to be hardwired where the alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure.~~

~~2. Work on the exterior surfaces of dwellings, such as the replacement of roofing or siding are exempt from the requirements of this section.~~

~~3. Permits involving alterations or repairs to plumbing, electrical, and mechanical are exempt from the requirements of this section[r42].~~

1309.0314 SECTION R314, ~~FOAM PLASTIC~~ SMOKE ALARMS.

IRC Section ~~R314.5.11~~ R314.3.1 is amended as follows:

R314.3.1 Alterations, repairs and additions. When alterations, repairs, including installation of replacement windows and doors, or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the individual dwelling unit shall be equipped with smoke alarms located as required for new dwellings.

Exceptions:

1. Work involving the exterior surfaces of dwellings, such as the replacement of roofing or siding, or the addition of an open porch or deck, and chimney repairs are exempt from the requirements of this section.
2. Installation, alteration or repairs of plumbing, electrical, or mechanical systems are exempt from the requirements of this section[r43].

~~**R314.5.11 Sill plate and headers.** Foam plastic shall be permitted to be spray applied to a sill plate and header (rim joist) without thermal barrier subject to all of the following:~~

~~1. The maximum thickness of the foam plastic shall not exceed 5 1/2 inches (139.5 mm).~~

~~2. The foam plastic shall have a flame spread index of 25 or less and an accompanying smoke developed index of 450 or less when tested in accordance with ASTM E 84[r44].~~

1309.0315 [Repealed, 32 SR 12]

1309.0315 SECTION R315, CARBON MONOXIDE ALARMS.

IRC Section R315.1, Carbon monoxide alarms, is amended as follows:

R315.1 Carbon monoxide alarms.

For new construction, every one-family, two-family and townhouse dwelling shall have an approved and operational carbon monoxide alarm installed within ten feet of each sleeping room in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages[r45].

1309.0316 [Repealed, 32 SR 12]

1309.0317 ~~SECTION R317, DWELLING UNIT SEPARATION.~~ [REPEAL]

~~Subpart 1. **IRC Section R317.1.** IRC Section R317.1 is amended to read as follows:~~

~~**R317.1 Two family dwellings.** Dwelling units in two family dwellings shall be separated from each other by wall and/or floor assemblies having not less than 1 hour fire resistance rating when tested in accordance with ASTM E 119. Fire resistance rated floor ceiling and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to the underside of the roof sheathing.~~

~~**Exceptions:**~~

~~1. A fire resistance rating of 1/2 hour shall be permitted in buildings equipped throughout with an automatic sprinkler system installed in accordance with NFPA 13.~~

~~2. Wall assemblies need not extend through attic spaces when the ceiling is protected by not less than 5/8 inch (15.9 mm) type X gypsum board and an attic draftstop constructed as specified in Section R502.12.1 is provided above and along the wall assembly separating the dwellings. The structural framing supporting the ceiling shall also be protected by not less than 1/2 inch (12.7 mm) gypsum board or equivalent.~~

~~**R317.1.1 Supporting construction.** When floor assemblies are required to be fire resistance rated by Section R317.1, the supporting construction of such assemblies shall have an equal or greater fire resistive rating.~~

~~Subp. 2. **IRC Section 317.2.** IRC Section 317.2 is amended to read as follows:~~

R317.2 Townhouses. Each townhouse shall be considered a separate building and shall be separated by fire resistance rated wall assemblies meeting the requirements of Section R302 for exterior walls.

Exceptions: A common 2 hour fire resistance rated wall is permitted for townhouses if such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. Electrical installations shall be installed in accordance with chapters 33 through 42. Penetrations of electrical outlet boxes shall be in accordance with Section R317.3.

R317.2.1 Continuity. The fire resistance rated wall or assembly separating townhouses shall be continuous from the foundation to the underside of the roof sheathing, roof deck, or roof slab and shall extend the full length of the wall including wall extensions through and separating attached accessory structures. Separation shall extend through enclosed soffits, overhangs, and similar projections.

Subp. 3. **IRC Section R317.4.** IRC Section R317 is amended by adding a new section to read as follows:

R317.4 Sound transmission. Wall and floor ceiling assemblies separating dwelling units, including those separating adjacent townhouse units, shall provide airborne sound insulation for walls, and both airborne and impact sound insulation for floor ceiling assemblies.

R317.4.1 Airborne sound. Airborne sound insulation for wall and floor ceiling assemblies shall meet a Sound Transmission Class (STC) rating of 45 when tested in accordance with ASTM E 90. Penetrations or openings in construction assemblies for piping; electrical devices; recessed cabinets; bathtubs; soffits; or heating, ventilating, or exhaust ducts shall be sealed, lined, insulated, or otherwise treated to maintain the required ratings. Dwelling unit entrance doors, which share a common space, shall be tight fitting to the frame and sill.

R317.4.2 Structural borne sound. Floor/ceiling assemblies between dwelling units or between a dwelling unit and a public or service area within a structure shall have an Impact Insulation Class (IIC) rating of not less than 45 when tested in accordance with ASTM E 492.

R317.4.3 Referenced standards.

R317.4.3.1 ASTM E 90 04 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements R317.4.1.

R317.4.3.2 ASTM E 492 04 (1996)e Specification for Laboratory Measurement of Impact Sound Transmission through Floor Ceiling Assemblies Using the Tapping Machine R317.4.2[r46].

1309.0318 SECTION R318, MOISTURE VAPOR RETARDERS.[REPEAL]

IRC Section R318.1 is amended to read as follows:

R318.1 Vapor retarders. In all above grade framed walls, floors, and roof/ceilings comprising elements of the building thermal envelope, a vapor retarder shall be installed on the warm side of

~~the insulation. Vapor retarders installed under a concrete floor slab shall comply with section R506.2.3.~~

~~**Exception:** In construction where moisture or freezing will not damage the materials~~[r47].

1309.0322 [Repealed, 32 SR 12]

1309.0323 SECTION R323, STORM SHELTERS.

IRC Section R323 is deleted in its entirety[r48].

1309.0403 SECTION R403, FOOTINGS.

Subpart 1. **IRC Section R403.1.4.1.** IRC Section R403.1.4.1 is amended to read as follows:

R403.1.4.1 Frost protection. Except where otherwise protected from frost, foundation walls, piers, and other permanent supports of buildings and structures shall be protected from frost by one or more of the following methods:

1. Extended below the frost line specified in Table R301.2(1);
2. Constructing in accordance with Section R403.3;
3. Constructing in accordance with ASCE 32;
4. Erected on solid rock; or
5. Constructing in accordance with chapter 1303[r49].

Exception: Decks not supported by a dwelling need not be provided with footings that extend below the frost line.

Footings shall not bear on frozen soil.

Subp. 2. **IRC Section R403.1.6.** IRC Section R403.1.6 is amended to read as follows:

R403.1.6 Foundation anchorage. Sill plates and walls~~When braced wall panels are~~ supported directly on continuous foundations~~, the wall wood sill plate or cold formed steel bottom track~~ shall be anchored to the foundation in accordance with this section.

~~The wood~~ Wood sole plates at all exterior walls on monolithic slabs, ~~and~~ wood sole~~sill~~ plates of braced wall panels at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with anchor bolts spaced a maximum of 6 feet (1829 mm) on center. ~~There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section.~~ Bolts shall be at least 1/2 inch (12.7 mm) in diameter and shall extend a minimum of 7 inches (178 mm) into ~~masonry or~~ concrete or grouted cells of concrete masonry units. ~~Interior bearing wall sole plates on monolithic slab foundations shall be positively anchored with approved fasteners.~~ A nut and

washer shall be tightened on each bolt ~~to the plate~~. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundations that are not part of a braced wall panel shall be positively anchored with approved fasteners. Sills plates and sole plates shall be protected against decay and termites where required by Sections R317~~22~~ and R318~~23~~. Cold-formed steel framing systems shall be fastened to the wood sill plates or anchored directly to the foundation as required in Section R505.3.1 or R603.1.1. When vertical reinforcing is required by other sections of this code, the foundation anchor bolts shall align with the reinforcing. All anchor bolts installed in masonry shall be grouted in place with at least 1 inch (25 mm) of grout between the bolt and the masonry.

Exceptions:

1. Foundation anchor straps spaced as required to provide equivalent anchorage to 1/2 inch diameter (12.7 mm) anchor bolts. When vertical reinforcing is required by other sections of this code, the foundation anchor straps shall align with the reinforcing.

2. Walls 24 inches (609.6 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels according to Figure R602.10.5 at corners.

3. Walls 12 inches (304.8 mm) total length or shorter connecting offset braced wall panels shall be permitted to be connected to the foundation without anchor bolts. The wall shall be attached to adjacent braced wall panels according to Figure R602.10.5 at corners.

1309.0404 SECTION R404, FOUNDATION AND RETAINING WALLS.

Subpart 1. **Section R404.1.** IRC Section R404.1, ~~Items 4 and 5, are~~ is amended to read as follows:

~~4. Floor shall be blocked perpendicular to the floor joists. Blocking shall be full depth within three joist spaces of the foundation wall.~~

~~5. Where foundation walls support unbalanced load on opposite sides of the building, such as a daylight basement, the rim board shall be attached to the sill with a 20 gage metal angle clip at 24 inches on center, with five 8d nails per leg, or an approved connector supplying 230 pounds per linear foot capacity.~~

R404.1 Concrete and masonry foundation walls. Concrete foundation walls shall be selected and constructed in accordance with the provisions of Section R404.1.2. Masonry foundation walls shall be selected and constructed in accordance with the provisions of Section R404.1.1. Concrete and masonry foundation walls shall be laterally supported at the top and bottom. Foundation walls that meet all of the following shall be considered laterally supported:

1. Full basement floor shall be 3.5 inches (89 mm) thick concrete slab poured tight against the bottom of the foundation wall.
2. Floor joists and blocking shall be connected to the sill plate at the top of wall with an approved connector with listed capacity meeting the top of wall reaction in Table

R404.1(1). Maximum spacing of floor joists shall be 24" on center. Spacing of blocking shall be in accordance with Table R404.1(1).

3. Bolt spacing for the sill plate shall be no greater than per Table R404.1(1).
4. Floor shall be blocked perpendicular to the floor joists. Blocking shall be full depth within three joist spaces of the foundation wall. Floor sheathing shall be fastened to blocking in accordance with Table R602.3(1).
5. Where foundation walls support unbalanced load on opposite sides of the building, such as a daylight basement, the rim board shall be attached to the sill with a 20 gage metal angle clip at 24 inches on center, with five 8d nails per leg, or an approved connector supplying 230 pounds per lineal foot capacity.

Exception: Cantilevered concrete and masonry foundation walls that do not have permanent lateral support at the top shall be constructed as set forth in Table R404.1.1(5), Table R404.1.1(6), or Table R404.1.1(7).

Subp. 2. **Table R404.1(1)~~(2)~~.** IRC Section R404.1 is amended by adding Table R401.1(1) ~~Table R404.1(2) is amended to read~~ as follows:

Table R404.1(1)~~(2)~~

Maximum Anchor Bolt and Blocking Spacing for Supported Foundation Wall

Max. Wall Height	Max. Unbalanced Backfill Height	Soil Classes	Soil Load (pcf / ft)	Top of Wall Reaction (plf)[b]	1/2" diameter Anchor Bolt Spacing (inches)[a]	Spacing of Blocking Perpendicular To Floor Joists (inches)
		GW, GP, SW, & SP	30	250	72	60
8' – 0"	**7' – 4"**	GM, GC, SM-SC, & ML	45	370	72	40
		SC, MH, ML-CL & I-CL	60	490	48	30
		GW, GP, SW, & SP	10	320	72	48
9' – 0"	**8' – 4"**	GM, GC, SM-SC, & ML	45	480	48	32
		SC, MH, ML-CL, & I-CL	60	640	40	24

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

[a] Sill plate shall be 2 x 6 minimum. Anchor bolt shall be minimum 0.5" diameter cast in place with 7" embed. Anchor bolt shall have a 2" diameter by 0.125" thick washer tightened and countersunk 0.25" into the top of the sill plate.

[b] Minimum load to be used for sizing of accepted anchors or fasteners if bolts are not used.

Subp. 3. **[Repeal]~~Table R404.1(3). IRC Table R404.1(3) is deleted in its entirety.~~**

Subp. 4. **[Repeal]~~Section R404.1.1. IRC Section R404.1.1 is amended to read as follows:~~**

~~**R404.1.1 Masonry foundation walls.** Concrete masonry and clay masonry foundation walls shall be constructed as set forth in Table R404.1.1(1), R404.1.1(2), R404.1.1(3), or R404.1.1(4) and shall also comply with the provisions of Section R404 and the applicable provisions of Sections R606, R607, and R608. Rubble stone masonry foundation walls shall be constructed in accordance with Sections R404.1.8 and R607.2.2. Cantilevered masonry foundation walls shall be constructed as set forth in Table R404.1.1(6), R404.1.1(7), or R404.1.1(8). Cantilevered means: foundation walls that do not have permanent lateral support at the top.~~

Subp. 5. **[Repeal]~~Section R404.1.2.~~** ~~IRC Section R404.1.2 is amended to read as follows:~~

~~**R404.1.2 Concrete foundation walls.** Concrete foundation walls shall be constructed as set forth in Table R404.1.1(5) and shall also comply with the provisions of Section R404 and the applicable provisions of Section R404.2. Cantilevered concrete foundation walls shall be constructed as set forth in Table R404.1.1(6), R404.1.1(7), or R404.1.1(8). Cantilevered means: foundation walls that do not have permanent lateral support at the top.~~

Subp. 6. **Table R404.1.1(5)~~(6)~~.** IRC Section R404 is amended by adding a new table as follows:

Table R404.1(5)~~(6)~~

Cantilevered Concrete and Masonry Foundation Walls

Maximum Wall Height[j] (feet)	Maximum Unbalanced Backfill Height[e] (feet)	Minimum Vertical Reinforcement Size and Spacing for 8 – Inch Nominal Wall Thickness[a,b,c,e,f,i,k]		
		Soil Classes[d]		
		GW, GP, SW, & SP	GM, GC, SM, SM-CS, & ML	SC, MH, ML-CL, and inorganic CL
4	3	None required	None required	None required
	4	None required	None required	No. 4 @ 72 in. o.c.
5	3	None required	None required	None required
	4	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[h]	No. 4 @ 40 in. o.c.[g]
	5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[h]	No. 4 @ 40 in. o.c.[g]

a. Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi.

b. Alternative reinforcing bar sizes and spacings having an equivalent cross sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the reinforcement does not exceed 72 inches.

c. Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 2.5 inches.

d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.

e. Interior concrete floor slab on grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of slab on grade to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is the difference in height of the exterior finish ground levels and the top of the interior concrete slab on grade.

f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 psi.

g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum.

h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches o.c. maximum. No dowels are required where length of the foundation wall between perpendicular walls is two times the foundation wall height or less.

i. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only one end by a perpendicular wall is 17 feet or less.

j. Maximum wall height is measured from top of the foundation wall to the bottom of the interior concrete slab on grade.

k. Install foundation anchorage per Section R403.1.6.

Subp. 7. **Table R404.1.1(6)~~(7)~~.** IRC Section R404 is amended by adding a new table as follows:

Table R404.1.1(6)~~(7)~~

Cantilevered Concrete and Masonry Foundation Walls

Maximum Wall Height[j] (feet)	Maximum Unbalanced Backfill Height[e] (feet)	Minimum Vertical Reinforcement Size and Spacing for 10 – Inch Nominal Wall Thickness[a,b,c,e,f,i,k]		
		Soil Classes[d]		
		GW, GP, SW, & SP	GM, GC, SM, SM-CS, & ML	SC, MH, ML-CL, and inorganic CL
4	3	None required	None required	None required
	4	None required	None required	None required
5	3	None required	None required	None required
	4	None required	No. 4 @ 72 in. o.c.	No. 4 @ 64 in. o.c.[g]
	5	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[g]

6	3	None required	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.
	4	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 64 in. o.c.[h]
	5	No. 4 @ 64 in. o.c.[h]	No. 4 @ 40 in. o.c.[g,h]	No. 5 @ 48 in. o.c.[g,h]
	6	No. 4 @ 64 in. o.c.[h]	No. 4 @ 40 in. o.c.[g,h]	No. 5 @ 48 in. o.c.[g,h]

a. Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi.

b. Alternative reinforcing bar sizes and spacings having an equivalent cross sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the reinforcement does not exceed 72 inches.

c. Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 2.5 inches.

d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.

e. Interior concrete slab on grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of slab on grade to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is the difference in height of the exterior finish ground levels and the top of the interior concrete slab on grade.

f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 psi.

g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum.

h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches o.c. maximum. No dowels are required where length of the foundation wall between perpendicular walls is two times the foundation wall height or less.

i. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only one end by a perpendicular wall is 17 feet or less.

j. Maximum wall height is measured from top of the foundation wall to the bottom of the interior concrete slab on grade.

k. Install foundation anchorage per Section R403.1.6.

Subp. 8. **Table R404.1.1(7)~~(8)~~.** IRC Section R404 is amended by adding a new table as follows:

Table R404.1.1(7)~~(8)~~

Cantilevered Concrete and Masonry Foundation Walls

Maximum Wall Height[j] (feet)	Maximum Unbalanced Backfill Height[e] (feet)	Minimum Vertical Reinforcement Size and Spacing for 12 – Inch Nominal Wall Thickness[a,b,c,e,f,i,k]		
		Soil Classes[d]		
		GW, GP, SW, & SP	GM, GC, SM, SM-CS, & ML	SC, MH, ML-CL, and inorganic CL
4	3	None required	None required	None required
	4	None required	None required	None required
5	3	None required	None required	None required
	4	None required	None required	No. 4 @ 72 in. o.c.
	5	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.
6	3	None required	None required	None required
	4	None required	None required	No. 4 @ 72 in. o.c.
	5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[h]	No. 4 @ 40 in. o.c.[g]
	6	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[g]	No. 4 @ 32 in. o.c.[g,h]
7	3	None required	None required	None required
	4	None required	No. 4 @ 72 in. o.c.	No. 4 @ 72 in. o.c.
	5	No. 4 @ 72 in. o.c.	No. 4 @ 56 in. o.c.[h]	No. 4 @ 40 in. o.c.[g]
	6	No. 4 @ 48 in. o.c.[h]	No. 5 @ 48 in. o.c.[g,h]	No. 6 @ 48 in. o.c.[g,h]
	7	No. 4 @ 48 in. o.c.[h]	No. 5 @ 40 in. o.c.[g,h]	No. 6 @ 48 in. o.c.[g,h]

a. Mortar shall be Type M or S and masonry shall be laid in running bond. Minimum unit compressive strength is 1,900 psi.

b. Alternative reinforcing bar sizes and spacings having an equivalent cross sectional area of reinforcement per lineal foot of wall shall be permitted provided the spacing of the reinforcement does not exceed 72 inches.

c. Vertical reinforcement shall be Grade 60 minimum. The distance from the face of the soil side of the wall to the center of vertical reinforcement shall be no greater than 3 inches.

d. Soil classes are in accordance with the Unified Soil Classification System. Refer to Table R405.1.

e. Interior concrete slab on grade shall be placed tight to the wall. The exterior grade level shall be 6 inches minimum below the top of wall. Maximum height from top of slab on grade to bottom of floor joists is 10 feet, 0 inches. Unbalanced backfill height is the difference in height of the exterior finish ground levels and the top of the interior concrete slab on grade.

f. Minimum footing size of 20 inches by 8 inches shall be placed on soil with a bearing capacity of 2,000 psf. Minimum concrete compressive strength of footing shall be 3,000 psi.

g. Provide propped cantilever wall: top of footing shall be 16 inches below the bottom of the concrete floor slab minimum.

h. Provide #5 Grade 60 dowels, 1 foot, 6 inches long, to connect footing to wall. Embed dowel 5 inches into footing. Place dowels in center of wall thickness spaced at 32 inches o.c. maximum. No dowels are required where length of the foundation wall between perpendicular walls is two times the foundation wall height or less.

i. This table is applicable where the length of the foundation wall between perpendicular walls is 35 feet or less, or where the length of the foundation laterally supported on only one end by a perpendicular wall is 17 feet or less.

j. Maximum wall height is measured from top of the foundation wall to the bottom of the interior concrete slab on grade.

k. Install foundation anchorage per Section R403.1.6.

Subp. 9. **IRC Section R404.1.3.** IRC Section R404.1.3 is amended by adding the following exception to condition 2:

Exception: Cantilevered concrete and masonry foundation walls constructed in accordance with Table R404.1.1(6), R404.1.1(7), or R404.1.1(8).

1309.0406 SECTION R406, FOUNDATION WATERPROOFING AND DAMPPROOFING.

Subpart 1. **IRC Section R406.1.** IRC Section R406.1 is amended to read as follows:

R406.1 Concrete and masonry foundation dampproofing. Except where required by Section R406.2 to be waterproofed, foundation walls that retain earth and enclose interior spaces and floors below grade shall be dampproofed at a minimum from the top of the footing to the finished grade. Masonry walls shall be parged with not less than 3/8 inch (9.5 mm) portland cement parging applied to the exterior of the wall. The parging shall be dampproofed in accordance with one of the following:

1. Bituminous coating.

2. 3 pounds per square yard (1.63 kg/m2) of acrylic modified cement.

3. 1/8 inch (3.2 mm) coat of surface bonding cement complying with ASTM C 887.

4. Any material permitted for waterproofing in Section R406.2.

5. Other approved methods or materials.

Exception: Parging of unit masonry walls is not required where a material is approved for direct application to the masonry.

Concrete walls shall be dampproofed by applying any one of the above listed dampproofing materials or any one of the waterproofing materials listed in Section R406.2 to the exterior of the wall.

Subp. 2. **IRC Section R406.2.** IRC Section R406.2 is amended to read as follows:

R406.2 Concrete and masonry foundation waterproofing. In all soils groups other than Group 1 soils in accordance with Table R405.1, exterior foundation walls that retain earth and enclose interior spaces and floors below grade shall be waterproofed at a minimum from the top of the footing to the finished grade. Walls shall be waterproofed in accordance with one of the following:

1. 2 ply hot mopped felts.
2. 55 pound (25 kg) roll roofing.
3. 6 mil (0.15 mm) polyvinyl chloride.
4. 6 mil (0.15 mm) polyethylene.
5. 40 mil (1 mm) polymer modified asphalt.
6. 60 mil (1.5 mm) flexible polymer cement.
7. 1/8 inch cement based, fiber reinforced, waterproof coating.
8. 60 mil (1.5 mm) solvent free liquid applied synthetic rubber.

Exception: Organic solvent based products such as hydrocarbons, chlorinated hydrocarbons, ketones, and esters shall not be used for ICF walls with expanded polystyrene form material. Plastic roofing cements, acrylic coatings, latex coatings, mortars, and pargings are permitted to be used to seal ICF walls. Cold setting asphalt or hot asphalt shall conform to Type C of ASTM D 449. Hot asphalt shall be applied at a temperature of less than 200 degrees.

All joints in membrane waterproofing shall be lapped and sealed with an adhesive compatible with the membrane.

1309.0501 SECTION R501, GENERAL.

Section R501.3. IRC Section R501.3 is amended to read as follows:

R501.3 Fire protection of floors. Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a ½ inch gypsum wallboard membrane, 5/8 inch wood structural panel membrane, or equivalent on the underside of the floor framing member.

Exceptions:

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system.

2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.

3. Portions of floor assemblies can be unprotected when complying with the following:

3.1 The aggregate area of the unprotected portions shall not exceed 80 square feet per story; and

3.2 Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.

4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance[r50].

~~**R501.3 Fire protection of floors.** Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a ½-inch (12.7 mm) gypsum wallboard membrane, $^{5}/_{8}$-inch (16 mm) wood structural panel membrane, or equivalent on the underside of the floor framing member.~~

~~**Exceptions:**~~

~~1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA 13D, or other approved equivalent sprinkler system.~~

~~2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.~~

~~3. Portions of floor assemblies can be unprotected when complying with the following:~~

~~3.1 The aggregate area of the unprotected portions shall not exceed 80 square feet per story~~

~~3.2 Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly[r51].~~

~~4. Floor assemblies in existing, altered dwellings, and additions to existing dwellings[r52].~~

1309.0506 [Repealed, 32 SR 12]

1309.0602 SECTION R602, WOOD WALL FRAMING.

Subpart 1. **Table R602.3.1.** IRC Table R602.3.1 is amended to read as follows:

Table R602.3.1

Maximum Allowable Length of Wood Wall Studs Exposed to Wind Speeds of 90 mph or less[b,c,d,e,f,g,h,i]
Where conditions are not within the parameters of footnotes b, c, d, e, f, g, h, and i, design is required.

Roof spans up to 22' supporting a roof only

Maximum Wall Height (feet)	Exposure Category[h,i]	On-Center Spacing (inches) 24	16	12	8
10	B	2x6	2x4	2x4	2x4
	C	2x6	2x6	2x4	2x4
12	B	2x6	2x6	2x4	2x4
	C	2x6	2x6	2x6	2x4
14	B	2x6	2x6	2x6	2x4
	C	2x6	2x6	2x6	2x6
16	B	2x8	2x6	2x6	2x6
	C	2x8	2x6	2x6	2x6
18	B	2x8	2x8	2x6	2x6
	C	2x8	2x8	2x6	2x6
20	B	2x8	2x8	2x8	2x6
	C	NA[a]	2x8	2x8	2x6
24	B	NA[a]	2x8	2x8	2x8
	C	NA[a]	NA[a]	2x8	2x8

Roof spans greater than 22' and up to 26' supporting a roof only

Maximum Wall Height (feet)	Exposure Category[h,i]	On-Center Spacing (inches) 24	16	12	8
10	B	2x6	2x6	2x4	2x4
	C	2x6	2x6	2x6	2x4
12	B	2x6	2x6	2x6	2x4
	C	2x8	2x6	2x6	2x6
14	B	2x6	2x6	2x6	2x6
	C	2x8	2x8	2x6	2x6
16	B	2x8	2x6	2x6	2x6
	C	2x8	2x8	2x6	2x6
18	B	2x8	2x8	2x6	2x6
	C	NA[a]	2x8	2x8	2x6
20	B	NA[a]	2x8	2x8	2x6
	C	NA[a]	NA[a]	2x8	2x8
24	B	NA[a]	NA[a]	2x8	2x8

	C	NA[a]	NA[a]	NA[a]	2x8

Roof spans greater than 26' and up to 30' supporting a roof only

Maximum Wall Height (feet)	Exposure Category[h,i]	On-Center Spacing (inches) 24	16	12	8
10	B	2x6	2x6	2x4	2x4
	C	2x6	2x6	2x6	2x4
12	B	2x6	2x6	2x6	2x4
	C	2x8	2x6	2x6	2x6
14	B	2x8	2x6	2x6	2x6
	C	2x8	2x8	2x6	2x6
16	B	2x8	2x6	2x6	2x6
	C	2x8	2x8	2x8	2x6
18	B	2x8	2x8	2x6	2x6
	C	NA[a]	2x8	2x8	2x8
20	B	NA[a]	2x8	2x8	2x6
	C	NA[a]	NA[a]	2x8	2x8
24	B	NA[a]	NA[a]	2x8	2x8
	C	NA[a]	NA[a]	NA[a]	2x8

Roof spans greater than 30' and up to 34' supporting a roof only

Maximum Wall Height (feet)	Exposure Category[h,i]	On-Center Spacing (inches) 24	16	12	8
10	B	2x6	2x6	2x4	2x4
	C	2x6	2x6	2x6	2x4
12	B	2x6	2x6	2x6	2x4
	C	2x8	2x6	2x6	2x6
14	B	2x8	2x6	2x6	2x6
	C	2x8	2x8	2x6	2x6
16	B	2x8	2x8	2x6	2x6
	C	NA[a]	2x8	2x8	2x6
18	B	2x8	2x8	2x6	2x6
	C	NA[a]	NA[a]	2x8	2x8
20	B	NA[a]	2x8	2x8	2x6
	C	NA[a]	NA[a]	2x8	2x8
24	B	NA[a]	NA[a]	2x8	2x8
	C	NA[a]	NA[a]	NA[a]	2x8

a. Design required.

b. Applicability of these tables assumes the following: SPF#2 or better, Ground snow = 60 psf, Roof snow = 42 psf, Component and Cladding Zone 4 50 square feet (Exposure B = 14.3 psf, Exposure C = 18.4 psf), eaves not greater than 2.0 feet in dimension.

c. The exterior of the wall shall be continuously sheathed in accordance with one of the materials listed in items 32 to 38 in Table R602.3(1), including the prescribed fastening. All wall bracing requirements are to be in accordance with R602.10. Heights of tall walls may prohibit incorporation into the wall bracing system ~~methods (2-8) listed in Section R602.10.3~~.

d. Studs shall be continuous full height. Where studs do not extend full height due to a wall opening, full height studs shall be provided on each side of the opening, equal in number to the spacing of the required full height studs multiplied by half the width of the opening, plus one stud. Where multiple openings occur adjacent to one another, framing between openings is to include the total of all full height studs required for both openings combined.

e. Full depth blocking is required at 10 foot spacing maximum.

f. Utility, standard, stud, and No. 3 grade lumber of any species are not permitted.

g. This table is based on a maximum allowable deflection limit of L/120.

~~h. Exposure B – Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single family dwellings or larger. Exposure B shall be assumed unless the site meets the definition of another type exposure.~~

~~i. Exposure C – Open terrain with scattered obstructions, including surface undulations or other irregularities, having heights generally less than 30 feet extending more than 1,500 feet from the building site in any quadrant. This category includes flat open country, grasslands, and shorelines in hurricane prone regions. Exposure C shall also apply to any building located within Exposure B type terrain where the building is directly adjacent to open areas of Exposure C type terrain in any quadrant for a distance of more than 600 feet~~[r53]~~.~~

Subpart 2. IRC Section R602.10.11 is amended to read as follows:

R602.10.11 Cripple wall bracing. Cripple walls shall be constructed in accordance with Section R602.9 and braced in accordance with this section. Cripple walls shall be braced with the length and method of bracing used for the wall above in accordance with Tables R602.10.3(1) and R602.10.3(3), and the applicable adjustment factors in Table R602.10.3(2) or R602.10.3(4), respectively, except that the length of cripple wall bracing shall be multiplied by a factor of 1.15[r54].

1309.0612 SECTION R612, EXTERIOR WINDOWS AND DOORS.

Section R612.1, IRC Section R612.1 is amended to read as follows:

R612.1 General. This section prescribes performance and construction requirements for exterior window and door installed in walls. Windows and doors shall be installed in accordance with the fenestration manufacturer's written installation instructions. Window and door openings shall be flashed in accordance with Section R703.8. Written installation instructions shall be provided by the fenestration manufacturer for each window or door[r55].

1309.0613 ~~SECTION R613, EXTERIOR WINDOWS AND GLASS DOORS.~~ [REPEAL]

~~Subpart 1. **Section R613.1.** IRC Section R613.1 is amended to read as follows:~~

~~**R613.1 General.** This section prescribes performance and construction requirements for exterior window systems installed in wall systems. Windows and doors shall be installed in accordance with the manufacturer's installation instructions. Installation instructions shall be provided by the manufacturer for each exterior window or door type~~[r56]~~.~~

~~Subp. 2. **Section R613.2.** IRC Section R613.2 is deleted in its entirety~~[r57]~~.~~

1309.0702 SECTION R702, INTERIOR COVERING.

Subpart 1. **Table R702.1 (3).** IRC Table R702.1(3) is amended to read as follows[r58]:

(Table R702.1(3) is new)

TABLE R702.1(3)
CEMENT PLASTER PROPORTIONS, PARTS BY VOLUME

COAT	CEMENT PLASTER TYPE	CEMENTITIOUS MATERIALS				VOLUME OF AGGREGATE PER SUM OF SEPARATE VOLUMES OF CEMENTITIOUS MATERIALS[b]
		Portland Cement Type I, II or III or Blended Cement Type IP, I (PM), IS or I (SM)	Plastic Cement	Masonry Cement Type M, S or N	Lime	
First	Portland or blended	1			$^1/_4$ - $1^1/_2$[a]	$2^1/_2$ - 4
	Masonry			1	~~1~~	$2^1/_2$ - 4
	Plastic		1			$2^1/_2$ - 4
Second	Portland or blended	1			$^1/_4$ - $1^1/_2$	3 - 5
	Masonry			1		3 - 5
	Plastic		1			3 - 5
Finish	Portland or blended	1			$^1/_4$ - 2	$1^1/_2$ - 3
	Masonry			1		$1^1/_2$ - 3
	Plastic		1			$1^1/_2$ - 3

For SI: 1 inch = 25.4 mm, 1 pound = 0.545 kg.

a. Lime by volume of 0 to 3/4 shall be used when the plaster will be placed over low-absorption surfaces such as dense clay tile or brick.

b. The same or greater sand proportion shall be used in the second coat than used in the first coat.

Subp. 2. **Section R702.7, Vapor retarders.** IRC Section R702.7 is amended to read as follows:

IRC R702.7 Vapor retarders. Class I or II vapor retarders are required on the interior side of frame walls in Climate Zones 6 and 7. Class II vapor retarders are allowed when required or recommended by the contractor or licensed design professional.

1309.0703 SECTION R703, EXTERIOR COVERING.

Subpart 1. [Repealed, 32 SR 12]

Subp. 2. [Repealed, 32 SR 12]

Subp. 2. **R703.2 Water resistive-barrier.** IRC Section R703.2 is amended to read as follows:

R703.2 Water-resistive barrier. One layer of No. 15 asphalt felt, free from holes and breaks, complying with ASTM D 226 for Type 1 felt or other approved water-resistive barrier shall be applied over studs or sheathing of all exterior walls. Such felt or material shall be applied horizontally, with the upper layer lapped over the lower layer not less than 2 inches (51 mm). The water-resistive barrier shall overlap the flashings required in Section R703.8 not less than 2 inches (51 mm). Where joints occur, in the water-resistive barrier or flashing, the joints shall be lapped not less than 6 inches (152 mm). The felt or other approved material shall be continuous to the top of walls and terminated at penetrations and building appendages in a manner to meet the requirements of the exterior wall envelope as described in Section R703.1.

Exception: Omission of the water-resistive barrier is permitted in the following situations:

1. In detached accessory buildings.

2. Under exterior wall finish materials as permitted in Table R703.4.

3. Under paperbacked stucco lath when the paper backing is an approved water-resistive barrier[r59].

Subp. 3. **Section R703.6.** IRC Section R703.6 is amended to read as follows:

R703.6 Exterior plaster. ~~Installation of these materials shall be in compliance with ASTM C 926 98a and ASTM C 1063 03 and provisions of this code~~[r60].

R703.6.1 Lath. All lath and lath attachments shall be of corrosion resistant materials. Expanded metal or woven wire lath shall be attached with 11 gage nails having a 7/16 inch (11.1 mm) head or 16 gage staples, spaced at no more than 6 inches (152 mm) or as otherwise approved. Nails or staples shall penetrate wood framing support members not less than 3/4 inch (19 mm[r61]).

R703.6.1.3 Control joints and expansion joints. Provisions for the control of expansion shall be determined by the exterior plaster application designer. ASTM C 1063 03 sections 7.11.4. - 7.11.4.4 do not apply[r62].

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, pressure-preservative treated wood or decay-resistant wood as specified in Section R317.1 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).

On wood-frame construction with an on-grade floor slab system, exterior plaster shall be applied to cover, but not extend below, lath, paper and screed.

The proportion of aggregate to cementitious materials shall be as set forth in Table R702.1(3[r63]).

R703.6.2.1 Weep screeds. A minimum 0.019 inch (No. 26 galvanized sheet gage), corrosion resistant weep screed or plastic weep screed, with a minimum vertical attachment flange of 3 1/2 inches (89 mm) shall be provided at or below the foundation plate line on exterior stud walls in accordance with ASTM C 1063 ~~03~~. The weep screed shall be placed a minimum of 4 inches (102 mm) above the earth or 2 inches (51 mm) above paved areas and shall be of a type that will allow trapped water to drain to the exterior of the building. The weather resistant barrier shall lap the attachment flange. The exterior lath shall cover and terminate on the attachment flange of the weep screed[r64].

R703.6.3 Water resistive barriers. Water resistive barriers shall be installed as required in Section R703.2 and, where applied over wood based sheathing, shall include two layers of a water resistive vapor permeable barrier. Each layer shall meet both of the following requirements:

1. A water resistance not less than that of 60 minute Grade D paper; or a minimum hydrostatic head of 60.9 cm when tested in accordance with hydrostatic pressure test method AATCC 127 1998; or a minimum water transudation time of 60 minutes when tested in accordance with ASTM D 779.

2. A water vapor permeance not less than that of no. 15 felt; or a minimum permeance rating of 8.5 gr/h.ft.^{2} in Hg (US perm) (4.9 x 10^{10} kg/Pa.s.m^2) when tested in accordance with Procedure B of ASTM E96.

Exception: One layer of water resistive barrier complying with R703.2 is permitted when a drainage space that allows bulk water to flow freely behind the cladding is provided[r65].

R703.6.4 Application. Each coat shall be kept in a moist condition for at least 48 hours prior to application of the next coat.

Exception: Applications installed in accordance with ASTM C926. The second coat is permitted to be applied as soon as the first coat has attained sufficient rigidity to receive the second coat[r66].

R703.6.5 Curing. The finish coat for two-coat cement plaster shall not be applied sooner than seven days after application of the first coat. For three-coat cement plaster, the second coat shall not be applied sooner than 48 hours after application of the first coat, except as noted in Section R703.6.4. The finish coat for three-coat cement plaster shall not be applied sooner than seven days after application of the second coat[r67].

Subp. 3a. **[REPEAL]~~Section R703.7. IRC Section R703.7 is amended by adding the following sentence to the end of Section R703.7: For structures in 90 mph wind speed region apply Seismic Design Category A limitations and requirements of Exception 1 and Table R703.7(1~~**[r68]~~**).~~

Subp. 4. [Repealed, 32 SR 12]

Subp. 5. [Repealed, 32 SR 12]

Subp. 6. [Repealed, 32 SR 12]

Subp. 7. [Repealed, 32 SR 12]

Subp. 8. [Repealed, 32 SR 12]

Subp. 8a. **Section R703.7.4.2.** IRC Section R703.7.4.2 is amended to read as follows:

R703.7.4.2 Air space. The veneer shall be separated from the sheathing by an air space of a minimum of a nominal 1 inch (25 mm) but nor more than 4 1/2 inches (114 mm).

Exception: One layer of water resistive barrier complying with Section R703.2 is permitted when a drainage space that allows bulk water to flow freely behind the cladding is provided.

Subp. 8b. **Section R703.7.4.3.** IRC Section R703.7.4.3 is amended to read as follows:

R703.7.4.3 Mortar or grout fill. As an alternate to the air space required by Section R703.7.4.2, mortar or grout shall be permitted to fill the air space. When the 1 inch (25.4 mm) space is filled with mortar, a weather resistant membrane or building paper as described in Section R703.2 or R703.6.3 is required over studs or sheathing. When filling the air space, it is permitted to replace the sheathing and weather resistant membrane or asphalt saturated felt paper with a wire mesh and approved paper or an approved paper backed reinforcement attached directly to the studs.

R703.7.4.4 Masonry veneer on sheathed substrates. On sheathed substrates, a corrosion resistant, self furring expanded metal lath shall be installed over the weather resistant membrane or building paper with appropriate fasteners as described in Section R703.6.1. Fasteners shall penetrate wood supports a minimum of one inch[r69].

Subp. 9. **Section R703.8.** IRC Section R703.8 is amended to read as follows:

R703.8 Flashing. Approved corrosion resistant flashing shall be applied shingle fashion in such a manner as to prevent entry of water into the wall cavity or penetration of water to the building structural framing components. Self-adhered membranes used as flashing shall comply with AAMA 711. The flashing shall extend to the surface of the exterior wall finish. Approved corrosion resistant flashing shall be installed at all of the following locations:

1. Exterior window and door openings. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish or to the water resistive barrier for subsequent drainage. Flashing at exterior window and door openings shall be installed at all of the following locations:

1.1. The fenestration manufacturer's installation and flashing instructions, or for applications not addressed in the fenestration manufacturer's instructions, in accordance with the flashing manufacturer's instructions. Where flashing instructions or details are not provided, pan flashing shall be installed at the sill of exterior window and door openings. Pan flashing shall be sealed or sloped in such a manner as to direct water to the surface of

the exterior wall finish or to the water-resistive barrier for subsequent drainage. Openings using pan flashing shall also incorporate flashing or protection at the head and sides.

Exceptions:

a) Windows or doors installed in accordance with the manufacturer's installation instructions which include an alternate flashing method.
b) Windows and doors in detached accessory structures.
c) Skylights, bow and bay windows.
d) Doors required to meet accessibility requirements that would prevent the installation of pan flashing.
e) Repairs or replacement of existing windows and doors.
f) When a method is provided by a registered design professional.

1.2. In accordance with the flashing design or method of a registered design professional.

1.3. In accordance with other approved methods.

2. At the intersection of chimneys or other masonry construction with frame or stucco walls, with projecting lips on both sides under stucco copings.

3. Under and at the ends of masonry, wood, or metal copings and sills.

4. Continuously above all projecting wood trim.

5. Where exterior porches, decks, or stairs attach to a wall or floor assembly of wood frame construction.

6. At wall and roof intersections.

7. At built in gutters.

8. Where exterior material meets in other than a vertical line.

~~9. Where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding in such a manner as to divert or kick out water away from the assembly[r70].~~

~~**R703.8.1 Pan flashing of windows and doors.** A pan flashing shall be provided under all exterior windows and doors. Pan flashing shall be (a) sloped to drain water to the exterior surface of a weather resistive barrier or flat with sealed back dam and side dams to prevent re entry of water into the wall cavity or onto interior finishes, and (b) maintain the thermal envelope of the building. Pan flashing made from metal must be thermally isolated from interior surfaces.~~

~~**Exceptions:**~~

~~1. Windows or doors installed in accordance with the manufacturer's installation instructions which include an alternate flashing method.~~

~~2. Windows or doors in detached accessory structures.~~

~~3. Skylights, bow or bay windows.~~

~~4. Doors required to meet accessibility requirements that would prevent the installation of pan flashing.~~

~~5. Repairs or replacement of existing windows and doors.~~

~~6. When a method is provided by a registered design professional~~[r71]~~.~~

~~1309.0802 SECTION 802, WOOD ROOF FRAMING.~~ [REPEAL]

~~IRC Section R802.10.5 is amended to read as follows:~~

~~R802.10.5 Truss to wall connection.~~ ~~Trusses shall be connected to wall plates by the use of approved fasteners or connectors having a resistance to uplift of not less than the value listed on the truss design drawings~~[r72]~~.~~

~~1309.0806 SECTION R806, ROOF VENTILATION.~~ [REPEAL]

~~IRC Section R806.4 is deleted in its entirety~~[r73]~~.~~

1309.0903 SECTION R903, WEATHER PROTECTION.

~~IRC Section R903.2.2 is amended as follows:~~

~~R903.2.2 Kick out flashing/diverter.~~ ~~A kick out flashing shall be installed where the lower portion of a sloped roof stops within the plane of an intersecting wall cladding, in such a manner as to divert or kick out water away from the assembly~~[r74]~~.~~

IRC Section R903.2.1 is amended as follows:

R903.2.1 Locations. Flashings shall be installed at wall and roof intersections, wherever there is a change in roof slope or direction and around roof openings. A kick out flashing shall be installed to divert the water away from where the eave of a sloped roof intersects a vertical sidewall. The kick out flashing on the roof shall be a minimum of two and one -half inches long. Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than 0.019 inch (0.5 mm) (No. 26 galvanized sheet[r75]).

1309.0905 SECTION R905, REQUIREMENTS FOR ROOF COVERINGS.

Subpart 1. IRC Section R905.2.1 is amended as follows:

R905.2.1 Sheathing requirements. Asphalt shingles shall be fastened to solidly sheathed decks or 1 inch thick nominal wood boards[r76].

Subpart 2. IRC Section R905.2.8.5 - Drip edge, is deleted in its entirety[r77].

1309.4300 REFERENCED STANDARDS.

Modifications to chapter 43. The list of referenced standards in IRC chapter 43 is modified as follows:

A. References to NFPA 13-02 shall be deleted and replaced with references to NFPA 13-10.

B. References to NFPA 58-04 shall be deleted and replaced with references to NFPA 58-11.

C. References to NFPA 72-02 shall be deleted and replaced with references to NFPA 72-10.