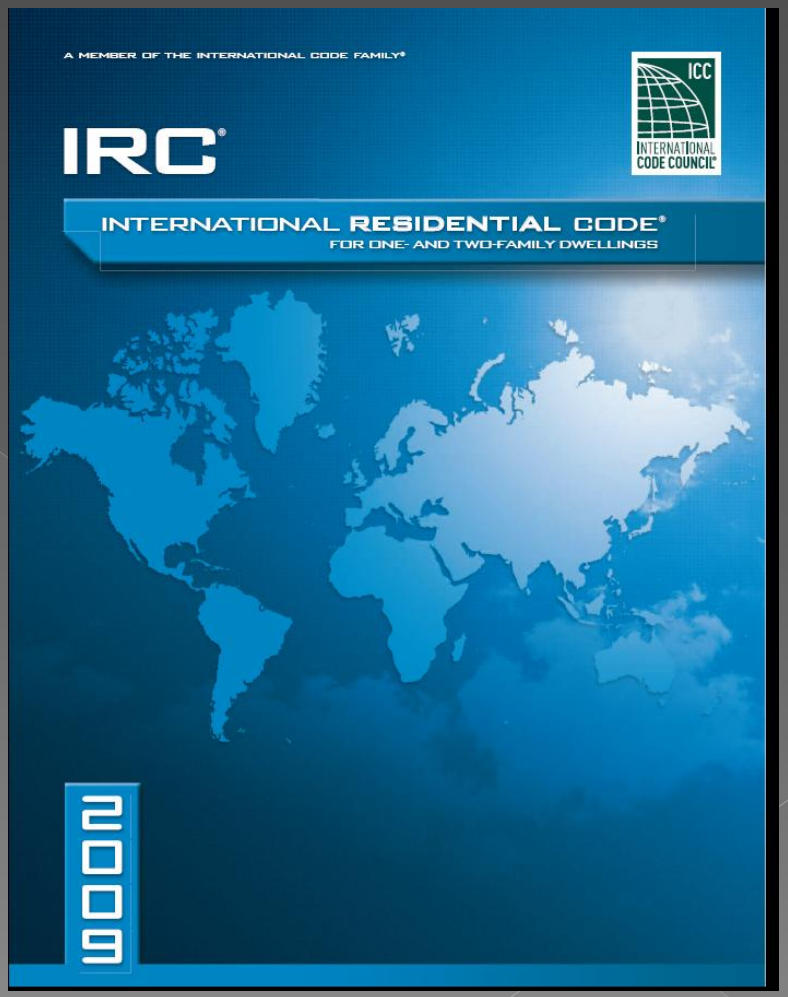
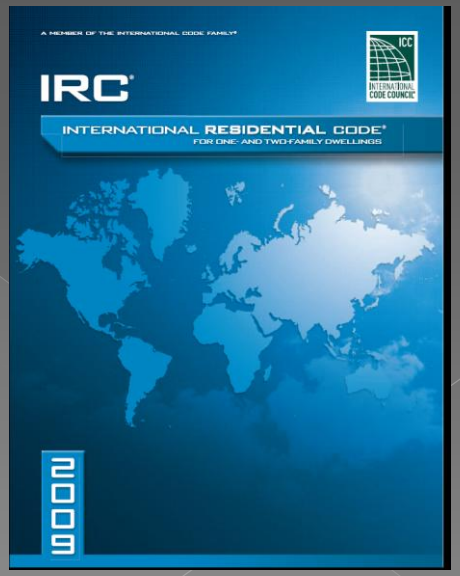
International Residential Code



International Residential Code

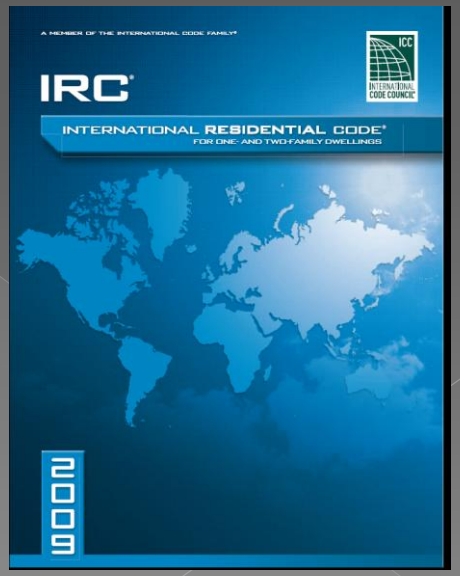
Significant Code Changes to the 2009 International Residential Building Code



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 1
SCOPE AND ADMINISTRATION



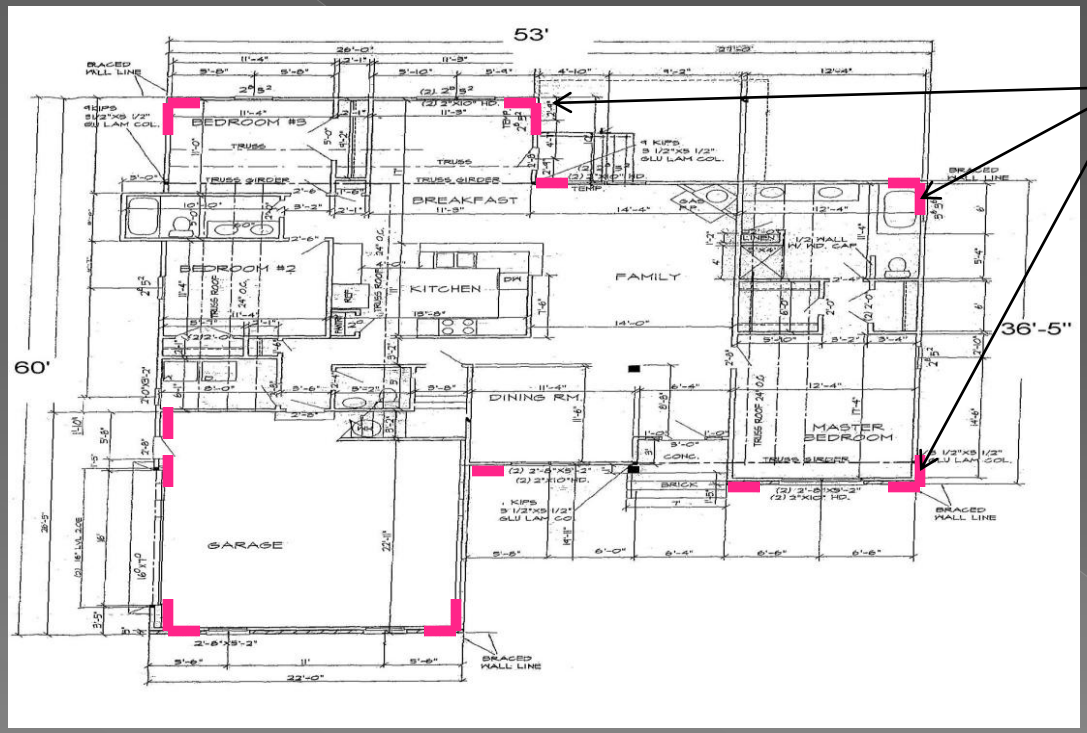
International Residential Code

R106.1.1 Information on Construction Documents

Where required by the building official, all braced wall lines, shall be identified on the construction documents and all pertinent information including, but not limited to, bracing methods, location and length of braced wall panels, foundation requirements of braced wall panels at top and bottom shall be provided.

International Residential Code

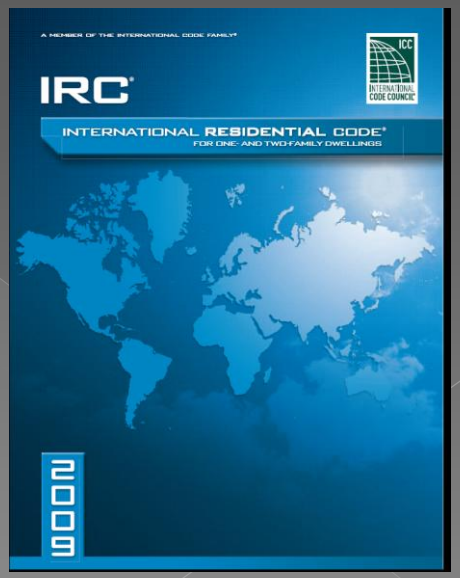
R106.1.1 Information on Construction Documents



Braced Wall Panels

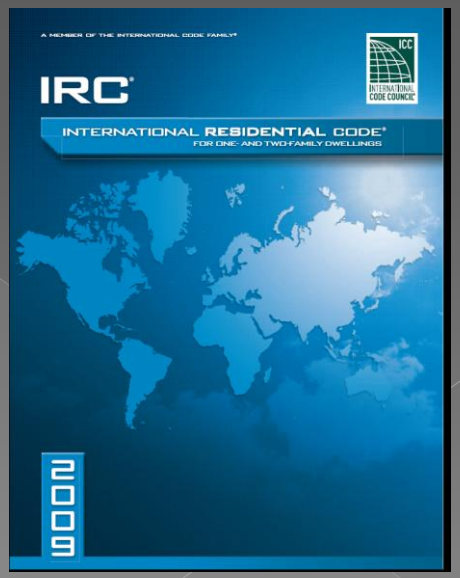
International Residential Code

R108.6 Work commencing before permit issuance



International Residential Code

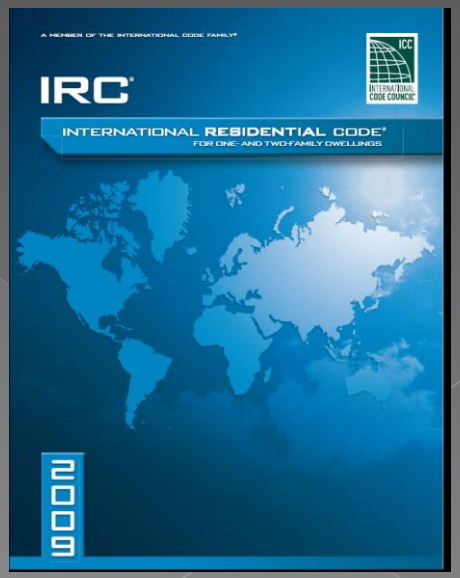
Any person who commences work requiring a permit on a building, structure, electrical, gas, mechanical or plumbing system before obtaining the necessary permits shall be subject to a fee established by the applicable governing authority that shall be in addition to the required permit fees.



International Residential Code

Montgomery County Commissioners have adopted

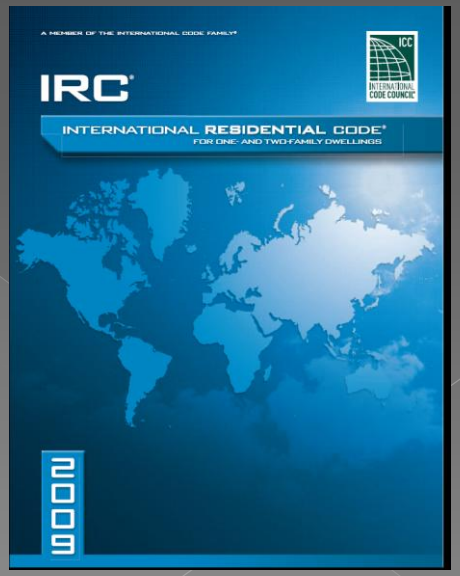
Double the original permit fee for failing to obtain the proper permits



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

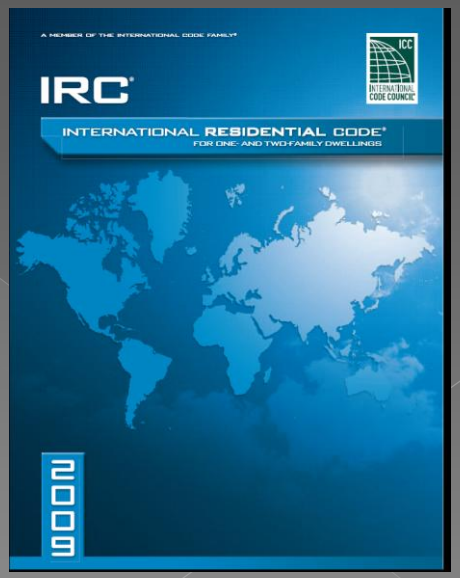
CHAPTER 3
BUILDING PLANNING



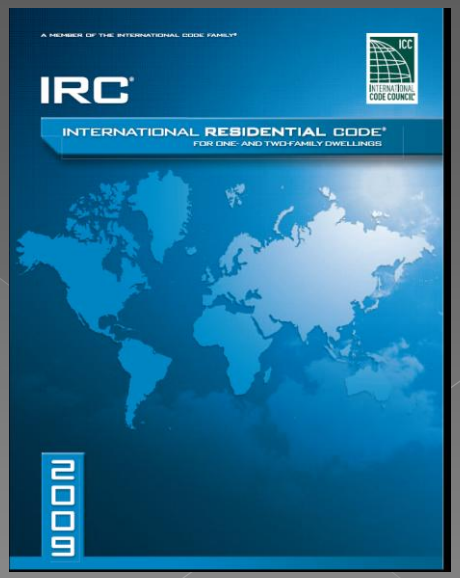
International Residential Code

R301.2.2 Seismic design Categories

New Seismic Design Category, D(o) will not apply in Montgomery County TN. This would have effected foundations, slab on grade, flooring, and wall bracing. Montgomery County Tn. Is in a split zone. Montgomery County chose Seismic Design Category C for residential construction.



International Residential Code



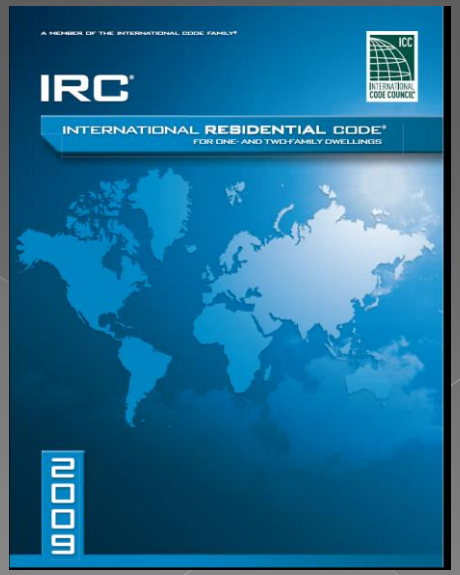
International Residential Code

Table R301.2.2.2.1 Wall Bracing adjustment factors by roof covering dead load

TABLE R301.2.2.2.1
WALL BRACING ADJUSTMENT FACTORS BY ROOF COVERING DEAD LOAD[a]

WALL SUPPORTING	ROOF/CEILING DEAD LOAD	
	15 psf or less	25 psf
Roof only	1.0	1.2
Roof plus one or two stories	1.0	1.1

For SI: 1 pound per square foot = 0.0479 kPa.
a. Linear interpolation shall be permitted.



International Residential Code

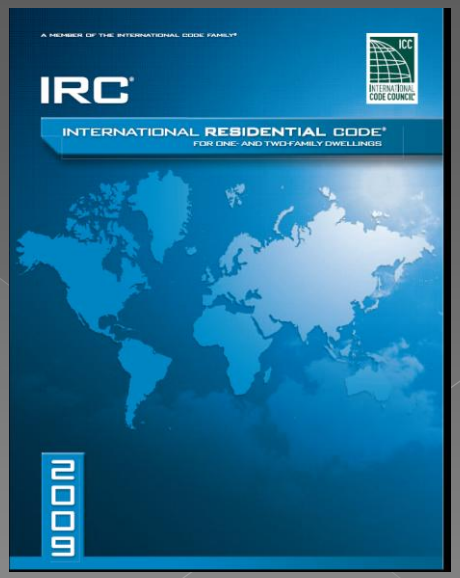
Table R301.5 Minimum uniformly distributed live loads

Attics with limited storage now have a live load requirement of 20 psf.

Guardrails in-fill components now have a live load requirement of 50 psf.

Habitable Attics spaces served by fixed stair now have a live load of 30 psf.

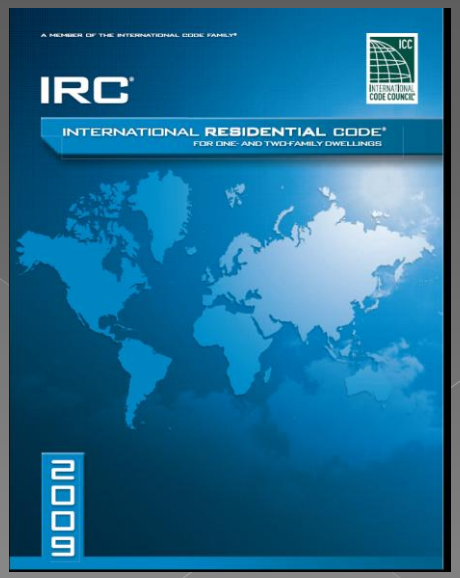
PLEASE NOTE THAT DEAD LOADS MUST BE FIGURED INTO THE DESIGN.



International Residential Code

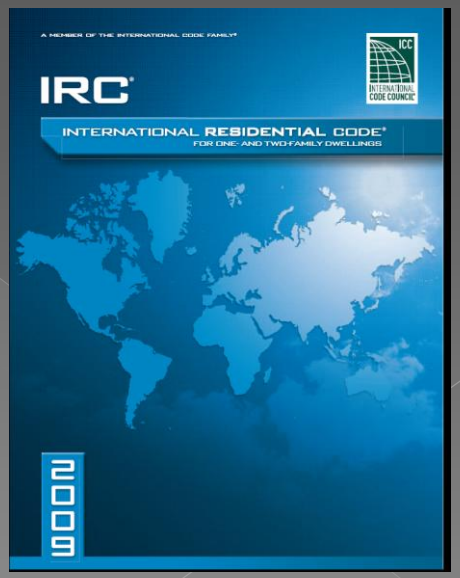
R302 Fire Resistant Construction

Fire resistant construction has all been combined and placed in section R302



International Residential Code

FIRE-RESISTANT CONSTRUCTION
R302.1 Exterior walls. Construction, projections, openings and penetrations of *exterior walls of dwellings and accessory* buildings shall comply with Table R302.1.
Exceptions:
1. Walls, projections, openings or penetrations in walls perpendicular to the line used to determine the *fire separation distance*.
2. Walls of *dwellings and accessory structures located* on the same *lot*.
3. Detached tool sheds and storage sheds, playhouses and similar structures exempted from permits are not required to provide wall protection based on location on the *lot. Projections beyond the exterior wall shall* not extend over the *lot line*.
4. Detached garages accessory to a *dwelling located within* 2 feet (610 mm) of a *lot line are permitted to have roof* eave projections not exceeding 4 inches (102 mm).
5. Foundation vents installed in compliance with this code are permitted.



International Residential Code

TABLE R302.1
EXTERIOR WALLS

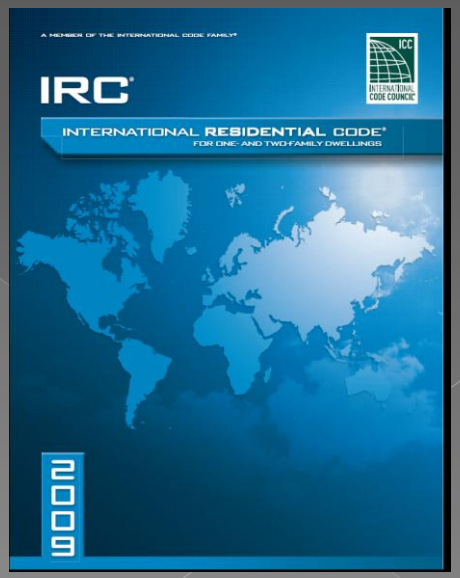
EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure form both sides	< 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	≥ 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 R317.3	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm.
N/A = Not Applicable.

International Residential Code

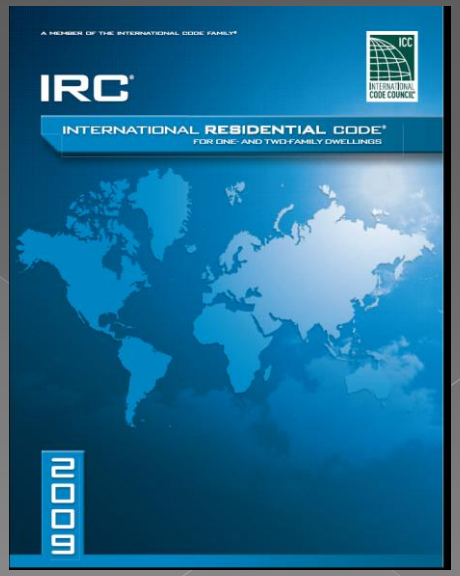
R302.2 & R302.3 Dwelling unit Separation

1.The fire-resistance rating for the common wall between townhouses has been reduced from 2 hours to 1 hour as fire sprinklers are now required in all new townhouses.
2. Dwellings units in 2 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.



International Residential Code

Exception:
The 1 hour fire resistance rating wall assembly is permitted in townhouses if the walls do not contain plumbing, or mechanical equipment, ducts or vents in the cavity of the wall.



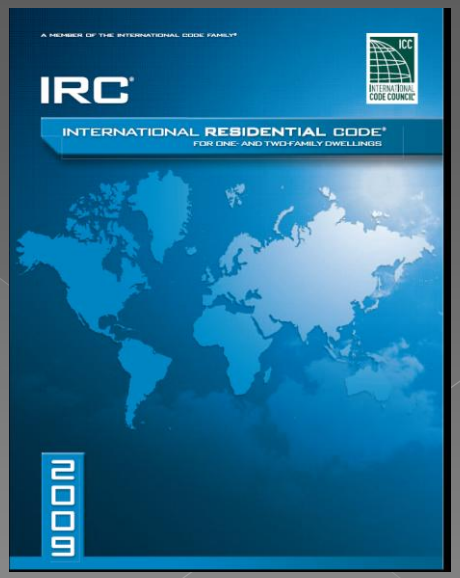
International Residential Code

MONTGOMERY COUNTY
TENNESSEE

Table R302.6 Garage Separation Clarification

For clarification, the provisions requiring the application of Gypsum board on the garage side of the separation from a dwelling have been placed in a new table.

No technical change to the code/ easier to read table format.



International Residential Code

R302.6 Separation of Detached Garage from dwelling

Detached garages located within 3ft of the dwelling must be fire protected

TABLE R302.6
DWELLING/GARAGE SEPARATION

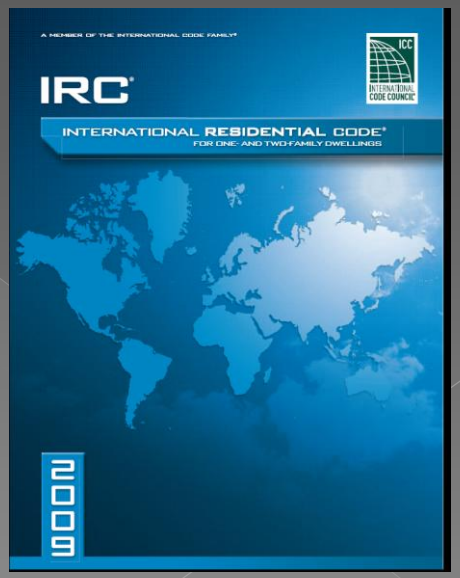
SEPARATION	MATERIAL
From the residence and attics	Not less than $^{1}/_{2}$-inch gypsum board or equivalent applied to the garage side
From all habitable rooms above the garage	Not less than $^{5}/_{8}$-inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than $^{1}/_{2}$-inch gypsum board or equivalent
Garages located less than 3 feet from a dwelling unit on the same lot	Not less than $^{1}/_{2}$-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

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

International Residential Code

R303.6.1 Light Activation at stairways

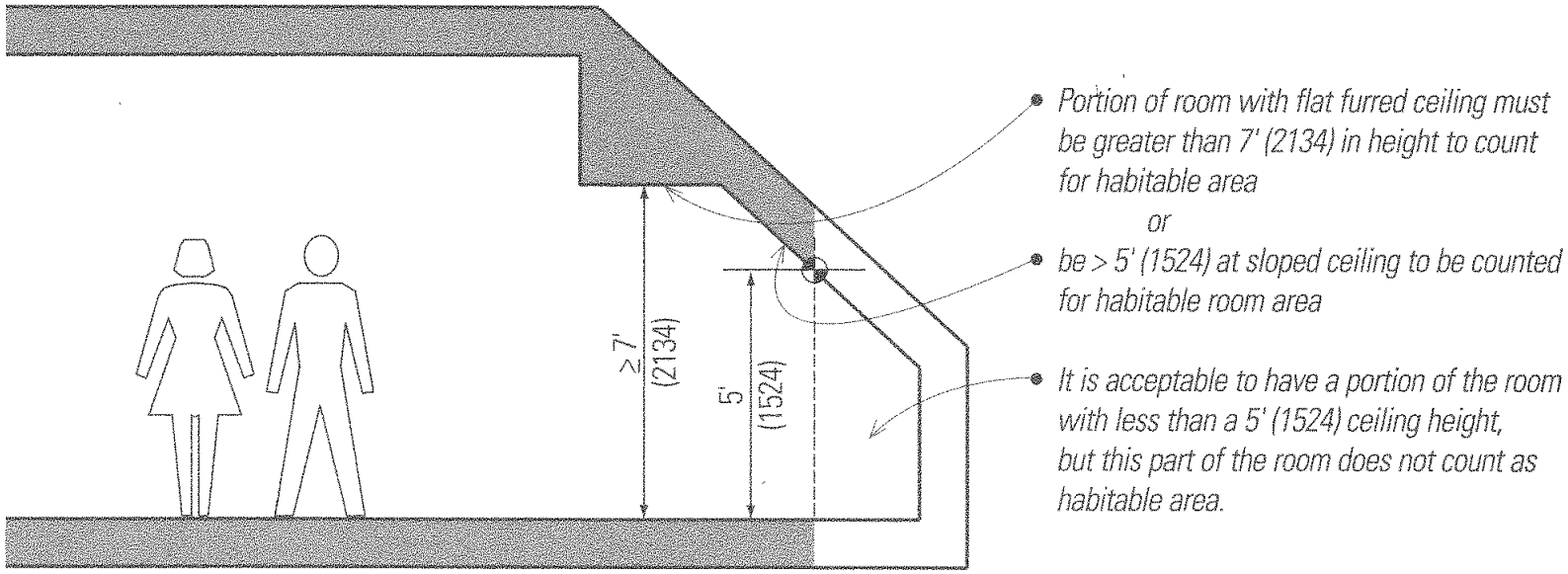
Only where a stairway has six or more risers, there must be a wall switch at each floor level to control the lighting outlet.



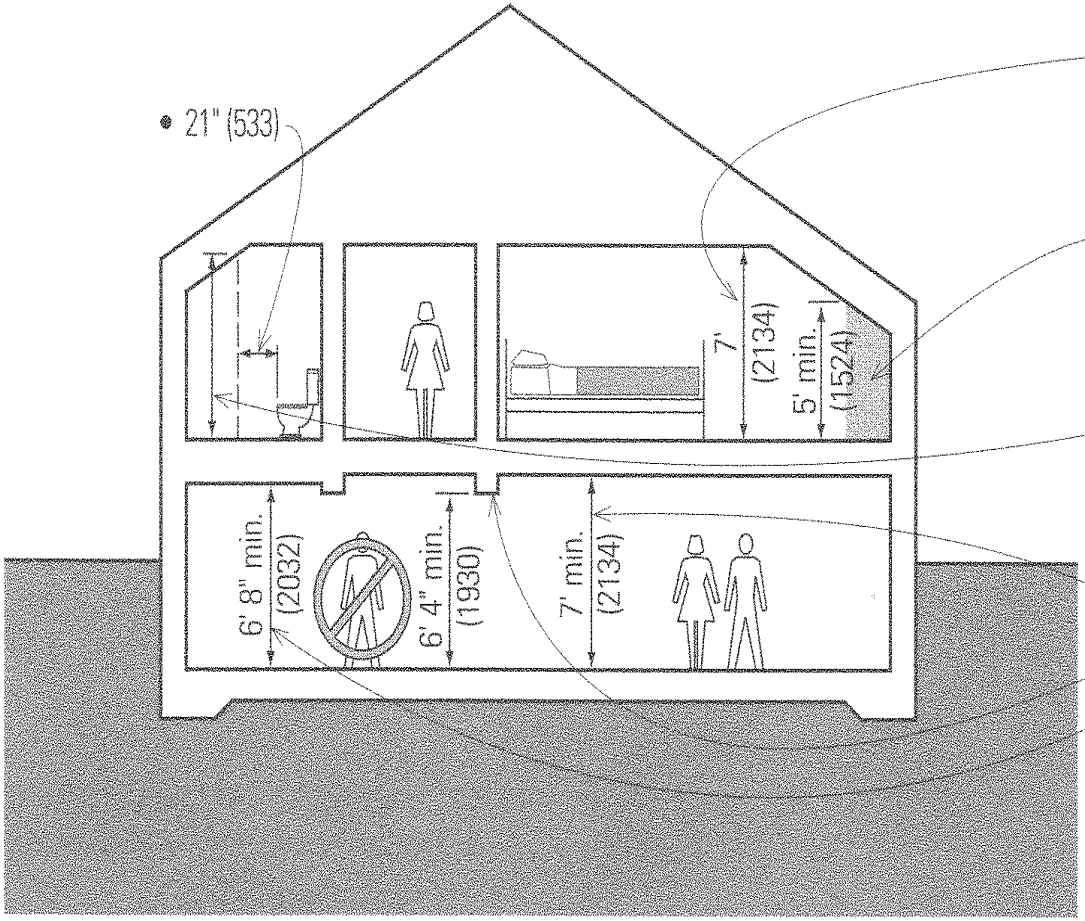
International Residential Code

R305.1 Sloped Ceilings

No portion of the required floor area may have a ceiling height of less than 5 feet.



International Residential Code



- *Typical minimum ceiling height for habitable rooms is 7' (2134)*
- *In rooms with sloped ceilings at least 50% of the room must be at least 7' (2134) high with no habitable portion less than 5' (1524).*
- *Bathroom to have minimum ceiling height of 6'-8 " (2032) at fixture and front clearance area as shown on Figure R307.1*
- *7' (2134) min. at habitable basement*
- *6'-8" (2032) min. at non-habitable basement*
- *6'-4" (1930) min. at beam in non-habitable basement*
- *Note: all heights are measured from finished floor to the lowest ceiling projection.*

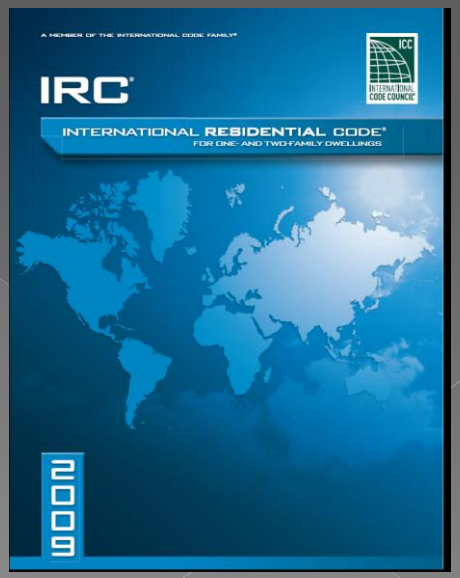
International Residential Code

R308.4 Glazing/ Hazardous locations

*All doors and enclosures of shower, bathtub, whirlpool, ect. Shall be safety glazing.

*Building walls enclosing showers, bathtubs, whirlpool, ect. Where bottom edge of glazing is less than 60 inches above standing of walking surface. shall be safety glazing.

Tempered glass may not meet the requirements of safety glazing..
CPSC 16CFR,part 1201



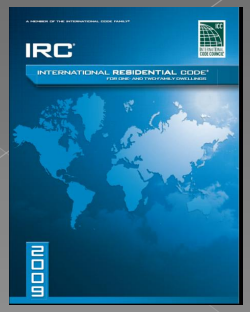
International Residential Code

MONTGOMERY COUNTY
TENNESSEE

R310.1 Emergency Escape and rescue Openings

All Basements regardless of whether the basement contains "habitable space" must now have at least one emergency escape or rescue opening. Also to include habitable attics and every sleeping room.

Section 202 has new definition habitable attic. Each Level



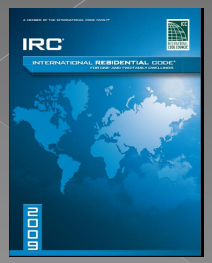
International Residential Code

ATTIC, HABITABLE. A finished or unfinished area, not considered a *story, when complying with all of the following requirements:*

1. The occupiable floor area is at least 70 square feet (17 m2), in accordance with Section R304,

2. The occupiable floor area has a ceiling height in accordance with Section R305, and

3. The occupiable space is enclosed by the roof assembly above, knee walls (if applicable) on the sides and the floor-ceiling assembly below.

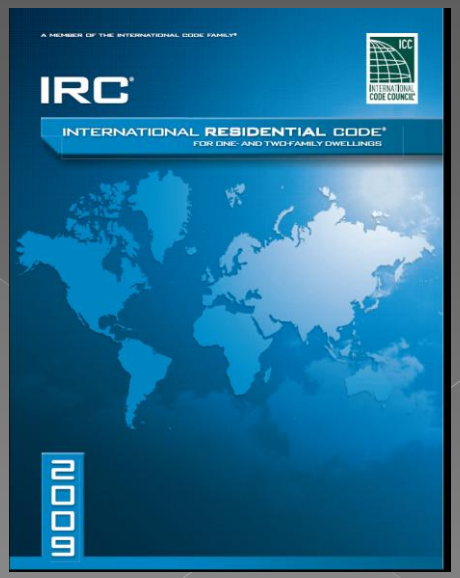


International Residential Code

MONTGOMERY COUNTY
TENNESSEE

R310.5 Emergency openings under decks and porches

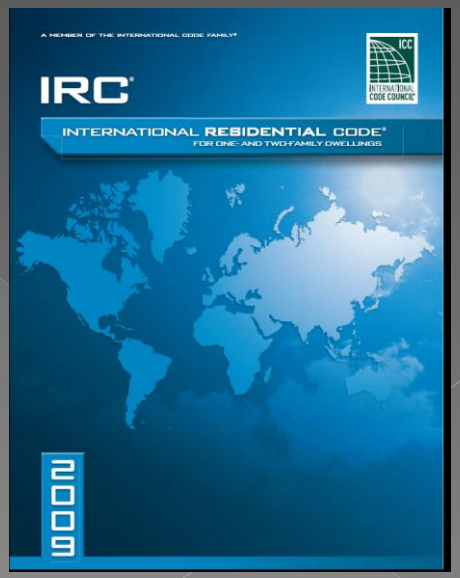
Escape windows are allowed under decks and porches as long as the window can be fully opened and provides a path not less than 36 inches in height to a safe area.



International Residential Code

R311.4.3 Landings at exterior doors

Landings at an exterior door may now have a minimal slope for drainage purposes but the slope cannot exceed .25 units vertical to 12 units horizontal (2%)

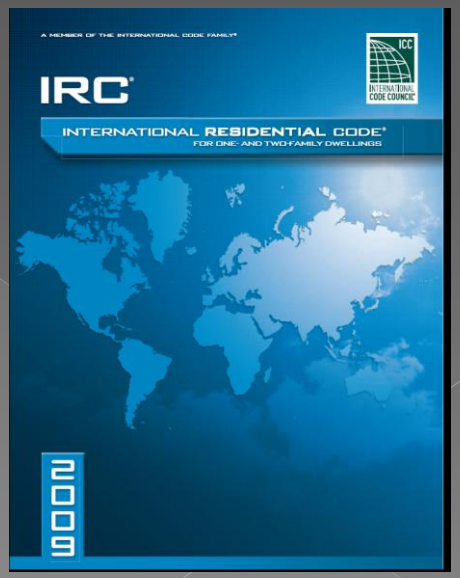


International Residential Code

R311.5.1 Construction Attachment

Exterior landings, decks, balconies, stairs and similar facilities shall be positively anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal.

All Exterior Exits



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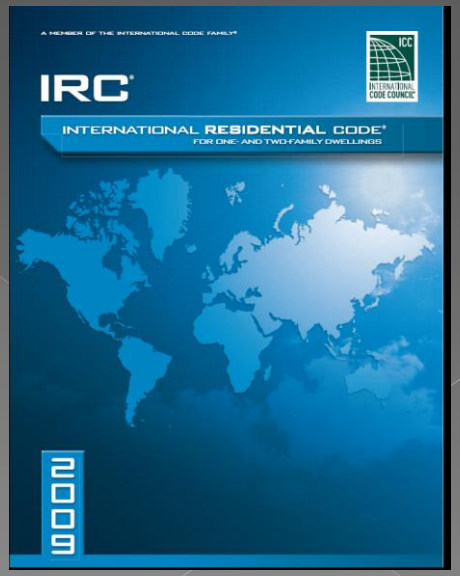


International Residential Code

R502.2.2.1 Deck ledger connection to band joist.

For decks supporting a total design load of 50 pounds per square foot (2394 Pa) [40 pounds per square foot (1915 Pa) live load plus 10 pounds per square foot (479 Pa) dead load], the connection between a deck ledger of pressure preservative- treated Southern Pine, incised pressure-preservative-treated Hem-Fir or *approved decay- resistant* species, and a 2-inch (51 mm) nominal lumber band joist bearing on a sill plate or wall plate shall be constructed with 1/2-inch (12.7 m) lag screws or bolts with washers in accordance with Table R502.2.2.1. Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.

International Residential Code

R502.2.2.1.1 Placement of lag screws or bolts in deck ledgers.

The lag screws or bolts shall be placed 2 inches (51 mm)in from the bottom or top of the deck ledgers and between 2 and 5 inches (51 and 127 mm) in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

International Residential Code

TABLE R502.2.2.1
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST[c, f, g]
(Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6′ and less	6′1″ to 8′	8′1″ to 10′	10′1″ to 12′	12′1″ to 14′	14′1″ to 16′	16′1″ to 18′
Connection details	On-center spacing of fasteners[d, e]						
$^1/_2$ inch diameter lag screw with $^{15}/_{32}$ inch maximum sheathing[a]	30	23	18	15	13	11	10
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing	36	36	34	29	24	21	19
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing and $^1/_2$ inch stacked washers[b, h]	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479kPa.

a. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be $^1/_2$″.

c. Ledgers shall be flashed to prevent water from contacting the house band joist.

d. Lag screws and bolts shall be staggered in accordance with Section R502.2.2.1.1.

e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No.2 grade lumber, or other approved materials as established by standard engineering practice.

f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1 inch thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.

g. A minimum 1 × $9^1/_2$ Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.

h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

International Residential Code

R502.2.2.3 Deck lateral load connection.

The lateral load connection required by Section R502.2.2 shall be permitted to be in accordance with FigureR502.2.2.3. Hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds.

International Residential Code

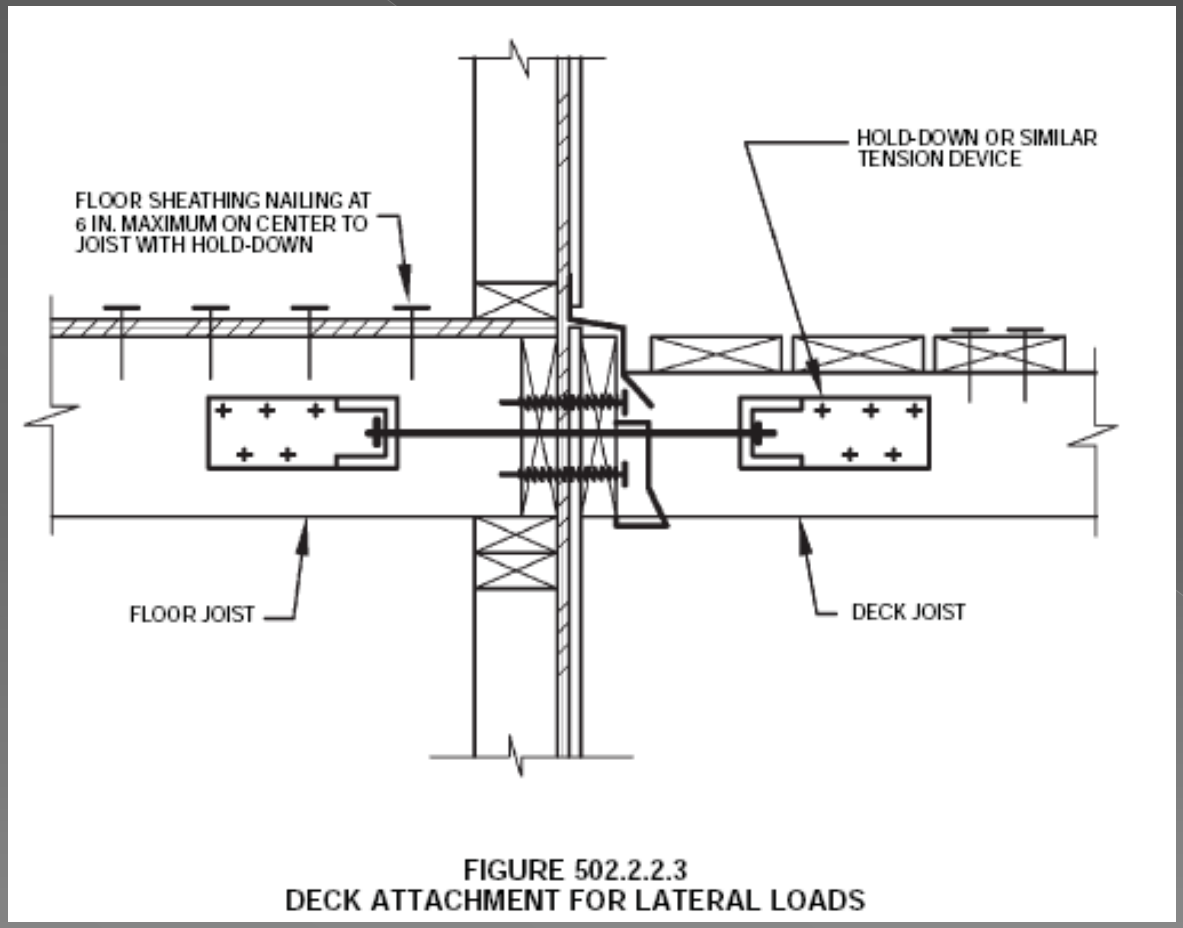
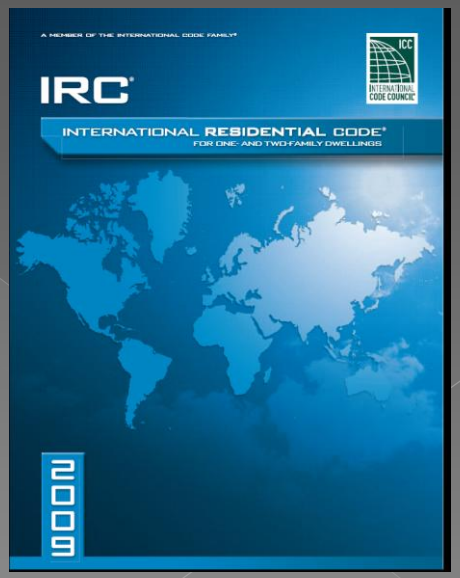


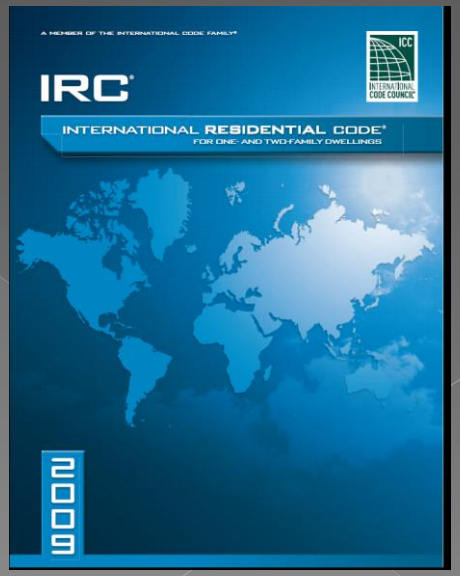
FIGURE 502.2.2.3
DECK ATTACHMENT FOR LATERAL LOADS



International Residential Code

R311.7.7.3 Grip Size handrails

All required handrails shall be of one of the following types or provide equivalent graspability. TYPE I/OR TYPE II



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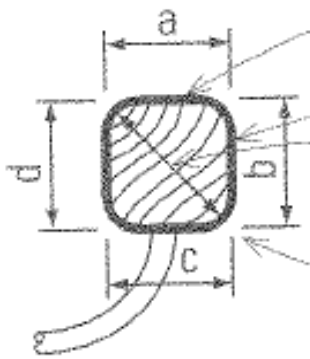
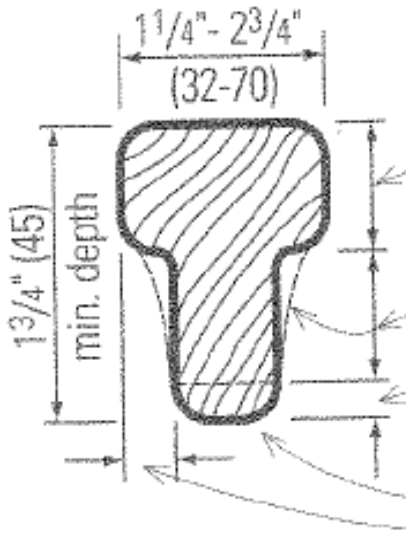


Type I Non-circular handrail

- 4" (102) minimum perimeter dimension (a + b + c + d)
- 6 1/4" (160) maximum perimeter dimension (a + b + c + d)
- 2 1/4" (57) maximum diagonal dimension
- Minimum radius of 0.01" (0.25)



Type II Non-circular handrail

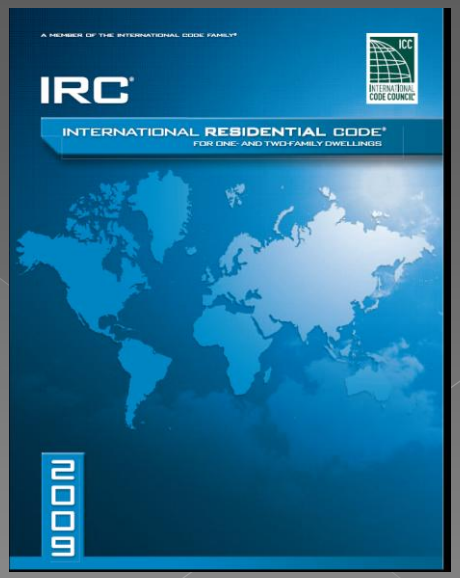
[handrail perimeter > 6 1/4" (160)]

- 3/4" (19) maximum to top of finer recess from top of rail
- 7/8" (22) maximum distance to achieve finger recess depth
- 3/8" (10) minimum vertical extension below finger recess
- 0.01" (0.25) minimum radius
- 5/16" (8) graspable finger recess [both sides]

International Residential Code

R312.1 Guardrails Where required

Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade below at any point within 36 inches horizontally to the edge of the open side. Insect screening shall not be considered as a guard.



International Residential Code

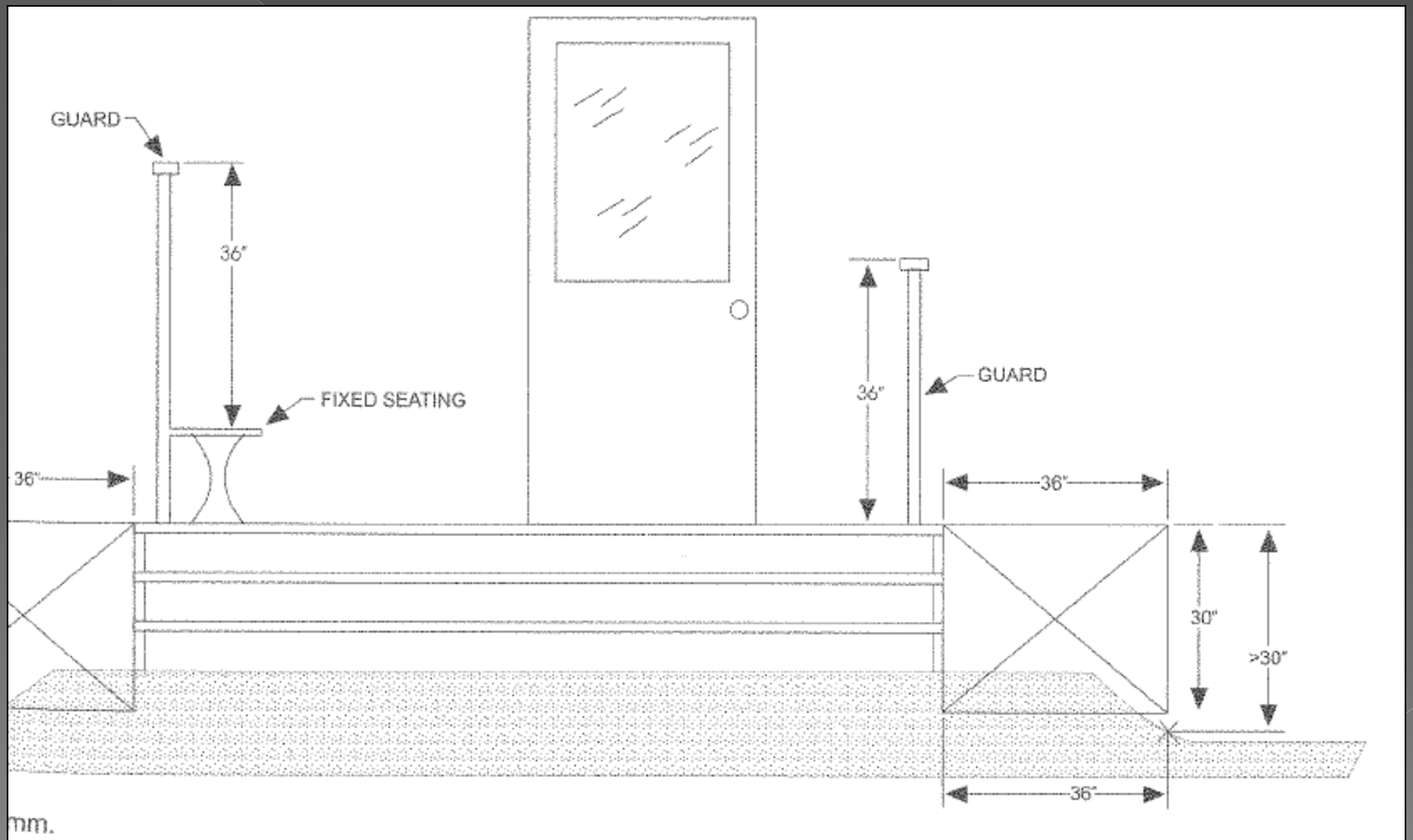


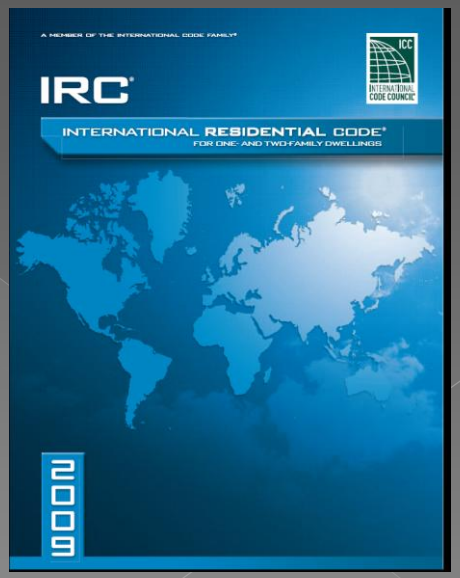
Figure R312.1
DROP OFF AND GUARD HEIGHT REQUIREMENTS

International Residential Code

R313.1 Townhouse Fire Sprinkler System

An automatic residential fire sprinkler system shall be installed in townhouses.

Montgomery County as a part of the adoption of the 2009 International Residential Code has deleted the requirement for automatic residential fire sprinklers in single family dwellings.

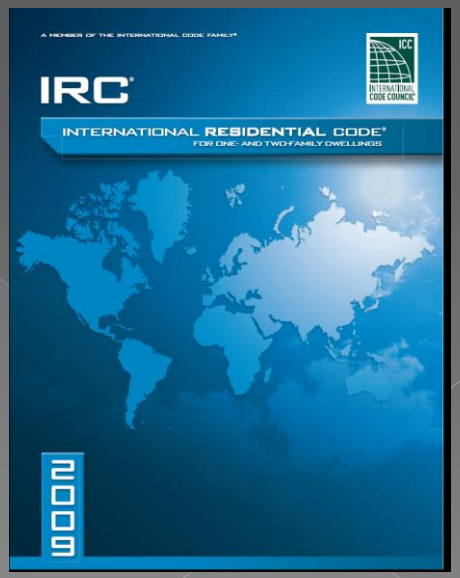


International Residential Code

R315.1 Carbon Monoxide Alarms

For new construction, an approved carbon monoxide alarm shall be installed outside of each sleeping area in the immediate vicinity of the bedrooms in dwelling units within which fuel-fired appliances are installed and in dwelling units that have attached garages.

Carbon monoxide alarms must Comply with UL 2034



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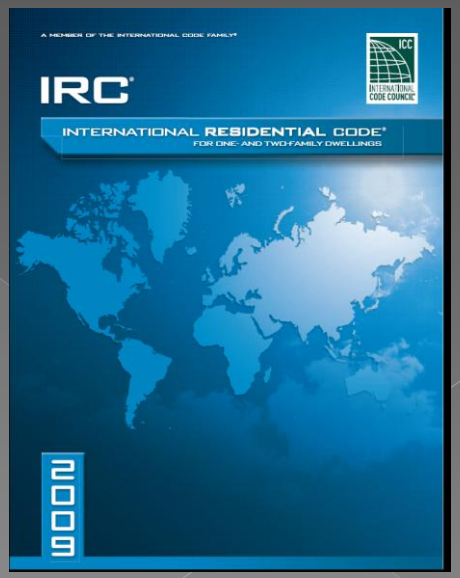
R315.2 Where required in existing dwellings

Where work requiring a permit occurs in existing dwellings that have attached garages or in existing dwellings within which fuel-fired appliances exist, carbon monoxide alarms shall be provided in accordance with section R315.1



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R316 Foam Plastic

R316.5.2 Roofing. The thermal barrier specified in Section R316.4 is not required when the foam plastic in a roof assembly or under a roof covering is installed in accordance with the code and the manufacturer's installation instructions and is separated from the interior of the building by tongue-and-groove wood planks or wood structural panel sheathing in accordance with Section R803, not less than 15/32 inch (11.9 mm) thick bonded with exterior glue and identified as Exposure 1, with edges supported by blocking or tongue-and-groove joints or an equivalent material. The smoke-developed index for roof applications shall not be limited.

International Residential Code

R316.5.3 Attics.
The thermal barrier specified in Section
R316.4 is not required where all of the following apply:
1. *Attic access is required by Section R807.1.*
2. The space is entered only for purposes of repairs or maintenance.
3. The foam plastic insulation is protected against ignition using one of the following ignition barrier materials:
    - 3.1. 11/2-inch-thick (38 mm) mineral fiber insulation;
    - 3.2. 1/4-inch-thick (6.4 mm) wood structural panels;
    - 3.3. 3/8-inch (9.5 mm) particleboard;
    - 3.4. 1/4-inch (6.4 mm) hardboard;
    - 3.5. 3/8-inch (9.5 mm) gypsum board; or
    - 3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

The above ignition barrier is not required where the foam plastic insulation has been tested in accordance with Section R316.6. PLEASE REFER TO ESR PRODUCT REPORT.

International Residential Code

R316.5.4 Crawl spaces. The thermal barrier specified in Section R316.4 is not required where all of the following apply:

1. Crawlspace access is required by Section R408.4
2. Entry is made only for purposes of repairs or maintenance.
3. The foam plastic insulation is protected against ignition using one of the following ignition barrier materials:
    - 3.1. 11/2-inch-thick (38 mm) mineral fiber insulation;
    - 3.2. 1/4-inch-thick (6.4 mm) wood structural panels;
    - 3.3. 3/8-inch (9.5 mm) particleboard;
    - 3.4. 1/4-inch (6.4 mm) hardboard;
    - 3.5. 3/8-inch (9.5 mm) gypsum board; or
    - 3.6. Corrosion-resistant steel having a base metal thickness of 0.016 inch (0.406 mm).

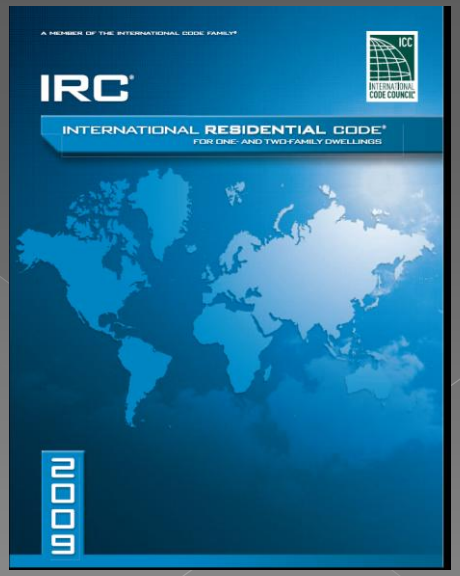
The above ignition barrier is not required where the foam plastic insulation has been tested in accordance with Section R316.6. PLEASE REFER TO THE ESR PRODUCT REPORT.

International Residential Code

R317.1.5 Wood Decay Protection

Exposed Glue-laminated wood, if not protected by a roof or eave, must be preservative-treated

See www.awpa.com for more information

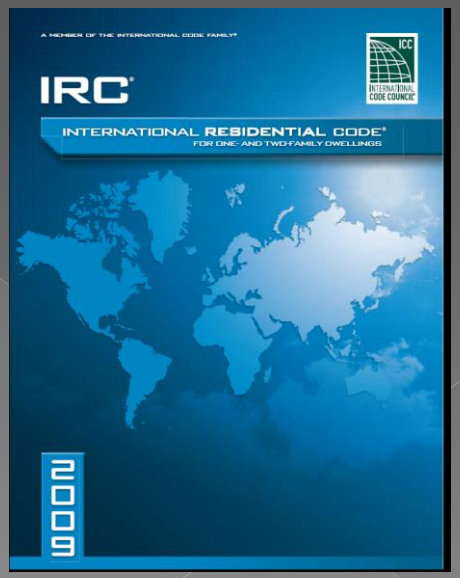


International Residential Code

R317.3.1 Fasteners for preservative-treated wood

Fasteners for preservative-treated wood shall be hot dipped zinc-coated galvanized steel, stainless steel, silicon bronze or copper. Coating types and weights for connectors in contact with preservative-treated wood shall be in accordance with connectors manufacturer's recommendations.

In the absence of manufacturer's recommendation, a minimum of ASTM A 653 type G185 zinc-coated galvanized steel, or equivalent, shall be used.



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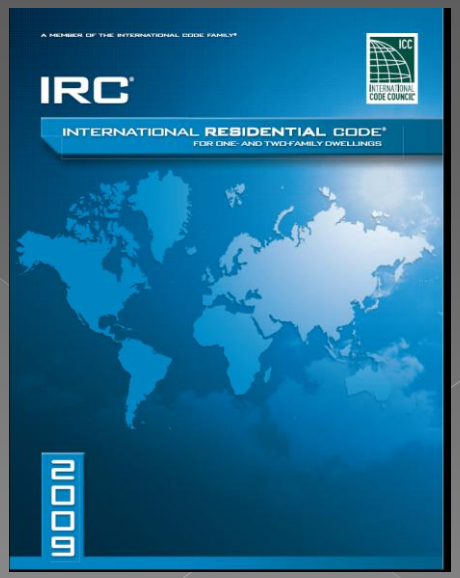
R317.4 Wood/Plastic Composites

Wood/Plastic composites used in exterior deck boards, stair treads, handrails and guardrail systems shall bear a label indicating the required performance levels & demonstrating compliance with the provisions of ASTM D 7032

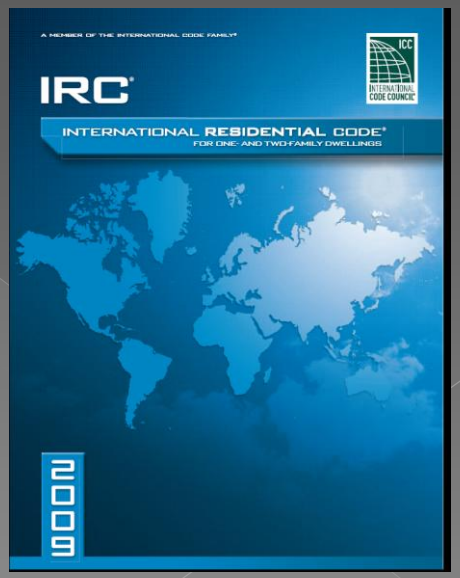


International Residential Code

MONTGOMERY COUNTY
TENNESSEE

R319.1 Site Address Number

Numbers shall be a minimum of 4 inches high with a minimum stroke width of 1/2 inch. Where access is by means of a private road and the building address cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.



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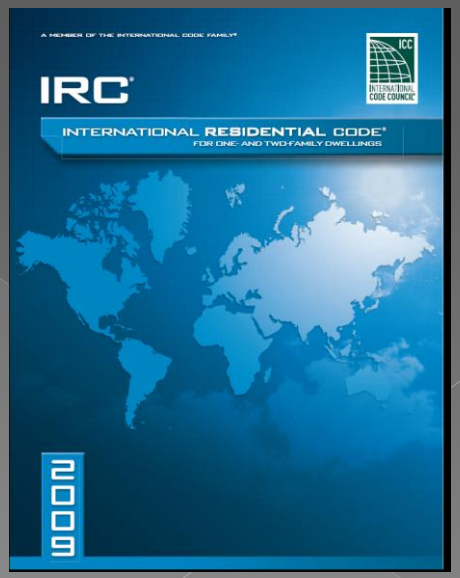
R323.1 Storm Shelters

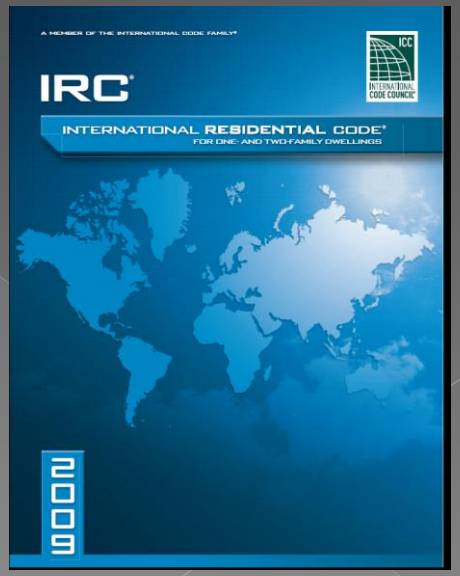
This section applies to the construction of storm shelters when constructed as a separate detached buildings or when constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as tornados and hurricanes. In addition to other applicable requirements in this code, storm shelters shall be constructed in accordance with ICC/NSSA-500.



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 4
FOUNDATIONS

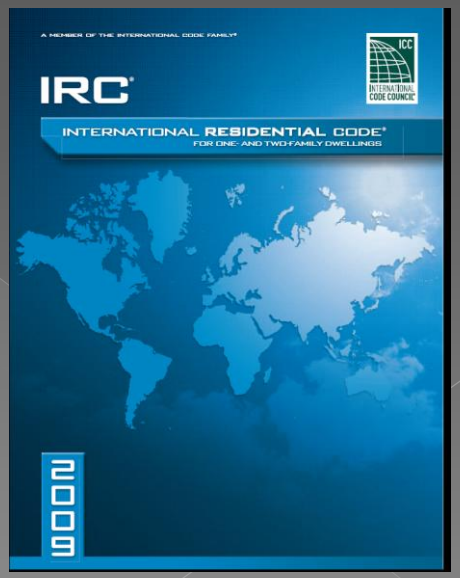


International Residential Code

R401.3 Drainage

For surface drainage , grade needs to be a minimum of 6 inches fall within the first 10 feet(few exceptions) Swales shall be sloped a minimum of 2% when located within 10 feet of the building foundation.

Exception: Where lot lines, walls, slopes or other physical barriers prohibit 6 inches of fall within 10 feet, drains, or swales shall be constructed to ensure drainage away from the structure. Impervious surfaces within 10 feet of the building foundation shall be sloped a minimum of 2 percent away from the building.



International Residential Code

R403.1.6 Foundation anchorage

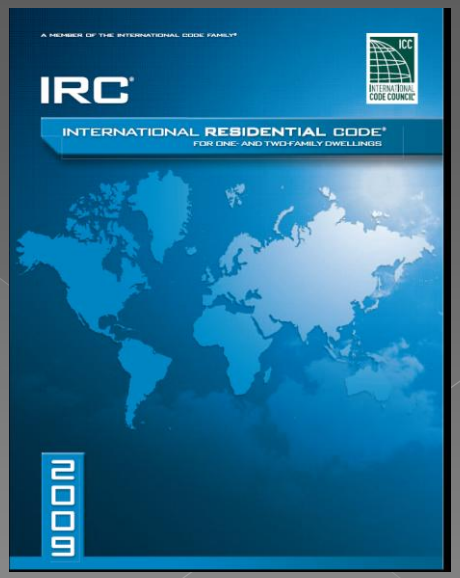
Bolts shall be at least 1/2 inch in diameter and shall extend a minimum of 7 inches into concrete or grouted cells of concrete masonry units. There shall be a bolt every 6 feet on center. There shall be a minimum of 2 bolts per plate section with one bolt located not more than 12 inches maximum or less than 3 1/2 inches from each end of the plate section.

(EXCEPTIONS) Walls 24 inches 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 per figure R602.10.5 at corners.

International Residential Code

Exceptions:

1. Foundation anchorage, spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts.
2. Walls 24 inches (610 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 at corners as shown in Figure* R602.10.4.4(1).
3. Connection of walls 12 inches (305 mm) total length or shorter connecting offset *braced wall panels to the foundation without anchor bolts shall* be permitted. The wall shall be attached to adjacent *braced wall panels at corners as shown in Figure* R602.10.4.4(1).



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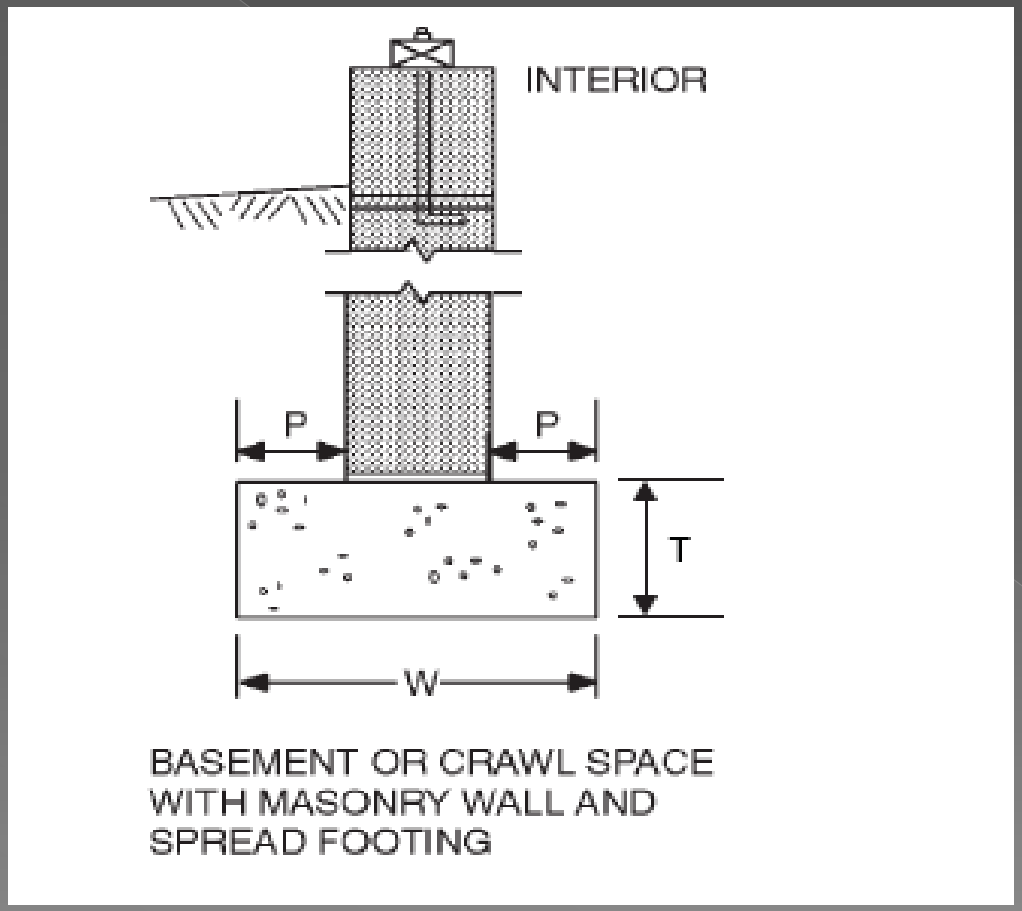

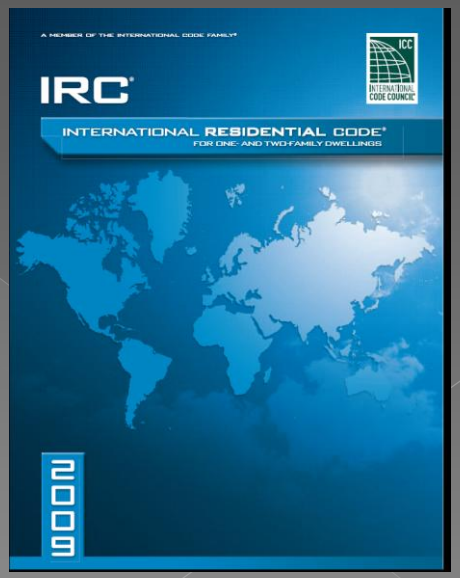

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R403.1.6.1 Foundation Anchorage in seismic zone D(o),D(1),D(2) and wood light-framed townhouses in SDC "C"

Plate washers conforming to section R602.11.1 shall be provided for all anchor bolts over the full length of required braced wall lines. Properly sized cut washers shall be permitted for anchor bolts in wall lines not containing braced wall panels.
2. Maximum anchor bolt spacing shall be 4 feet on center for buildings over two stories in height.

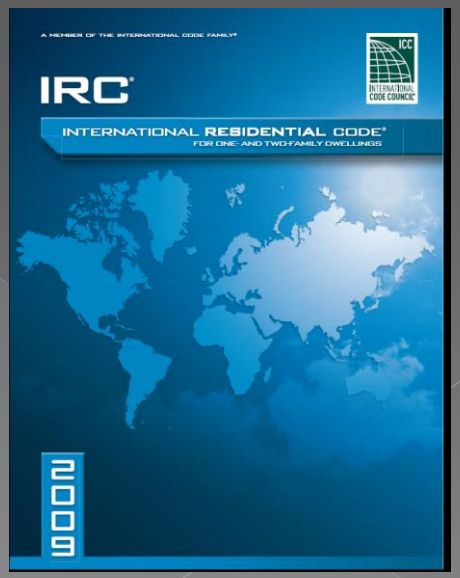

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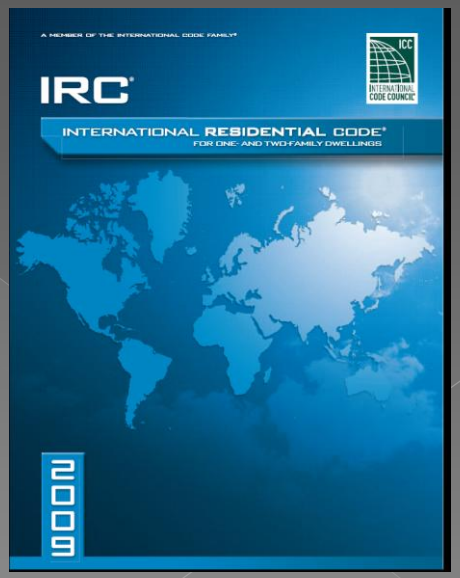
Plate washers shall be a minimum of 0.229 inch thick by 3 inches by 3 inches in size, shall be installed between the foundation sill plate and the nut. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16 inch larger than the bolt diameter and a slot length not to exceed 1 3/4 inches provided a standard cut washer is placed between the plate washer and the nut.



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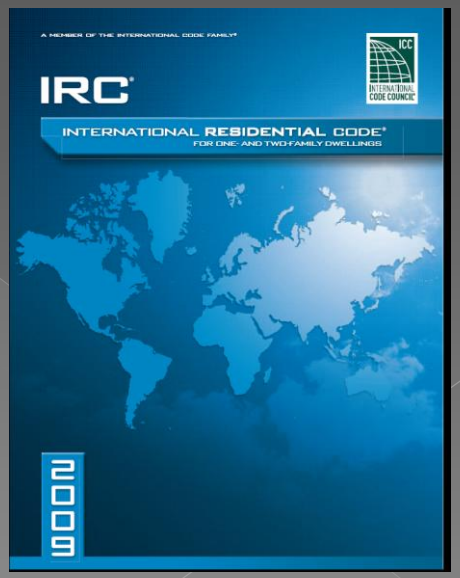
R403.1.8 Foundations on Expansive soils

Foundations and floor slabs for buildings located on expansive soils shall be designed in accordance with section 1805.8 of the INTERNATIONAL BUILDING CODE



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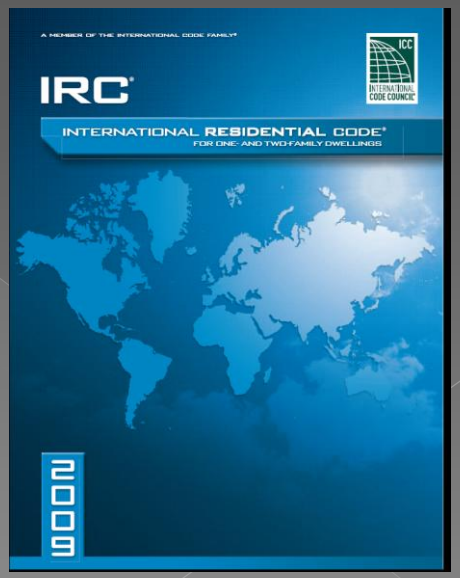
R404.4 Retaining walls

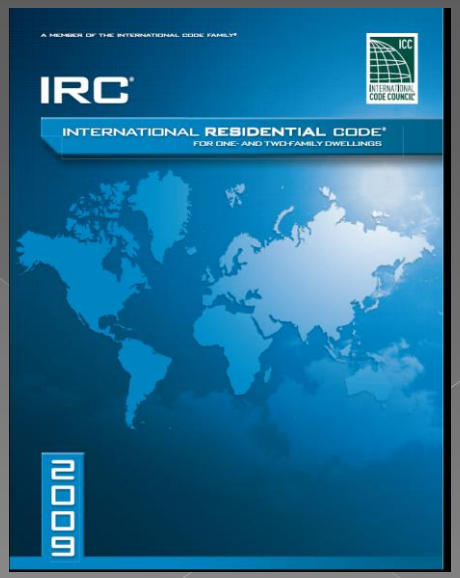
If a wall is not laterally supported at the top and retains in excess of 24 inches of unbalanced fill, it must be designed for a safety factor of 1.5 against lateral sliding and overturning.



International Residential Code

R405
FOUNDATION DRAINAGE

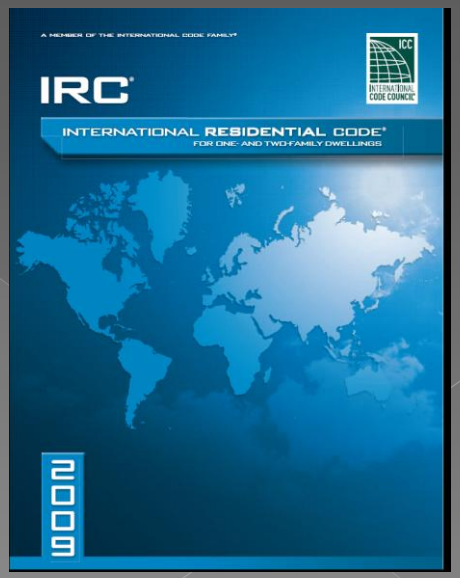
R405.1 Concrete or masonry foundations. Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below *grade*. *Drainage tiles, gravel or crushed stone drains,* perforated pipe or other *approved systems or materials shall be* installed at or below the area to be protected and shall discharge by gravity or mechanical means into an *approved drainage* system.



International Residential Code

R405
FOUNDATION DRAINAGE

Gravel or crushed stone drains shall extend at least 1 foot (305 mm) beyond the outside edge of the footing and 6 inches (152 mm) above the top of the footing and be covered with an *approved filter membrane material. The top of open joints of* drain tiles shall be protected with strips of building paper, and the drainage tiles or perforated pipe shall be placed on a minimum of 2 inches (51 mm) of washed gravel or crushed rock at least one sieve size larger than the tile joint opening or perforation
and covered with not less than 6 inches (152 mm) of the same material.

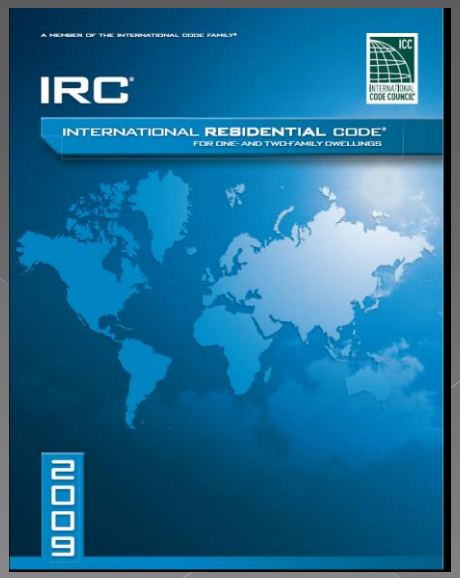


International Residential Code

R405 FOUNDATION DRAINAGE

The size of the drain pipe is located in Chapter 33 STORM DRAINAGE.

P3302.1 Subsoil drains.
Subsoil drains shall be open-jointed, horizontally split or perforated pipe conforming to one of the standards listed in Table P3302.1 Such drains shall not be less than 4 inches (102 mm) in diameter. Where the building is subject to backwater, the subsoil drain shall be protected by an accessibly located backwater valve. Subsoil drains shall discharge to a trapped area drain, sump, dry well or *approved location* above ground. The subsoil sump shall not be required to have either a gas-tight cover or a vent. The sump and pumping system shall comply with Section P3303.



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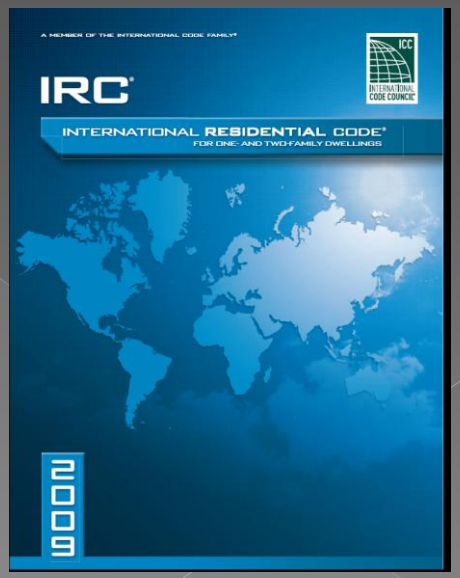
P3303 SUMPS AND PUMPING SYSTEMS

P3303 contains detailed requirements for sump pit and pumping systems for use in crawlspaces and basement applications on subsoil drains.



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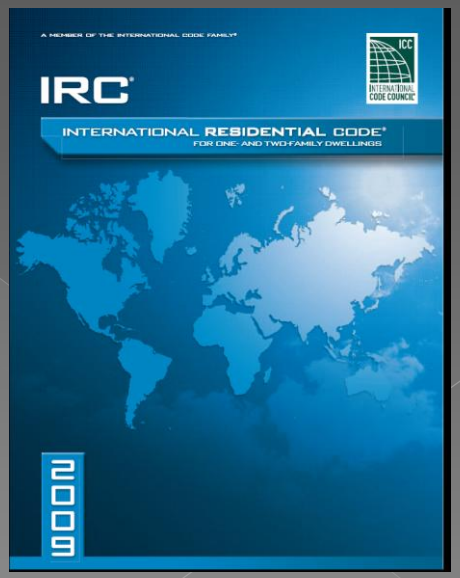
R406.1,R406.2 Foundation damp proofing & waterproofing

BIG CHANGE

Not just "habitable" spaces anymore. This includes crawl spaces.

Damp proofing and waterproofing of concrete and masonry foundations required for all interior and below grade spaces (materials may be applied directly to the masonry substrate)



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R408.3 Unvented crawl space

Exposed earth is covered with a continuous vapor retarder. Joints of the vapor retarder shall overlap by 6 inches and shall be sealed or taped. The edge of the vapor retarder shall extend at least 6 inches up the stem wall and shall be attached and sealed to the stem wall; and one of the following two must also be provided

1. Continuously operated mechanical exhaust ventilation at the rate equal to 1 cfm for each 50 square feet of crawl space, and an airway path to the common area, and perimeter walls insulated in accordance with section N1102.2.8
2. Conditioned air supply sized to deliver at a rate equal to 1 cfm for each 50 square feet of crawl space, including a return air pathway to the common area, and perimeter walls insulated in accordance with section N1102.2.8 3. Plenum complying with section M1601.4, if under floor space is used as a plenum.

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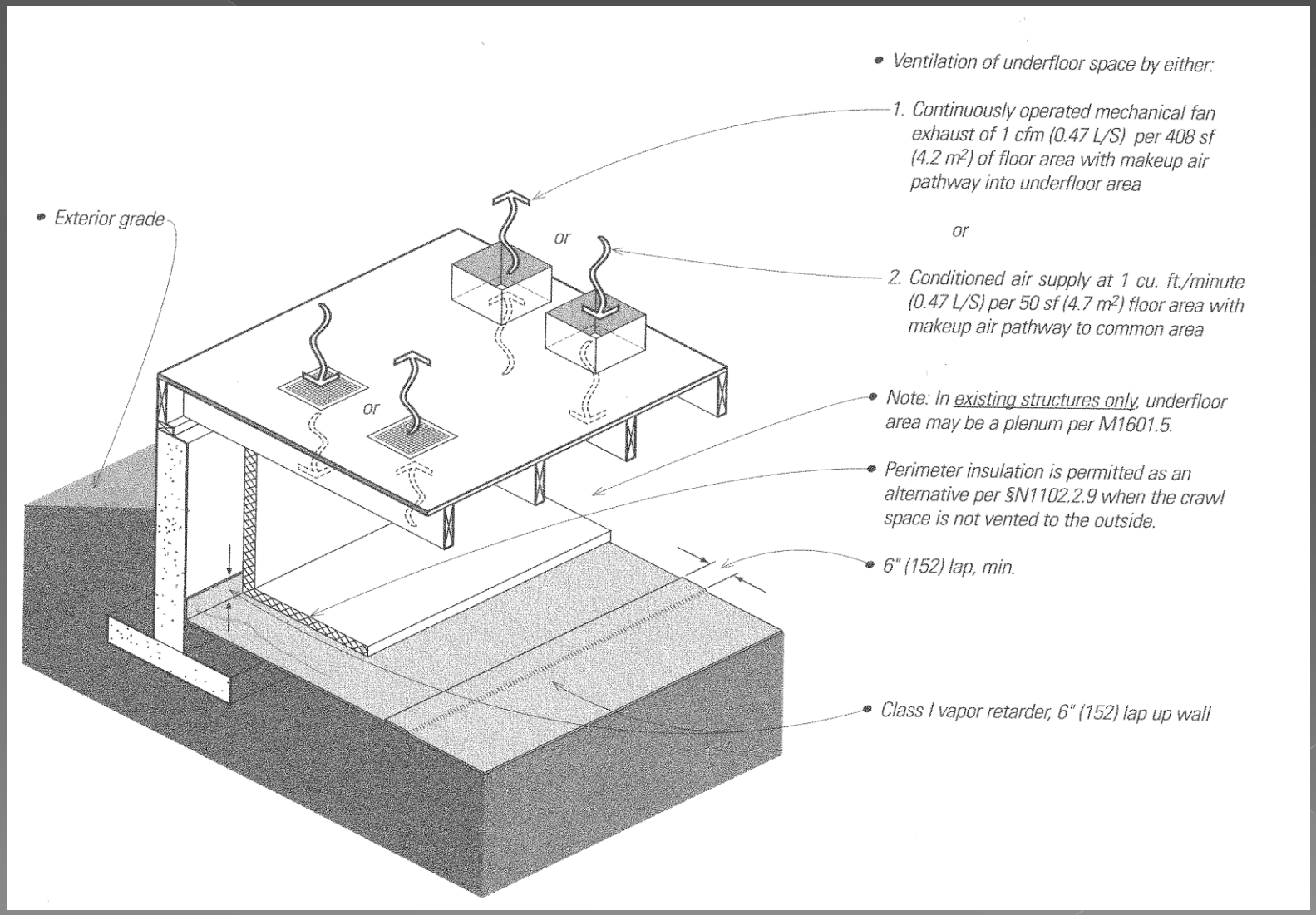

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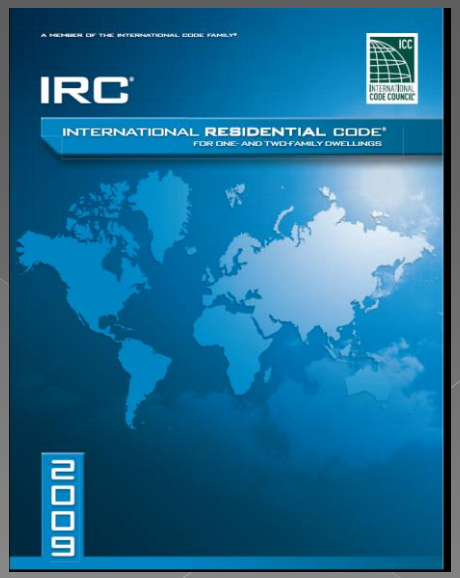
R502.2.1 & R602.10.8 Framing at Braced wall lines & connections

Adds cross-reference between Chapter 5 & Chapter6

A load path for lateral force required between floor framing and braced wall panels located above of below floor.

CONNECTIONS:

1. Where joists are perpendicular to braced wall lines above, blocking needs to be under and in line with the braced wall panels.
2. Where joists are perpendicular to braced wall lines below, blocking needs to be over and in line with the braced wall panels.
3. Where joists are parallel to braced wall lines above or below, a rim joist or other parallel framing member is required at the wall.



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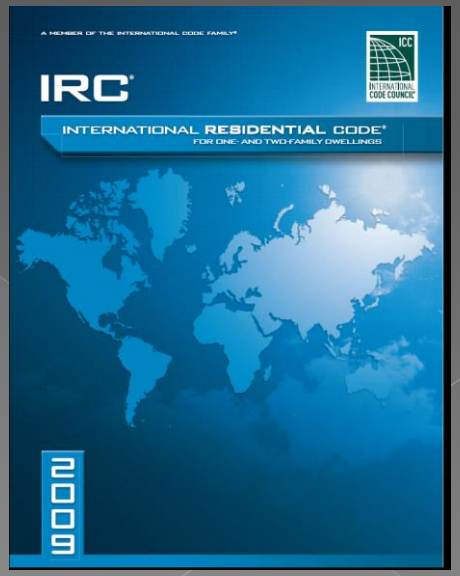
MONTGOMERY COUNTY
TENNESSEE

CHAPTER 5
FLOORS



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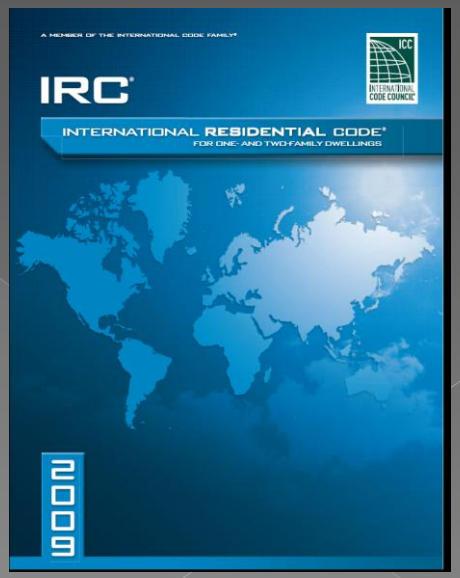
R502.2.2.1 & Table 502.2.2.1 Table Deck Ledger Addition: Prescriptive methods for securely attaching a wood deck to the dwelling structure are now included in the IRC.



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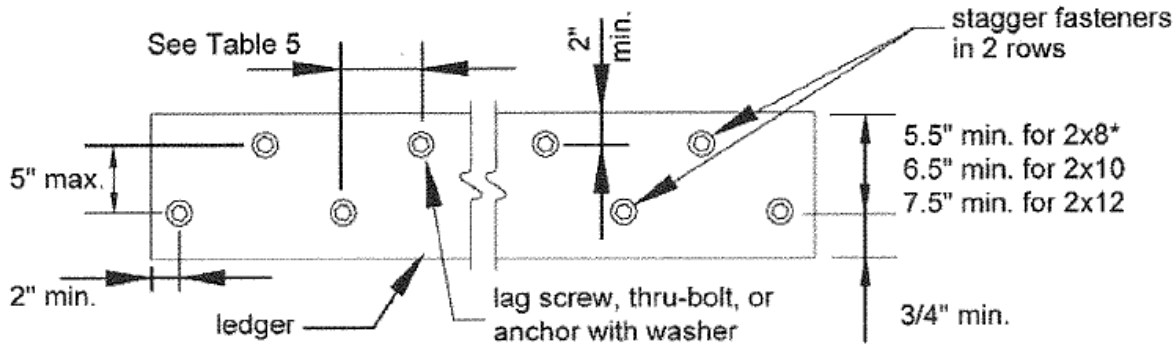
R502.2.2.1 prescribes support specifications for deck ledger connections to band joist & all lag screws, bolts & washers shall be hot-dipped galvanized or stainless steel.
R502.2.2.1.1 Lag screws or bolts shall be placed 2 inches from the bottom or top of the deck ledgers & between 2-5 inches from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.
R502.2.2.2 deck ledger connections not conforming to table R502.2.2.1 shall be designed in accordance with accepted engineering practice. DECK LEDGERS SHALL NOT BE SUPPORTED ON STONE OR MASONRY VENEER.
R502.2.2.3 the lateral load connection required by section R502.2.2 shall be permitted to be in accordance with figureR502.2.2.3.

International Residential Code

Figure 19: Ledger Board Fastener Spacing and Clearances



See Figure 14 for rim joist fastener spacing

*Distance can be reduced to 4.5" if lag screws are used or bolt spacing is reduced to that of lag screws to attach 2x8 ledgers to 2x8 band joists (1/2" stacked washers not permitted)

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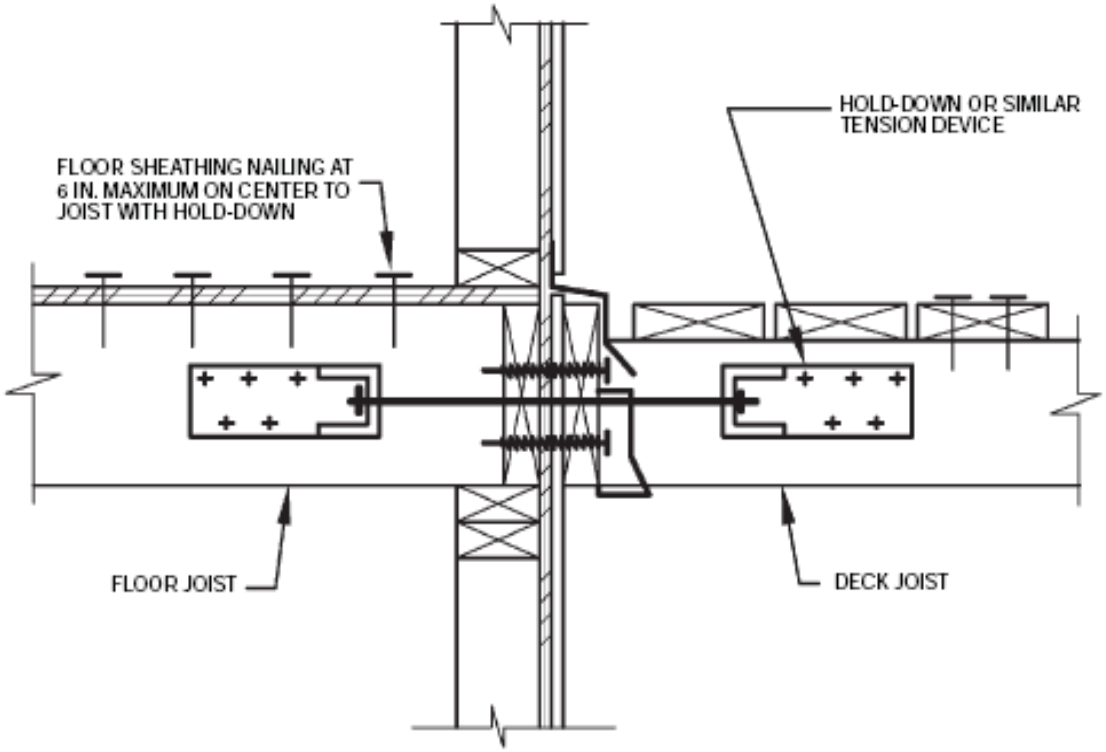

For SI: 1 inch = 25.4 mm.

FIGURE 502.2.2.3
DECK ATTACHMENT FOR LATERAL LOADS

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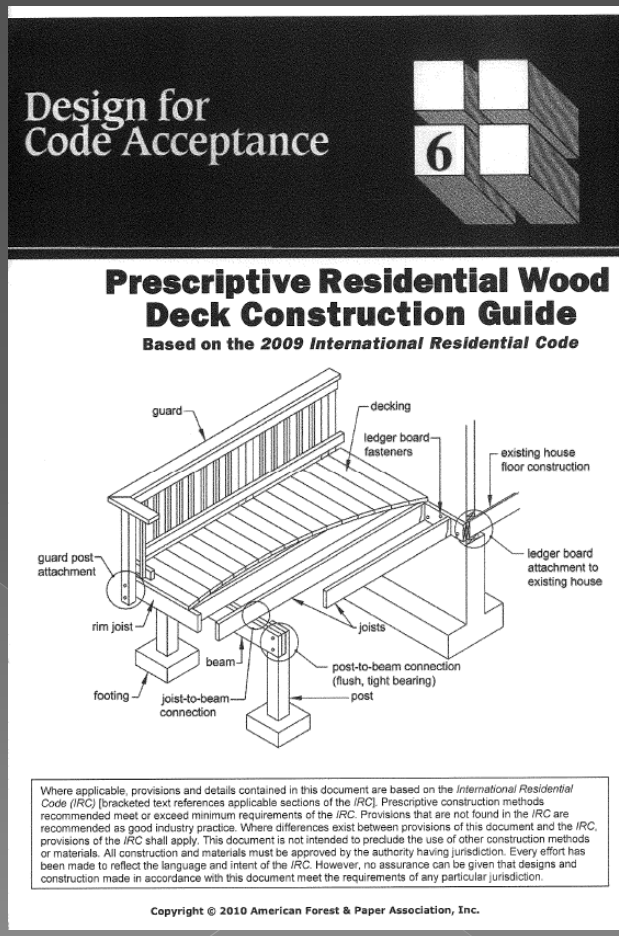
For Prescriptive Residential wood deck construction Guide go to web site: http://www.awc.org/Publications/DCA/DCA6/DCA6-09.pdf



Design for Code Acceptance 6

Prescriptive Residential Wood Deck Construction Guide

Based on the *2009 International Residential Code*

Where applicable, provisions and details contained in this document are based on the *International Residential Code (IRC)* [bracketed text references applicable sections of the *IRC*]. Prescriptive construction methods recommended meet or exceed minimum requirements of the *IRC*. Provisions that are not found in the *IRC* are recommended as good industry practice. Where differences exist between provisions of this document and the *IRC*, provisions of the *IRC* shall apply. This document is not intended to preclude the use of other construction methods or materials. All construction and materials must be approved by the authority having jurisdiction. Every effort has been made to reflect the language and intent of the *IRC*. However, no assurance can be given that designs and construction made in accordance with this document meet the requirements of any particular jurisdiction.

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International Residential Code

Table R502.2.2.1 Fastener Spacing for deck ledgers

Table R502.2.2.1 now addresses the use lag screws and bolts and spacing between fasteners for Deck ledgers.

TABLE R502.2.2.1
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST[c, f, g]
(Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6′ and less	6′1″ to 8′	8′1″ to 10′	10′1″ to 12′	12′1″ to 14′	14′1″ to 16′	16′1″ to 18′
Connection details	On-center spacing of fasteners[d, e]						
$^1/_2$ inch diameter lag screw with $^{15}/_{32}$ inch maximum sheathing[a]	30	23	18	15	13	11	10
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing	36	36	34	29	24	21	19
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing and $^1/_2$ inch stacked washers[b, h]	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479kPa.

a. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be $^1/_2$″.

c. Ledgers shall be flashed to prevent water from contacting the house band joist.

d. Lag screws and bolts shall be staggered in accordance with Section R502.2.2.1.1.

e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No.2 grade lumber, or other approved materials as established by standard engineering practice.

f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1 inch thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.

g. A minimum 1 × $9^1/_2$ Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.

h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

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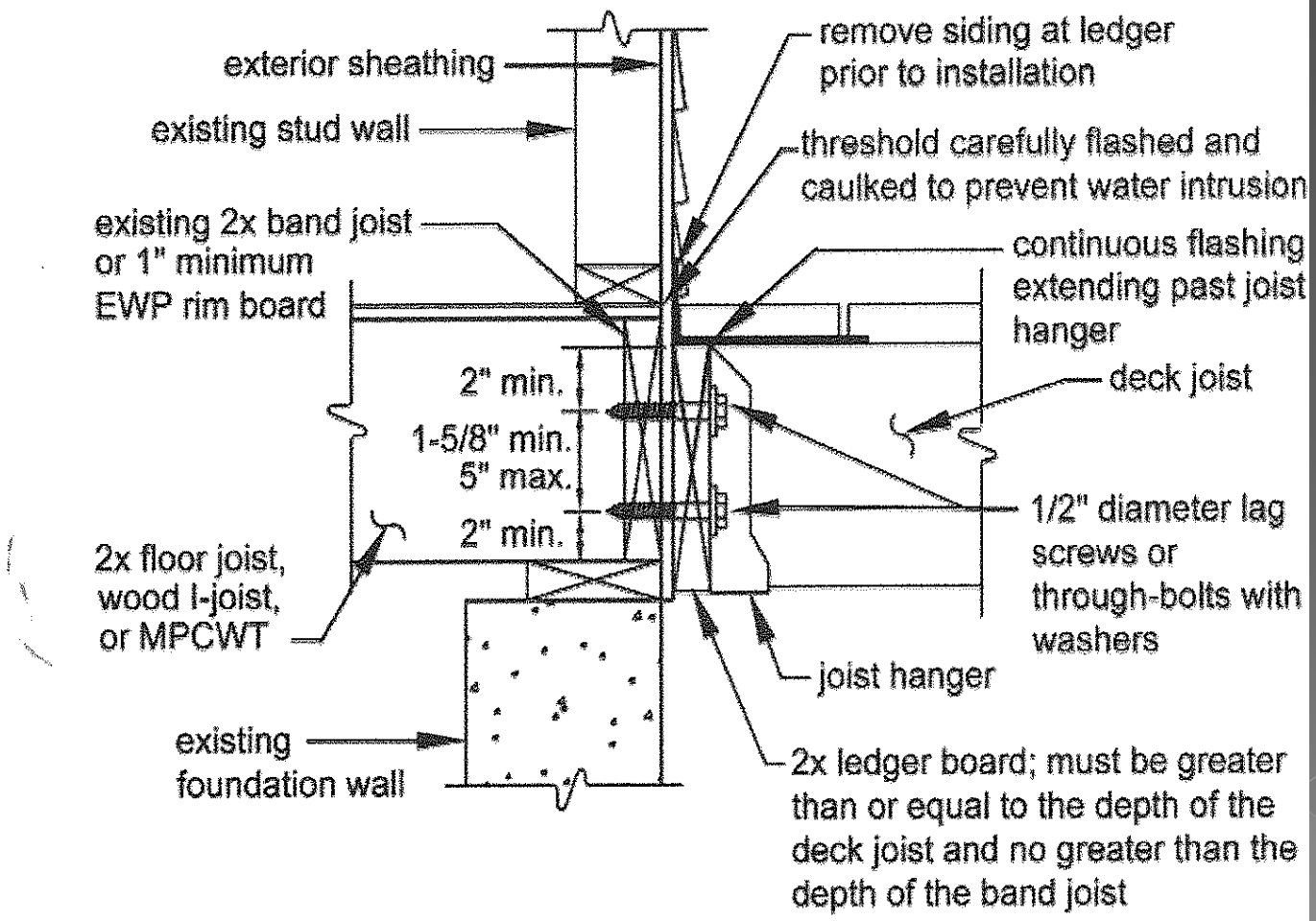
General Attachment of Ledger Board to Band Joist or Rim Board



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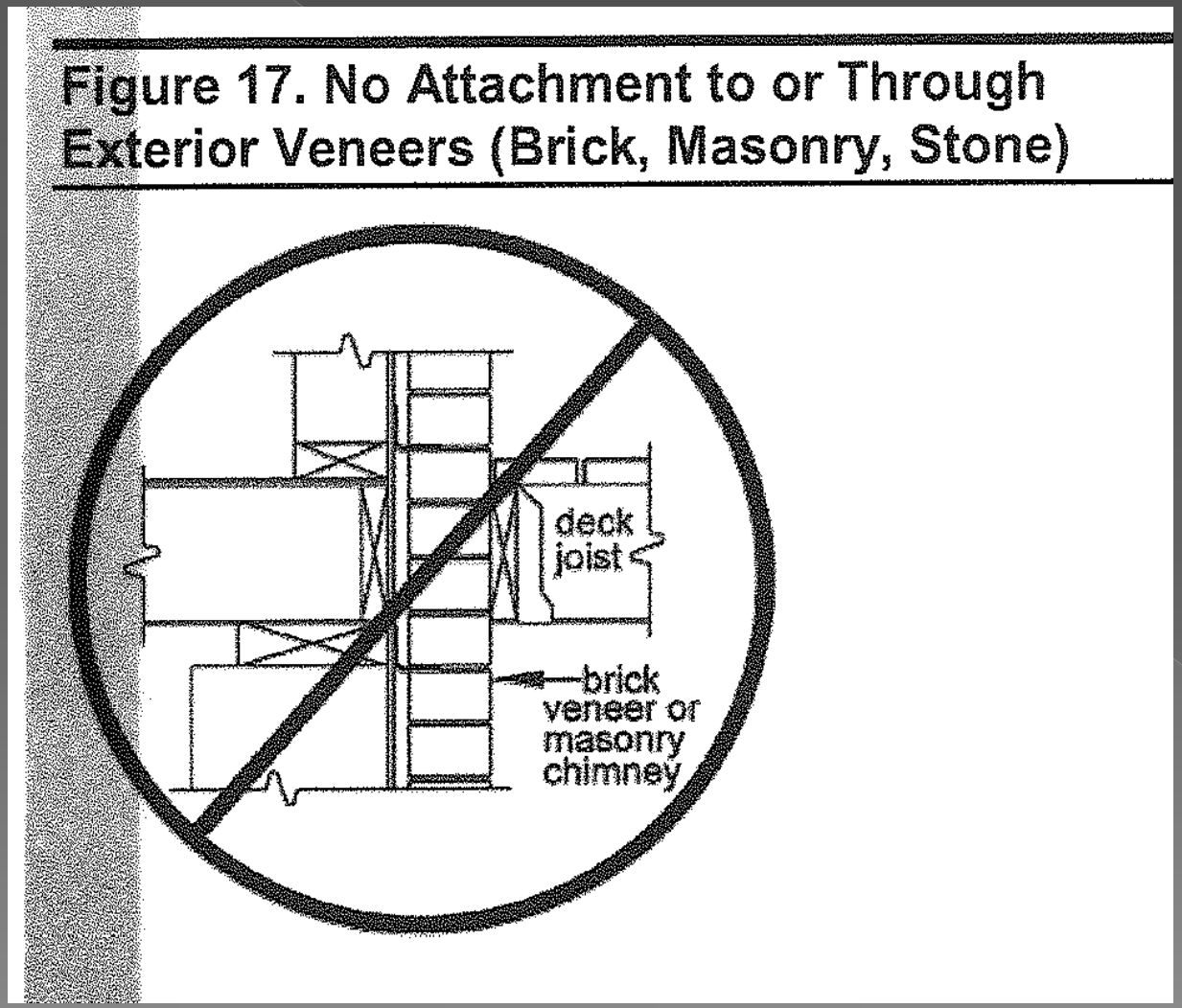

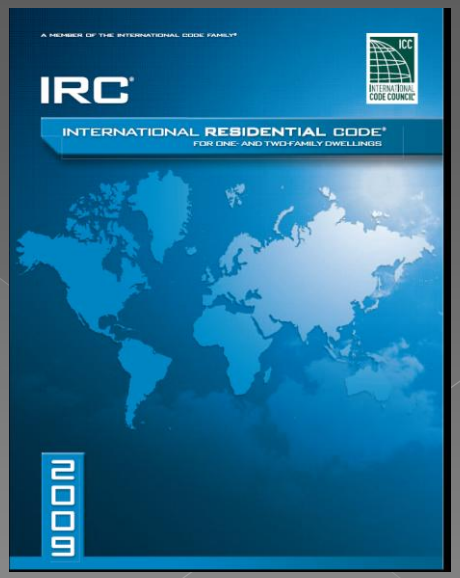

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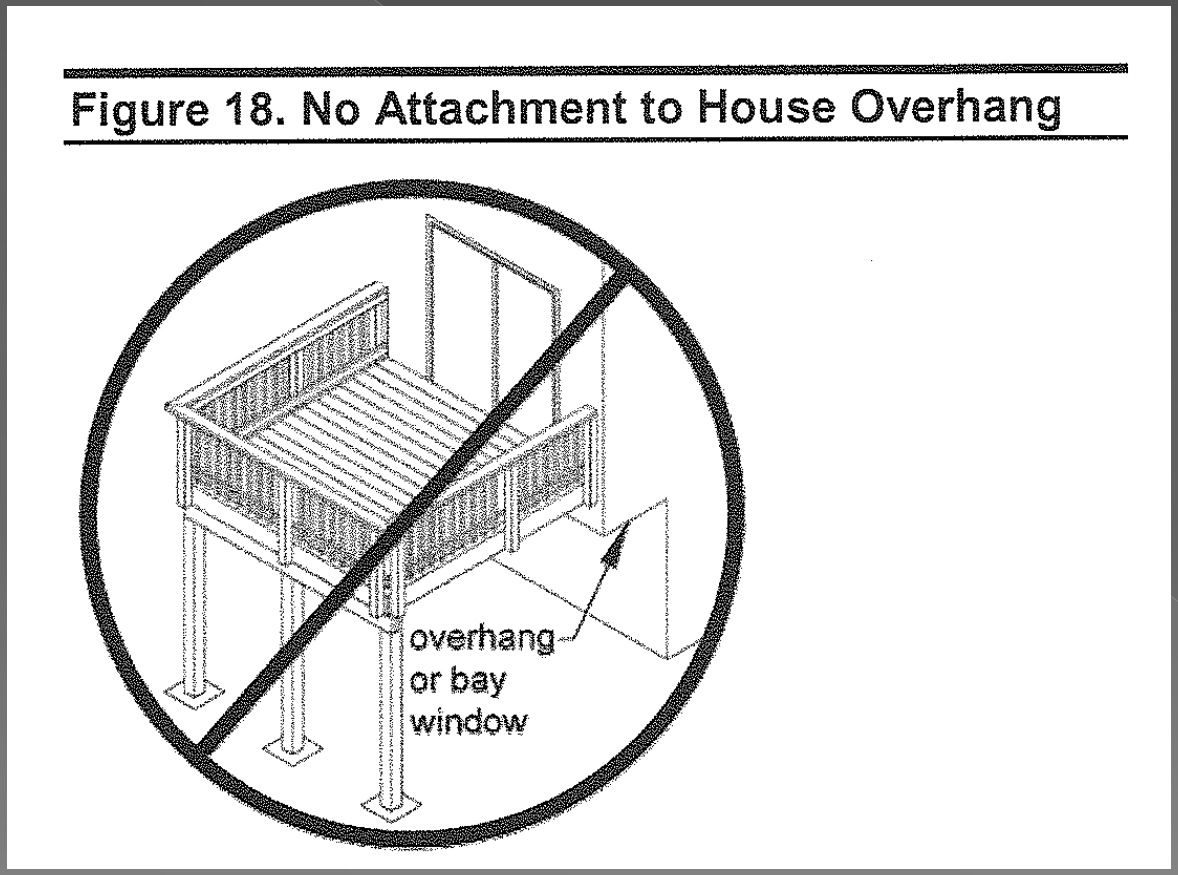
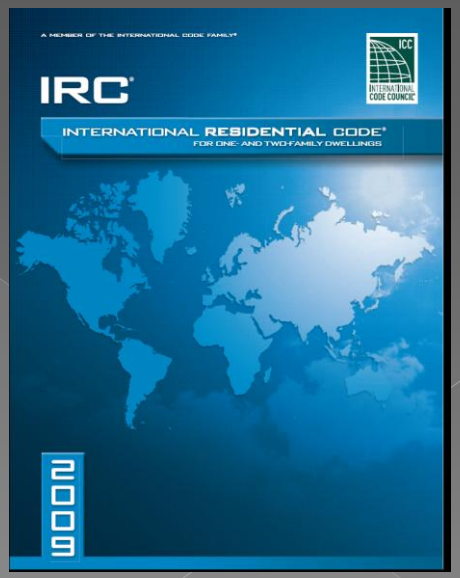
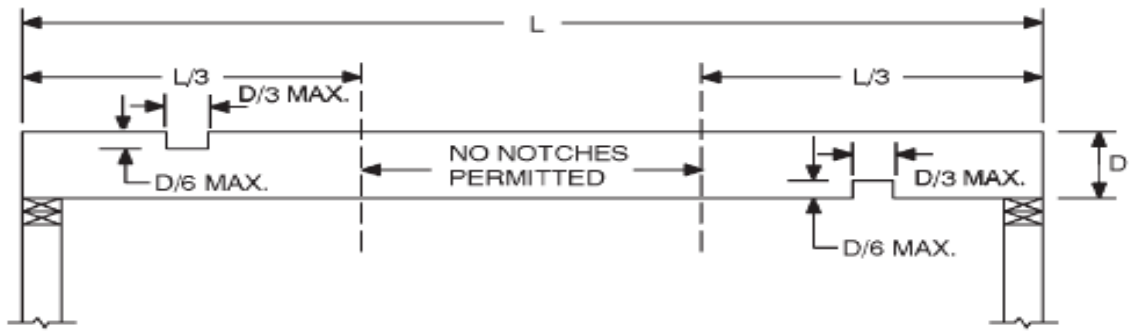




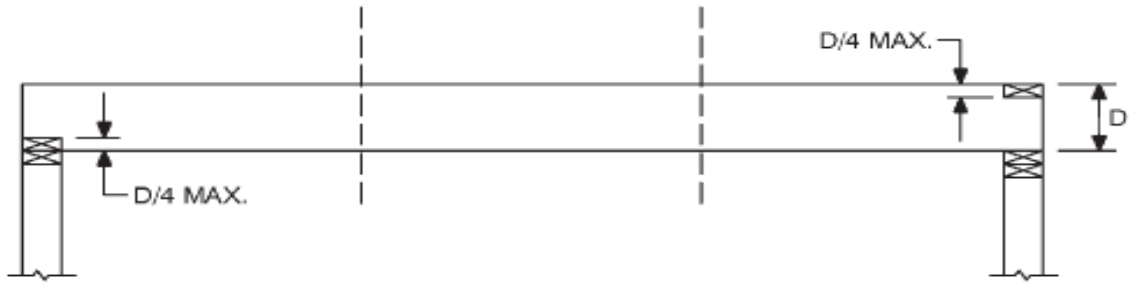
International Residential Code

R502.8 Notching

No notches in middle third of span
maximum notch length D/3 ,
Maximum notch depth D/6



FLOOR JOIST—CENTER CUTS



FLOOR JOIST—END CUTS

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R502.8 Boring

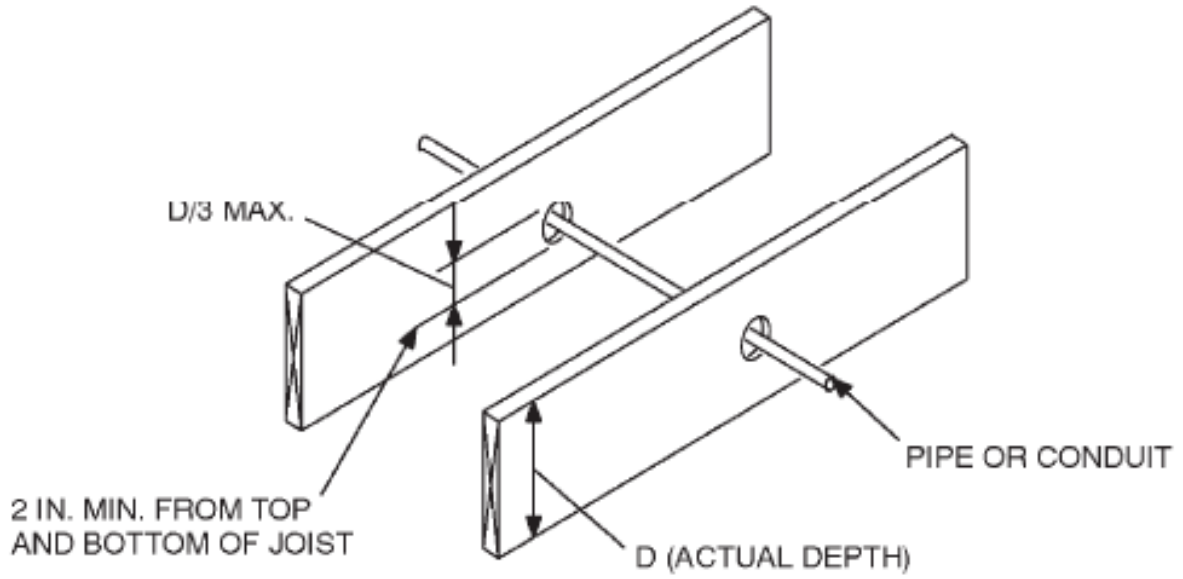
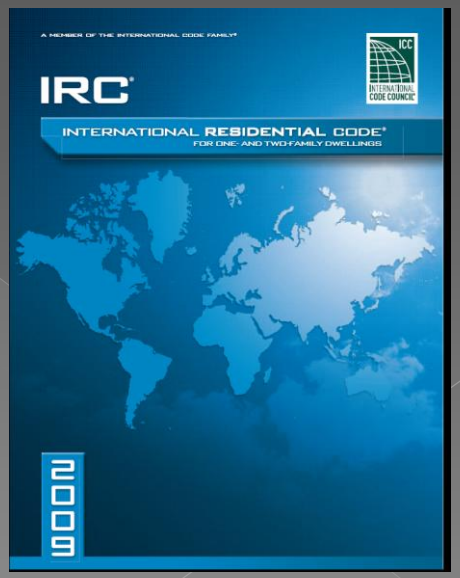


FIGURE R502.8
CUTTING, NOTCHING AND DRILLING



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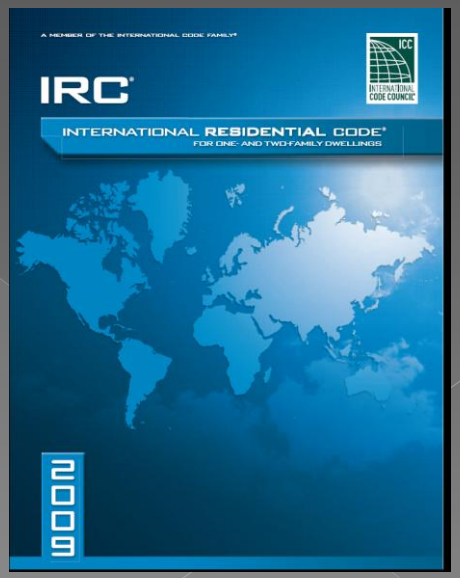
R502.8.2 Engineered wood products

Cuts, notches and holes bored in trusses, structural composite lumber, structural glue-laminated members or I-joists are prohibited except where permitted by the manufacture's recommendations or where the effects of such alterations are specifically considered in the design of the member by a registered design professional.



** Manufactures recommendations vary between brands**

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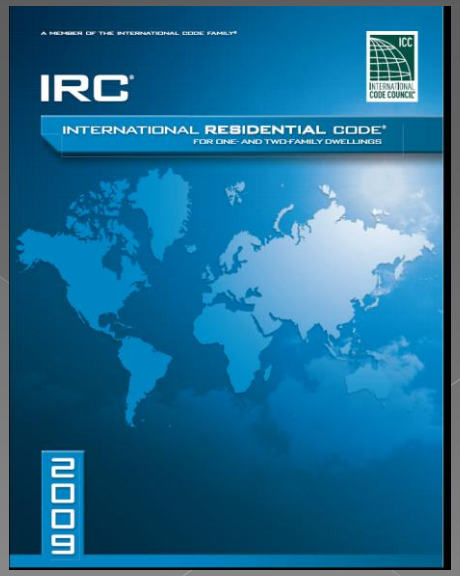
MONTGOMERY COUNTY
TENNESSEE

CHAPTER 6
WALL CONSTRUCTION



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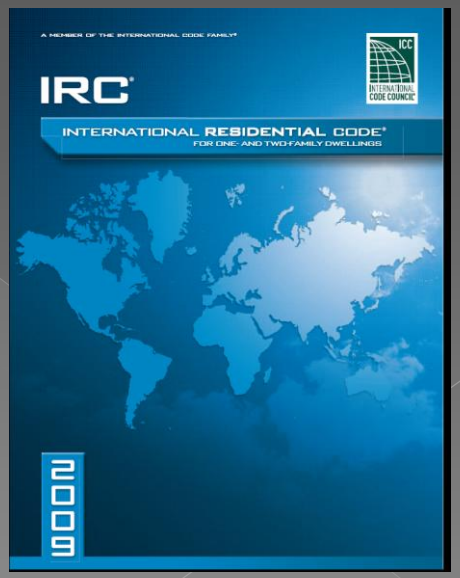
MONTGOMERY COUNTY
TENNESSEE

R602.3 Design & Construction

MAJOR CHANGE

Studs shall be continuous from support at the sole plate to a support at the top plate to resist loads perpendicular to the wall.



International Residential Code

R602.3 Design & Construction

COMMENTARY

The studs for exterior walls must be continuous From the support at the top, i.e., stacked framing That forms a "hinge" is not permitted. There is no prescriptive design in the code for stacked framing. Exterior wall framing that is stacked and forms a "hinge" must be engineered.

The exception for stud continuity of studs is for jack Studs, trimmer studs and cripple studs at openings.

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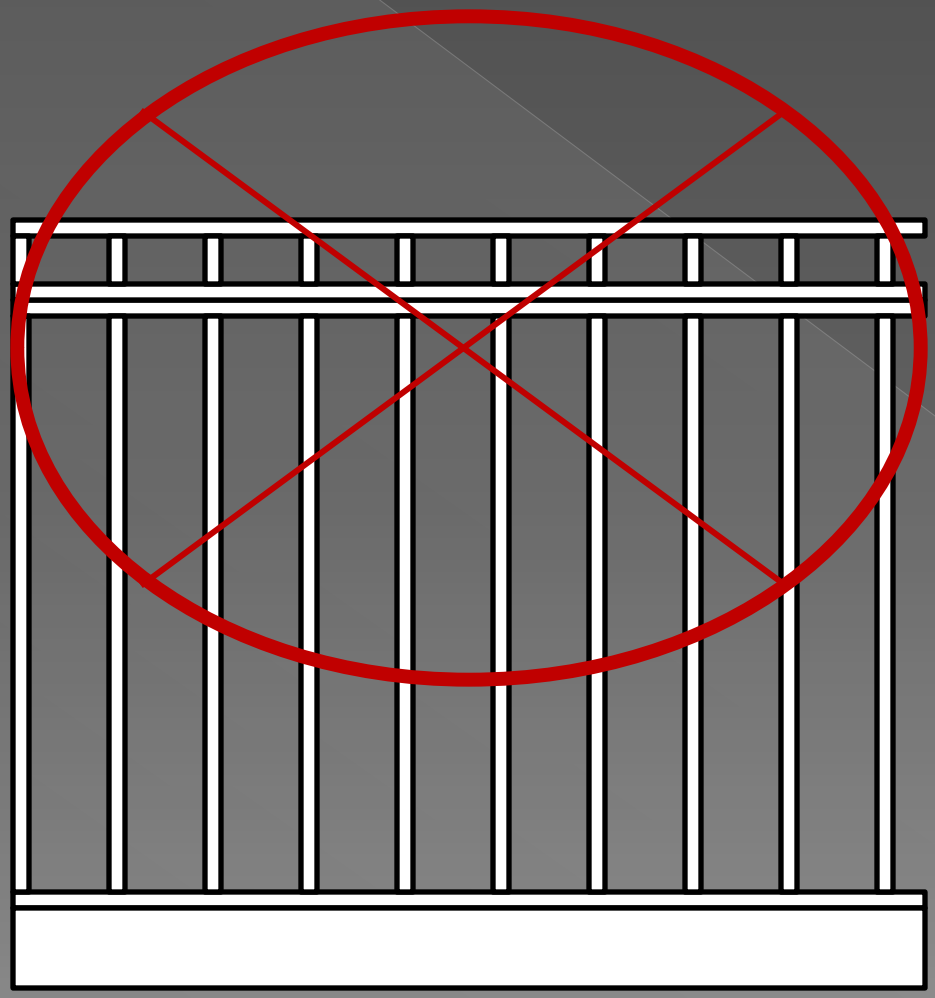

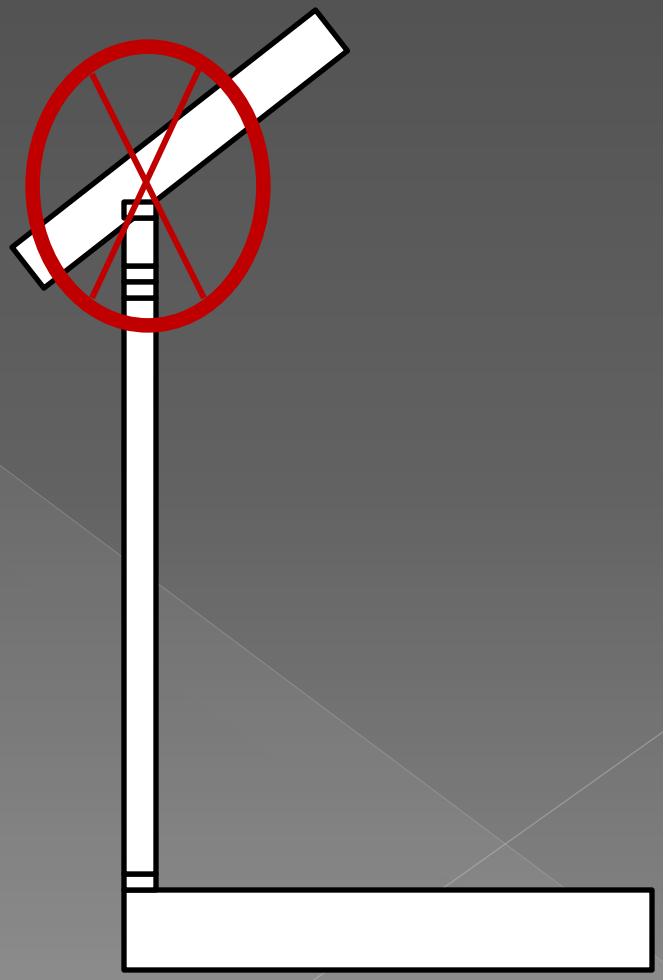

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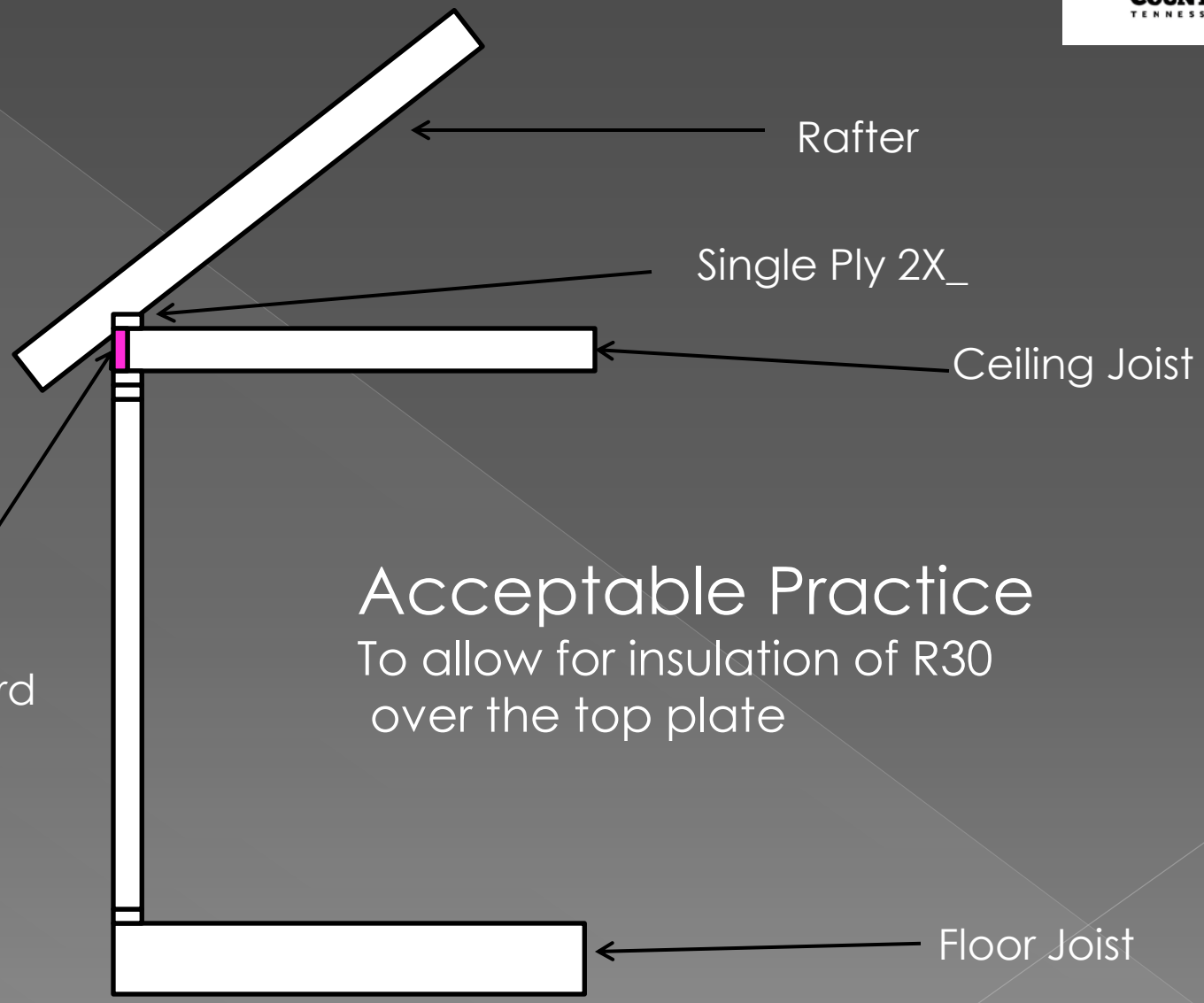

Acceptable Practice

To allow for insulation of R30 over the top plate

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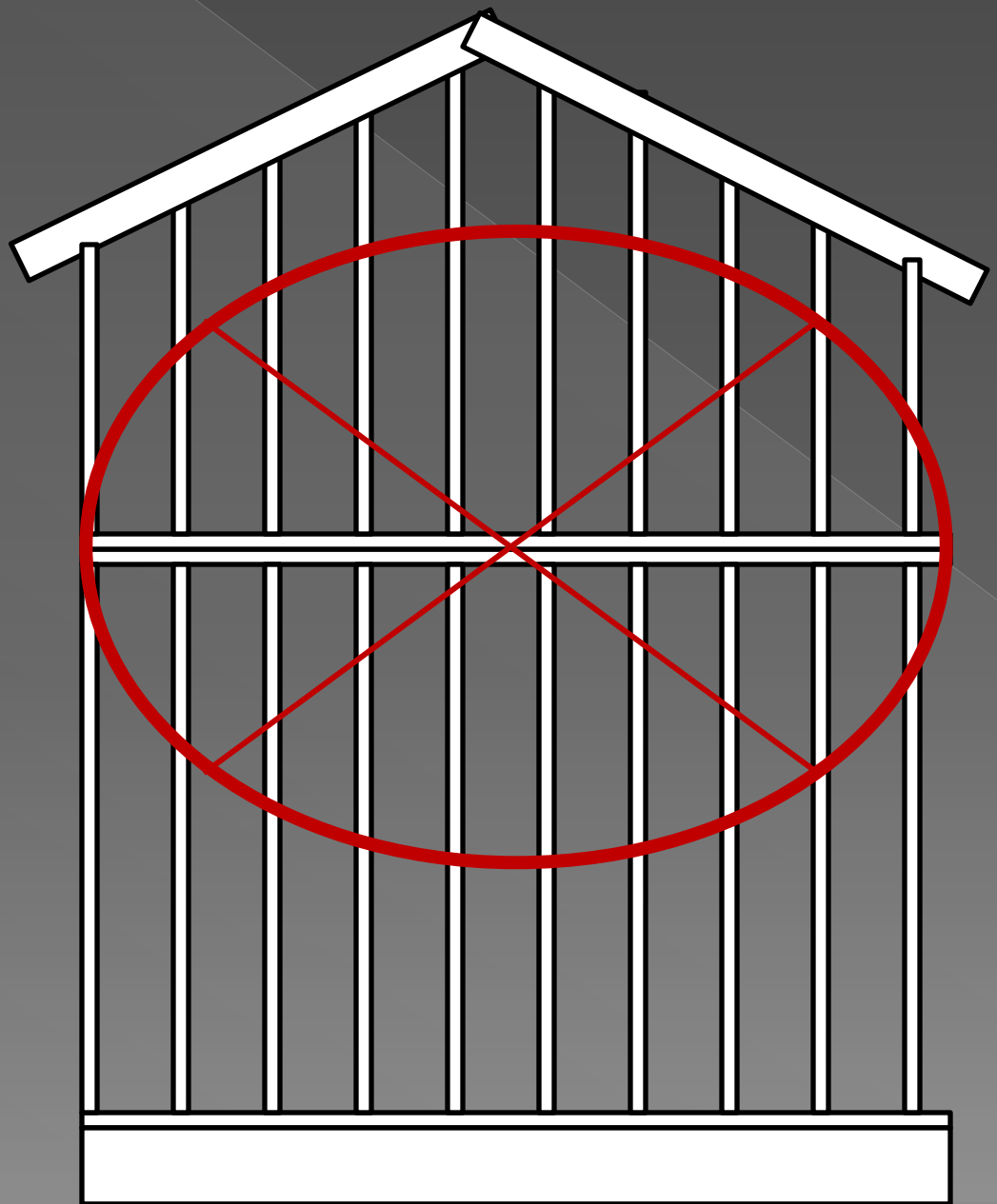

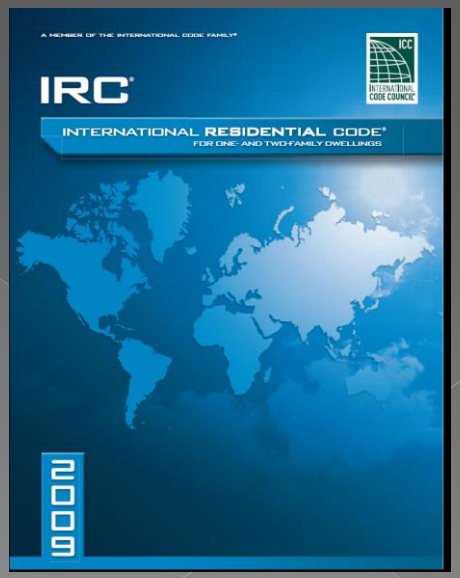

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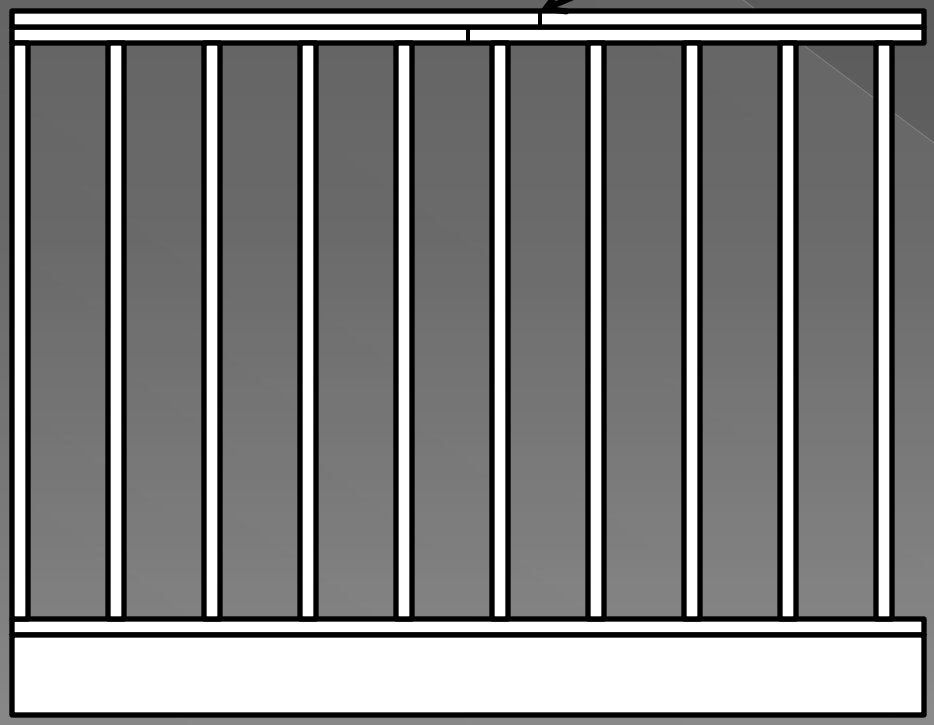
R602.3.2 Top Plate

Top plate joints are not required to occur over studs.
(with a double top plate)

End joints in top plates shall be offset at least 24"



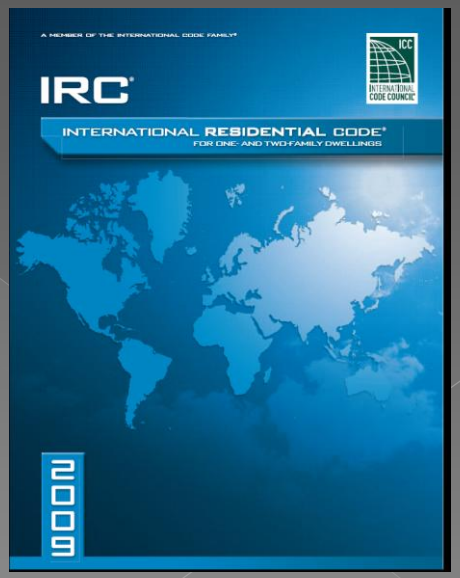


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Table R602.3(1) Fastener Schedule

NEW TABLE:
1. Diameter and length of each nail added
2.Minimum requirements added for collar ties and ridge straps.

** Also see revised table R602.3(2) for increases in length and decreased spacing of some fasteners used as alternate attachments.

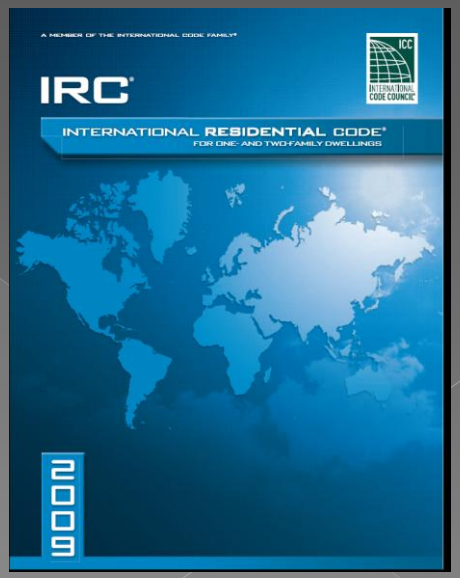

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TABLE R602.3(1)
FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

ITEM	DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER[a, b, c]	SPACING OF FASTENERS
	Roof		
1	Blocking between joists or rafters to top plate, toe nail	3-8d ($2^1/_2$" × 0.113")	—
2	Ceiling joists to plate, toe nail	3-8d ($2^1/_2$" × 0.113")	—
3	Ceiling joists not attached to parallel rafter, laps over partitions, face nail	3-10d	—
4	Collar tie rafter, face nail or $1^1/_4$" × 20 gage ridge strap	3-10d (3" × 0.128")	—
5	Rafter to plate, toe nail	2-16d ($3^1/_2$" × 0.135")	—
6	Roof rafters to ridge, valley or hip rafters: toe nail face nail	 4-16d ($3^1/_2$" × 0.135") 3-16d ($3^1/_2$" × 0.135")	 — —

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	Wall		
7	Built-up corner studs	10d (3″ × 0.128″)	24″ o.c.
8	Built-up header, two pieces with $^1/_2$″ spacer	16d (3$^1/_2$″ × 0.135″)	16″ o.c. along each edge
9	Continued header, two pieces	16d (3$^1/_2$″ × 0.135″)	16″ o.c. along each edge
10	Continuous header to stud, toe nail	4-8d (2$^1/_2$″ × 0.113″)	—
11	Double studs, face nail	10d (3″ × 0.128″)	24″ o.c.
12	Double top plates, face nail	10d (3″ × 0.128″)	24″ o.c.
13	Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d (3$^1/_2$″ × 0.135″)	—
14	Sole plate to joist or blocking, face nail	16d (3$^1/_2$″ × 0.135″)	16″ o.c.
15	Sole plate to joist or blocking at braced wall panels	3-16d (3$^1/_2$″ × 0.135″)	16″ o.c.
16	Stud to sole plate, toe nail	3-8d (2$^1/_2$″ × 0.113″) or 2-16d 3$^1/_2$″ × 0.135″)	— —
17	Top or sole plate to stud, end nail	2-16d (3$^1/_2$″ × 0.135″)	—
18	Top plates, laps at corners and intersections, face nail	2-10d (3″ × 0.128″)	—
19	1″ brace to each stud and plate, face nail	2-8d (2$^1/_2$″ × 0.113″) 2 staples 1$^3/_4$″	— —
20	1″ × 6″ sheathing to each bearing, face nail	2-8d (2$^1/_2$″ × 0.113″) 2 staples 1$^3/_4$″	— —
21	1″ × 8″ sheathing to each bearing, face nail	2-8d (2$^1/_2$″ × 0.113″) 3 staples 1$^3/_4$″	— —
22	Wider than 1″ × 8″ sheathing to each bearing, face nail	3-8d (2$^1/_2$″ × 0.113″) 4 staples 1$^3/_4$″	— —
	Floor		

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	Floor		
23	Joist to sill or girder, toe nail	3-8d ($2^1/_2$" × 0.113")	—
24	1" × 6" subfloor or less to each joist, face nail	2-8d ($2^1/_2$" × 0.113") 2 staples $1^3/_4$"	— —
25	2" subfloor to joist or girder, blind and face nail	2-16d ($3^1/_2$" × 0.135")	—
26	Rim joist to top plate, toe nail (roof applications also)	8d ($2^1/_2$" × 0.113")	6" o.c.
27	2" planks (plank & beam – floor & roof)	2-16d ($3^1/_2$" × 0.135")	at each bearing
28	Built-up girders and beams, 2-inch lumber layers	10d (3" × 0.128")	Nail each layer as follows: 32" o.c. at top and bottom and staggered. Two nails at ends and at each splice.
29	Ledger strip supporting joists or rafters	3-16d ($3^1/_2$" × 0.135")	At each joist or rafter

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Table 602.3(5) Size, height & spacing of wood studs. A habitable attic is a new term in the 2009 IRC.

Placement of habitable attics in the wood stud table clarifies that wood studs of a size, height & spacing adequate for carrying a roof & ceiling also are adequate for supporting a habitable attic.

Footnote c places a limitation of 32 feet for the roof span when using 2x4 studs to support a habitable attic. For greater roof spans, the code requires not less than 2x6 studs or an engineered design.

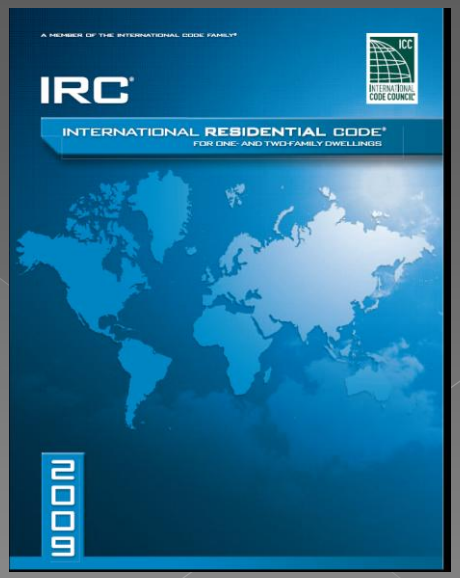

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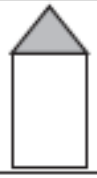
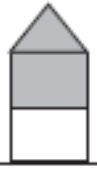
TABLE R602.3(5)
SIZE, HEIGHT AND SPACING OF WOOD STUDS[a]

STUD SIZE (Inches)	BEARING WALLS					NONBEARING WALLS	
	Laterally unsupported stud height[a] (feet)	Maximum spacing when supporting a roof-ceiling assembly or a habitable attic assembly, only (Inches)	Maximum spacing when supporting one floor, plus a roof-ceiling assembly or a habitable attic assembly (Inches)	Maximum spacing when supporting two floors, plus a roof-ceiling assembly or a habitable attic assembly (Inches)	Maximum spacing when supporting one floor height[a] (feet)	Laterally unsupported stud height[a] (feet)	Maximum spacing (Inches)
							
2 × 3[b]	—	—	—	—	—	10	16
2 × 4	10	24[c]	16[c]	—	24	14	24
3 × 4	10	24	24	16	24	14	24
2 × 5	10	24	24	—	24	16	24
2 × 6	10	24	24	16	24	20	24

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 square foot = 0.093 m².

a. Listed heights are distances between points of lateral support placed perpendicular to the plane of the wall. Increases in unsupported height are permitted where justified by analysis.

b. Shall not be used in exterior walls.

c. A habitable attic assembly supported by 2 × 4 studs is limited to a roof span of 32 feet. Where the roof span exceeds 32 feet, the wall studs shall be increased to 2 × 6 or the studs shall be designed in accordance with accepted engineering practice.

c. A habitable attic assembly supported by 2 × 4 studs is limited to a roof span of 32 feet. Where the roof span exceeds 32 feet, the wall studs shall be increased to 2 × 6 or the studs shall be designed in accordance with accepted engineering practice.

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ATTIC, HABITABLE. A finished or unfinished area, not considered a *story, complying with all of the following requirements:*

1. The occupiable floor area is at least 70 square feet (17 m2), in accordance with Section R304,

2. The occupiable floor area has a ceiling height in accordance with Section R305, and

3. The occupiable space is enclosed by the roof assembly above, knee walls (if applicable) on the sides and the floor-ceiling assembly below.

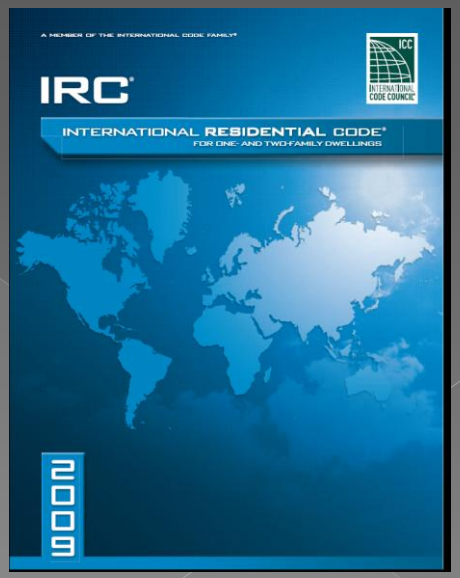

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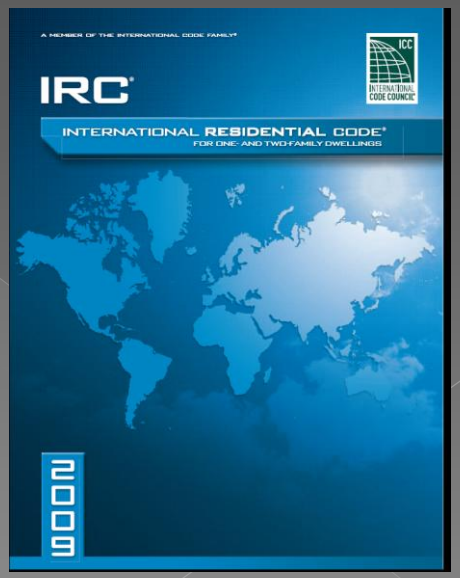
TABLE R301.5
MINIMUM UNIFORMLY DISTRIBUTED LIVE LOADS
(in pounds per square foot)

USE	LIVE LOAD
Attics without storage[b]	10
Attics with limited storage[b, g]	20
Habitable attics and attics served with fixed stairs	30
Balconies (exterior) and decks[e]	40
Fire escapes	40
Guardrails and handrails[d]	200[h]
Guardrail in-fill components[f]	50[h]
Passenger vehicle garages[a]	50[a]
Rooms other than sleeping room	40
Sleeping rooms	30
Stairs	40[c]



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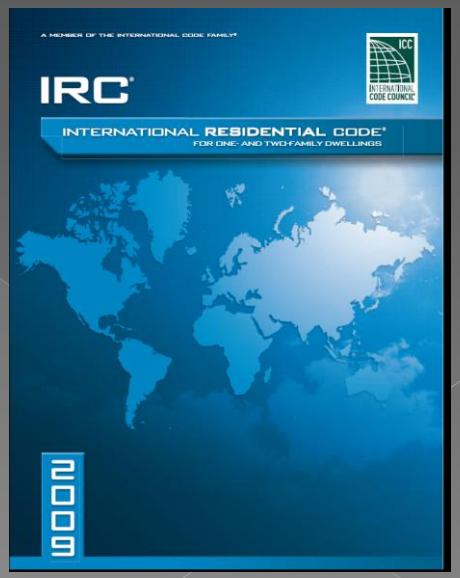
R602.6 Boring & Notching (studs) exterior walls and interior bearing walls.

Notch is 25% of stud depth// boring 40% of stud depth

1. may bore up to 60% if stud is doubled & < 2 successive studs
2. Bored hole may not be any closer than 5/8 inch to face of the stud.

Bored holes shall not be in the same cross section of cut or notched studs



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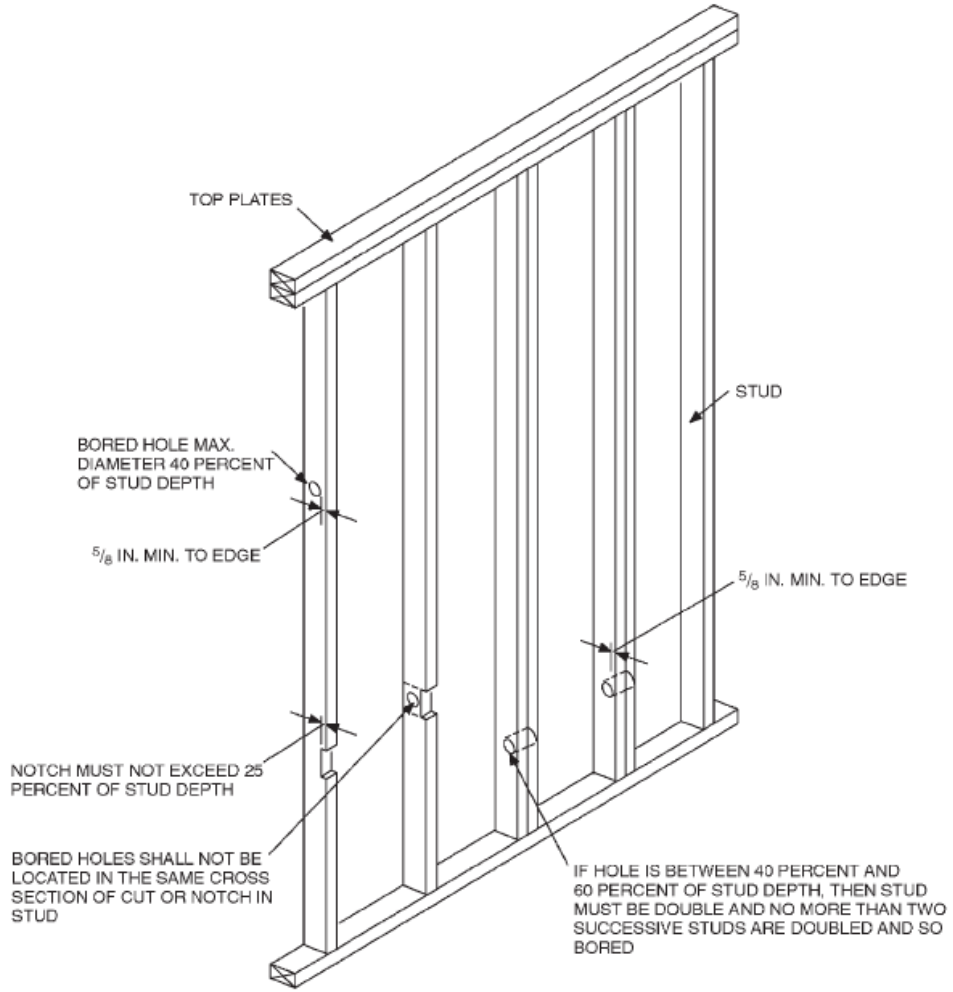
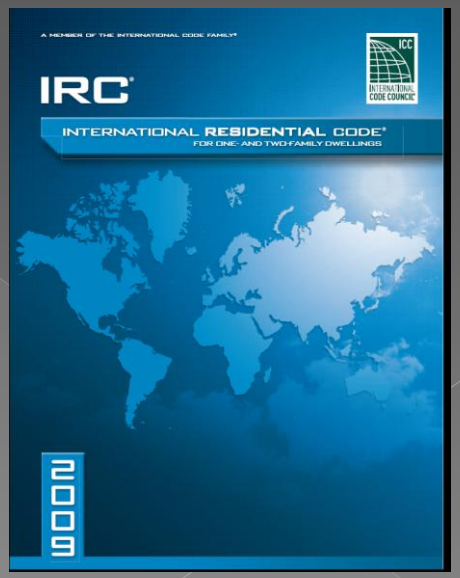


For SI: 1 inch = 25.4 mm.
NOTE: Condition for exterior and bearing walls.

FIGURE R602.6(1)
NOTCHING AND BORED HOLE LIMITATIONS FOR EXTERIOR WALLS AND BEARING WALLS

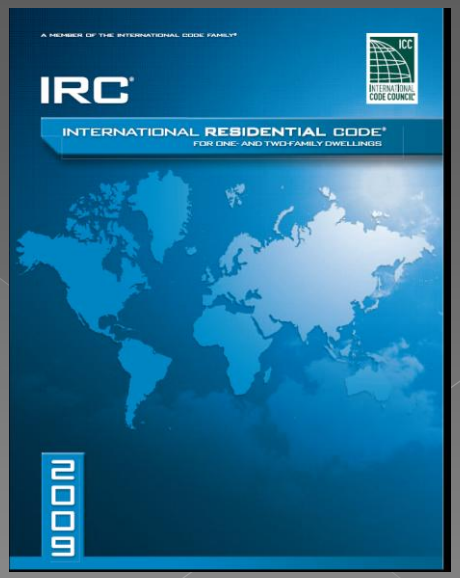


International Residential Code

R602.6 Boring & Notching (studs) interior nonbearing walls

Maximum notch is 40% stud depth
Maximum boring is 60% stud depth

Bored holes shall not be in the same cross section of cut or notched studs



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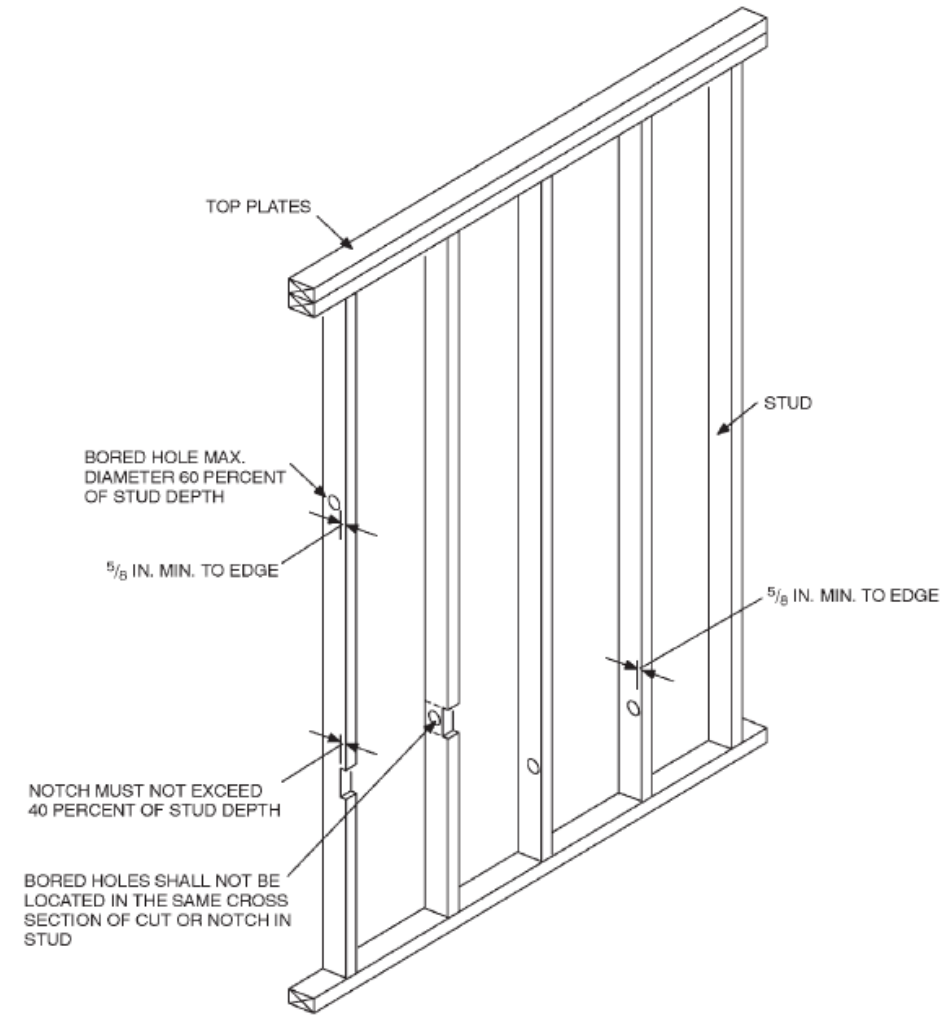
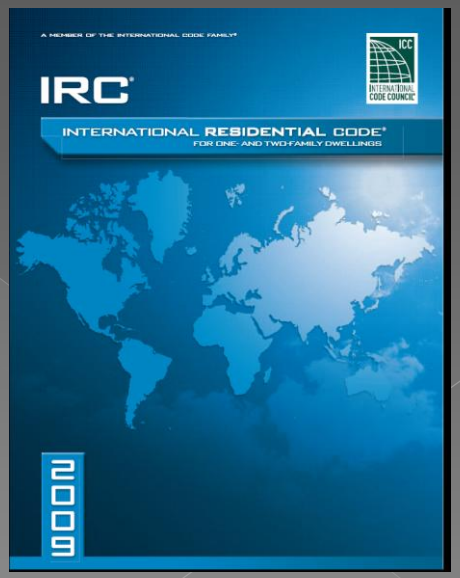


For SI: 1 inch = 25.4 mm.

FIGURE R602.6(2)
NOTCHING AND BORED HOLE LIMITATIONS FOR INTERIOR NONBEARING WALLS



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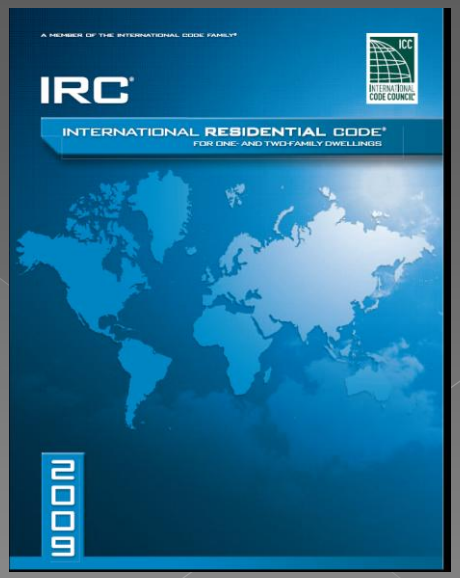
R602.6.1 Drilling and notching of top plate. When a metal tie is required across the opening of a notched or drilled top plate, the tie must now extend at least 6 inches beyond each side of the opening.

When a top plate is cut , notched or drilled by more than 50% of its width, only one 16ga metal tie is required when connecting double top plates.

To reduce the possibility of splitting the wood plate, the length of the nails used to attach the metal tie has been reduced from 3 1/2 inches to 1 1/2 inches & a tie of sufficient length to extend at least 6 inches beyond the opening on each side is now prescribed. Nails must have a minimum diameter of .148 inches,



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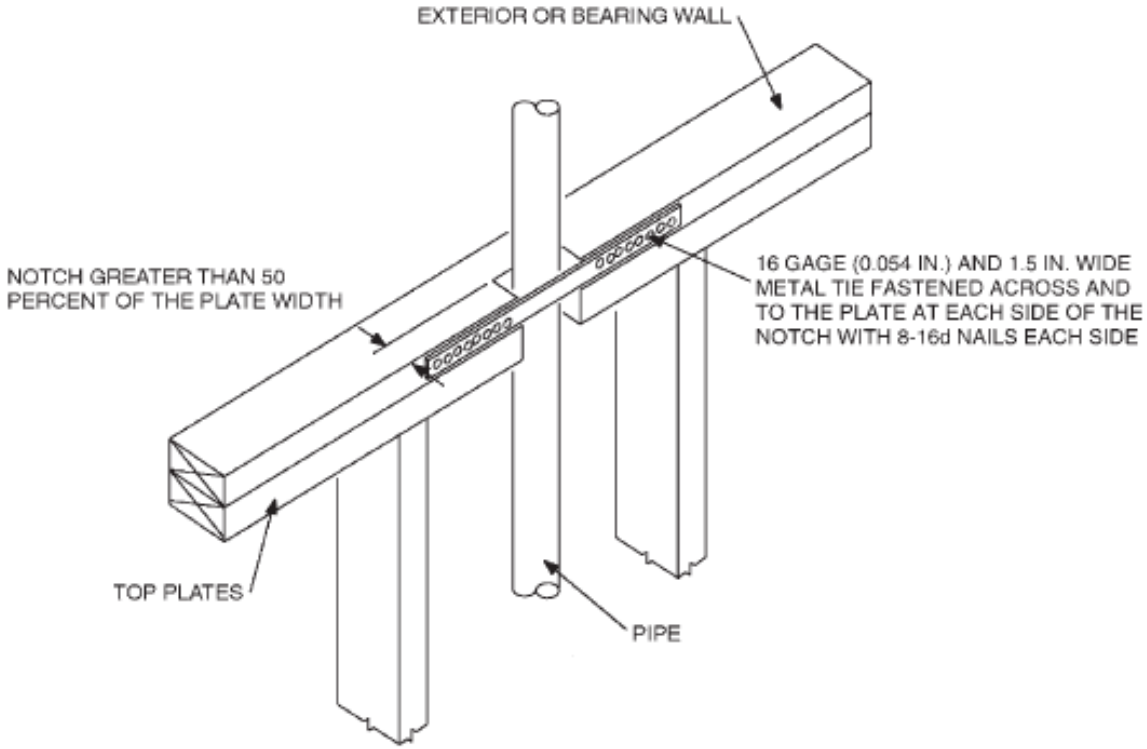
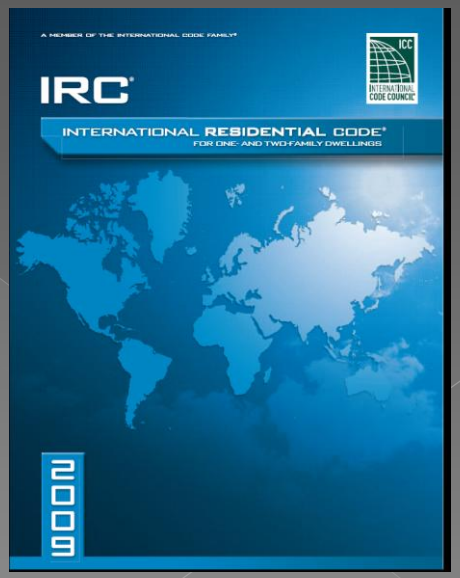


For SI: 1 inch = 25.4 mm.

FIGURE R602.6.1
TOP PLATE FRAMING TO ACCOMMODATE PIPING



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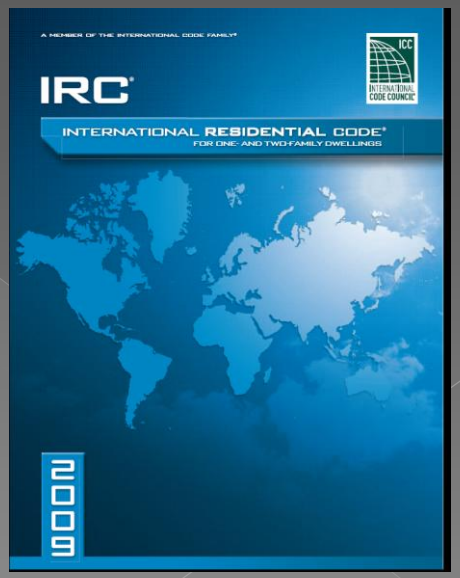
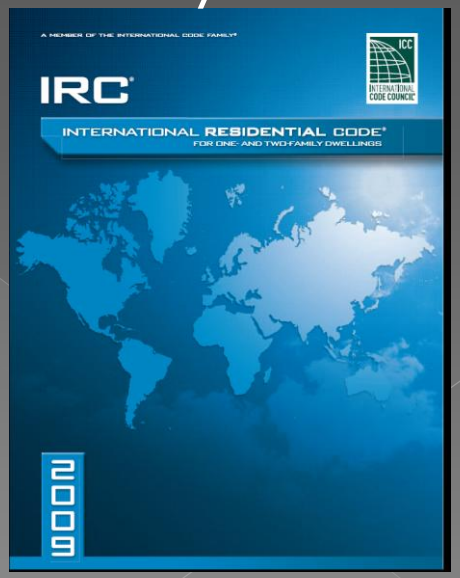
R602.8 Fireblocking required

At openings around vents, pipes, ducts, cables and wires at ceiling and floor level, with an approved material to resist free passage of flame and products of combustion.



International Residential Code

R602.10 Braced Wall Lines & Braced wall Panels Modification:
The wood frame wall bracing provisions of Section R602.10 have been entirely rewritten to provide technical accuracy & clarity.



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The amount of bracing is now expressed as length in feet. After all adjustments are made, the minimum total length of bracing in a brace wall line must be at least 48 inches.

Seismic loading is predominantly proportional to the length of the brace wall line, but the wind loading is proportional to the wall line spacing, the height of the walls, and the height of the roof relative to the eaves.

Accordingly values in the seismic table are a function of braced wall line length, and values in the wind table are a function of braced wall line spacing.

R602.10.1.2 clarifies that for other than angled walls, only wall panels parallel to the braced wall line count in satisfying the amount of bracing requirements. Where exterior braced wall panels are subjected to wind uplift, connections must be provided unless the weight of the wall above offsets the wind uplift forces. When the net uplift at the bottom of wall exceeds 100plf, connections such as straps must be provided from story-to-story to provide a complete load path from the roof to the foundation.

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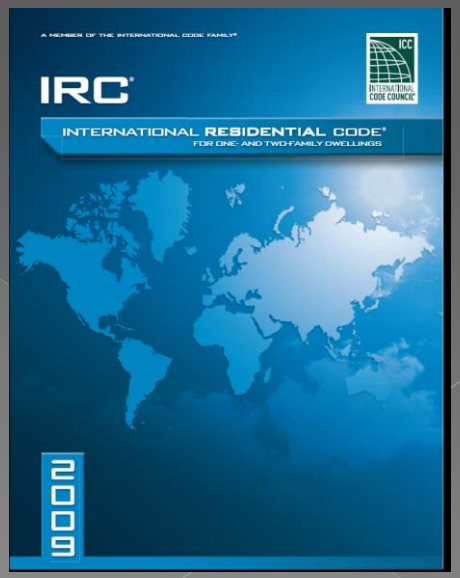
Walls perpendicular to the braced wall line do not count toward the bracing amount required in the direction of the braced wall panels that are subjected to wind uplift. Values in the wind table are based on an assumed 10 feet high wall for each story & 10 feet height between the eave & ridge of the roof.



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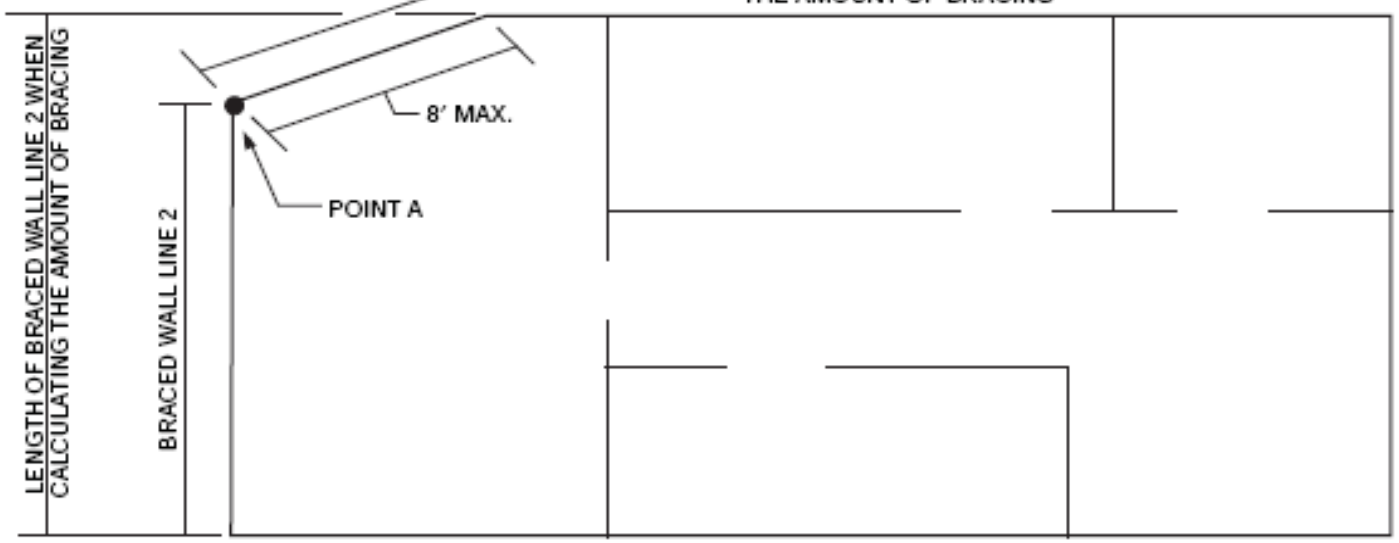
R602.10.1.3 Angled Corners of Braced wall lines: This new section allows angled wall segments to contribute to the amount of wall bracing in a braced wall line.



For SI: 1 foot = 304.8 mm.

FIGURE R602.10.1.3
ANGLED CORNERS

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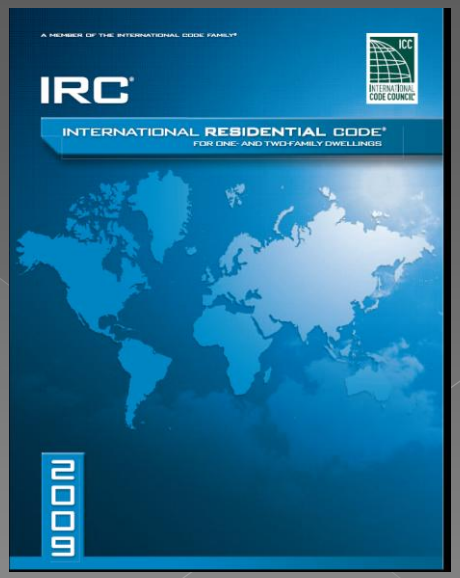
R602.10.1.4 Braced wall panel Location Modification: The location requirements for braced wall construction are now grouped together in a single section & adds several figures.

The 2009 IRC limits the combined total inset distance to 12.5 feet while still allowing inflexibility to inset a panel a distance of 12.5 feet from 1 end. New text clarifies that all of the braced wall panels are allowed to be offset 4 feet from the line that establishes the braced wall line & the total out-to-out offset of brace wall panels is not more than 8 feet.



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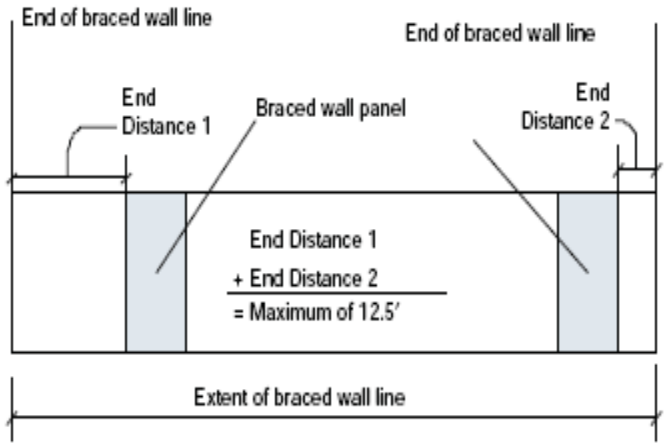
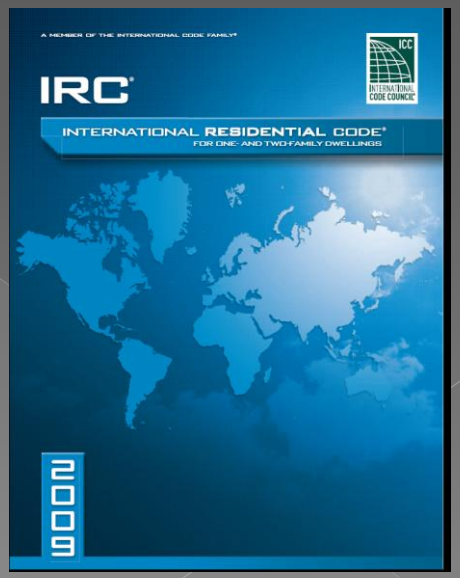


Braced wall panel shall be permitted to be located away from the end of a braced wall line, provided the total end distance from each end to the nearest braced wall panel does not exceed 12.5′. If braced wall panel is located at the end of the braced wall line, then end distance is 0′.

For SI: 1 foot = 304.8 mm.

FIGURE R602.10.1.4(2)
BRACED WALL PANEL END DISTANCE REQUIREMENTS (SDC A, B AND C)



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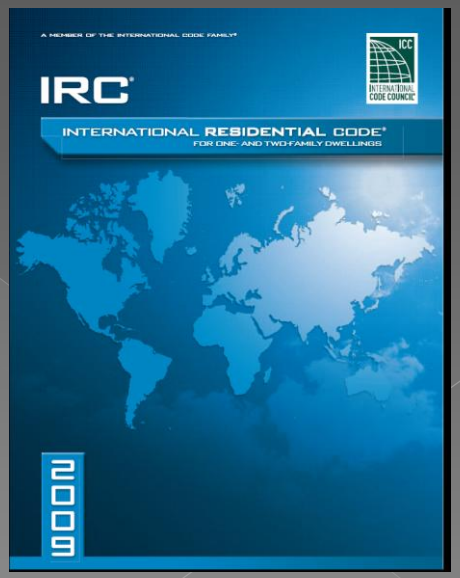
R602.10.2 Intermittent Brace wall Panel Construction Methods Modification: The bracing methods of the 2006 IRC listed as types 1-8 & 2 alternate braced wall panel methods have been grouped into 1 table & given a 2-3 letter abbreviation to make the section more user friendly.



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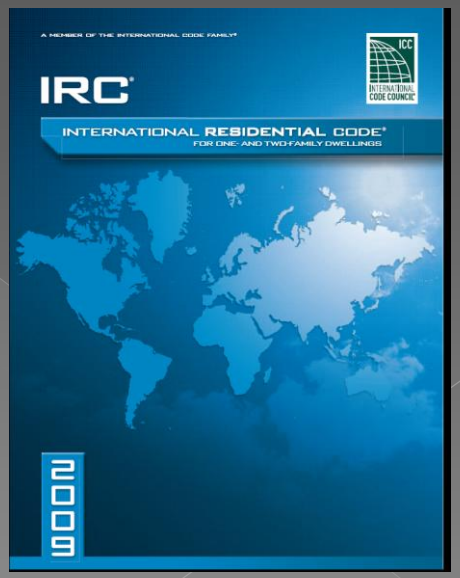
The code now uses the term 'intermittent' to describe bracing methods utilizing isolated braced wall panels & to clearly differentiate these methods from continuous sheathing methods are now placed in tabular format with description, illustrative icon & connection criteria.



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R602.10.2 the construction of intermittent braced wall panels shall be in accordance with 1 of the methods listed in Table 602.10.2

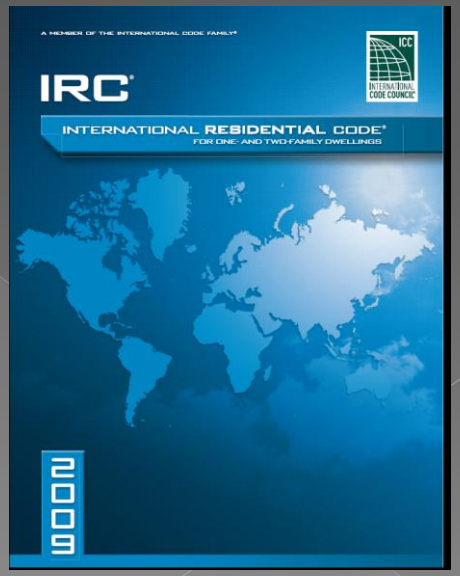

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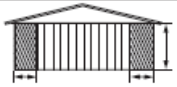
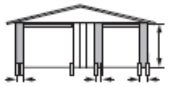
TABLE R602.10.2
INTERMITTENT BRACING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
LIB	Let-in-bracing	1 × 4 wood or approved metal straps at 45° to 60° angles for maximum 16″ stud spacing		Wood: 2-8d nails per stud including top and bottom plate metal: per manufacturer
DWB	Diagonal wood boards	$^3/_4$″ (1″ nominal) for maximum 24″ stud spacing		2-8d ($2^1/_2$″ × 0.113″) nails or 2 staples, $1^3/_4$″ per stud
WSP	Wood structural panel (see Section R604)	$^3/_8$″		For exterior sheathing see Table R602.3(3) For interior sheathing see Table R602.3(1)
SFB	Structural fiberboard sheathing	$^1/_2$″ or $^{25}/_{32}$″ for maximum 16″ stud spacing		$1^1/_2$″ galvanized roofing nails or 8d common ($2^1/_2$″ × 0.131) nails at 3″ spacing (panel edges) at 6″ spacing (intermediate supports)
GB	Gypsum board	$^1/_2$″		Nails or screws at 7″ spacing at panel edges including top and bottom plates; for all braced wall panel locations for exterior sheathing nail or screw size, see Table R602.3(1); for interior gypsum board nail or screw size, see Table R702.3.5
PBS	Particleboard sheathing (see Section R605)	$^3/_8$″ or $^1/_2$″ for maximum 16″ stud spacing		$1^1/_2$″ galvanized roofing nails or 8d common ($2^1/_2$″ × 0.131) nails at 3″ spacing (panel edges) at 6 spacing (intermediate supports)
PCP	Portland cement plaster	See Section R703.6 For maximum 16″ stud spacing		$1^1/_2$″, 11 gage, $^7/_{16}$″ head nails at 6″ spacing or $^7/_8$″, 16 gage staples at 6″ spacing
HPS	Hardboard panel siding	$^7/_{16}$″ For maximum 16″ stud spacing		0.092″ dia., 0.225″ head nails with length to accommodate $1^1/_2$″ penetration into studs at 4″ spacing (panel edges), at 8″ spacing (intermediate supports)
ABW	Alternate braced wall	See Section R602.10.3.2		See Section R602.10.3.2
PFH	Intermittent portal frame	See Section R602.10.3.3		See Section R602.10.3.3
PFG	Intermittent portal frame at garage	See Section R602.10.3.4		See Section R602.10.3.4

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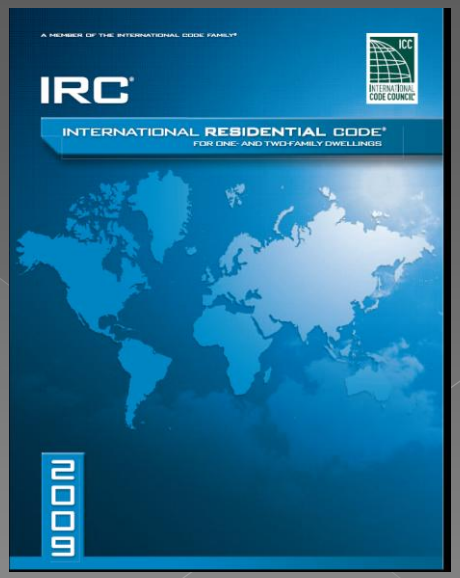
R602.10.2.1 intermittent braced wall panels shall have gypsum wall board installed on the side of the wall opposite the bracing material. Gypsum wall board shall be not less than 1/2 inch in thickness & be fastened in accordance with Table R702.3.5 for interior gypsum wall board.



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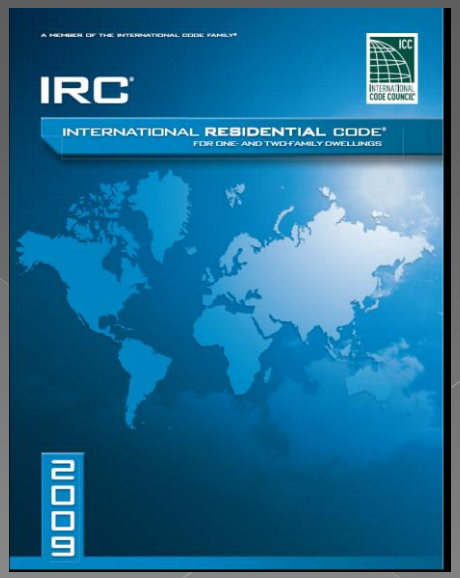
Exceptions:

1. Wall panels that are braced in accordance with methods GB, ABW, PFG & PFH.
2. When an approved interior finish material with an in-plane shear resistance equivalent to gypsum board is installed.
3. For methods DWB, WSP, SFB, PBS, PCP & HPS, omitting gypsum wall board is permitted.



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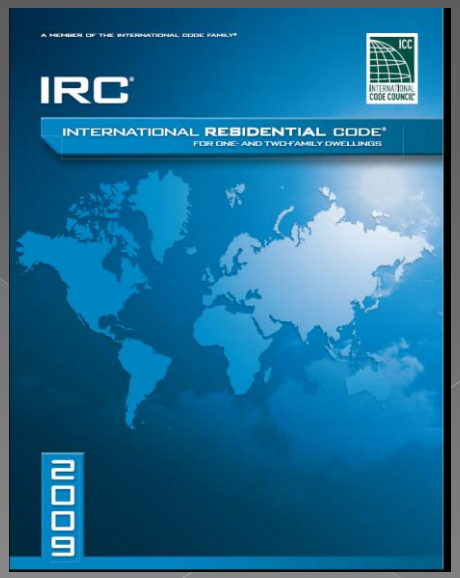
The new tabular format is intended to make it easier for code users to understand the options available. The reorganization & labeling intended to clarify the prescriptive bracing provisions & the 2 distinct paths for compliance-intermittent & continuous methods-to promote consistent application

The prohibition of adhesive attachment of wall sheathing in Seismic Design Categories C, D0, D1, & D2 is relocated from section 602.10.11.5 of the 2006 IRC.



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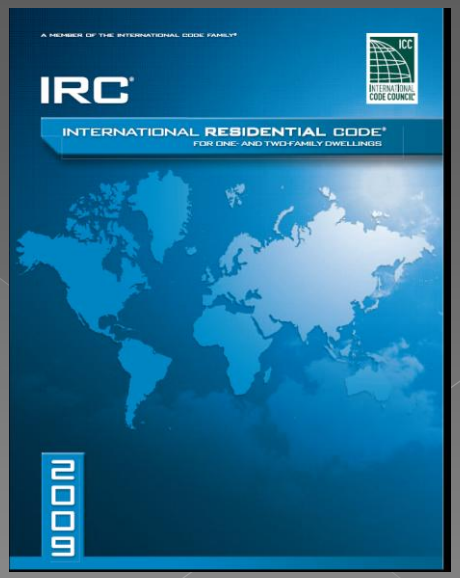
R602.10.3 Minimum Length of Braced Wall Panels Modification: The code now recognizes braced wall panels less than 48 inches but not less than 36 inches in length in SDC A,B &C.



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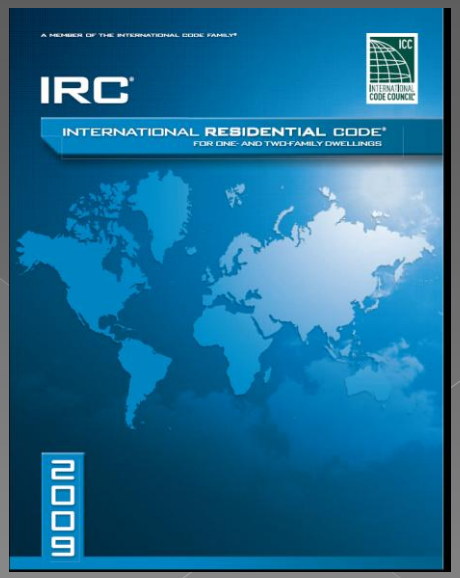
R602.10.3 replaces & modifies the 2006 R602.10.4. The amount of bracing is now expressed as the minimum total length of braced wall panels measured in the direction of the braced wall line. In most cases, the length of the braced wall panel in the 2009 IRC is equal to the actual length of the braced wall panel in the horizontal direction, provided it is not less than 48 inches.

The added text in Section R602.10.3 mirrors the footnotes of the referenced tables in advising that the amount of gypsum board required by the applicable table must be doubled when gypsum board is applied to only 1 side.



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R602.10.3.2 Method ABW- Alternate Braced Wall Panels Modification:
A new figure replaces much of the text in this section to more clearly illustrate the construction details for alternate braced wall panels, now described as bracing method ABW

R602.10.3.2 replaces & modifies the 2006 R602.10.6. The construction details for minimum materials, concrete reinforcement, hold-downs, anchoring, fastening & splicing are more clearly illustrated in drawing form rather than detailed code language. Much of the text of this section has been deleted in favor of the new figure without making technical changes to the method of construction.

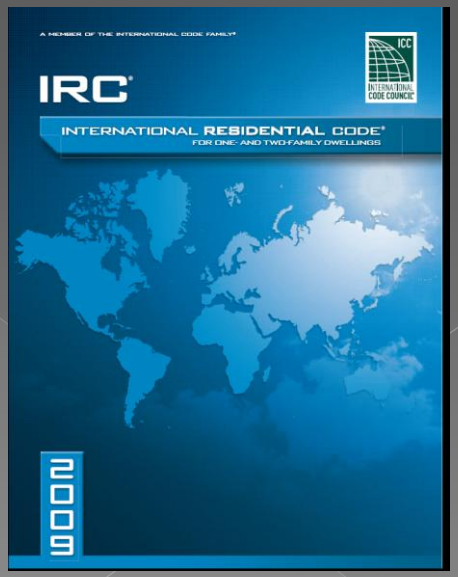

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TABLE R602.10.3.2
MINIMUM LENGTH REQUIREMENTS AND HOLD-DOWN FORCES FOR METHOD ABW BRACED WALL PANELS

SEISMIC DESIGN CATEGORY AND WIND SPEED		HEIGHT OF BRACED WALL PANEL				
		8 ft	9 ft	10 ft	11 ft	12 ft
SDC A, B and C Wind speed < 110 mph	Minimum sheathed length	2′ - 4″	2′ - 8″	2′ - 10″	3′ - 2″	3′ - 6″
	R602.10.3.2, item 1 hold-down force (lb)	1800	1800	1800	2000	2200
	R602.10.3.2, item 2 hold-down force (lb)	3000	3000	3000	3300	3600
SDC D_0, D_1 and D_2 Wind speed < 110 mph	Minimum sheathed length	2′ - 8″	2′ - 8″	2′ - 10″	NP[a]	NP[a]
	R602.10.3.2, item 1 hold-down force (lb)	1800	1800	1800	NP[a]	NP[a]
	R602.10.3.2, item 2 hold-down force (lb)	3000	3000	3000	NP[a]	NP[a]

For SI: 1 inch = 25.4 mm, 1 foot = 305 mm, 1 pound = 4.448 N.
a. NP = Not Permitted. Maximum height of 10 feet.

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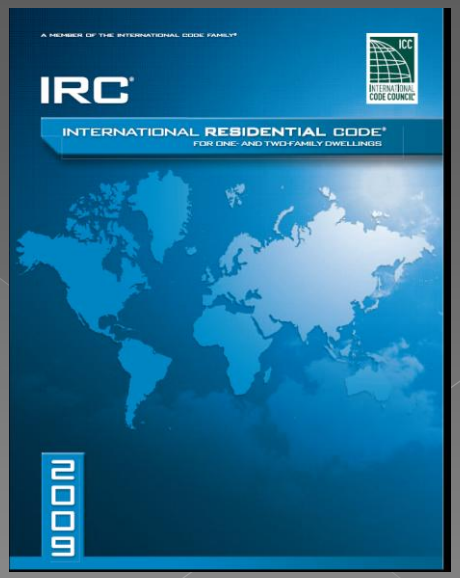
Alternate braced wall panel construction (ABW), is 1 of the more complicated provisions in the bracing section.

Other editorial changes to this section reflect the preferred terminology in an effort to provide accuracy consistency.



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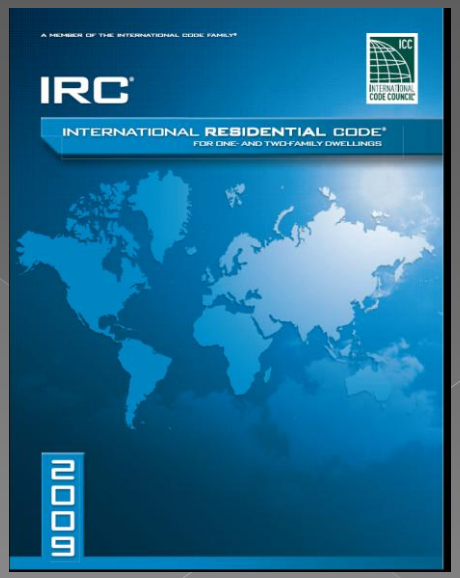
R602.10.3.3 Method PFH-Portal Frame with Holds-Down

Modification:
The alternate bracing method for a braced wall panel adjacent to a door or window opening, typically used at large overhead garage door openings, is now known as portal frame with holds-down (Method PFH).



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R602.10.3.3 replaces & modifies the 2006 R602.10.6.2.

The braced wall segments in Figure R602.10.6.2 are now labeled as 'portal frames,' a term that more accurately describes the configuration, prompting a change to designate this method of bracing as portal frame with holds-down (Method PFH).
The text describing the materials & connection details has been deleted in favor of Figure R602.10.3.2 for illustrating this method of bracing construction.
There is a minor revision which clarifies that 2 anchor bolts are required at the portal frame panel.

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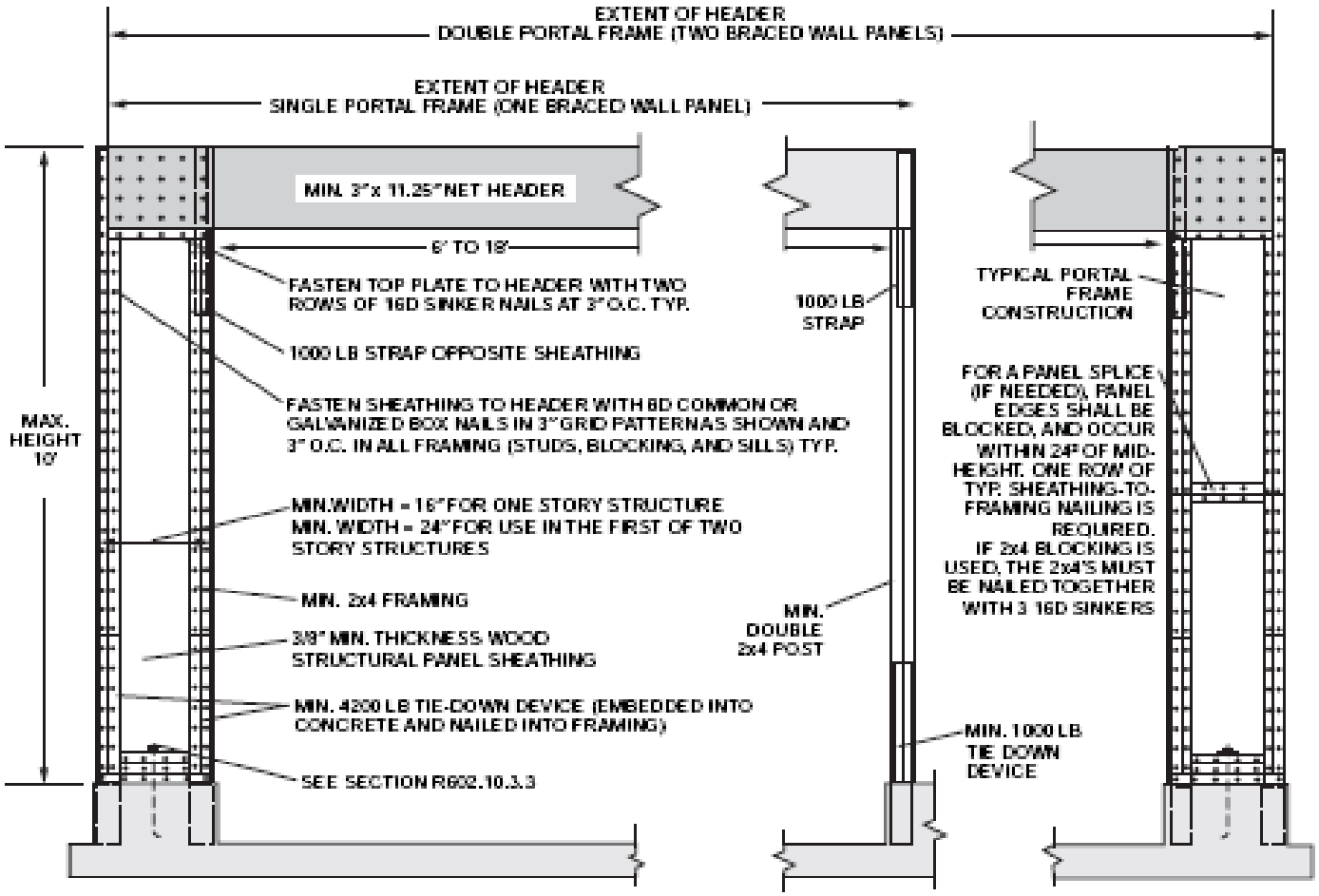

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound force = 4.448 N.

FIGURE R602.10.3.3
METHOD PFH: PORTAL FRAME WITH HOLD-DOWNS

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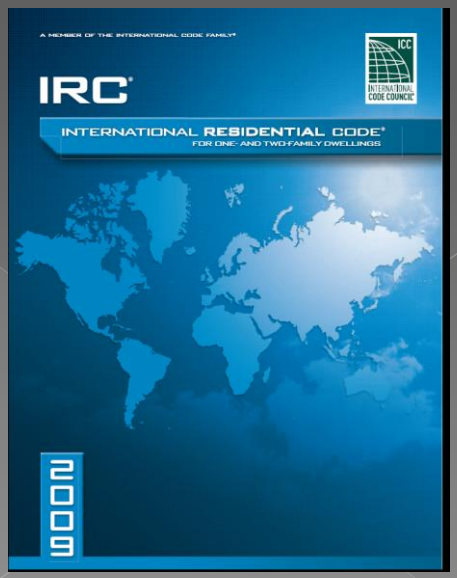
TENNESSEE

R602.10.4 Continuous Sheathing Modification:

The code now recognizes the practice of mixing intermittent bracing methods with the continuous sheathing method. The continuous sheathing method of bracing has undergone extensive revision & expansion to provide more flexibility in the design of & construction of dwellings.



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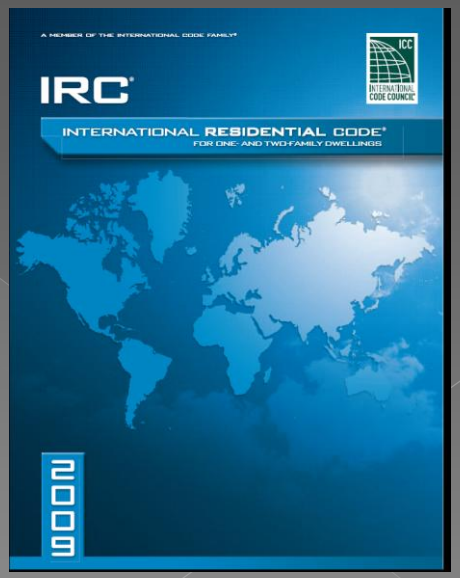
R602.10.4 replaces & modified the 2006 R602.10.5 In an effort to clearly differentiate intermittent from continuous bracing methods, the continuous sheathing provisions are no longer tied to wood structural panel bracing method WSP (formerly method 3).

Table R602.10.5 has been deleted & the minimum total length of braced wall panels for continuous sheathing appears in the applicable column of either Table R602.10.1.2(1), when wind controls, or Table R602.10.1.2(2). when seismic controls. The tabular value is no longer based on adjacent opening heights expressed as a percentage of wall heights.



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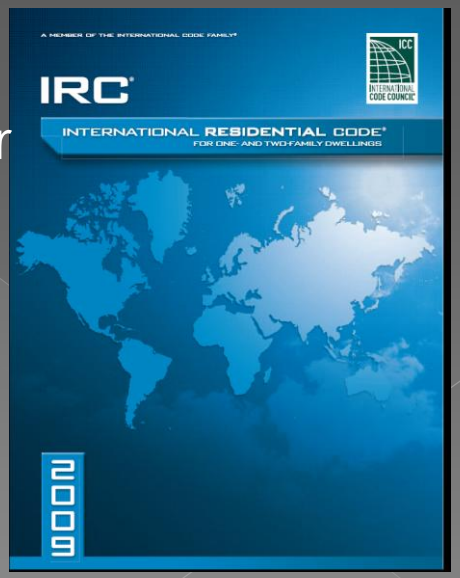
Amounts of required bracing are expressed as the length of braced wall panels in feet rather than a percentage of the braced wall line. The expanded section R602.10.4 established 3 separate & distinct methods for bracing with continuous sheathing & assigns to the table fro intermittent sheathing methods. The alternates for wood structural panel adjacent to garage openings (CS-G) & continuous portal frame (CS-PF) were developed from the footnotes that appeared in the 2006 IRC Table R602.1.5.



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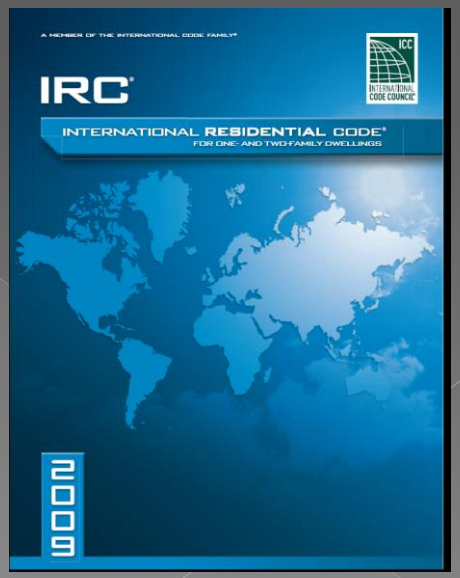
Section R602.10.4 requires continuous wood structural panel sheathing on all sheathable surfaces on 1 side of braced wall lines of exterior walls. This change permits other bracing methods to be used at other braced wall lines at any story.

The code clarifies the requirements for a minimum 24 inches wood structural panel on both sides of the corner at each end of the continuously sheathed braced wall line. A hold down device with a capacity of 800 lbs. installed on the corner stud of the end panel of the braced wall line that provides overturning restraint is permitted to substitute the 24 inch corner return segment that is perpendicular to the braced wall line.



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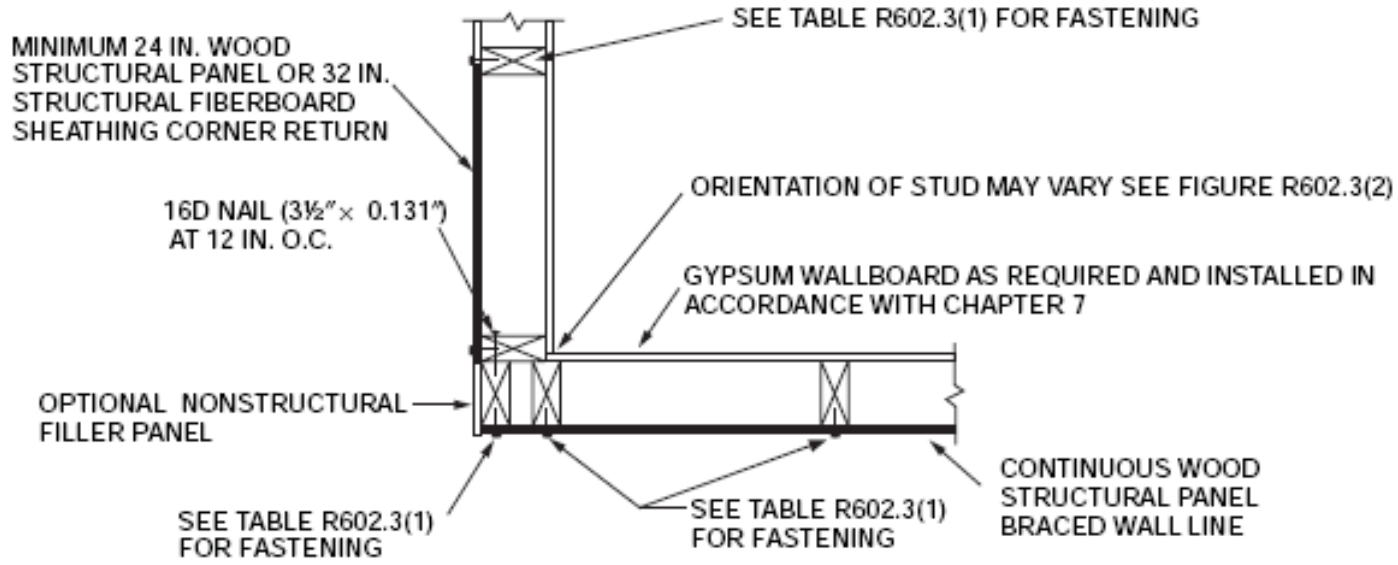

(a) OUTSIDE CORNER DETAIL

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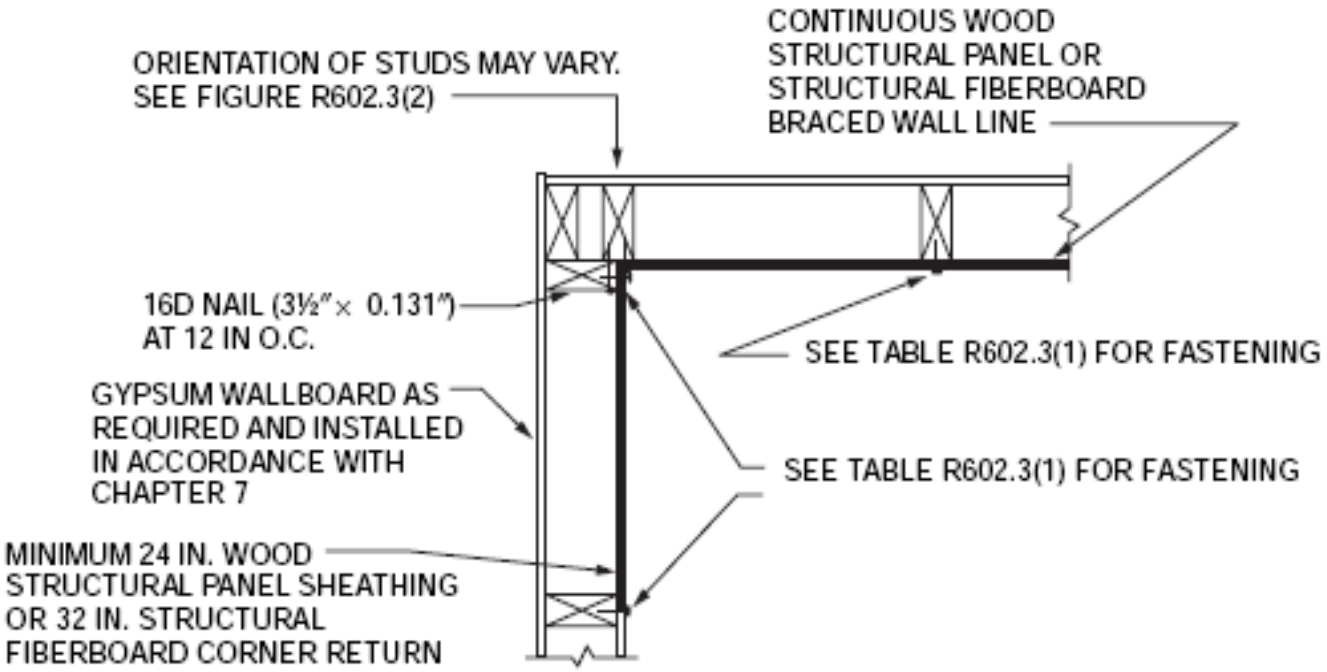
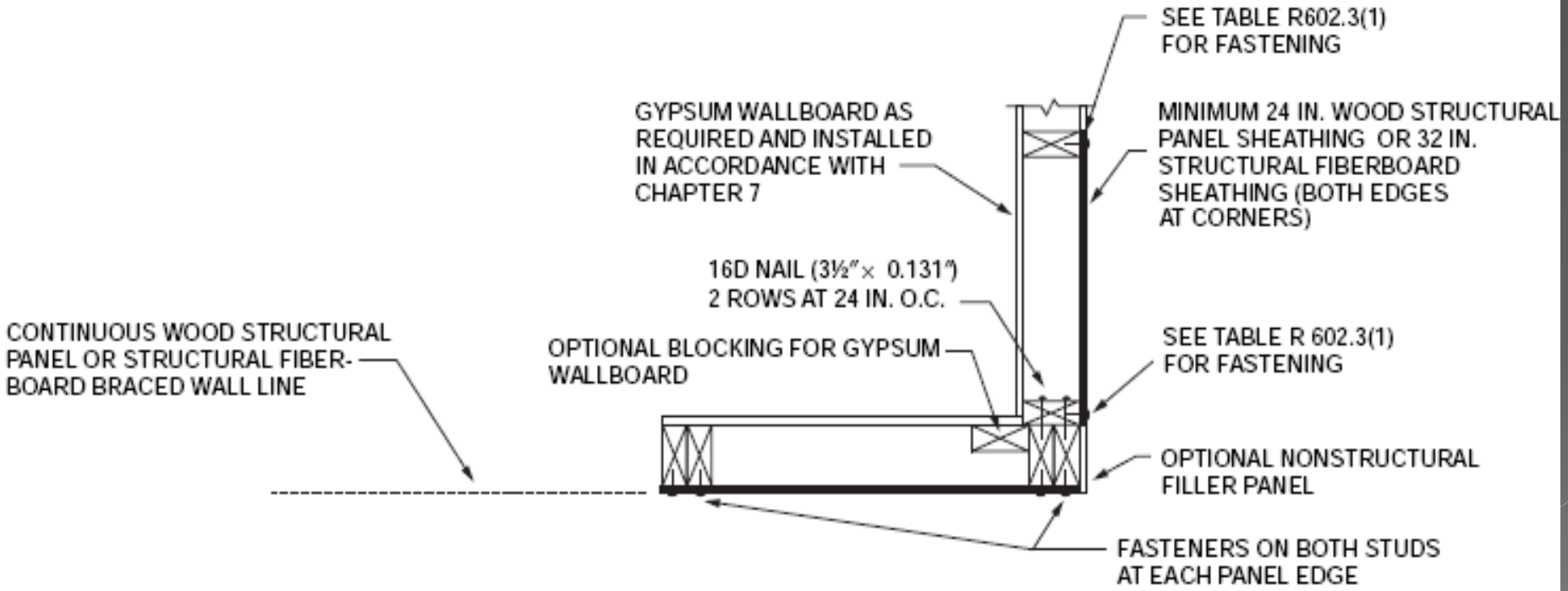


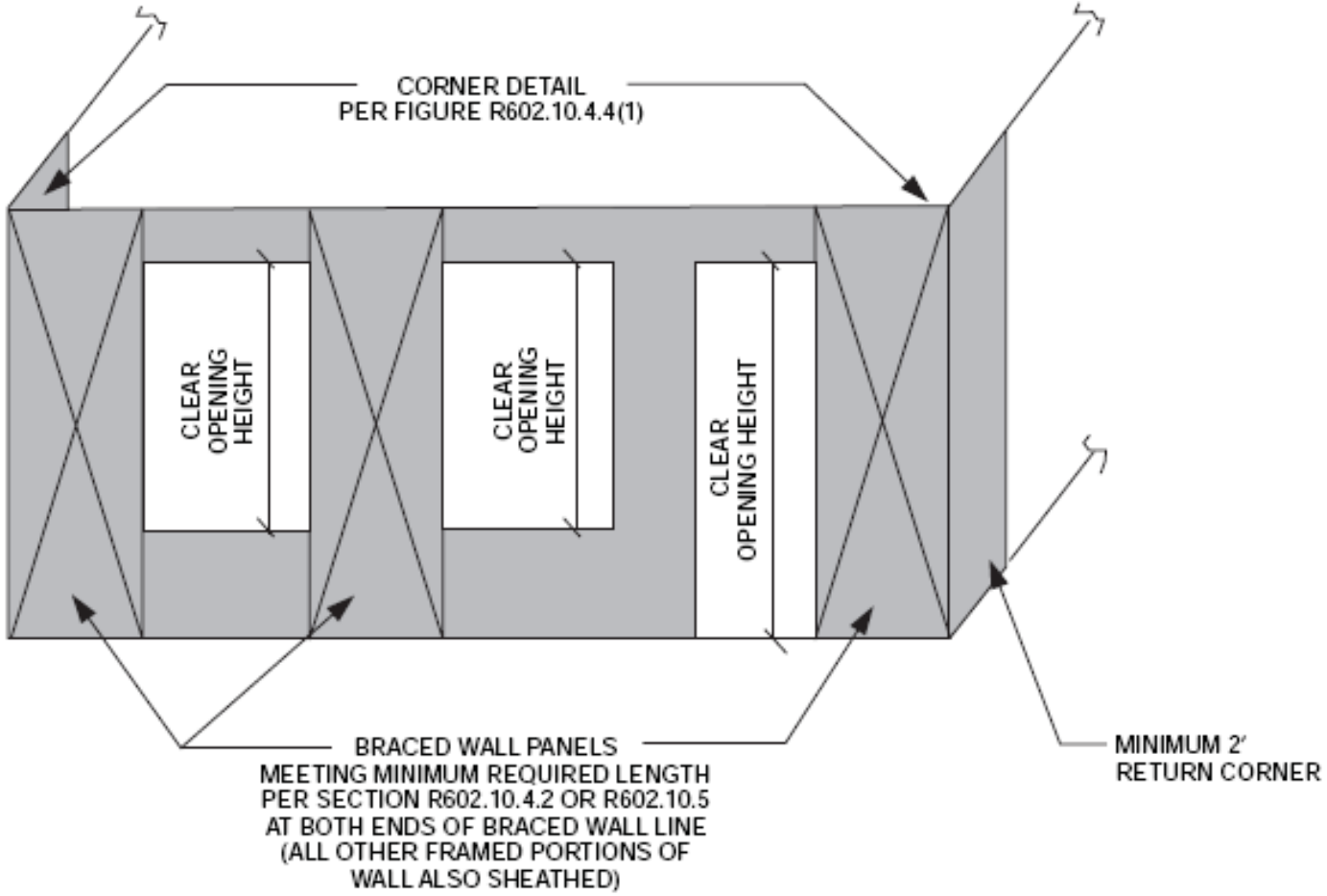
(b) INSIDE CORNER DETAIL

International Residential Code



(c) GARAGE DOOR CORNER

International Residential Code



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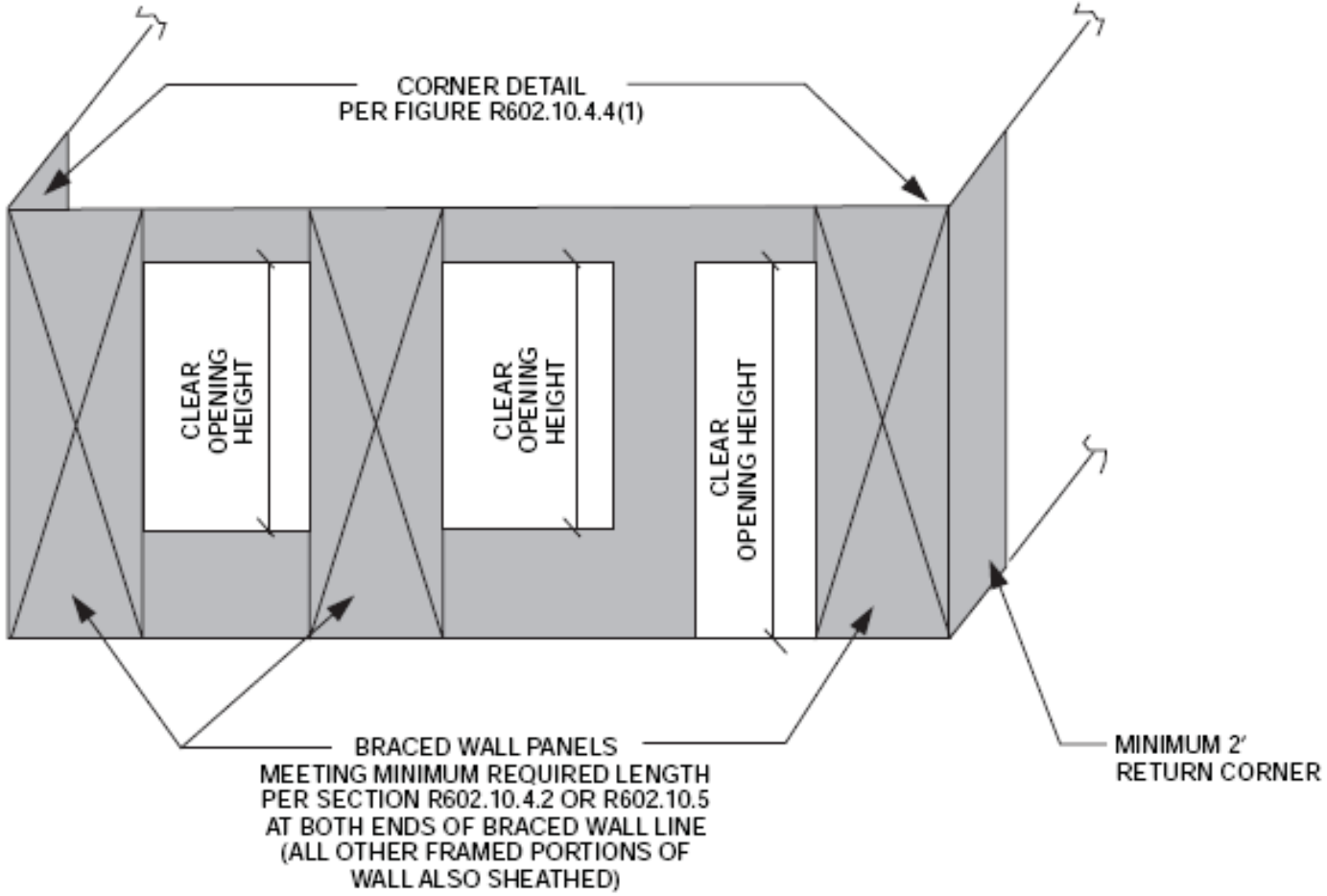
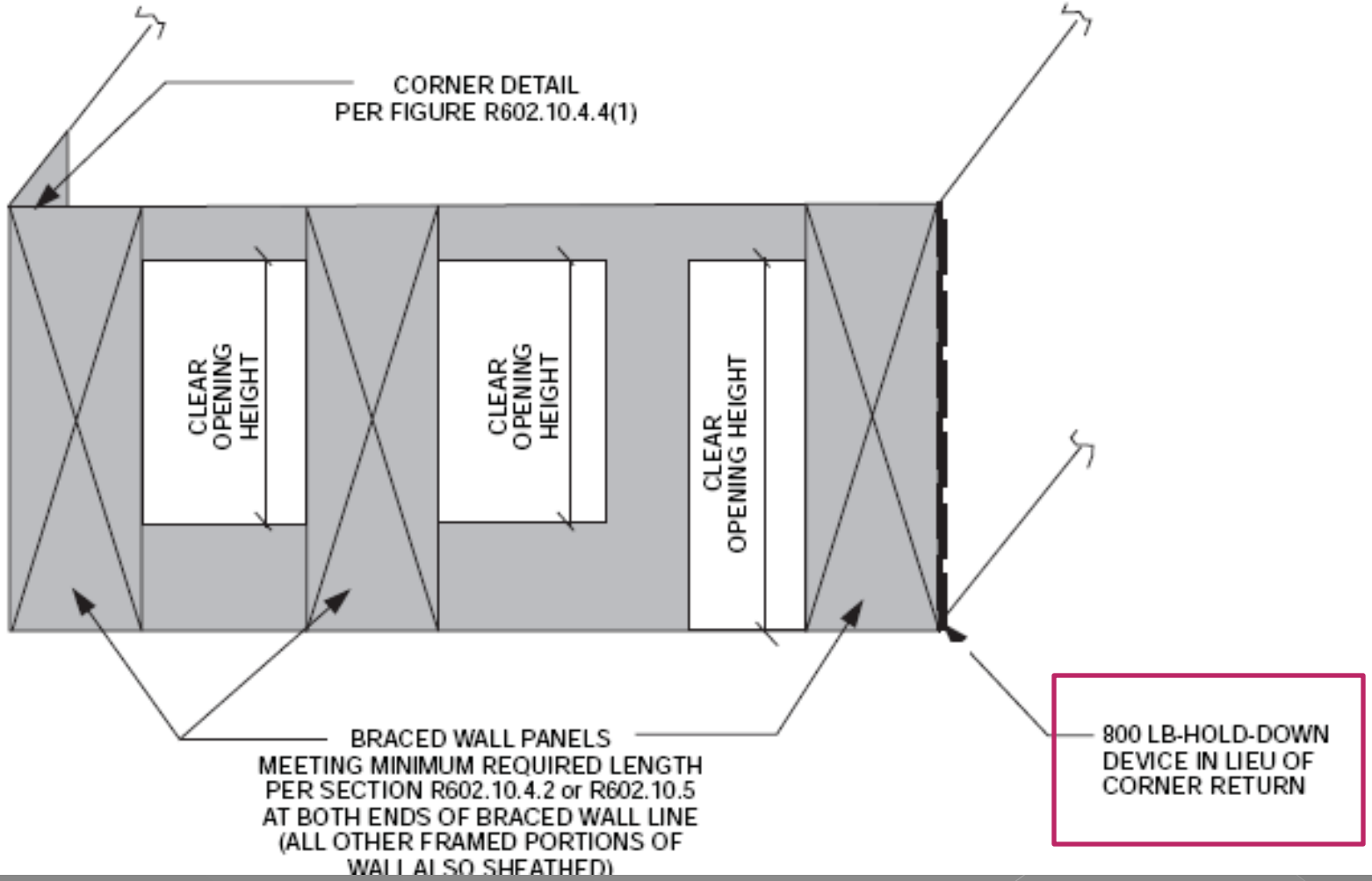
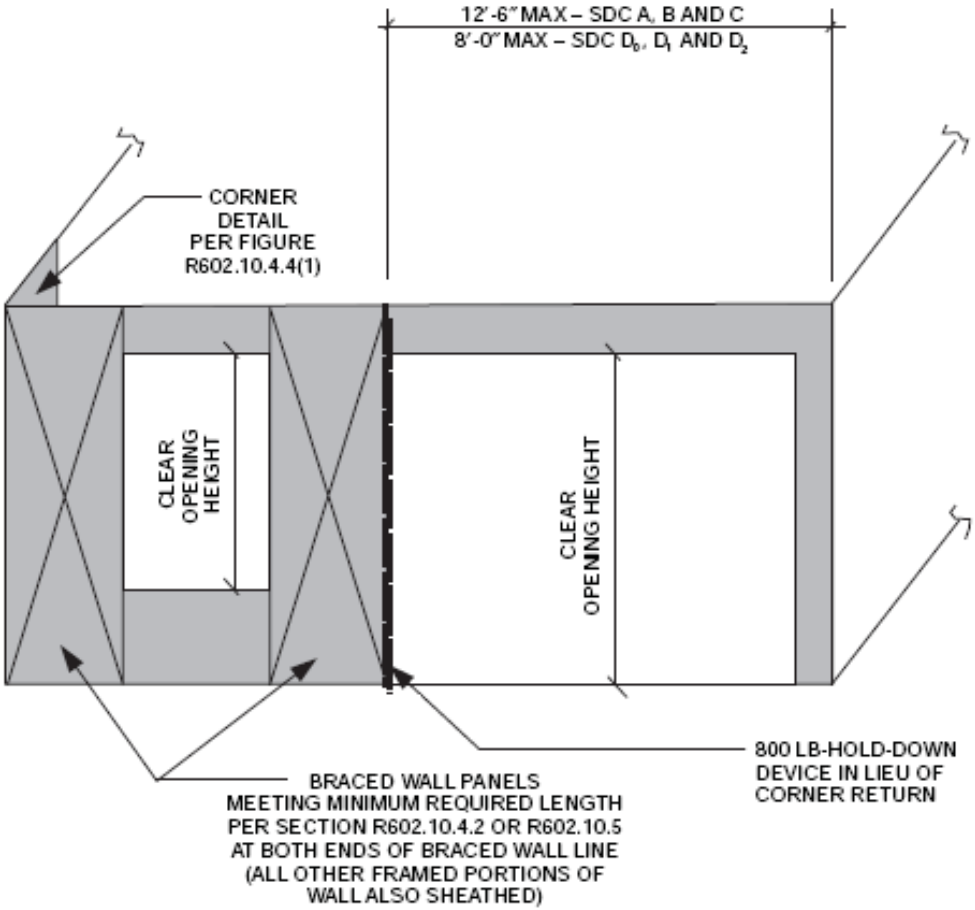


International Residential Code



International Residential Code



For SI: 1 foot = 305 mm. 1 pound = 4.448 N.

FIGURE R602.10.4.4(5)
BRACED WALL LINE WITH CONTINUOUS SHEATHING—FIRST BRACED WALL PANEL AWAY FROM END OF WALL LINE WITH HOLD-DOWN

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In SDC A,B & C where the basic wind speed is less than or equal to 100 mph, the code permits mixing of methods in the same story & from story to story. When using the continuous sheathing method in seismic Design Categories D0,D1 & D2, or where wind speed exceeds 100 mph, mixing is not permitted on the same story. When using the continuous portal frame method, the total amount of bracing in the braced wall line must still meet the applicable tabular values for continuous wall sheathing.

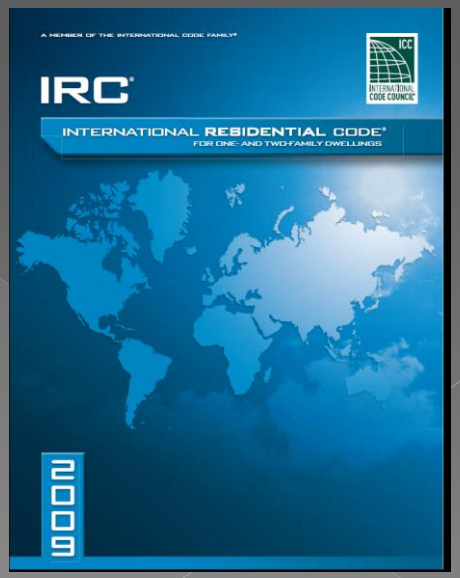

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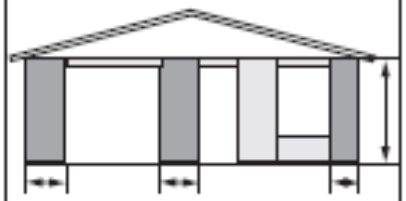
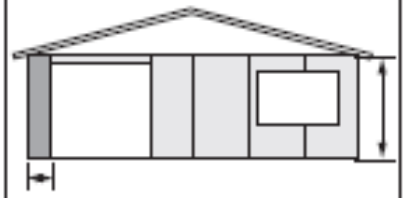
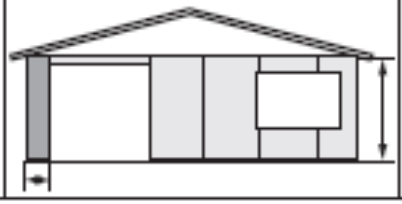
TABLE R602.10.4.1
CONTINUOUS SHEATHING METHODS

METHOD	MATERIAL	MINIMUM THICKNESS	FIGURE	CONNECTION CRITERIA
CS-WSP	Wood structural panel	$^3/_8$"		6d common (2" × 0.113") nails at 6" spacing (panel edges) and at 12" spacing (intermediate supports) or 16 ga. × $1^3/_4$ staples at 3" spacing (panel edges) and 6" spacing (intermediate supports)
CS-G	Wood structural panel adjacent to garage openings and supporting roof load only[a,b]	$^3/_8$"		See Method CS-WSP
CS-PF	Continuous portal frame	See Section R602.10.4.1.1		See Section R602.10.4.1.1

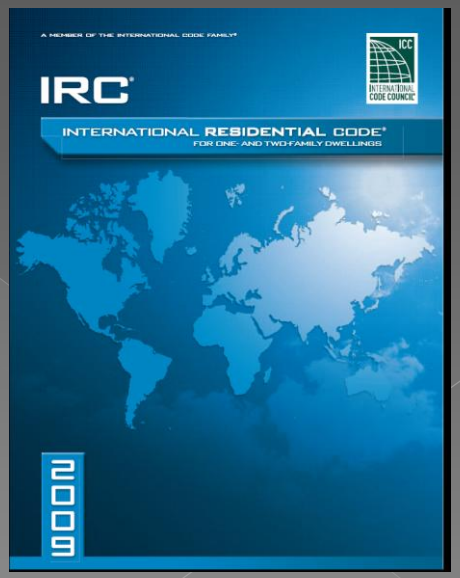
For SI: 1 inch = 25.4 mm, 1 pound per square foot = 47.89 Pa.

a. Applies to one wall of a garage only.

b. Roof covering dead loads shall be 3 psf or less.

International Residential Code

R602.10.6 & R602.10.7 Braced Wall Panel Connections & Support Modification: Requirements for braced wall panel connection to wood framing have been revised & the code now recognizes masonry stem wall construction for supporting braced wall panels & prescribes reinforcing when those walls are 48 inches or less in length.



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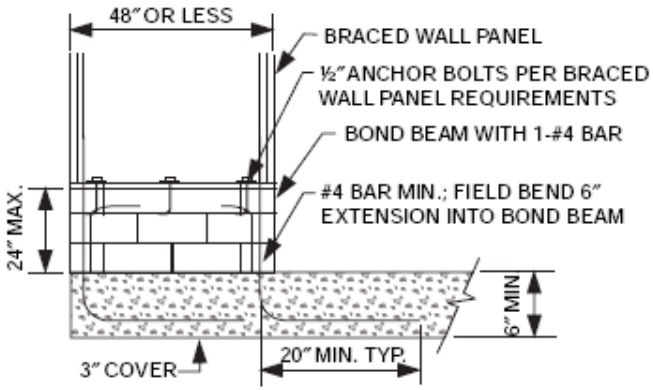
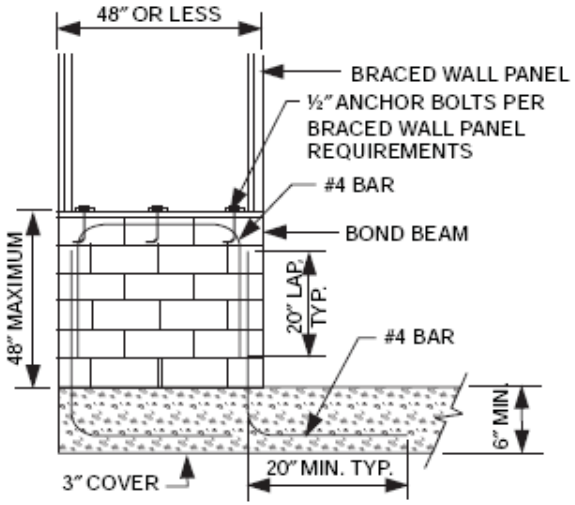
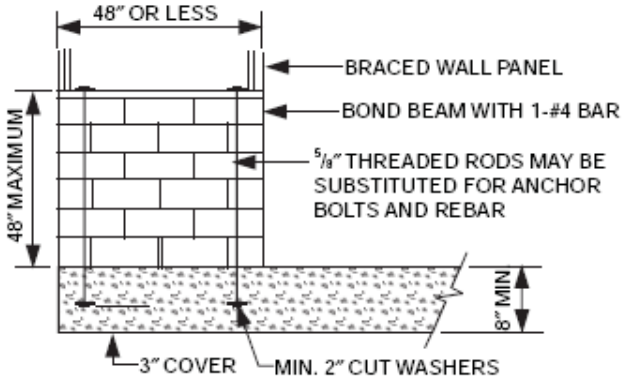


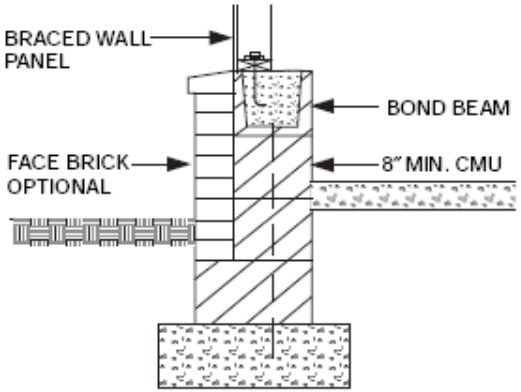
SHORT STEM WALL REINFORCEMENT



TALL STEM WALL REINFORCEMENT



OPTIONAL STEM WALL REINFORCEMENT



TYPICAL STEM WALL SECTION

NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN REBAR, THREADED RODS AND ANCHOR BOLTS.

International Residential Code

R602.10.6 Braced wall panels shall be connected to floor framing or foundation as follows:

1. Where joists are perpendicular to a braced wall panel above or below, a rim joist, band joist or blocking shall be provided along the entire length of the braced wall panel in accordance with Figure R602.10.6(1). Fastening of top & bottom wall plates to framing, rim joist, band joist and/or blocking shall be in accordance with Table R602.3(1).

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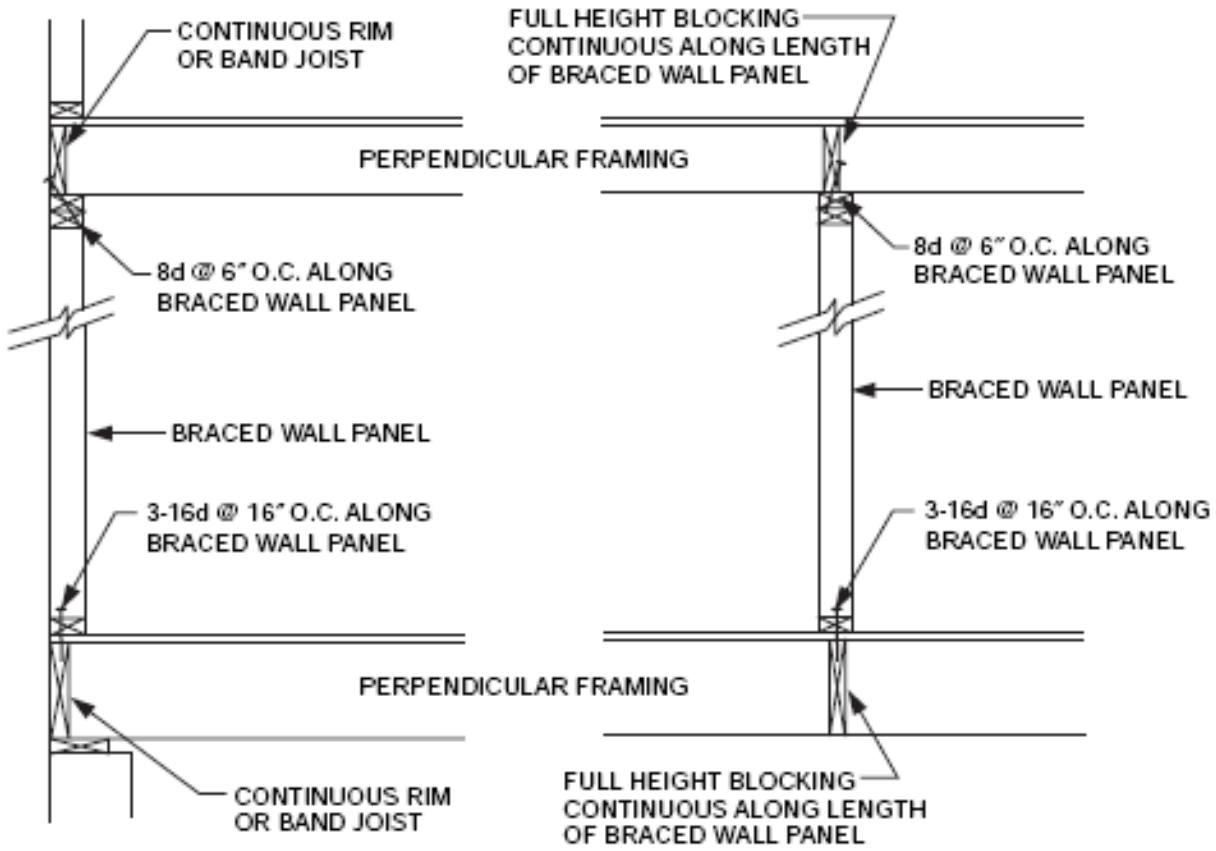

For SI: 1 inch = 25.4 mm.

FIGURE R602.10.6(1)
BRACED WALL PANEL CONNECTION WHEN PERPENDICULAR TO FLOOR/CEILING FRAMING

International Residential Code

2. Where joists are parallel to a braced wall panel above or below, a rim joist, end joist or other parallel framing member shall be provided directly above & below the braced wall panel in accordance with Figure R602.10.6(2). Where a parallel framing member cannot be located directly above or below the panel, full depth blocking at 16 inch spacing shall be provided between the parallel framing members to each side of the braced wall panel in accordance with Figure R602.10.6(2). Fastening of blocking and wall plates shall be accordance with Table R602.3(1) & Figure R602.10.6(2).

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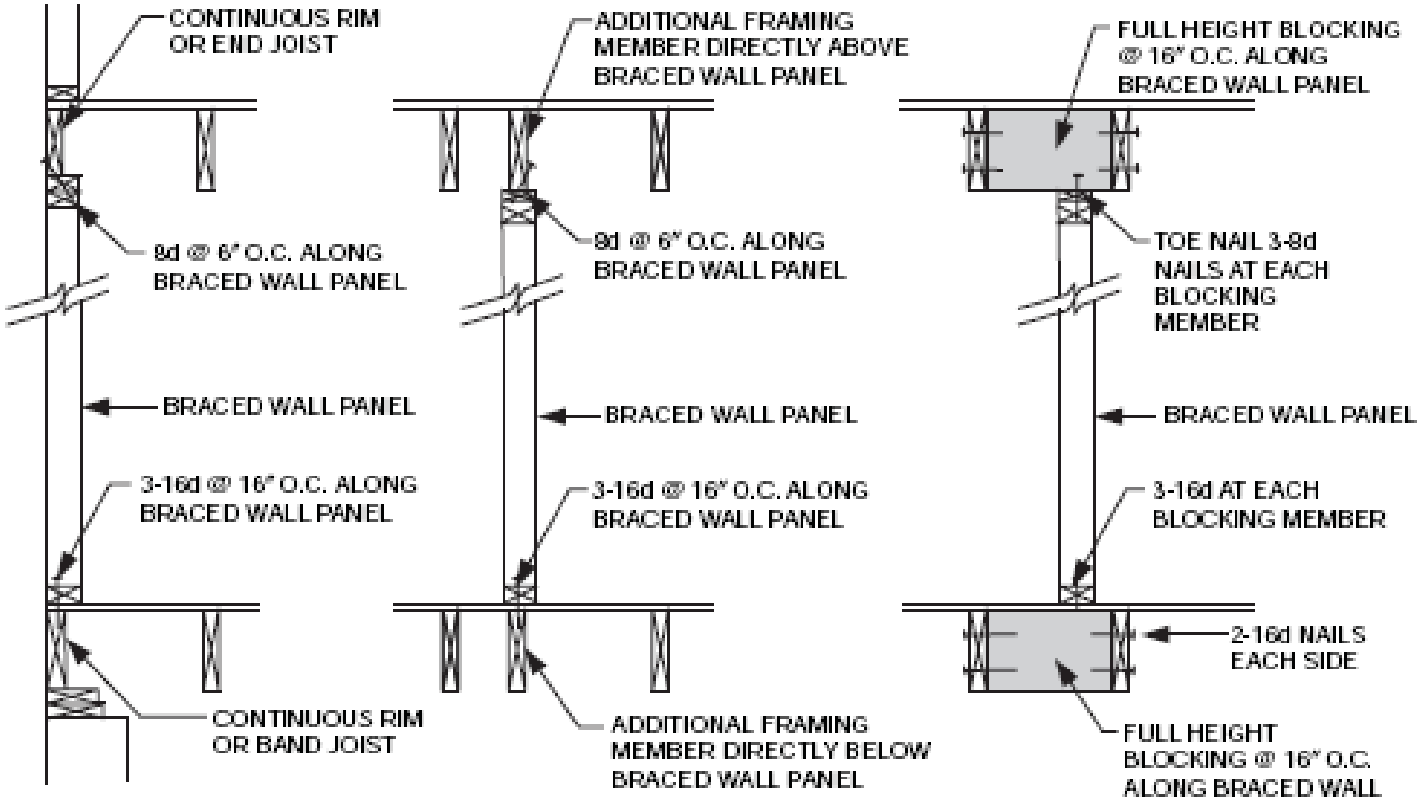
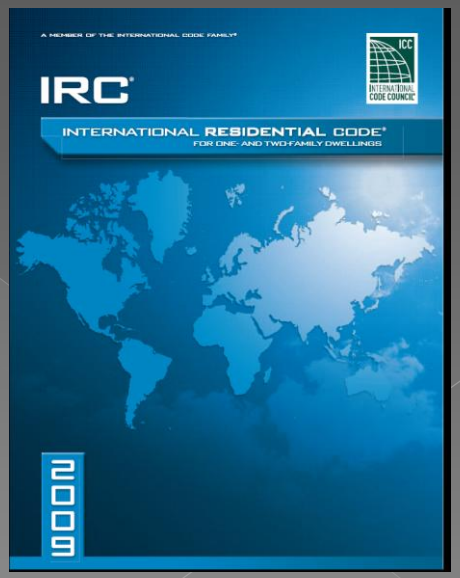


For SI: 1 inch = 25.4 mm.

FIGURE R602.10.6(2)
BRACED WALL PANEL CONNECTION WHEN PARALLEL TO FLOOR/CEILING FRAMING

International Residential Code

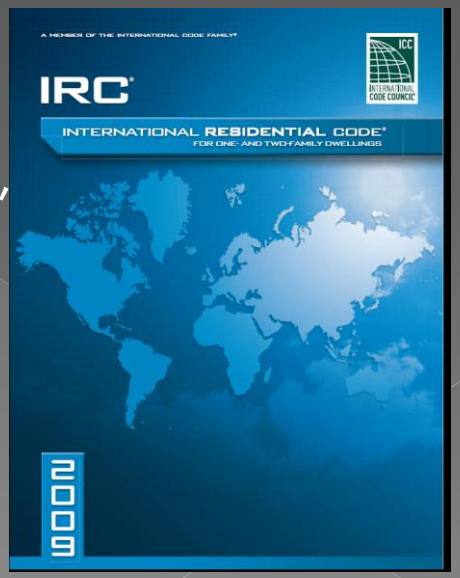
3. Connections of braced wall panels to concrete or masonry shall be in accordance with section R403.1.6.



International Residential Code

R602.10.7 Braced wall Panel support shall be provided as follows:

1. Cantilevered floor joists, supporting braced wall lines, shall comply with section R502.3.3. Solid blocking shall be provided at the nearest bearing wall location. In seismic Design Categories A, B & C where the cantilever is not more than 24 inches a full height rim joist instead of solid blocking shall be provided.



International Residential Code

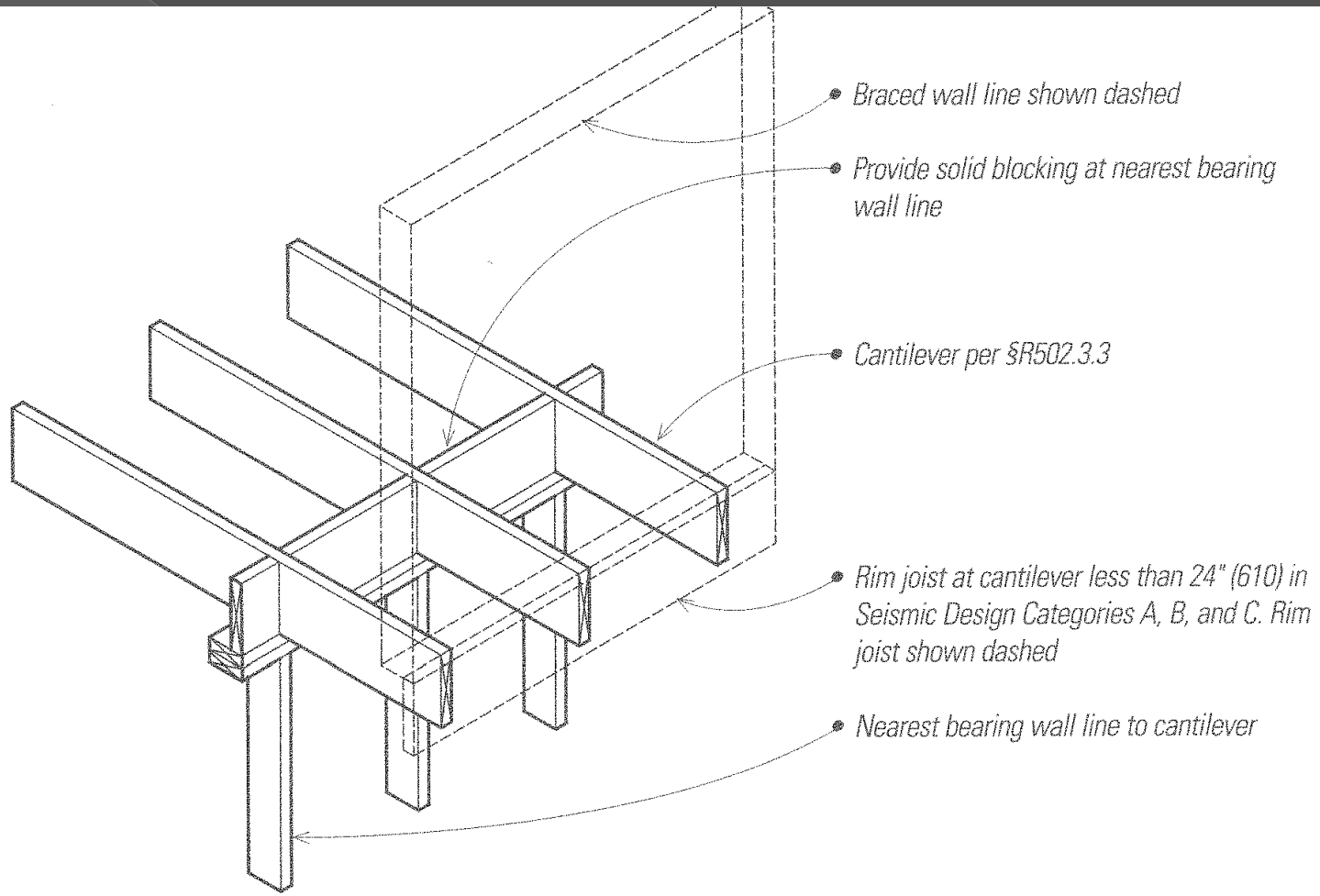
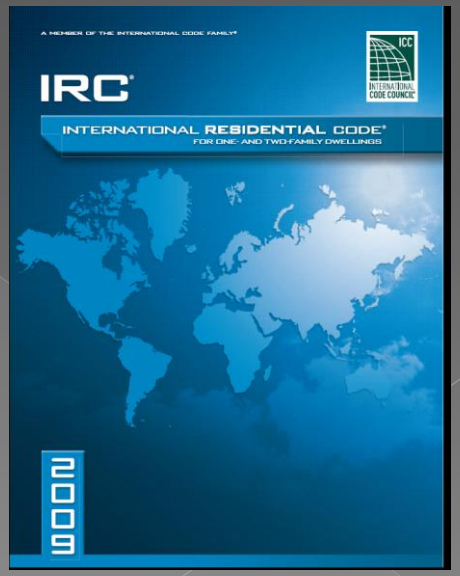


Figure R602.10.7 Braced Wall Panel Support

International Residential Code

2. Elevated post or pier foundations supporting braced wall panels shall be designed in accordance with accepted engineering practice.



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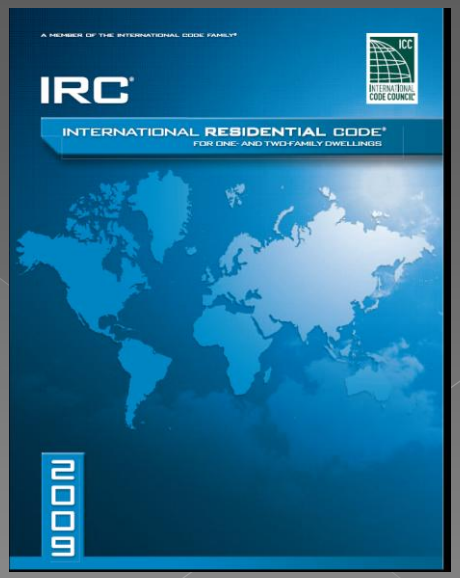
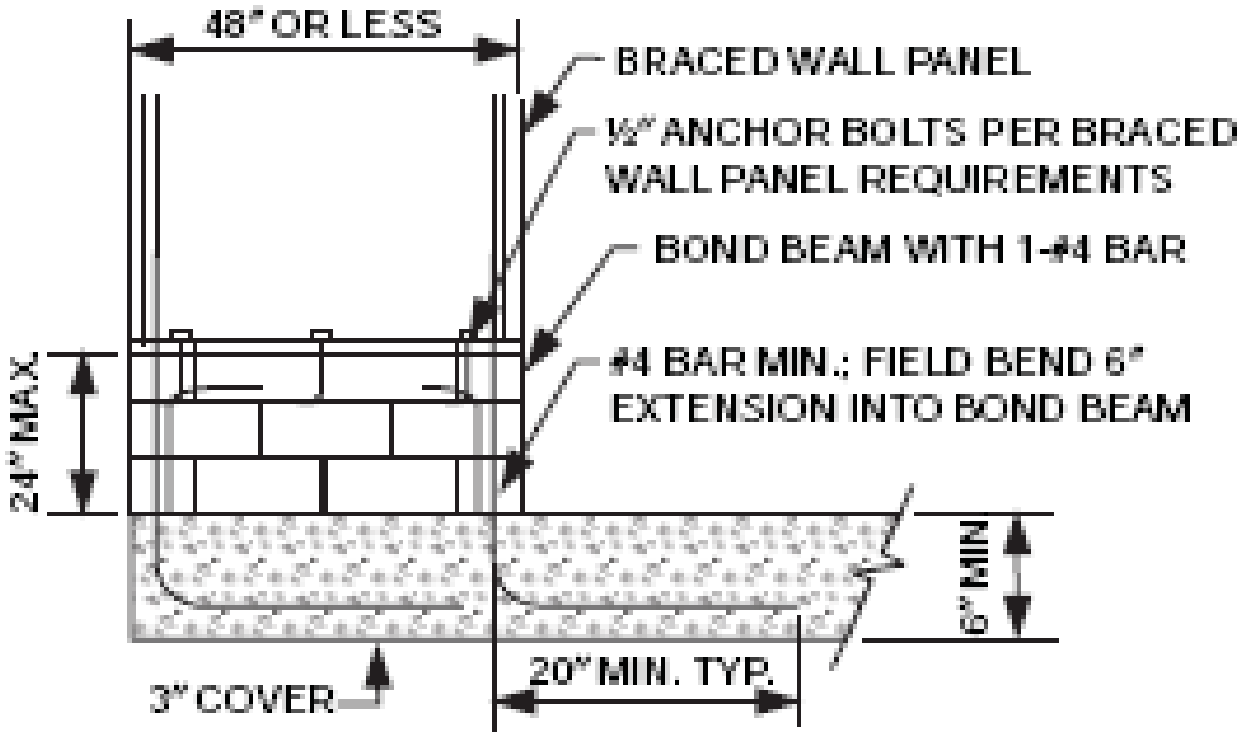
3. Masonry stem walls with a length of 48 inches or less supporting braced wall panels shall be reinforced in accordance with Figure R602.10.7. Masonry stem walls with a length greater than 48 inches supporting braced wall panels shall be constructed in accordance with section R403.1 Braced wall panels constructed in accordance with section R602.10.3.2 & R602.10.3.3 shall be attached to masonry stem walls.

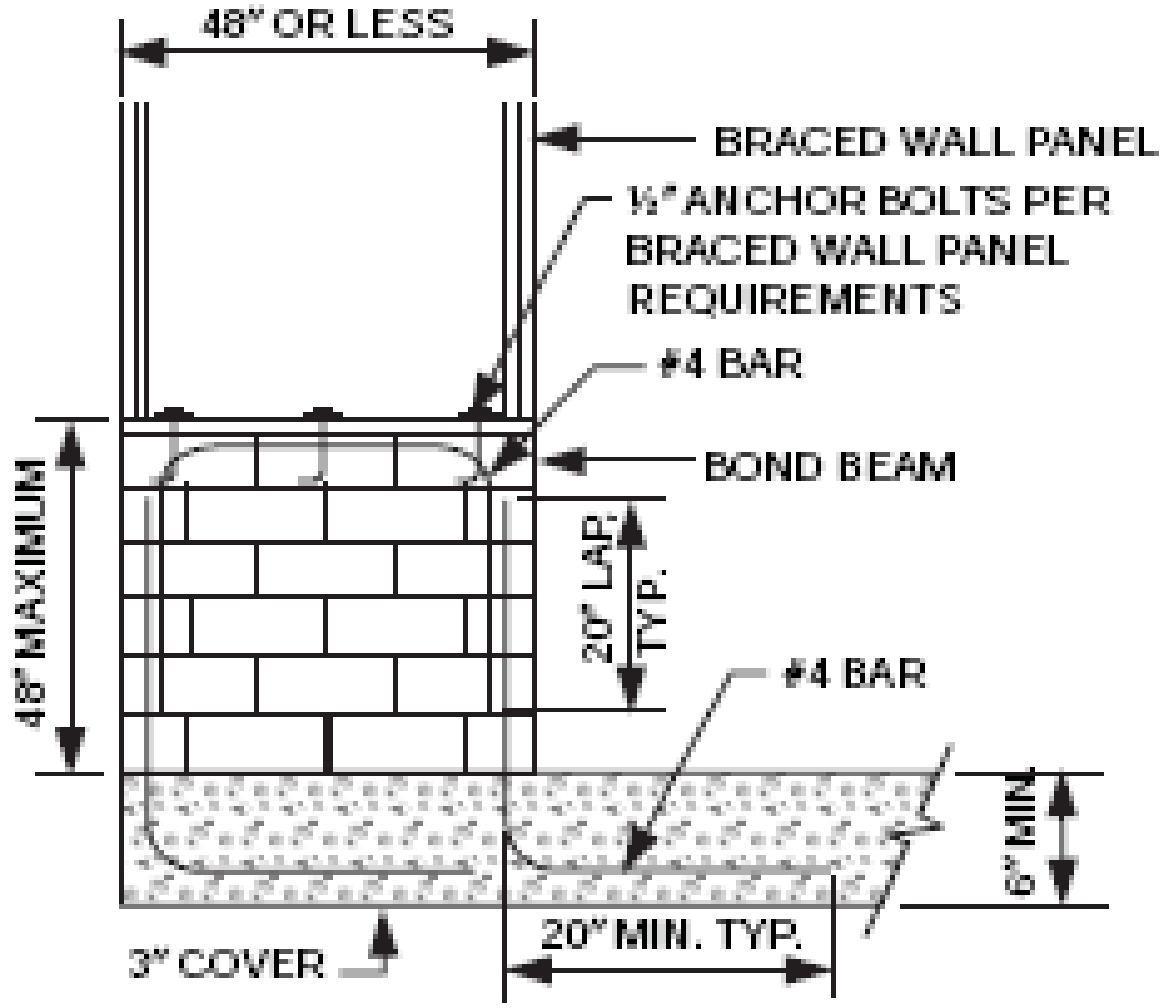


International Residential Code



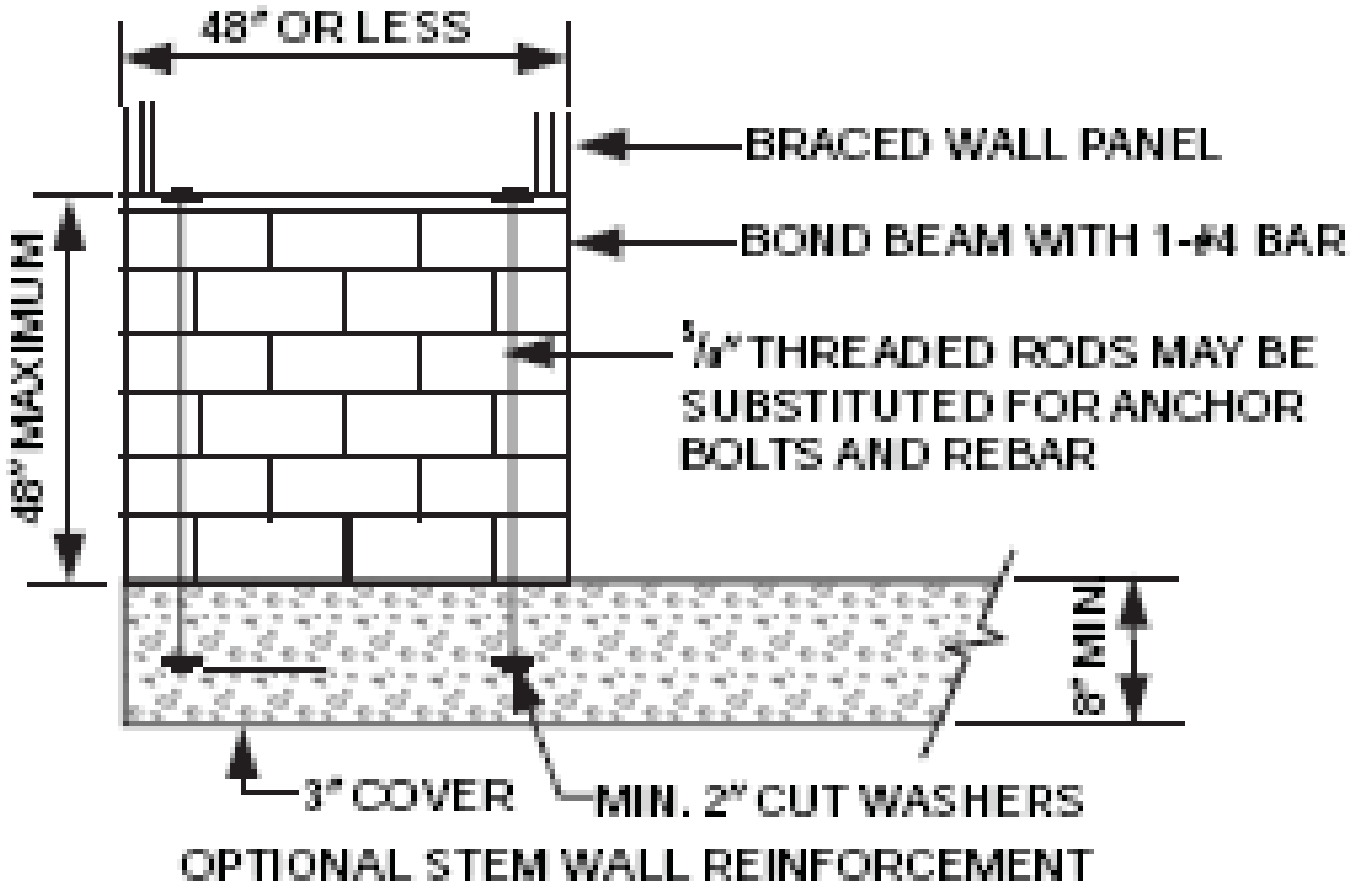
SHORT STEM WALL REINFORCEMENT

International Residential Code

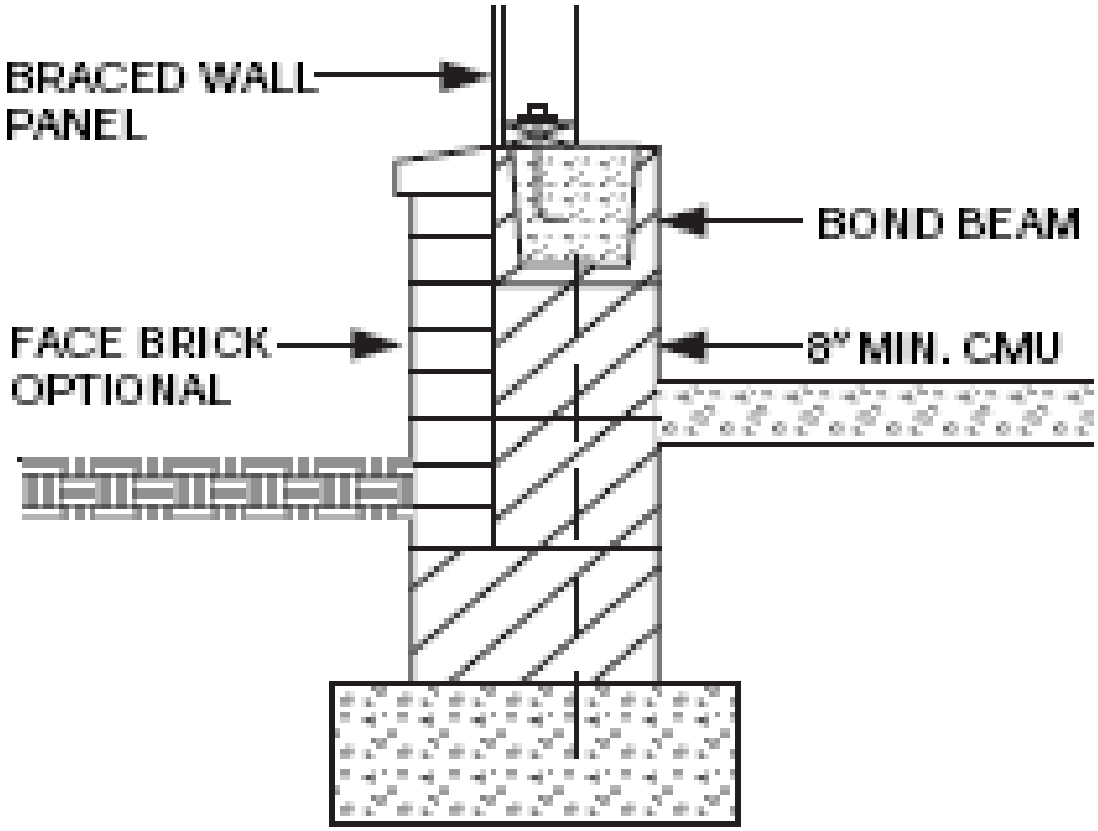


TALL STEM WALL REINFORCEMENT

International Residential Code

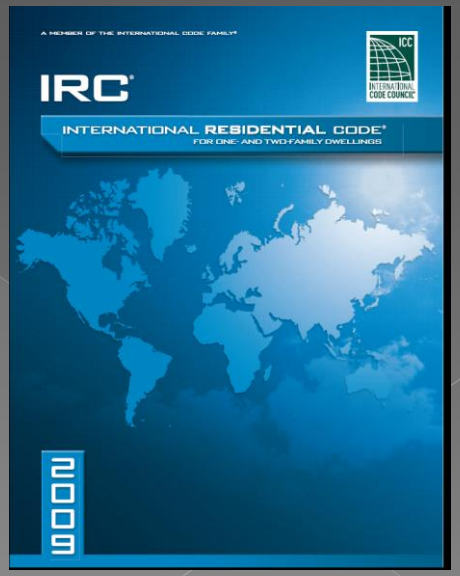


International Residential Code



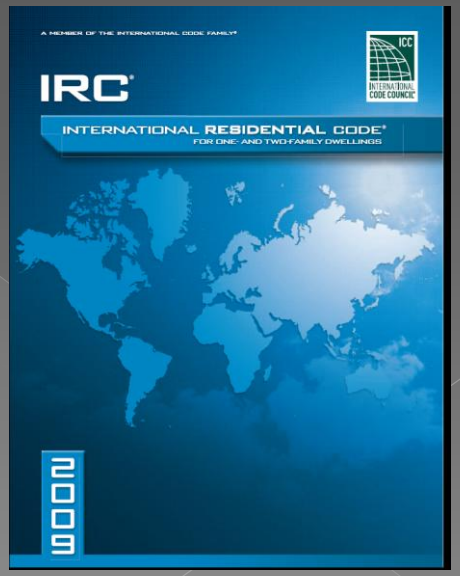
TYPICAL STEM WALL SECTION

International Residential Code



International Residential Code

NOTE: GROUT BOND BEAMS AND ALL CELLS WHICH CONTAIN
REBAR, THREADED RODS AND ANCHOR BOLTS.



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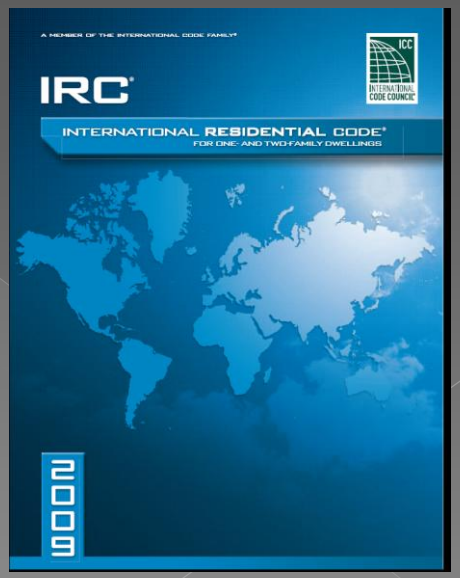
The change also clarifies that these bracing connection requirements apply to the individual braced wall panel segments, not the entire braced wall line. New figures illustrate the connection options to ensure proper installation without compromising the lateral load resisting capacity.

New text also recognizes floor joist cantilever conditions to support braced wall panels consistent with the requirements of section R502.3.3.



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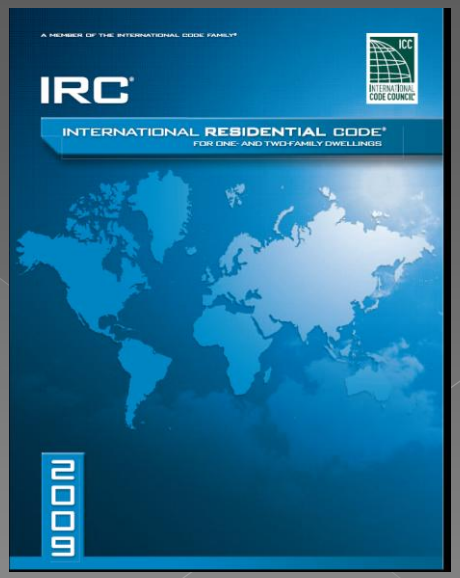
R602.10.8 Braced Wall Panel Joints

Modification:
The exception permitting horizontal joints without blocking in lower SDC has been deleted. The code now permits horizontal joints without blocking for panel sheathing except hardboard panel siding, provided the minimum required amount of bracing is doubled.



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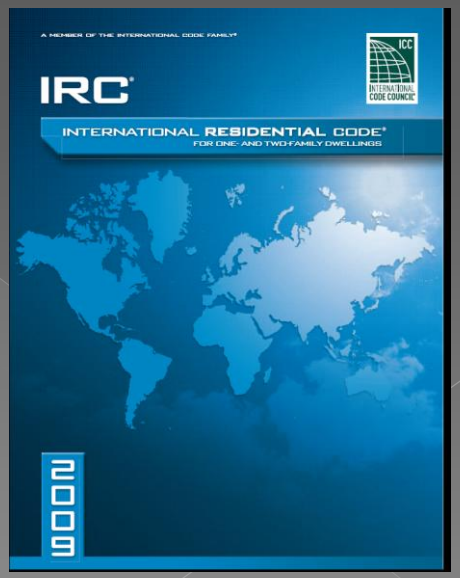
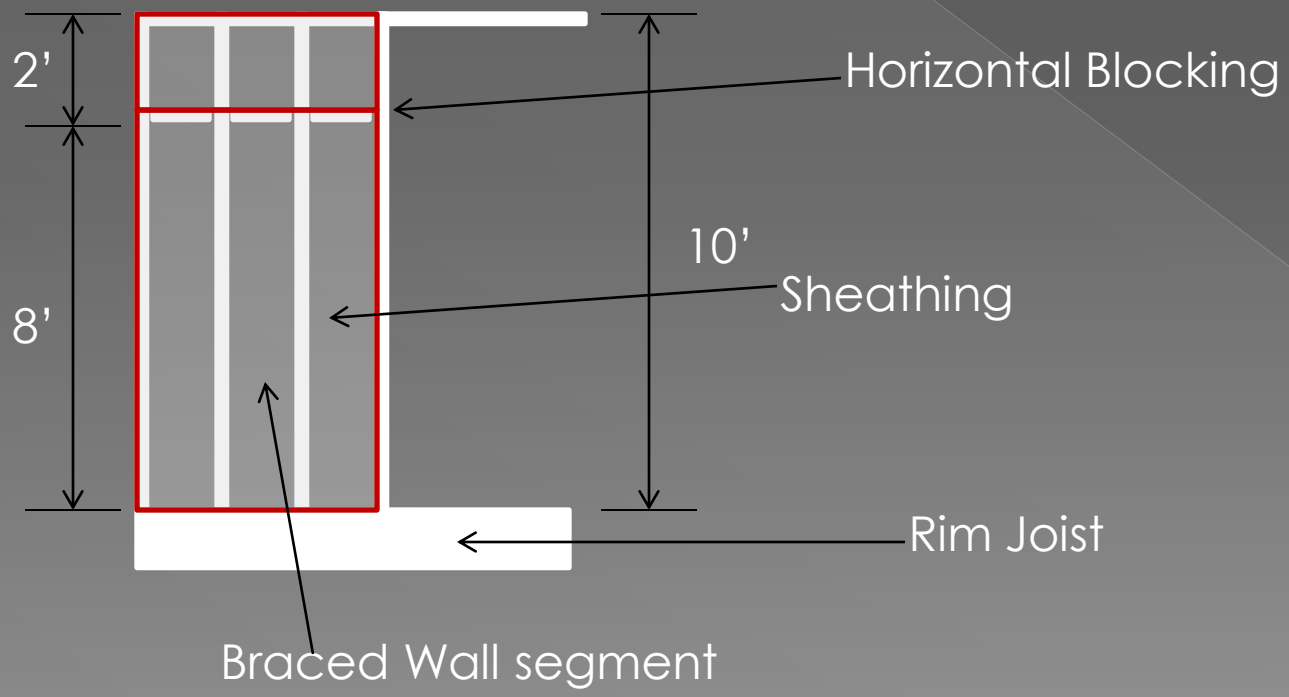
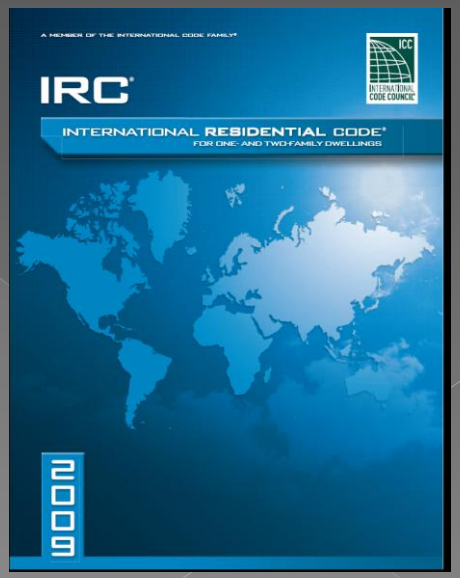
R602.10.8 replaces & modifies the 2006 R602.10.7
Blocking is now required for the horizontal joints of braced wall panel sheathing in all SDC. This change also clarifies that blocking is required only for the prescribed braced wall panels, not the entire braced wall line.
Blocking at horizontal joints shall not be required in wall segments that are not counted as braced wall panels.
Where the bracing length provided is at least twice the minimum length required by Tables R602.10.1.2(1) & R602.10.1.2(2) blocking at horizontal joints shall not be required in braced wall panels constructed using Methods WSP, SFB, GB, PBS or HPS.
Gypsum board braced wall panels(method GB) applied horizontally do not require attachment to horizontal blocking at joints



International Residential Code

Blocking at intermediate joints increases stiffness to keep braced wall panels from buckling out of plane when subject to in-plane loads. Testing has shown a 50% reduction in the bracing strength of wood structural panels when the blocking is omitted.



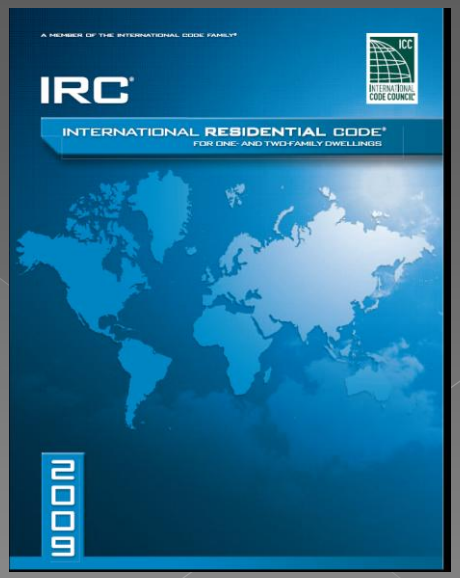


International Residential Code

602.10.9 Cripple Wall Bracing

Modification:

This section has been relocated & the terminology updated to be consistent with other changes to Section R602.10. Required bracing is now measured as length in feet rather than a percentage of the braced wall line & is determined from the wind or seismic table, whichever is greater value.



International Residential Code

R602.10.9 replaces & modifies the 2006 R602.10.2.
Table602.10.1 has been replaced by separate Tables R602.10.1.2(1) & R602.10.1.2(2) for determining the total length of bracing to resist the predominant loads from either wind or seismic forces.
The 8 types of bracing using isolated braced wall panels & previously represented by numbers are now known as intermittent bracing methods & have been relabeled with short abbreviations. Method WSP now represents wood structural panel bracing replacing the method 3 designation.

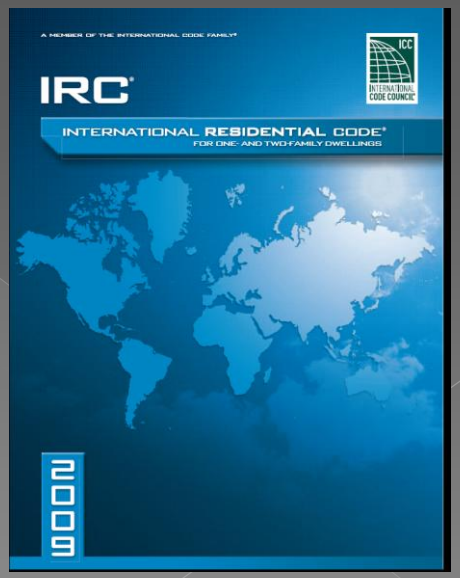


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TABLE R602.10.1.2(1)[a, b, c, d, e]—continued
BRACING REQUIREMENTS BASED ON WIND SPEED
(as a function of braced wall line spacing)

EXPOSURE CATEGORY B, 30 FT MEAN ROOF HEIGHT, 10 FT EAVE TO RIDGE HEIGHT, 10 FT WALL HEIGHT, 2 BRACED WALL LINES			MINIMUM TOTAL LENGTH (feet) OF BRACED WALL PANELS REQUIRED ALONG EACH BRACED WALL LINE			
Basic Wind Speed (mph)	Story Location	Braced wall Line Spacing (feet)	Method LIB[f, h]	Method GB (doubled sided)[g]	Method DWB, WSP, SFB, PCP, HPS[f, i]	Continuous Sheathing
≤ 100 (mph)		10	4.5	4.5	2.5	2.5
		20	8.5	8.5	5.0	4.0
		30	12.0	12.0	7.0	6.0
		40	15.5	15.5	9.0	7.5
		50	19.0	19.0	11.0	9.5
		60	22.5	22.5	13.0	11.0
		10	8.5	8.5	5.0	4.5
		20	16.0	16.0	9.0	8.0
		30	23.0	23.0	13.0	11.0
		40	29.5	29.5	17.0	14.5
		50	36.5	36.5	21.0	18.0
		60	43.5	43.5	25.0	21.0
		10	NP	12.5	7.5	6.0
		20	NP	23.5	13.5	11.5
		30	NP	34.0	19.5	16.5
		40	NP	44.0	25.0	21.5
		50	NP	54.0	31.0	26.5
		60	NP	64.0	36.5	31.0
≤ 110 (mph)		10	5.5	5.5	3.0	3.0
		20	10.0	10.0	6.0	5.0
		30	14.5	14.5	8.5	7.0
		40	18.5	18.5	11.0	9.0
		50	23.0	23.0	13.0	11.5
		60	27.5	27.5	15.5	13.5
		10	10.5	10.5	6.0	5.0
		20	19.0	19.0	11.0	9.5
		30	27.5	27.5	16.0	13.5
		40	36.0	36.0	20.5	17.5
		50	44.0	44.0	25.5	21.5
		60	52.5	52.5	30.0	25.5
		10	NP	15.5	9.0	7.5
		20	NP	28.5	16.5	14.0
		30	NP	41.0	23.5	20.0
		40	NP	53.0	30.5	26.0
		50	NP	65.5	37.5	32.0
		60	NP	77.5	44.5	37.5

International Residential Code

TABLE R602.10.1.2(1)[a, b, c, d, e]—continued
BRACING REQUIREMENTS BASED ON WIND SPEED
(as a function of braced wall line spacing)

For SI: 1 foot = 304.8 mm, 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s, 1 pound force = 4.448 N.

a. Tabulated bracing lengths are based on Wind Exposure Category B, a 30-ft mean roof height, a 10-ft eave to ridge height, a 10-ft wall height, and two braced wall lines sharing load in a given plan direction on a given story level. Methods of bracing shall be as described in Sections R602.10.2, R602.10.4 and R602.10.5. Interpolation shall be permitted.

NUMBER OF STORIES	EXPOSURE/HEIGHT FACTORS		
	Exposure B	Exposure C	Exposure D
1	1.0	1.2	1.5
2	1.0	1.3	1.6
3	1.0	1.4	1.7

b. For other mean roof heights and exposure categories, the required bracing length shall be multiplied by the appropriate factor from the following table:

c. For other roof-to-eave ridge heights, the required bracing length shall be multiplied by the appropriate factor from the following table: interpolation shall be permitted.

SUPPORT CONDITION	ROOF EAVE-TO-RIDGE HEIGHT			
	5 ft or less	10 ft	15 ft	20 ft
Roof only	0.7	1.0	1.3	1.6
Roof + floor	0.85	1.0	1.15	1.3
Roof + 2 floors	0.9	1.0	1.1	NP

d. For a maximum 9-foot wall height, multiplying the table values by 0.95 shall be permitted . For a maximum 8-foot wall height, multiplying, the table values by 0.90 shall be permitted. For a maximum 12-foot wall height, the table values shall be multiplied by 1.1.

e. For three or more braced wall lines in a given plan direction, the required bracing length on each braced wall line shall be multiplied by the appropriate factor from the following table:

NUMBER OF BRACED WALL LINES	ADJUSTMENT FACTOR
3	1.30
4	1.45
≥ 5	1.60

f. Bracing lengths are based on the application of gypsum board finish (or equivalent) applied to the inside face of a braced wall panel. When gypsum board finish (or equivalent) is not applied to the inside face of braced wall panels, the tabulated lengths shall be multiplied by the appropriate factor from the following table:

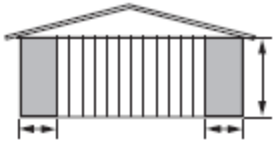
BRACING METHOD	ADJUSTMENT FACTOR
Method LIB	1.8
Methods DWB, WSP, SFB, PBS, PCP, HPS	1.4

g. Bracing lengths for Method GB are based on the application of gypsum board on both faces of a braced wall panel. When Method GB is provided on only one side of the wall, the required bracing amounts shall be doubled. When Method GB braced wall panels installed in accordance with Section R602.10.2 are fastened at 4 inches on center at panel edges, including top and bottom plates, and are blocked at all horizontal joints, multiplying the required bracing percentage for wind loading by 0.7 shall be permitted.

h. Method LIB bracing shall have gypsum board attached to at least one side according to the Section R602.10.2 Method GB requirements.

i. Required bracing length for Methods DWB, WSP, SFB, PBS, PCP and HPS in braced wall lines located in one-story buildings and in the top story of two or three story buildings shall be permitted to be multiplied by 0.80 when an approved hold-down device with a minimum uplift design value of 800 pounds is fastened to the end studs of each braced wall panel in the braced wall line and to the foundation or framing below.

International Residential Code

WSP	Wood structural panel (see Section R604)	$^{3}/_{8}''$		For exterior sheathing see Table R602.3(3) For interior sheathing see Table R602.3(1)

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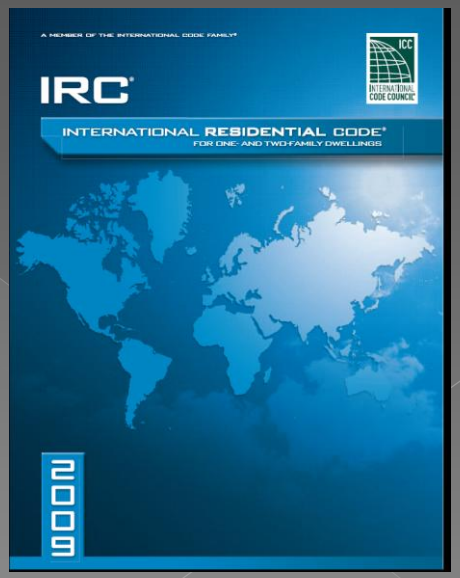
MONTGOMERY COUNTY
TENNESSEE

R602.11 Wall Anchoring

Clarification:
Braced wall panel connections to wood framing at interior & exterior wall locations have been consolidated in the appropriate connections provisions in section 602.10.6



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Section602.11 now includes only those provisions related to anchorage of the braced wall line to concrete & masonry foundations.

As part of the effort to reorganize the all bracing provisions of sections 602.10 & 602.11, redundant language has been removed & all provisions related to braced wall panel connections to wood framing of floor & roof/ceiling diaphragms are now located in section R602 .10.6.

International Residential Code

Section 602.11, Wall Anchorage, consolidates requirements for anchoring the sill plate of the braced wall line to a concrete or masonry foundation. Reorganization of this section clarifies that section R403.1.6 applies to the sill anchorage of the braced wall lines for all buildings in SDC A,B, and 1-2 family dwellings in SDC C.

The anchorage provisions of section 602.11.1 apply to all buildings in SDCs D0, D1, & D2 and in townhouses in SDC C.

The stepped foundation provisions related to wall bracing do not apply to buildings sited in SDC A, B, or C.

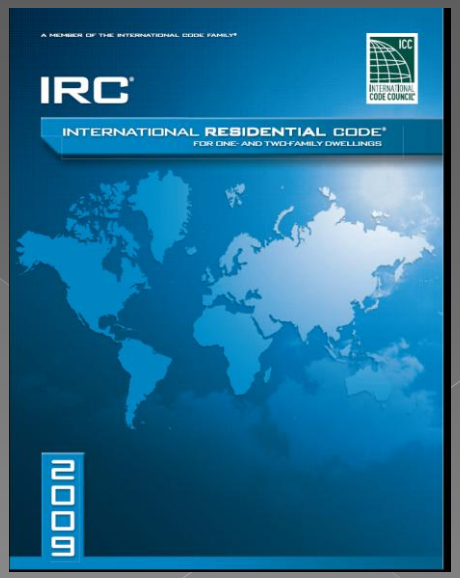
The code no longer differentiates interior from exterior braced wall panels or braced wall lines.

International Residential Code

R612.1 Window Installation

Window manufactures must provide installation instructions. Installation must comply with the window's installation instructions.

Window and door openings shall be flashed in accordance with section R703.8



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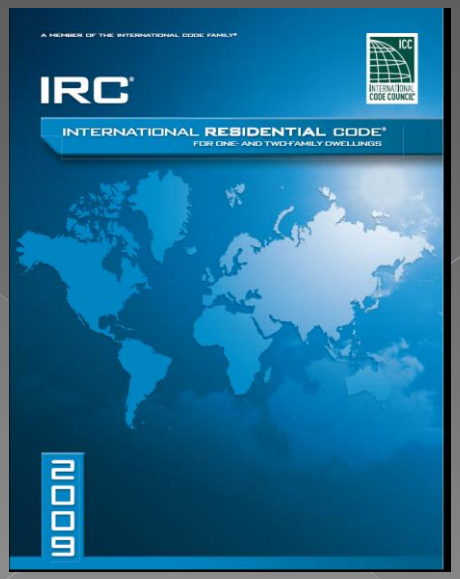
R612.2 Window Sills

Where the opening of a window is located more than 72 inches above the exterior finished grade or surface below, the lowest part of the window's clear opening must be a minimum of 24 inches above the finished floor of the room where the window is located. Glazing between the floor and 24 inches shall be fixed or have openings such that a 4-inch diameter sphere cannot pass through.

1. Openings that are provided with window fall prevention devices shall comply with section R612.3 & meet requirements of ASTM F 2090.
2. Windows that are provided with opening limiting devices shall comply with Section R612.4, window opening limit devices shall be self acting and shall be positioned to prohibit the free passage of a 4 inch diameter rigid sphere.



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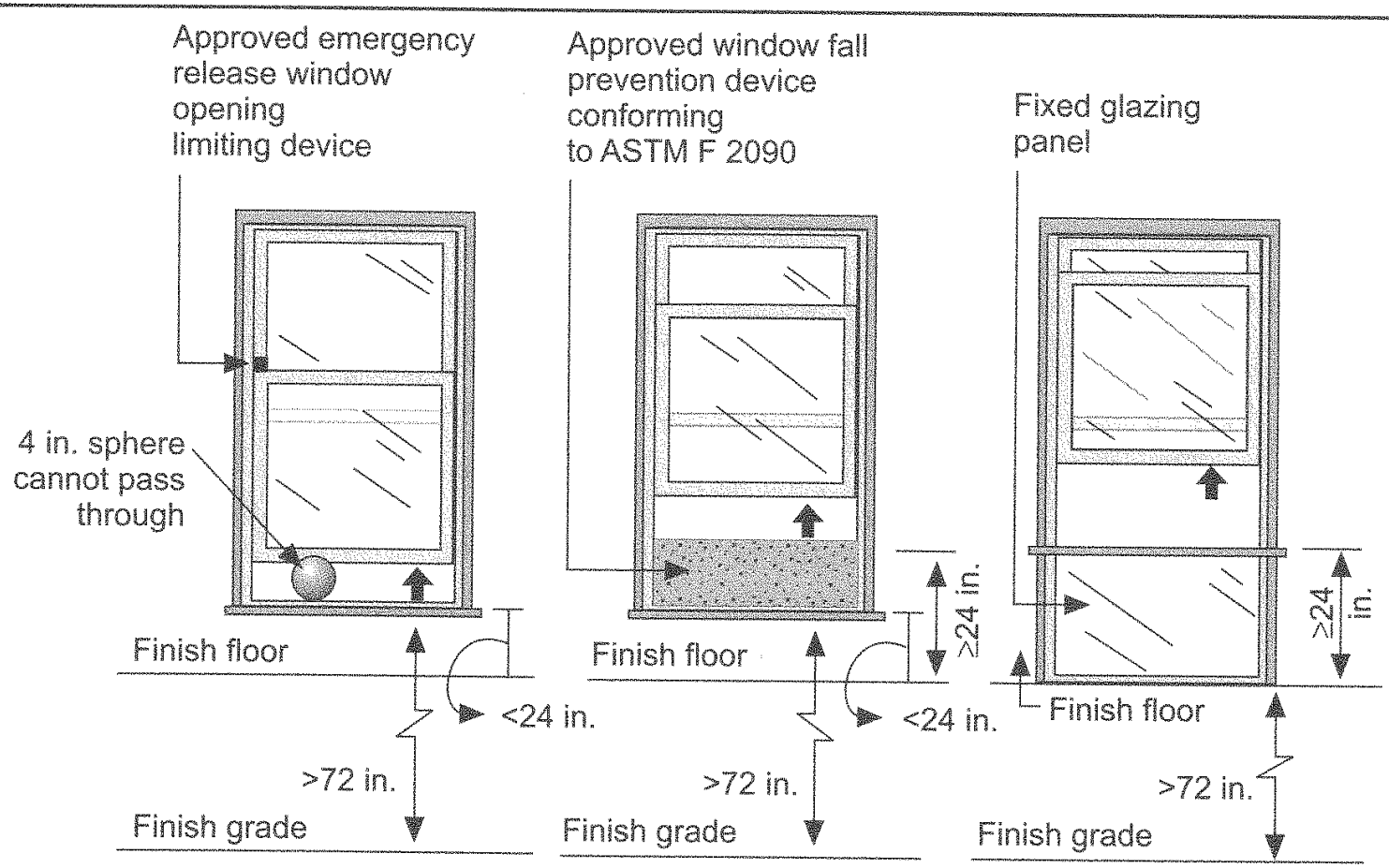

For SI: 1 inch = 25.4 mm.

Figure R612.2
WINDOW SILL HEIGHT

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R612.4.2 Operation for emergency escape

Window opening limiting devices shall be designed with release mechanisms to allow for emergency escape through the window opening without the need for keys, tools or special knowledge.

Window opening limiting devices shall comply with all of the following:

1. Release of the window opening-limiting device shall require no more than 15 pounds (66 N) of force.
2. The window opening limiting device release mechanism shall operate properly in all types of weather.
3. Window opening limiting devices shall have their release mechanisms clearly identified for proper use in an emergency.

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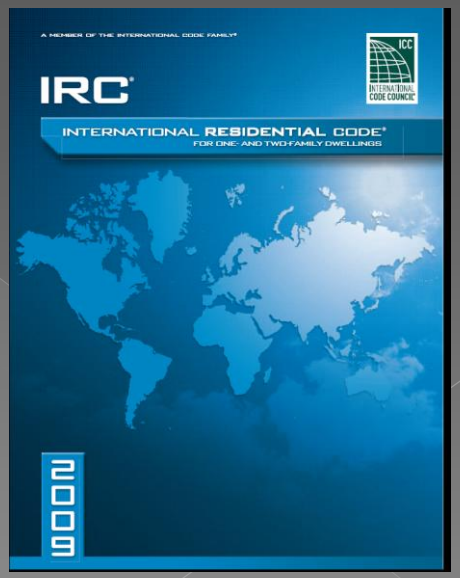
The window opening limiting device shall not reduce the minimum net clear opening area of the window unit below what is required by Section R312.1.1 of the



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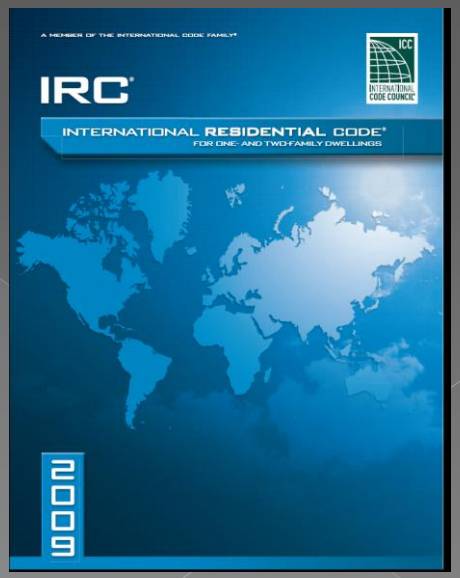
R702.3.7 Horizontal Gypsum Board Diaphragm ceiling

1. Gypsum board permitted on wood joists to create a horizontal diaphragm (see table R702.3.7)
2. Gypsum board MUST be installed perpendicular to ceiling framing members.
3. End joints of adjacent courses of board cannot occur on the same joist.
4. Gypsum board cannot be used to resist lateral forces imposed by masonry or concrete.

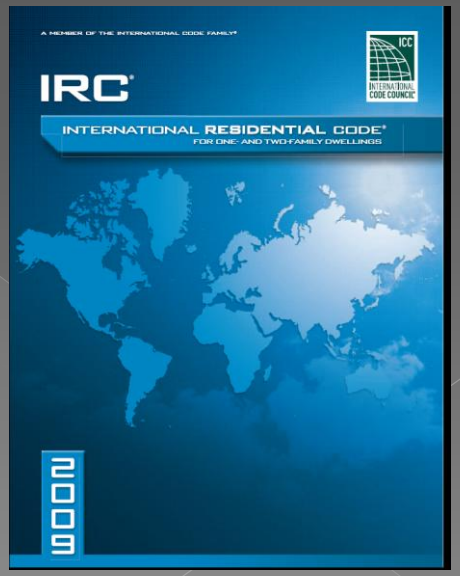


Makes IRC more consistent with IBC

International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 7
WALL COVERING



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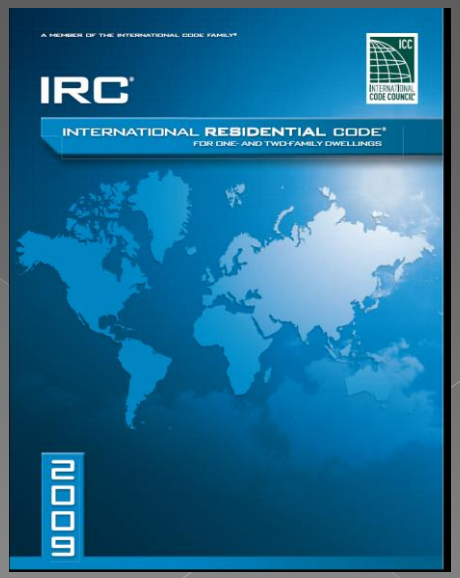
R702.4.2 Cement, Fiber Cement and Glass Mat Gypsum Backers

Green gypsum board is no longer allowed to be used as a backer behind tiled tub and shower walls.

Must be in compliance ASTM C 1288,C 1325, C 1178



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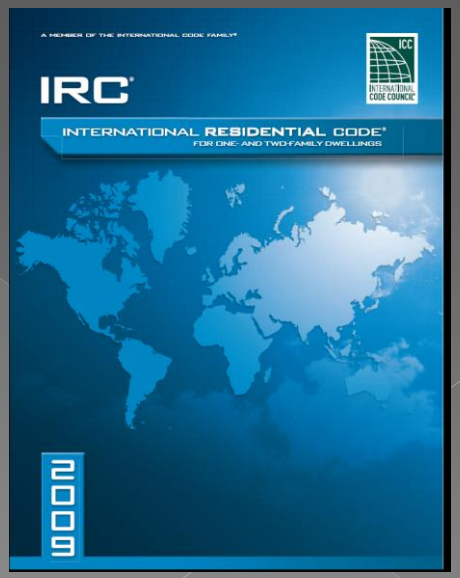
R703.1.1 General: Draining Exterior Wall Assemblies

A means of draining water that enters the assembly to the exterior must be provided.

Need to flash properly and ensure weep holes are placed properly.



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R703.2,Table R703.4 Water Resistive barrier Performance requirements for wind resistance have been added to the water resistance provisions of exterior wall covering systems. Changes to Table R703.4 clarify the water resistive barrier requirements for various wall covering & cladding systems & update the fastening requirements to reflect current industry practices.

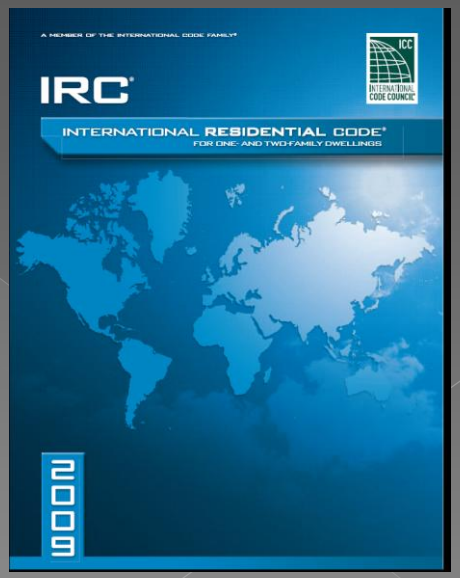

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TABLE R703.4
WEATHER–RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL		NOMINAL THICKNESS[d] (inches)	JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b, c, d]					
					Wood or wood structural panel sheathing	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Horizontal aluminum[a]	Without insulation	0.019[f]	Lap	Yes	0.120 nail $1^1/_2$″ long	0.120 nail 2″ long	0.120 nail 2″ long	0.120 nail[y]	Not allowed	Same as stud spacing
		0.024	Lap	Yes	0.120 nail $1^1/_2$″ long	0.120 nail 2″ long	0.120 nail 2″ long	0.120 nail[y]	Not allowed	
	With insulation	0.019	Lap	Yes	0.120 nail $1^1/_2$″ long	0.120 nail $2^1/_2$″ long	0.120 nail $2^1/_2$″ long	0.120 nail[y]	0.120 nail $1^1/_2$″ long	
Anchored veneer: brick, concrete, masonry or stone		2	Section R703	Yes	See Section R703 and Figure R703.7[g]					
Adhered veneer: concrete, stone or masonry[w]		—	Section R703	Yes Note w	See Section R703.6.1[g] or in accordance with the manufacturer's instructions.					
Hardboard[k] Panel siding-vertical		$^7/_{16}$	—	Yes	Note m	Note m	Note m	Note m	Note m	6″ panel edges 12″ inter. sup.[a]
Hardboard[k] Lap-siding-horizontal		$^7/_{16}$	Note p	Yes	Note o	Note o	Note o	Note o	Note o	Same as stud spacing 2 per bearing
Steel[h]		29 ga.	Lap	Yes	0.113 nail $1^3/_4$″ Staple–$1^3/_4$″	0.113 nail $2^3/_4$″ Staple–$2^1/_2$″	0.113 nail $2^1/_2$″ Staple–$2^1/_4$″	0.113 nail[v] Staple[v]	Not allowed	Same as stud spacing

International Residential Code

TABLE R703.4
WEATHER–RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL	NOMINAL THICKNESS[a] (inches)	JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b, c, d]					
				Wood or wood structural panel sheathing	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Particleboard panels	$^3/_8$ – $^1/_2$	—	Yes	6d box nail (2″ × 0.099″)	6d box nail (2″ × 0.099″)	6d box nail (2″ × 0.099″)	box nail[v]	6d box nail (2″ × 0.099″), $^3/_8$ not allowed	6″ panel edge, 12″ inter. sup.
	$^5/_8$	—	Yes	6d box nail (2″ × 0.099″)	8d box nail ($2^1/_2$″ × 0.113″)	8d box nail ($2^1/_2$″ × 0.113″)	box nail[v]	6d box nail (2″ × 0.099″)	
Wood structural panel siding[i] (exterior grade)	$^3/_8$ – $^1/_2$	Note p	Yes	0.099 nail–2″	0.113 nail–$2^1/_2$″	0.113 nail–$2^1/_2$″	0.113 nail[v]	0.099 nail–2″	6″ panel edges, 12″ inter. sup.
Wood structural panel lapsiding	$^3/_8$ – $^1/_2$	Note p Note x	Yes	0.099 nail–2″	0.113 nail–$2^1/_2$″	0.113 nail–$2^1/_2$″	0.113 nail[v]	0.099 nail–2″	8″ along bottom edge
Vinyl siding[l]	0.035	Lap	Yes	0.120 nail (shank) with a 0.313 head or 16 gauge staple with $^3/_8$ to $^1/_2$-inch crown[y, z]	0.120 nail (shank) with a 0.313 head or 16 gage staple with $^3/_8$ to $^1/_2$-inch crown[y]	0.120 nail (shank) with a 0.313 head or 16 gage staple with $^3/_8$ to $^1/_2$-inch crown[y]	0.120 nail (shank) with a 0.313 head per Section R703.11.2	Not allowed	16 inches on center or specified by the manufacturer instructions or test report
Wood[j] rustic, drop	$^3/_8$ Min	Lap	Yes	Fastener penetration into stud–1″				0.113 nail–$2^1/_2$″ Staple–2″	Face nailing up to 6″ widths, 1 nail per bearing; 8″ widths and over, 2 nails per bearing
Shiplap	$^{19}/_{32}$ Average	Lap	Yes						
Bevel	$^7/_{16}$								
Butt tip	$^3/_{16}$	Lap	Yes						
Fiber cement panel siding[t]	$^5/_{16}$	Note q	Yes Note u	6d common corrosion-resistant nail[r]	6d common corrosion-resistant nail[r]	6d common corrosion-resistant nail[r]	6d common corrosion resistant (12″ × 0.113″) nail[r, v]	4d common corrosion resistant nail[r]	6″ o.c. on edges, 12″ o.c. on intermed. studs

International Residential Code

TABLE R703.4
WEATHER–RESISTANT SIDING ATTACHMENT AND MINIMUM THICKNESS

SIDING MATERIAL	NOMINAL THICKNESS[a] (inches)	JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b, c, d]					
				Wood or wood structural panel sheathing	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Particleboard panels	$^3/_8$ – $^1/_2$	—	Yes	6d box nail (2″ × 0.099″)	6d box nail (2″ × 0.099″)	6d box nail (2″ × 0.099″)	box nail[v]	6d box nail (2″ × 0.099″), $^3/_8$ not allowed	6″ panel edge, 12″ inter. sup.
	$^5/_8$	—	Yes	6d box nail (2″ × 0.099″)	8d box nail ($2^1/_2$″ × 0.113″)	8d box nail ($2^1/_2$″ × 0.113″)	box nail[v]	6d box nail (2″ × 0.099″)	
Wood structural panel siding[i] (exterior grade)	$^3/_8$ – $^1/_2$	Note p	Yes	0.099 nail–2″	0.113 nail–$2^1/_2$″	0.113 nail–$2^1/_2$″	0.113 nail[v]	0.099 nail–2″	6″ panel edges, 12″ inter. sup.
Wood structural panel lapsiding	$^3/_8$ – $^1/_2$	Note p Note x	Yes	0.099 nail–2″	0.113 nail–$2^1/_2$″	0.113 nail–$2^1/_2$″	0.113 nail[v]	0.099 nail–2″	8″ along bottom edge
Vinyl siding[l]	0.035	Lap	Yes	0.120 nail (shank) with a 0.313 head or 16 gauge staple with $^3/_8$ to $^1/_2$-inch crown[y, z]	0.120 nail (shank) with a 0.313 head or 16 gage staple with $^3/_8$ to $^1/_2$-inch crown[y]	0.120 nail (shank) with a 0.313 head or 16 gage staple with $^3/_8$ to $^1/_2$-inch crown[y]	0.120 nail (shank) with a 0.313 head per Section R703.11.2	Not allowed	16 inches on center or specified by the manufacturer instructions or test report
Wood[j] rustic, drop	$^3/_8$ Min	Lap	Yes	Fastener penetration into stud–1″				0.113 nail–$2^1/_2$″ Staple–2″	Face nailing up to 6″ widths, 1 nail per bearing; 8″ widths and over, 2 nails per bearing
Shiplap	$^{19}/_{32}$ Average	Lap	Yes						
Bevel	$^7/_{16}$								
Butt tip	$^3/_{16}$	Lap	Yes						
Fiber cement panel siding[q]	$^5/_{16}$	Note q	Yes Note u	6d common corrosion-resistant nail[r]	6d common corrosion-resistant nail[r]	6d common corrosion-resistant nail[r]	6d common corrosion resistant (12″ × 0.113″) nail[r, v]	4d common corrosion resistant nail[r]	6″ o.c. on edges, 12″ o.c. on intermed. studs

International Residential Code

Weather resistant changed to water-resistive barrier Felt(or other approved material) required to be applied over exterior wall studs or sheathing must be continuous to top of walls (even gable end walls)

REGARDLESS OF THE TYPE OF SIDING, A WATER-RESISTIVE BARRIER IS REQUIRED

The provisions for whether resistance in section R703.1 have been broken into 2 subsections to recognize both water & wind resistance for exterior wall covering systems.

The omission of a water resistive barrier behind masonry veneer with a 1 inch air space is no longer permitted by Table R703.4. The line item for stone veneer has been changed to 'anchored veneer'. Anchored veneer now includes brick, concrete, masonry & stone that is secured to the structure with the code prescribed metal ties. Other changes include fastening requirements for wood structural panel siding & vinyl siding to recognize current industry & manufacturer's recommendations & rest reports.

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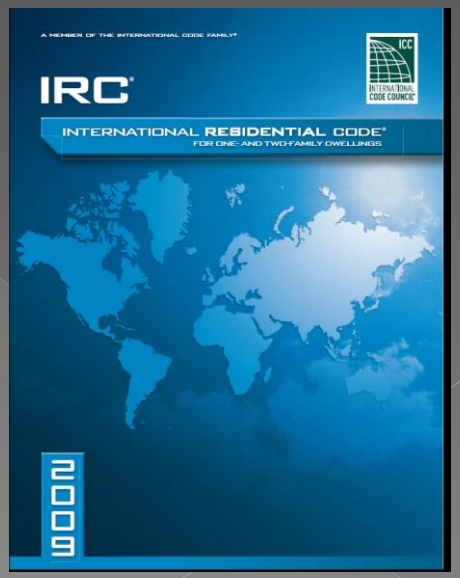
R703.6.3 Water Resistive barrier- behind plaster

For wood-based sheathing attached to the building exterior behind plaster, either



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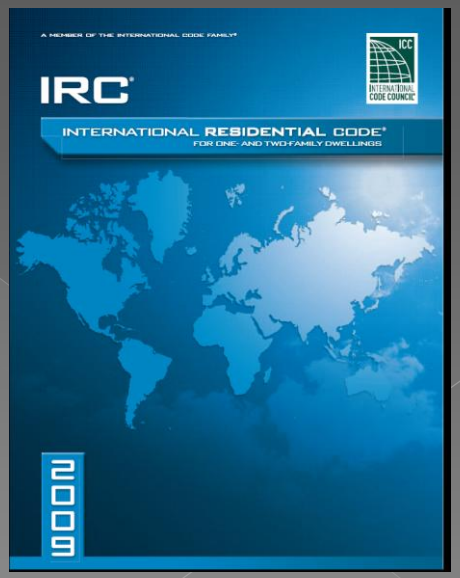
R703.7 Stone and masonry veneer, general. Stone and
masonry veneer shall be installed in accordance with this chapter, Table R703.4 and Figure R703.7. These veneers installed over a backing of wood or cold-formed steel shall be limited to the first *story above-grade and shall not exceed 5 inches (127* mm) in thickness. See Section R602.12 for wall bracing requirements for masonry veneer for wood framed construction and Section R603.9.5 for wall bracing requirements for masonry veneer for cold-formed steel construction.



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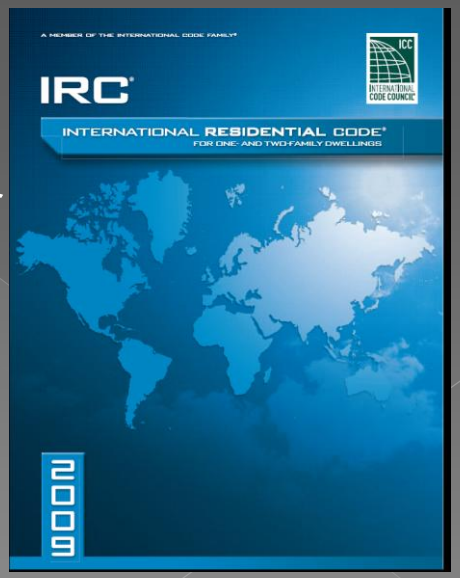
Exceptions:

1. For all buildings in Seismic Design Categories A, B and C, exterior stone or masonry veneer, as specified in Table R703.7(1), with a backing of wood or steel framing shall be permitted to the height specified in Table R703.7(1) above a noncombustible foundation.
2. For detached one- or two-family *dwellings in Seismic*

Design Categories D0, D1 and D2, exterior stone or masonry veneer, as specified in Table R703.7(2), with a backing of wood framing shall be permitted to the height specified in Table R703.7(2) above a noncombustible foundation.



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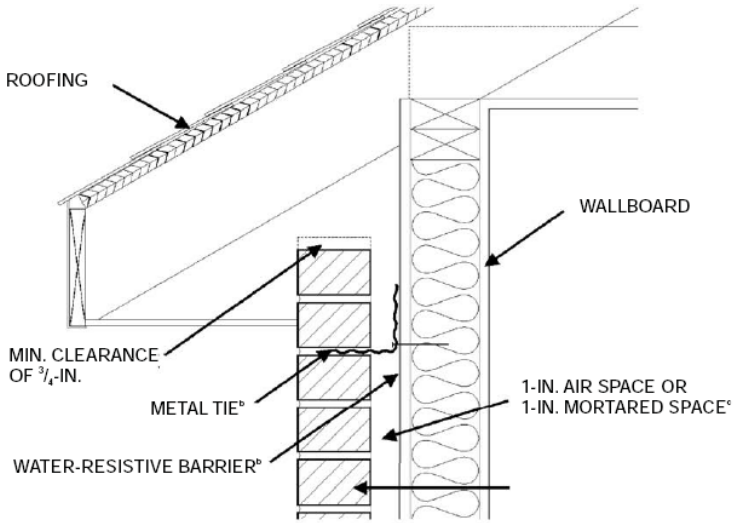

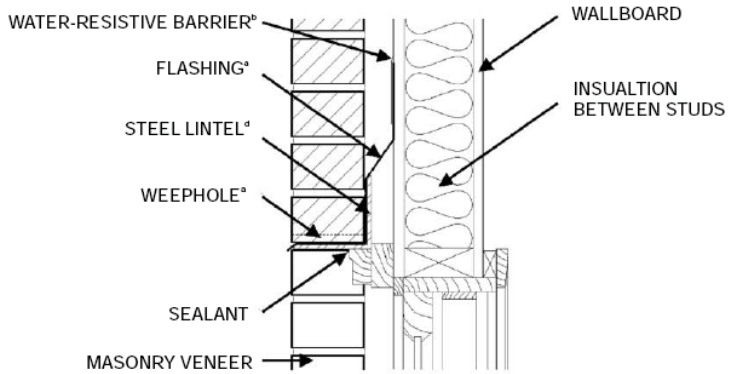

or SI: 1 inch = 25.4 mm.
See Sections R703.7.5, R703.7.6 and R703.8.
See Sections R703.2 and R703.7.4.
See Sections R703.7.4.2 and R703.7.4.3.
See Section R703.7.3.

FIGURE R703.7—continued
MASONRY VENEER WALL DETAILS

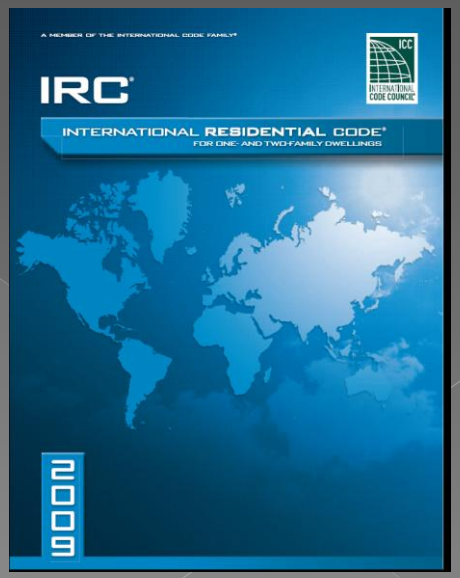

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TABLE R703.7(1)
STONE OR MASONRY VENEER LIMITATIONS AND REQUIREMENTS, WOOD OR STEEL FRAMING, SEISMIC DESIGN CATEGORIES A, B AND C

SEISMIC DESIGN CATEGORY	NUMBER OF WOOD OR STEEL FRAMED STORIES	MAXIMUM HEIGHT OF VENEER ABOVE NONCOMBUSTIBLE FOUNDATION[a] (feet)	MAXIMUM NOMINAL THICKNESS OF VENEER (inches)	MAXIMUM WEIGHT OF VENEER (psf)[b]	WOOD OR STEEL FRAMED STORY
A or B	Steel: 1 or 2 Wood: 1, 2 or 3	30	5	50	all
C	1	30	5	50	1 only
	2	30	5	50	top
					bottom
	Wood only: 3	30	5	50	top
					middle
					bottom

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.479 kPa.

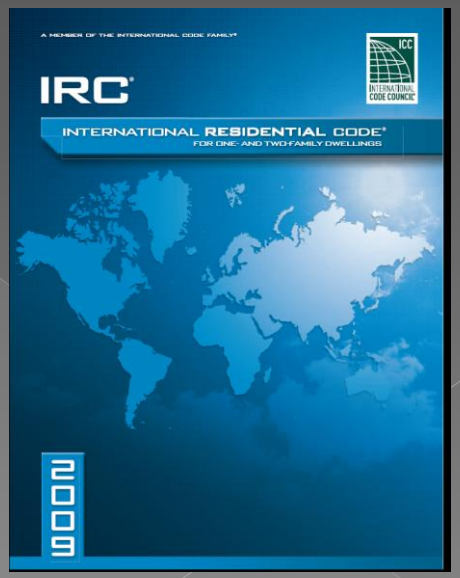
a. An Additional 8 feet is permitted for gable end walls. See also story height limitations of Section R301.3.

b. Maximum weight is installed weight and includes weight of mortar, grout, lath and other materials used for installation. Where veneer is placed on both faces of a wall, the combined weight shall not exceed that specified in this table.

International Residential Code

R703.7.3 Lintels Modification:

Steel lintels supporting masonry veneer above openings now require a shop coat of rust-inhibitive primer or other protection against corrosion. The 2009 IRC also provides an alternative prescriptive method for supporting veneer above opening measuring up to 18 feet 3 inches in length using a combination of a steel angle & masonry with horizontal reinforcing.



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Section R703.7.3 now specifically requires corrosion resistance for steel lintels to inhibit the development of rust & protect the integrity of the masonry veneer.

Steel lintel spans over openings shall to comply with either Table R703.7.3.1 or with prescriptive design of R703.7.3.2.
R703.7.3.1 The allowable span shall not exceed the values set forth in Table R703.7.3.1
The new section R703.7.3.2 provides a cost effective alternate to the steel lintel table for spanning large masonry veneer openings such as occur at overhead garage doors. These prescriptive provisions combine a steel angle with masonry veneer & reinforcing above to form the noncombustible lintel. Shoring is required to support steel lintel & veneer for a period of 7 days to allow the mortar to gain sufficient strength for the lintel to support the dead load of the masonry above.

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TABLE R703.7.3.1
ALLOWABLE SPANS FOR LINTELS SUPPORTING MASONRY VENEER[a, b, c, d]

SIZE OF STEEL ANGLE[a, c, d] (inches)	NO STORY ABOVE	ONE STORY ABOVE	TWO STORIES ABOVE	NO. OF $^1/_2$" OR EQUIVALENT REINFORCING BARS IN REINFORCED LINTEL[b, d]
$3 \times 3 \times {}^1/_4$	6′-0″	4′-6″	3′-0″	1
$4 \times 3 \times {}^1/_4$	8′-0″	6′-0″	4′-6″	1
$5 \times 3^1/_2 \times {}^5/_{16}$	10′-0″	8′-0″	6′-0″	2
$6 \times 3^1/_2 \times {}^5/_{16}$	14′-0″	9′-6″	7′-0″	2
$2\text{-}6 \times 3^1/_2 \times {}^5/_{16}$	20′-0″	12′-0″	9′-6″	4

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

a. Long leg of the angle shall be placed in a vertical position.

b. Depth of reinforced lintels shall not be less than 8 inches and all cells of hollow masonry lintels shall be grouted solid. Reinforcing bars shall extend not less than 8 inches into the support.

c. Steel members indicated are adequate typical examples; other steel members meeting structural design requirements may be used.

d. Either steel angle or reinforced lintel shall span opening.

International Residential Code

R703.7.3.2 The allowable span shall not exceed 18 feet 3 inches (5562 mm) and shall be constructed to comply with Figure R703.7.3.2 and the following:

1. Provide a minimum length of 18 inches (457 mm) of masonry veneer on each side of opening as shown in Figure R703.7.3.2.
2. Provide a minimum 5 inch by 31/2 inch by 5/16 inch (127 mm by 89 mm by 7.9 mm) steel angle above the opening and shore for a minimum of 7 days after installation.
3. Provide double-wire joint reinforcement extending 12 inches (305 mm) beyond each side of the opening. Lap splices of joint reinforcement a minimum of 12 inches (305 mm). Comply with one of the following:

3.1. Double-wire joint reinforcement shall be 3/16 inch (4.8 mm) diameter and shall be placed in the first two bed joints above the opening. 3.2. Double-wire joint reinforcement shall be 9 gauge (0.144 inch or 3.66 mm diameter) and shall be placed in the first three bed joints above the opening.

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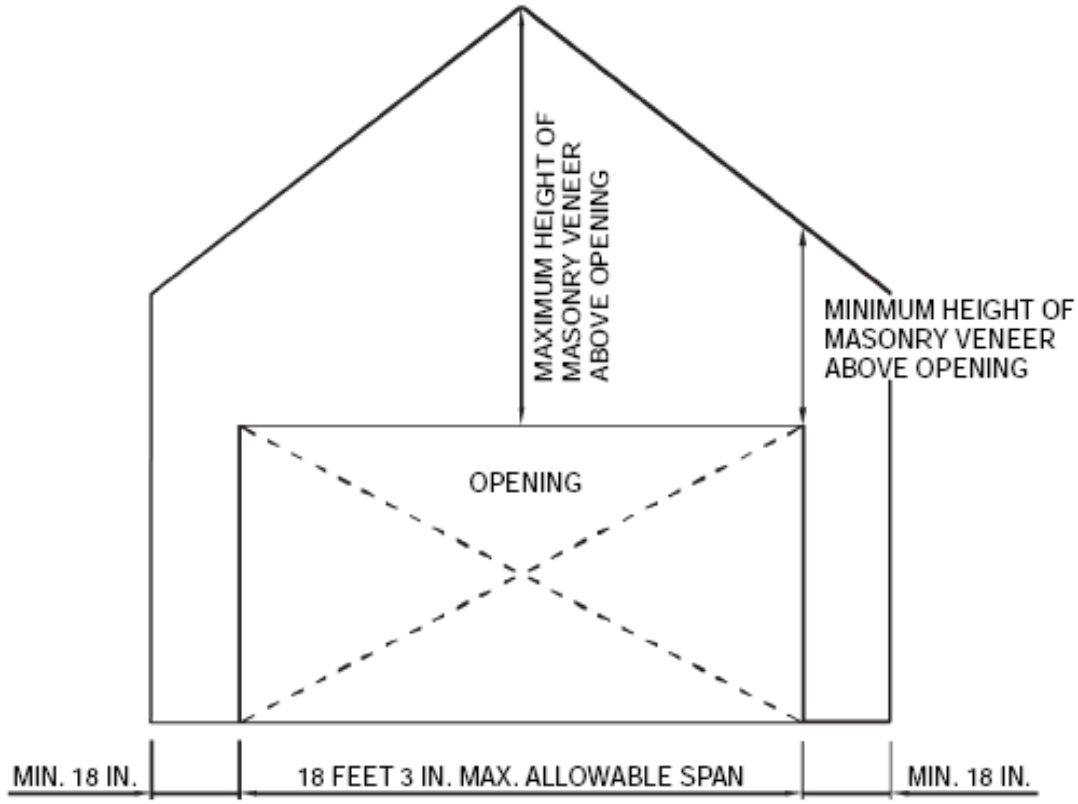


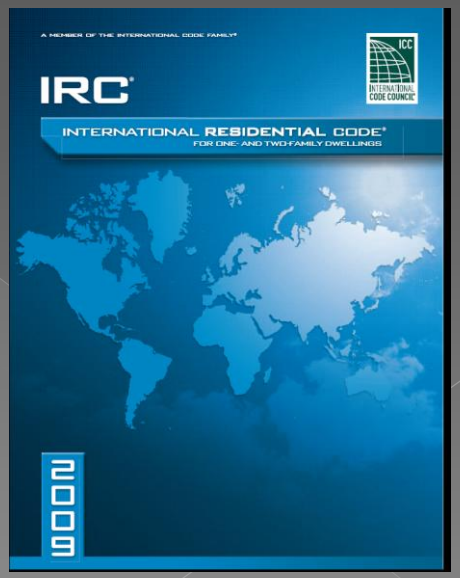
inch = 25.4 mm, 1 foot = 304.8 mm.

FIGURE R703.7.3.2
MASONRY VENEER OPENING

International Residential Code

R703.7.4 Masonry Veneer Anchorage modification: The code now prescribes the minimum embedment & cover dimensions for metal wall ties in the mortar of masonry veneer.

The new text completes the necessary prescriptive requirements for anchorage of masonry veneer & provides consistency with ACI 530.1/ASCE6/TMS 602 Specification for masonry Structures (MSJC Specification). The code now prescribes minimum embedment of 1 1/2 inches into the mortar or grout with not less 5/8 inch cover on the face side of the veneer.

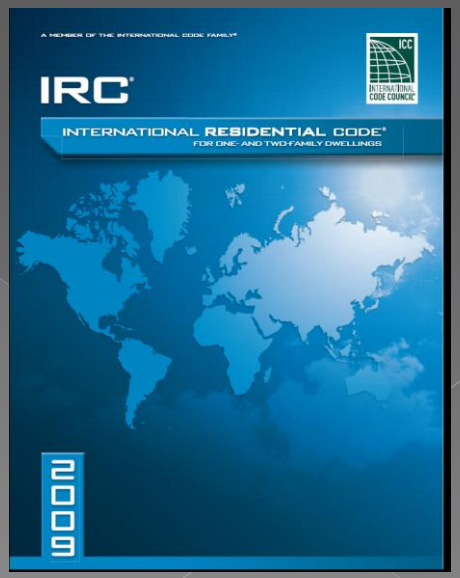


International Residential Code

R703.8 Flashing

1. Flashing at exterior window and door openings shall extend to the surface of the exterior wall finish OR the water-resistive barrier
2. flashing is required at all exterior window and door jambs
3. All provisions for self-flashing windows are eliminated

Self-adhered membranes used as flashing shall comply with AAMA 711



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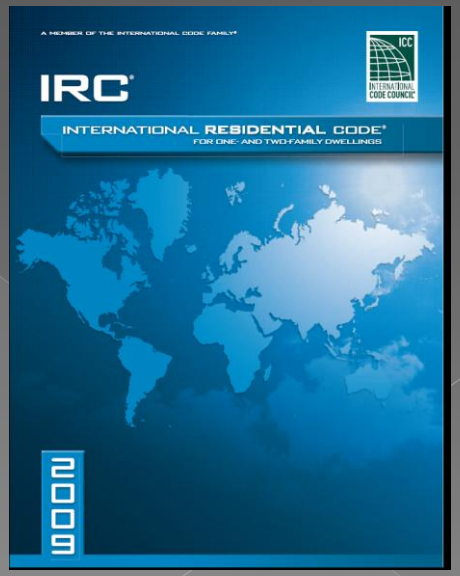
R703.11.1.1 & R703.11.2 Vinyl Siding Addition:

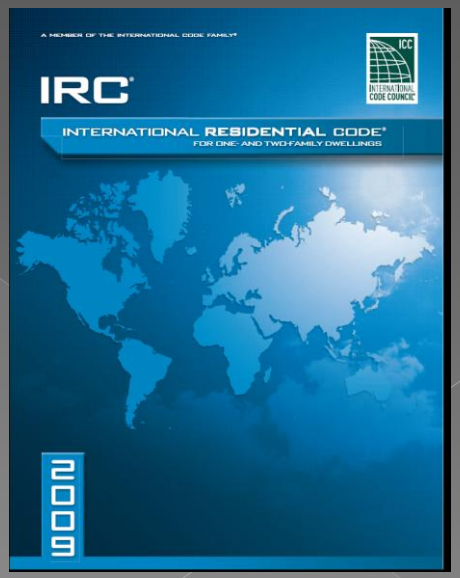
The 2009 IRC specifically requires vinyl soffit to be fastened in place in accordance with the industry standards to ensure adequate wind resistance. New provisions of vinyl siding over foam plastic sheathing based on design wind speed & wind exposure category.



International Residential Code

Section R703.11.1 requires vinyl siding, soffit & accessories to be installed with the manufacturer's installation instructions, requirements that have not changed in the 2009 IRC. To provide more guidance to the installer & code user, the IRC now specifies that vinyl soffit must be attached to suitable backing or nailing strips.

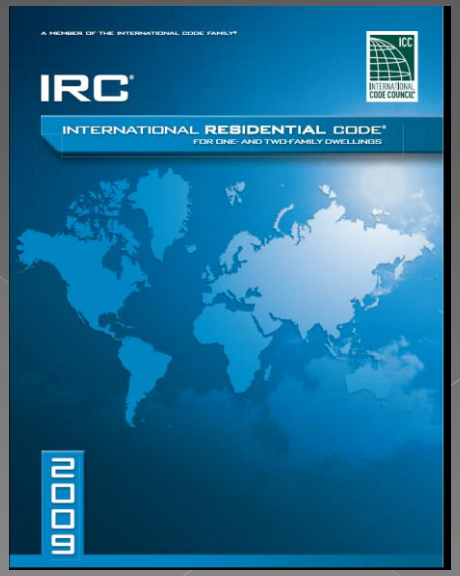
Section R703.11.2 has been added to improve wind resistance performance for vinyl siding applied over the foam plastic sheathing, a common installation for meeting energy efficient requirements. The code now offers prescriptive fastening requirements for areas with a basic wind speed not greater than 90 mph & a wind Exposure B condition.



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 8
ROOF - CEILING CONSTRUCTION



International Residential Code

R802.3 Framing details.

Rafters shall be framed to ridge board or to each other with a gusset plate as a tie. Ridge board shall be at least 1-inch (25 mm) nominal thickness and not less in depth than the cut end of the rafter. At all valleys and hips there shall be a valley or hip rafter not less than 2-inch (51 mm) nominal thickness and not less in depth than the cut end of the rafter. Hip and valley rafters shall be supported at the ridge by a brace to a bearing partition or be designed to carry and distribute the specific load at that point. Where the roof pitch is less than three units vertical in 12 units horizontal (25-percent slope), structural members that support rafters and ceiling joists, such as ridge beams, hips and valleys, shall be designed as beams.

International Residential Code

R802.3.1 Ceiling joist and rafter connections.

Ceiling joists and rafters shall be nailed to each other in accordance with Table R802.5.1(9), and the rafter shall be nailed to the top wall plate in accordance with Table R602.3(1). Ceiling joists shall be continuous or securely joined in accordance with Table R802.5.1(9) where they meet over interior partitions and are nailed to adjacent rafters to provide a continuous tie across the building when such joists are parallel to the rafters.

International Residential Code

R802.3.1 Ceiling joist and rafter connections.

Where ceiling joists are not connected to the rafters at the top wall plate, joists connected higher in the *attic shall be installed as* rafter ties, or rafter ties shall be installed to provide a continuous tie. Where ceiling joists are not parallel to rafters, rafter ties shall be installed. Rafter ties shall be a minimum of 2-inch by 4-inch (51mmby 102mm)(nominal), installed in accordance with the connection requirements in Table R802.5.1(9), or connections of equivalent capacities shall be provided. Where ceiling joists or rafter ties are not provided, the ridge formed by these rafters shall be supported by a wall or girder designed in accordance with accepted engineering practice.

International Residential Code

Collar ties or ridge straps to resist wind uplift shall be connected in the upper third of the *attic space in accordance* with Table R602.3(1).

Collar ties shall be a minimum of 1-inch by 4-inch (25 mm by 102 mm) (nominal), spaced not more than 4 feet (1219 mm) on center.

International Residential Code

R802.3.2 Ceiling joists lapped. Ends of ceiling joists shall

be lapped a minimum of 3 inches (76 mm) or butted over bearing partitions or beams and toe nailed to the bearing member. When ceiling joists are used to provide resistance to rafter thrust, lapped joists shall be nailed together in accordance with Table R602.3(1) and butted joists shall be tied together in a manner to resist such thrust.

TABLE R802.5.1(9)
RAFTER/CEILING JOIST HEEL JOINT CONNECTIONS[a, b, c, d, e, f, h]

RAFTER SLOPE	RAFTER SPACING (inches)	GROUND SNOW LOAD (psf)															
		20[g]				30				50				70			
		Roof span (feet)															
		12	20	28	36	12	20	28	36	12	20	28	36	12	20	28	36
		Required number of 16d common nails[a, b] per heel joint splices[c, d, e, f]															
3:12	12	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	16	5	8	10	13	5	8	11	14	6	11	15	20	8	14	20	26
	24	7	11	15	19	7	11	16	21	9	16	23	30	12	21	30	39
4:12	12	3	5	6	8	3	5	6	8	4	6	9	11	5	8	12	15
	16	4	6	8	10	4	6	8	11	5	8	12	15	6	11	15	20
	24	5	8	12	15	5	9	12	16	7	12	17	22	9	16	23	29
5:12	12	3	4	5	6	3	4	5	7	3	5	7	9	4	7	9	12
	16	3	5	6	8	3	5	7	9	4	7	9	12	5	9	12	16
	24	4	7	9	12	4	7	10	13	6	10	14	18	7	13	18	23
7:12	12	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	16	3	4	5	6	3	4	5	6	3	5	7	9	4	6	9	11
	24	3	5	7	9	3	5	7	9	4	7	10	13	5	9	13	17
9:12	12	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	16	3	4	4	5	3	3	4	5	3	4	5	7	3	5	7	9
	24	3	4	6	7	3	4	6	7	3	6	8	10	4	7	10	13
12:12	12	3	3	3	3	3	3	3	3	3	3	3	4	3	3	4	5
	16	3	3	4	4	3	3	3	4	3	3	4	5	3	4	5	7
	24	3	4	4	5	3	3	4	6	3	4	6	8	3	6	8	10

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.

a. 40d box nails shall be permitted to be substituted for 16d common nails.

b. Nailing requirements shall be permitted to be reduced 25 percent if nails are clinched.

c. Heel joint connections are not required when the ridge is supported by a load-bearing wall, header or ridge beam.

d. When intermediate support of the rafter is provided by vertical struts or purlins to a loadbearing wall, the tabulated heel joint connection requirements shall be permitted to be reduced proportionally to the reduction in span.

e. Equivalent nailing patterns are required for ceiling joist to ceiling joist lap splices.

f. When rafter ties are substituted for ceiling joists, the heel joint connection requirement shall be taken as the tabulated heel joint connection requirement for two-thirds of the actual rafter-slope.

g. Applies to roof live load of 20 psf or less.

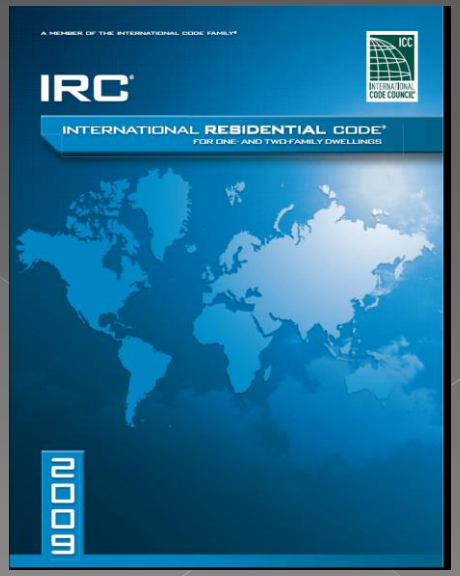
h. Tabulated heel joint connection requirements assume that ceiling joists or rafter ties are located at the bottom of the attic space. When ceiling joists or rafter ties are located higher in the attic, heel joint connection requirements shall be increased by the following factors:

International Residential Code

Table R802.5.1(1) through Table R802.5.1(8) Rafters spans for common Lumber

Rafter ties and ceilings can no longer be placed higher than the lower one-third of the attic area

This will affect bonus room ceiling-roof construction. OR the rafters shall be supported by a wall or beam designed in accordance with accepted engineering practice.



International Residential Code

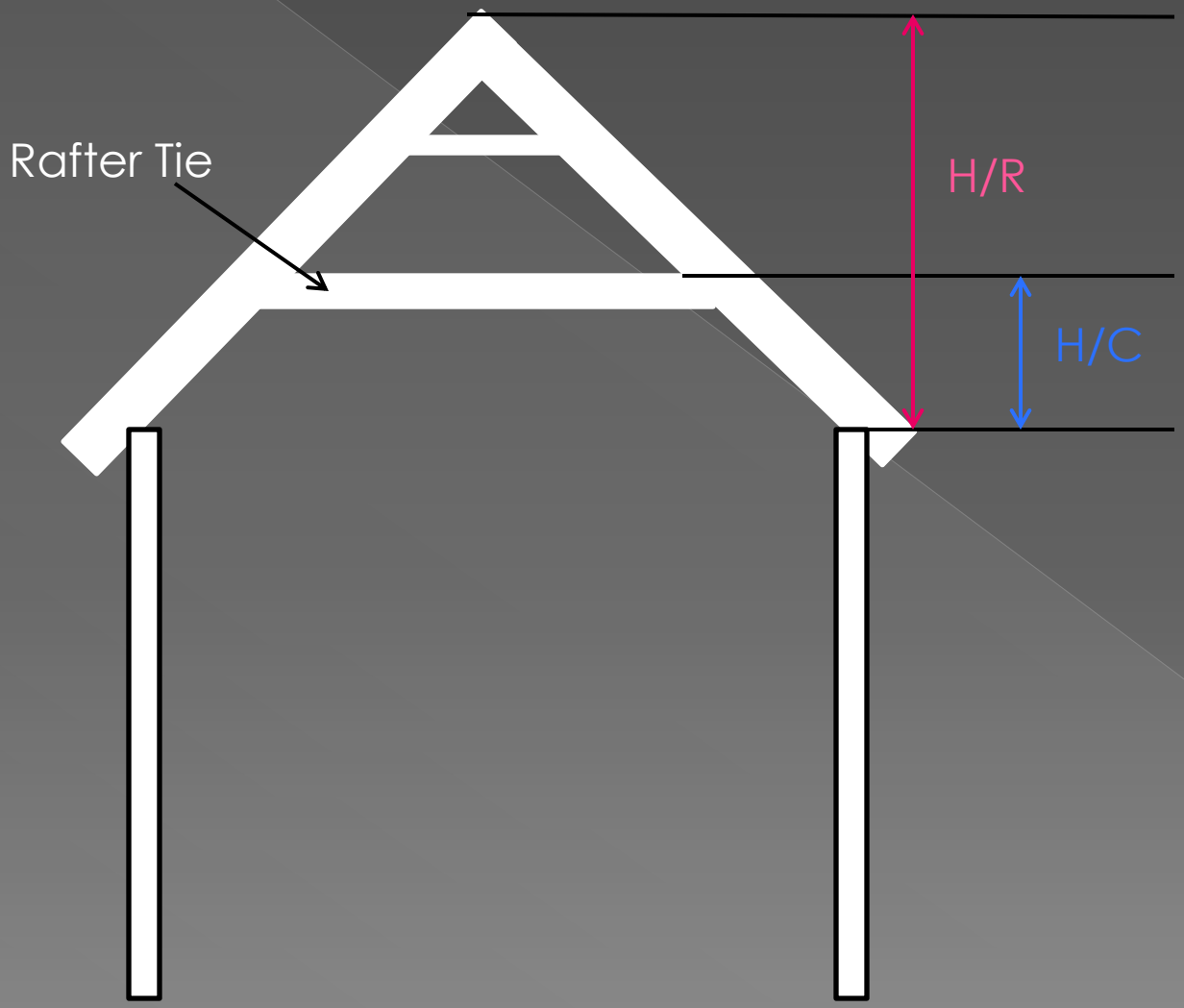
H_C/H_R	Heel Joint Connection Adjustment Factor
1/3	1.5
1/4	1.33
1/5	1.25
1/6	1.2
1/10 or less	1.11

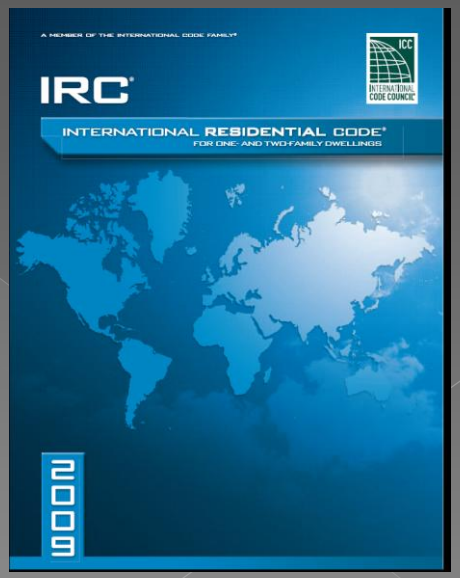
where:

H_C = Height of ceiling joists or rafter ties measured vertically above the top of the rafter support walls.

H_R = Height of roof ridge measured vertically above the top of the rafter support walls.

International Residential Code





International Residential Code

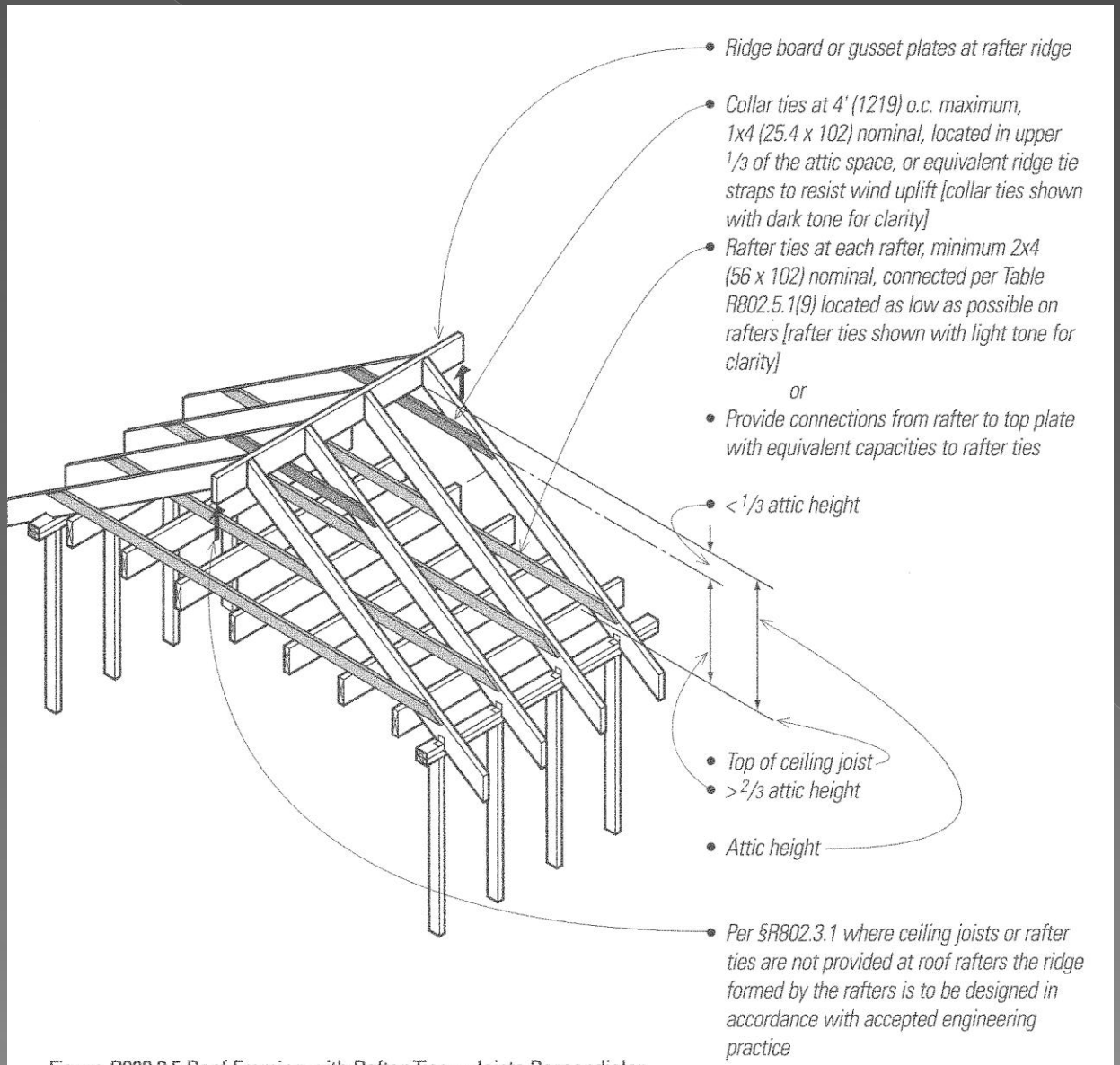
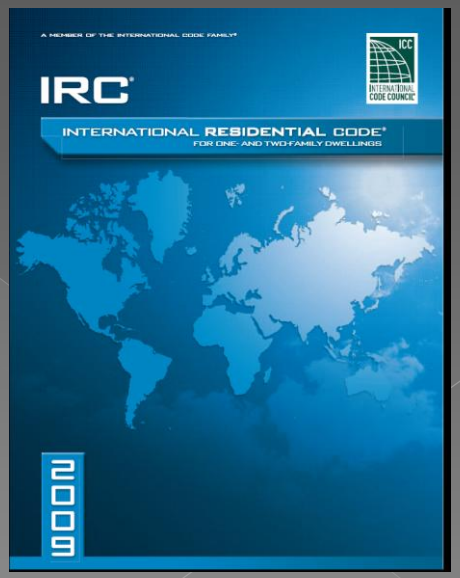


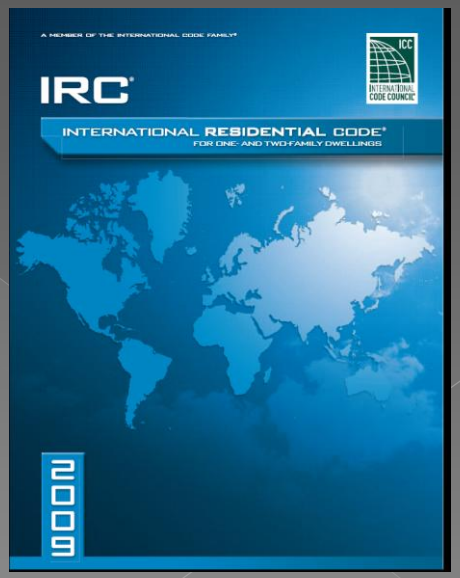
Figure R802.3.5 Roof Framing with Rafter Ties—Joists Perpendiclar to Rafters



International Residential Code

R807.1 Attic Access

The new text clarifies that measurements are taken from the framing members & not from the insulation. In determining attic height, the measurement is taken from the top of the ceiling joist or truss bottom chord to the bottom of the rafter to truss top chord.
The other change to this section clarifies that access openings through a wall require a minimum height of 30 inches.

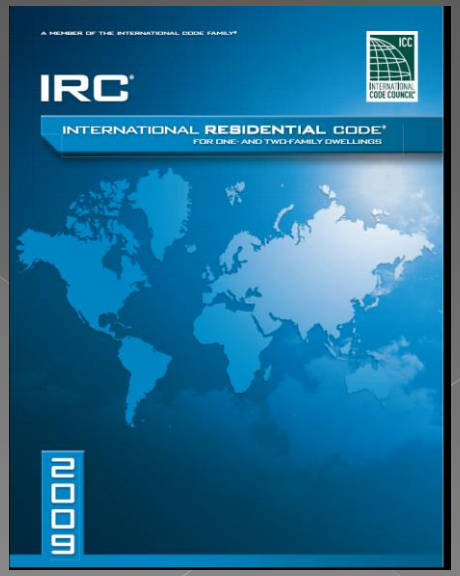


Buildings with combustible ceiling or roof construction shall have an attic access opening to attic areas that exceed 30 square feet.

International Residential Code

MONTGOMERY COUNTY
TENNESSEE

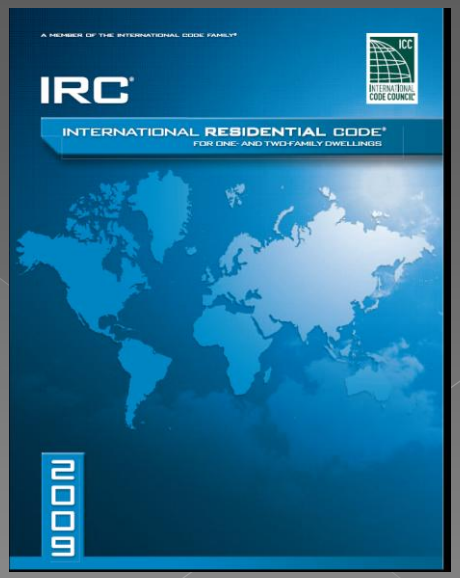
CHAPTER 9
ROOF ASSEMBLIES



International Residential Code

Table R905.10.3(1) & Table R905.1.3(2)
Metal roof Coverings Standards

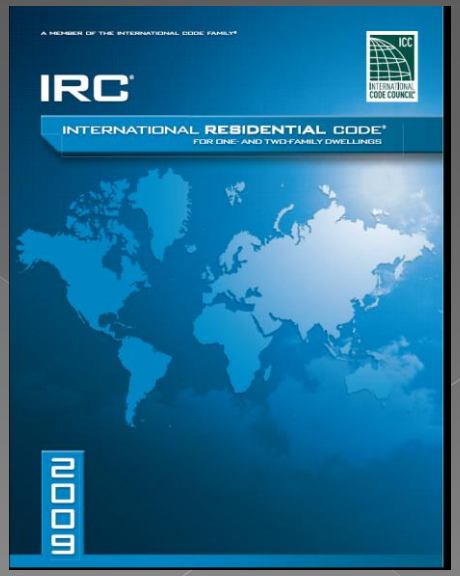
New application rates/thickness addressing additional metal roofing materials:
-galvanized steel
-stainless steel
-steel
-cold rolled copper



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 10
CHIMNEYS AND FIREPLACES

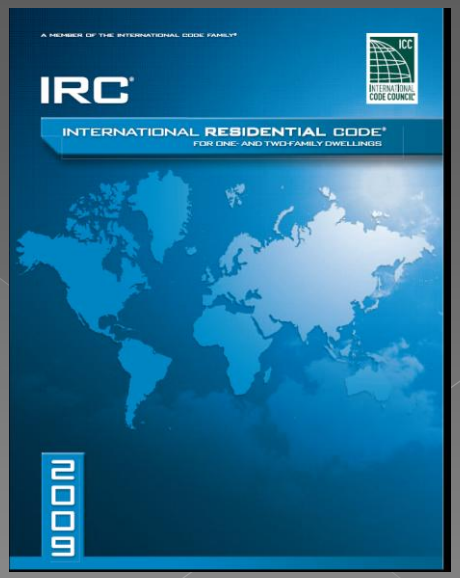


International Residential Code

MONTGOMERY COUNTY
TENNESSEE

R1001 & R1003 Masonry Fireplace & Chimneys

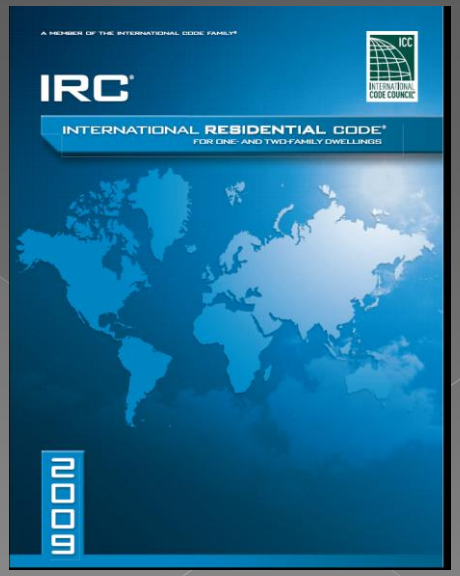
The 2009 IRC adds minimum thickness, parging, & lining requirements to the masonry fireplace smoke chamber provisions & references the applicable standards.



International Residential Code

MONTGOMERY COUNTY
TENNESSEE

CHAPTER 11
ENERGY EFFICIENCY



International Residential Code

- Energy Efficiency and thermal envelope requirements have slightly changed (see attached) Table N1102.1. Montgomery County is in a climate zone 4.

TABLE N1102.1
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION *U*-FACTOR	SKYLIGHT[b] *U*-FACTOR	GLAZED FENESTRATION SHGC	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE[k]	FLOOR *R*-VALUE	BASEMENT[c] WALL *R*-VALUE	SLAB[d] *R*-VALUE AND DEPTH	CRAWL SPACE[c] WALL *R*-VALUE
4 except Marine	0.35	0.60	NR	38	13	5/10	19	10/13	10, 2 ft	10/13

a. *R-values are minimums. U-factors and solar heat gain coefficient (SHGC) are maximums. R-19 batts compressed in to nominal 2 6 framing cavity such that the*
R-value is reduced by R-1 or more shall be marked with the compressed batt R-value in addition to the full thickness R-value.
b. The fenestration *U-factor column excludes skylights. The SHGC column applies to all glazed fenestration.*
c. The first *R-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.*
d. R-5 shall be added to the required slab edge *R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less, in zones 1*
through 3 for heated slabs.
e. There are no SHGC requirements in the Marine Zone.
f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.2 and Table N1101.2.
g. Or insulation sufficient to fill the framing cavity, R-19 minimum.
h. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where
structural sheathing is used. If structural sheathing covers more than25%of exterior, structural sheathing shall be supplemented with insulated sheathing of at least
R-2.
i. For impact-rated fenestration complying with Section R301.2.1.2, the maximum *U-factor shall be 0.75 in zone 2 and 0.65 in zone 3.*
j. For impact-resistant fenestration complying with Section R301.2.1.2 of the *International Residential Code, the maximum SHGC shall be 0.40.*
k. The second *R-value applies when more than half the insulation is on the interior.*

International Residential Code

CEILING INSULATION

R-38

N1102.2.2 Ceilings without attic spaces. Where Section N1102.1 would require insulation levels above R-30 and the design of the roof/ceiling assembly does not allow sufficient space for the required insulation, the minimum required insulation for such roof/ceiling assemblies shall be R-30. This reduction of insulation from the requirements of Section 402.1.1shall be limited to 500 square feet (46 m2) of ceiling area. This reduction shall not apply to the *U-factor* alternative approach in Section N1102.1.2 and the Total UA alternative in Section N1102.1.3.

International Residential Code

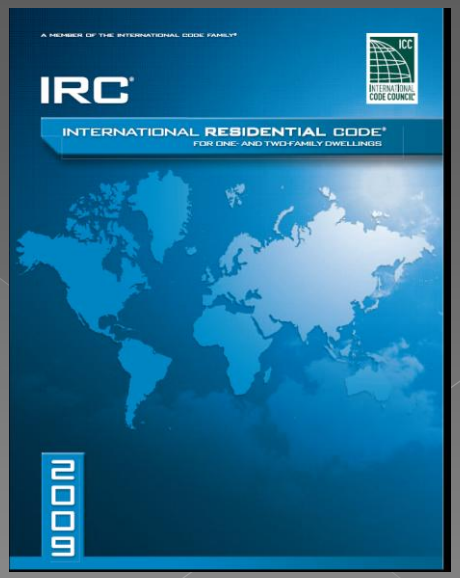
WOOD FRAMED WALL INSULATION- R13

FLOOR- R 19

BASEMENT WALL- R10 if CONTINUOUS
R13 if FRAMING CAVITY

SLABS- R10 WITH A DEPTH OF 2 ft

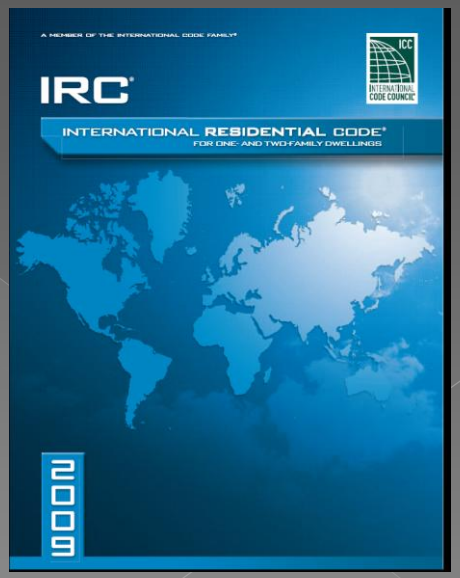
CRAWLSPACE- R10 if CONTINUOUS
R13 if FRAMING CAVITY



International Residential Code

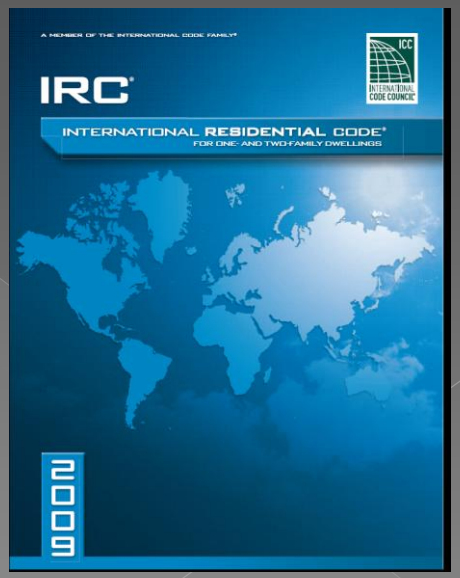
A permanent certificate shall be posted on or in the electrical distribution panel.

The certificate shall not cover or obstruct the visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall be completed by the builder or registered design professional (see attached sample).



International Residential Code

N1101.9 Certificate. A permanent certificate shall be posted on
or in the electrical distribution panel. The certificate shall not cover or obstruct the visibility of the circuit directory *label, service* disconnect *label or other required labels. The certificate* shall be completed by the builder or registered *design professional.* The certificate shall list the predominant *R-values of* insulation installed in or on ceiling/roof, walls, foundation (slab, *basement wall, crawlspace wall and/or floor) and ducts outside conditioned spaces; U-factors for fenestration; and the solar heat* gain coefficient (SHGC) of fenestration.



ENERGY EFFIENCY CERTIFICATE

International Residential Code

MONTGOMERY COUNTY
TENNESSEE

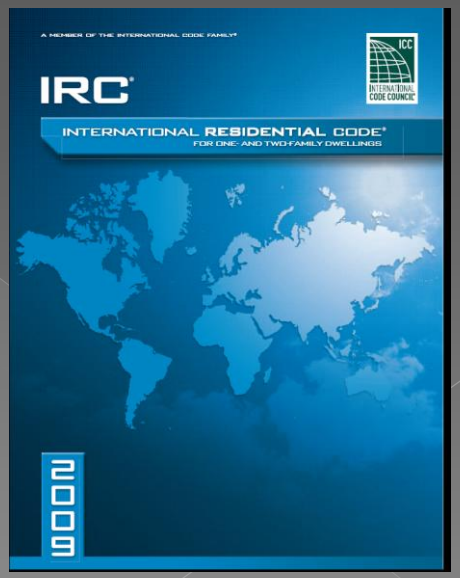
Energy Efficiency Certificate

Insulation Ratings	R-Values
Ceiling/Roof	
Walls	
Foundation Walls	
Slab	
Crawlspace Walls	
Crawlspace Floor	
Ductwork in Unconditioned Space	
Fenestration Ratings	**U-Values**
Windows	
Doors	
HVAC Equipment	**AFUE or EER/SEER**
Furnace: Gas__Elect__Oil__	
Heatpump	
Boiler: Gas__Oil__	
Cooling	
Water Htr: Gas__Elect__Oil__	

Room Heaters	Yes: #	No
Gas Fired		
Electric Furnace		
Baseboard Heat		

Address		Permit #

Builder/Designer	Signature	Date



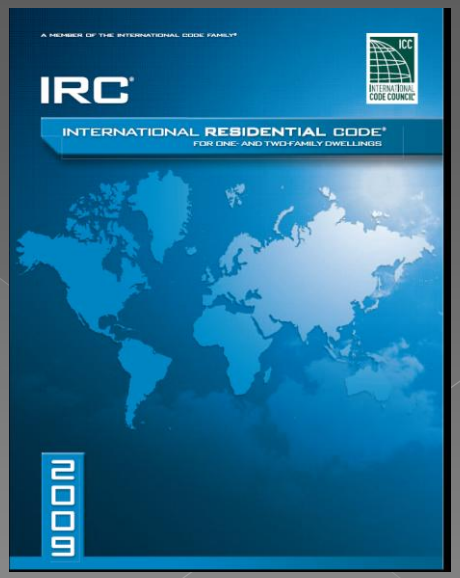
International Residential Code

Ducts Insulation-Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.

Exception: Ducts or portions thereof located completely inside the building thermal envelope.
For additional energy efficiency requirements see chapter 11 of the 2009 International Residential Code or the 2009 International Energy Conservation code.

International Residential Code

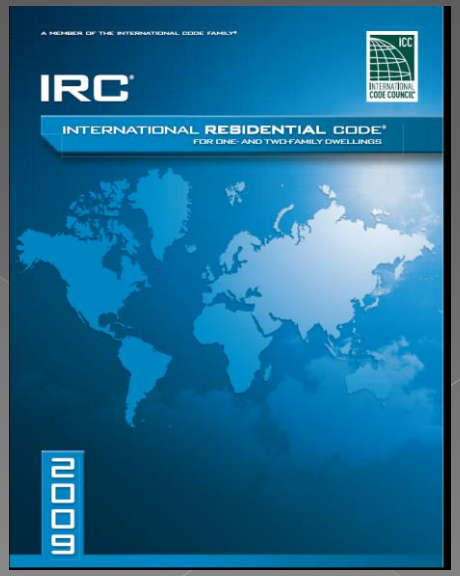
- On April 1, 2012 Montgomery County Building & Codes will start inspecting Mechanical Systems. Mechanical trades permit will be required (see attached fee schedule). Additional information will be forwarded on at a later time.



International Residential Code

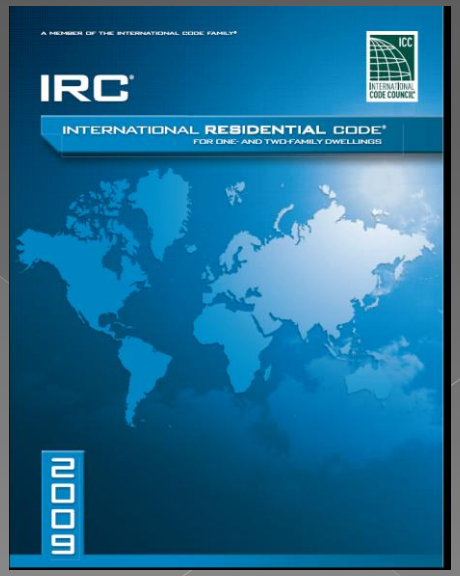
MONTGOMERY COUNTY
TENNESSEE

INSPECTION PROCEDURES



International Residential Code

In order for the Montgomery County Building & Codes Department to better ensure code compliance. Changes in the number, timing and type of residential inspections will change



International Residential Code

RESIDENTIAL INSPECTIONS REQUIRED

* FOOTING/ SETBACK

* ROUGH IN SLAB PLUMBING &ROUGH IN SLAB

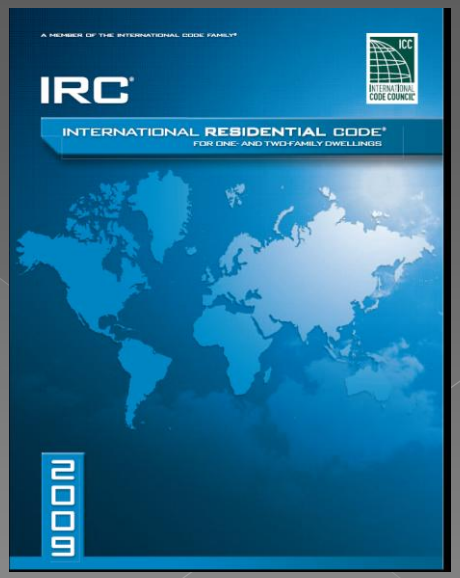
* FOUNDATION

* FRAMING

* MECHANICAL, PLUMBING & ENERGY CONSERVATION ROUGH IN

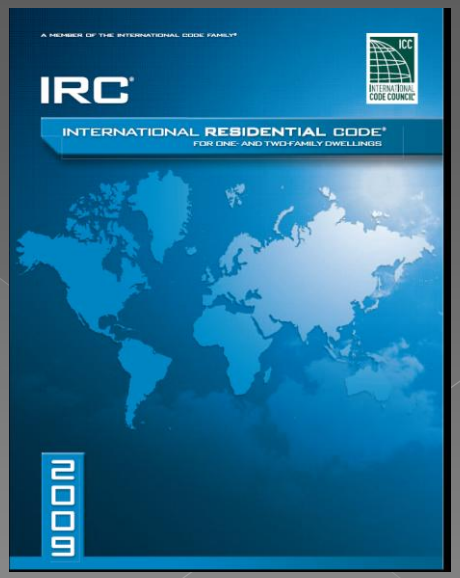
* PLUMBING FINAL & MECHANICAL FINAL

* BUILDING FINAL



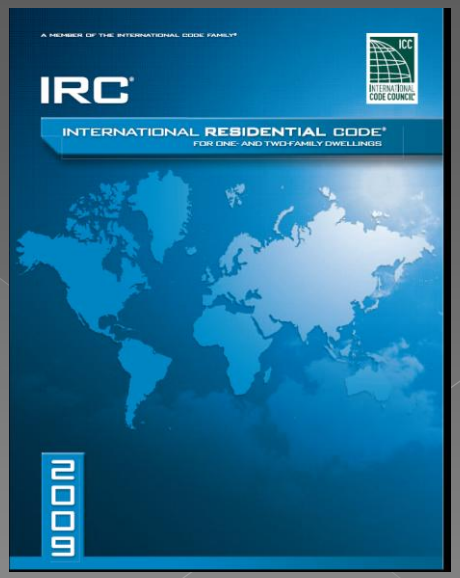
International Residential Code

FOOTING/ SETBACK- Property line are marked and readily visible. After trenches are excavated, steel grade stakes, reinforcement steel are in place, and form erected. DO NOT order concrete until this inspection is approved.



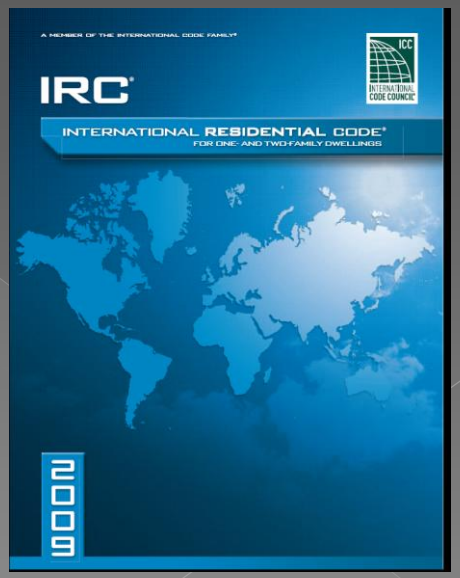
International Residential Code

ROUGH IN SLAB PLUMBING
After piping is installed, prior to being covered up. Montgomery County Building & Codes Department will inspect all plumbing systems outside of the water system serviced by the City of Clarksville.



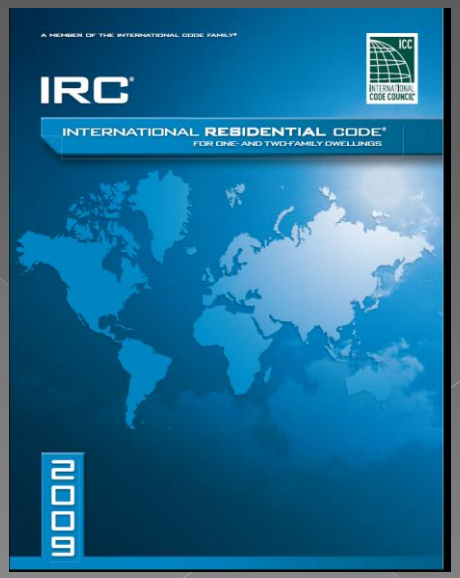
International Residential Code

ROUGH IN SLAB- On all dwellings with concrete slab floors , any accessory structures which is to be heated or cooled, basements or split foyer plans which have interior walls or plumbing pipes to be concealed in the concrete.



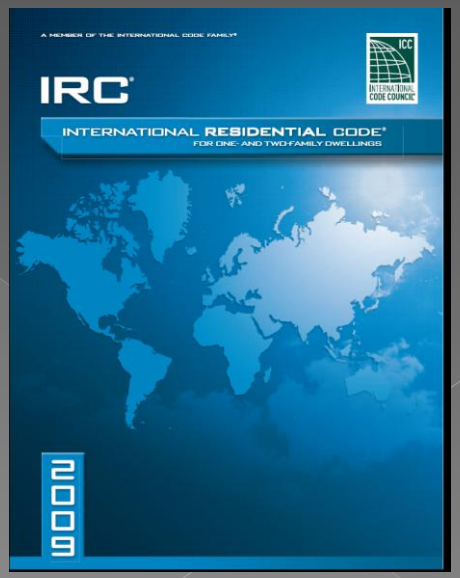
International Residential Code

FOUNDATION- After blocks or foundation walls are in place and the sill plates are anchored down. DO NOT cover with decking until this inspection is approved.



International Residential Code

FRAMING-
After the framing is completed, before rough in electrical, plumbing, insulating or applying exterior wall coverings such as moisture barriers and house wrap. Braced walls shall be marked so that they may be readably identified.



International Residential Code

MECHANICAL, PLUMBING & ENERGY CONSERVATION ROUGH IN INSPECTIONS

* Will be one inspection, all done at the same time.

* The electrical rough in inspection must have been installed and approved by the Tennessee electrical inspector prior to call for this inspection.

* Rough in plumbing- After piping is installed.
Water supply lines shall be under air test pressure, Minimum 50 psi.
DWV system shall be under test pressure either by air (5 psi) or water not less than 10 feet above the highest fitting connection of the section or to the highest point in the complete system.
Montgomery County Building & Codes Department will inspect all plumbing systems outside of the water system serviced by the City of Clarksville. Water systems inspected by the City of Clarksville shall be done and approved prior to calling for this inspection.

* Rough in mechanical- After all wiring, duct and equipment piping are installed.

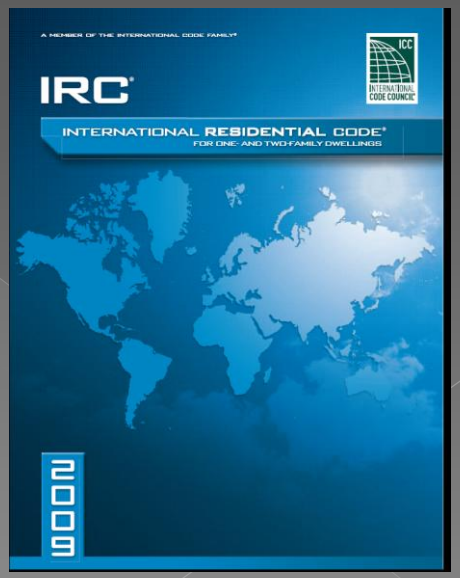
International Residential Code

PLUMBING FINAL- After all fixtures are installed and are in working condition with the supply water on.
Montgomery County Building & Codes Department will inspect all plumbing systems outside of the water system serviced by the City of Clarksville. Water systems inspected by the City of Clarksville shall be done and approved prior to calling for this inspection.

International Residential Code

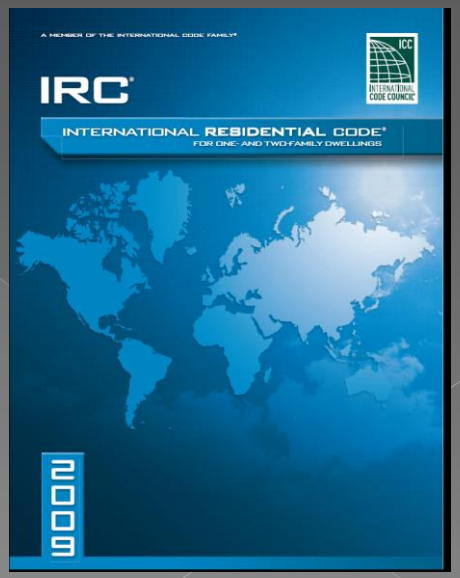
MECHANICAL FINAL - After all mechanical equipment has been installed, power connected and properly working.
Operating instruction and maintenance manuals shall be attached to all equipment.

In areas of Montgomery County



International Residential Code

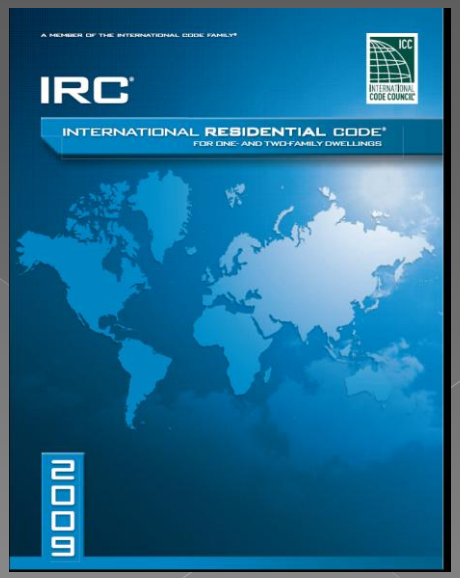
BUILDING FINAL- After power is on, all trades inspections are completed and the house is complete and ready for occupancy. Montgomery County Building and Codes Department will conduct the plumbing final inspection, mechanical final inspection and building final inspection all at the same time.



International Residential Code

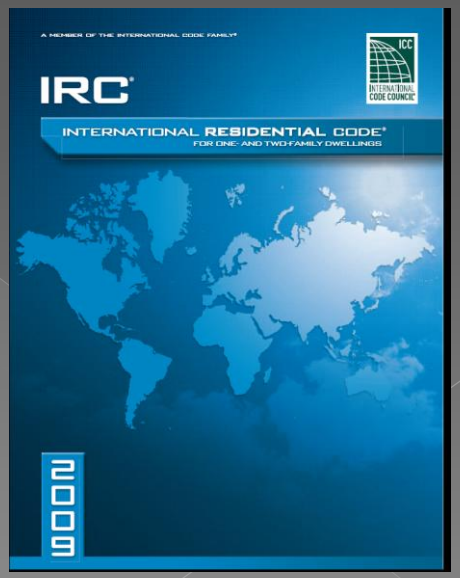
In areas of Montgomery County that are serviced by water districts other than the Clarksville city water the final plumbing, final mechanical inspections will be done at the time of the final building inspection.

In areas service by the Clarksville water department the final mechanical inspections will be done at the time of the final building inspection.



International Residential Code

On April 1, 2012 Montgomery County Building & Codes will start inspecting Mechanical Systems. Mechanical trades permit will be required (see attached fee schedule). Additional information will be forwarded on at a later time.



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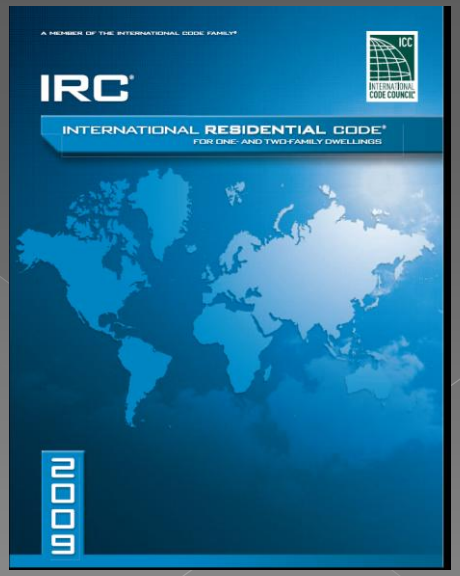

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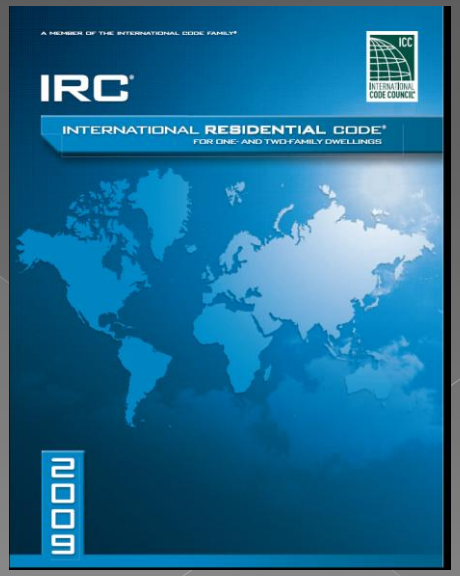

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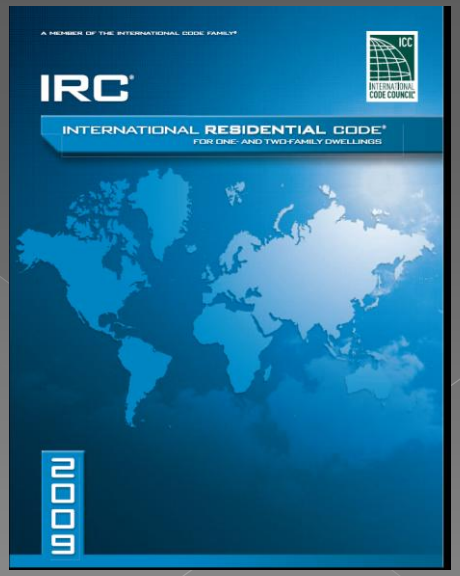

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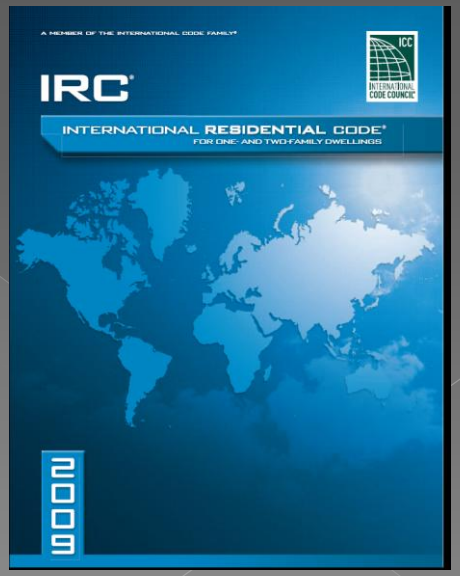

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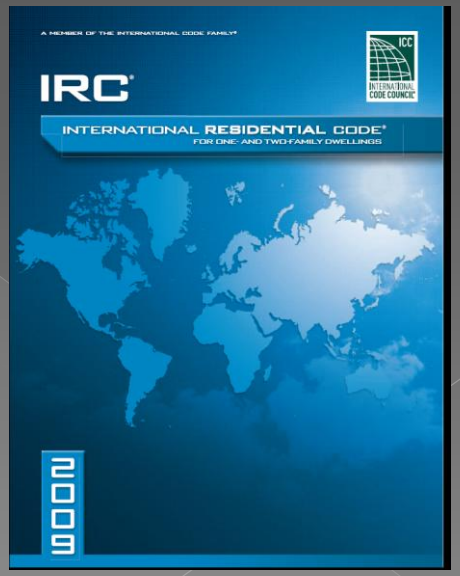

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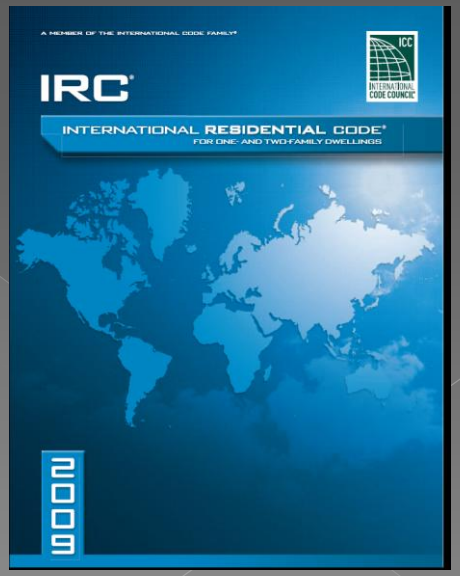

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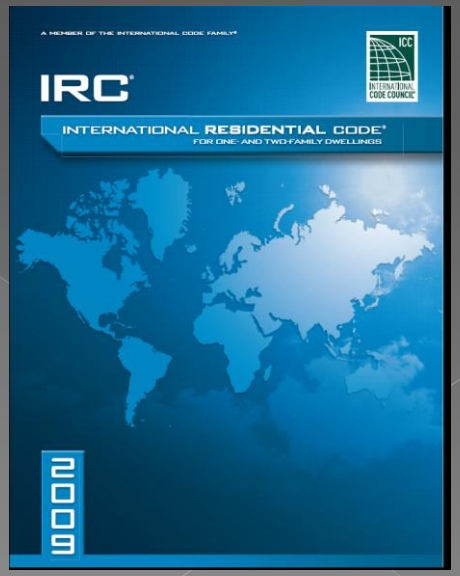

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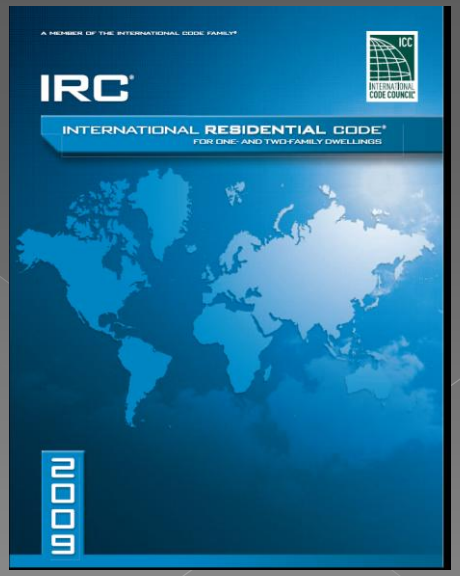
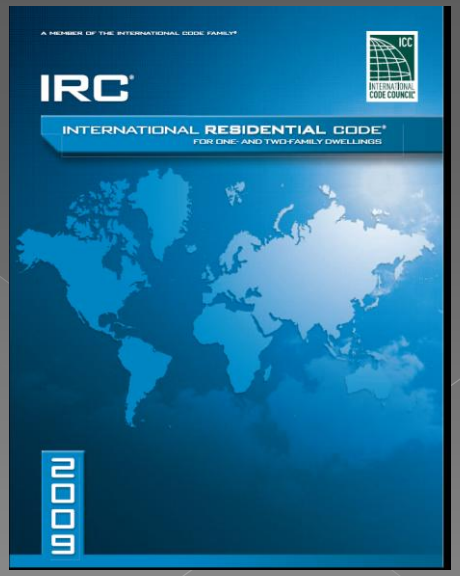
International Residential Code