

## Objectives

- Upon completion, participants will be better able to:
  - Identify the key differences between the 2006 IRC, 2009 IRC, 2012 IRC, and the 2015 IRC.
  - Explain the differences between the current and previous editions.
  - Apply the code requirements for design, plan review and inspection.



## Description

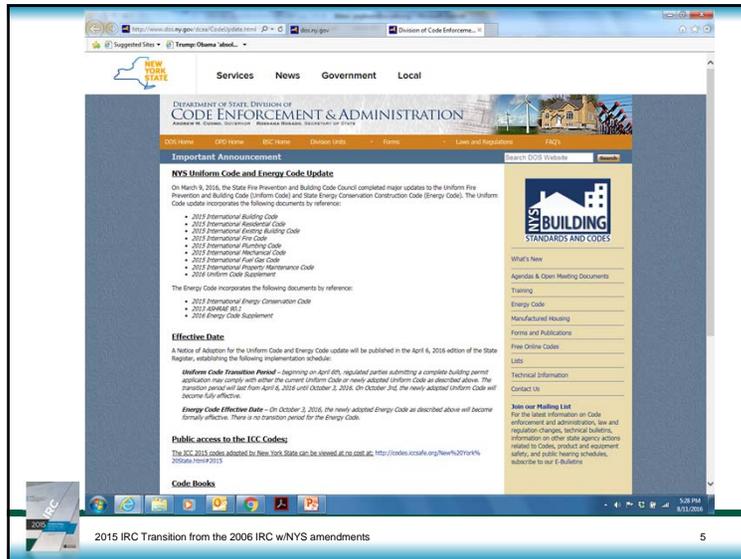
- This seminar will assist participants in implementing the transition from the 2006 IRC to the 2015 IRC.
- It will include relevant changes in the 2009 and 2012 IRC. This interactive training will focus on the key changes presented in the participant material.



## Welcome

- Rules for the course, breaks, restroom location.
- Introduction of instructor and participants.
- Other

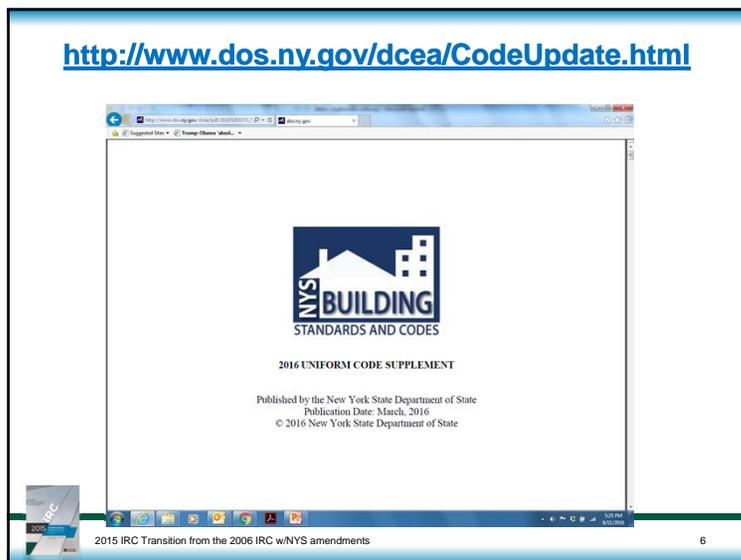




## Appendices

- Appendix E- Manufactured Housing Used as Dwellings
- Appendix H- Patio Covers
- Appendix J- Existing Buildings and Structures

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## Part 1

# Scope and Administration (Chapter 1)

8

## 2009

# R101.2 Scope, Grade Plane

- Grade plane replaces the word grade in determining the story limitations of the IRC.



(NYS Amendment- Section 313 Auto. Sprklrs- "Grade" ilo "Grade Plane")



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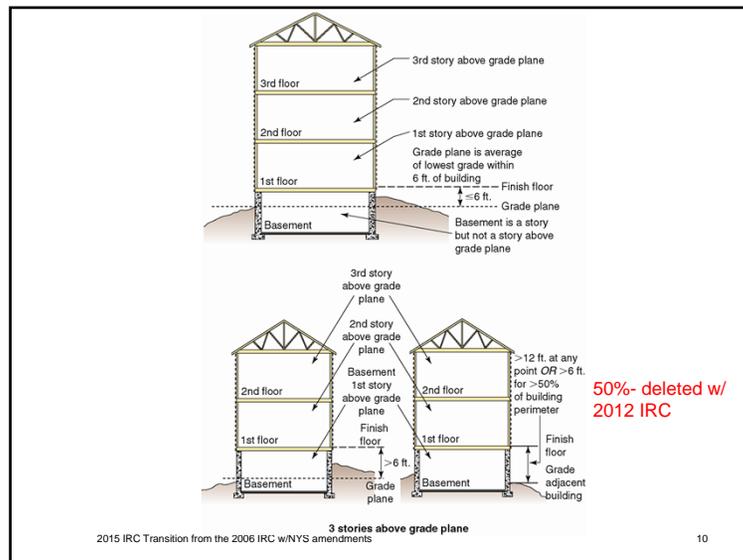
## 2009

# R101.2 Scope, Live/Work Units

- A new exception to scope of the IRC
- IBC provisions for live/work units
- Mix of residential and non-residential uses




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## 2009

# R101.2 Scope, Live/Work Units

- 3000 sf
- Non-residential
  - 50%
  - Main floor only
  - 5 workers
  - Accessible
  - 10% storage area




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2015

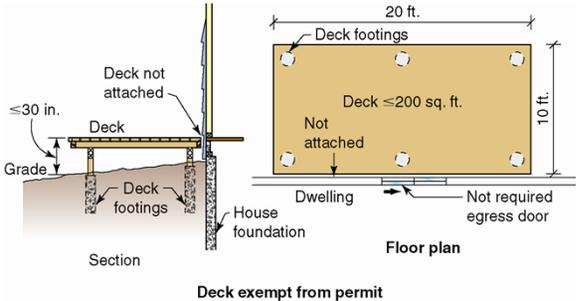
## R 101.2

### Scope – Accessory Structures

- The maximum height for accessory structures has been increased from two to three stories above grade plane. Technical requirements have been removed from the definition, and accessory structures are now permitted to be unlimited in area.



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**Deck exempt from permit**

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2009

## R105.2 Work Exempt from Permit

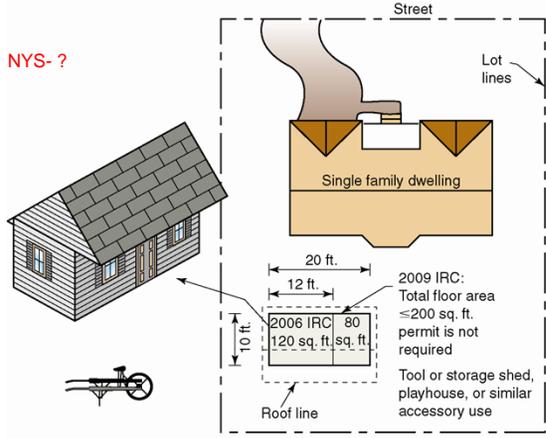
- Accessory structures 200 square feet
- Decks
  - 200 square feet
  - not attached
  - 30 inches high
- Electrical work

NYS- ?



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NYS- ?



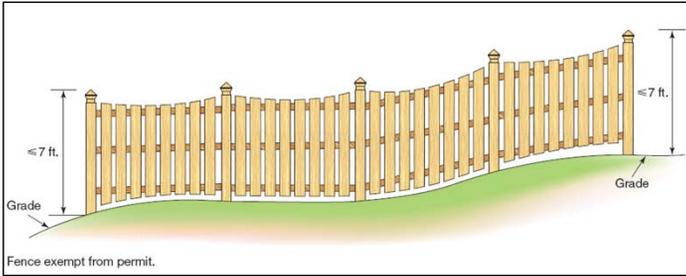
**Sheds exempt from permits**

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**R105.2** NYS- ? 2012

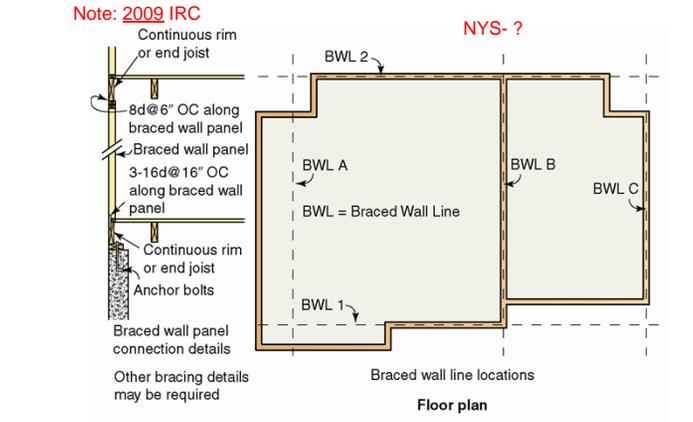
### Fences Exempt from Permit

- Fences up to 7 feet high are exempt from permit requirements



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Note: 2009 IRC NYS- ?



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**R106.1.1 Information on Construction Documents** 2009

- Add wall bracing information
  - If required by building official



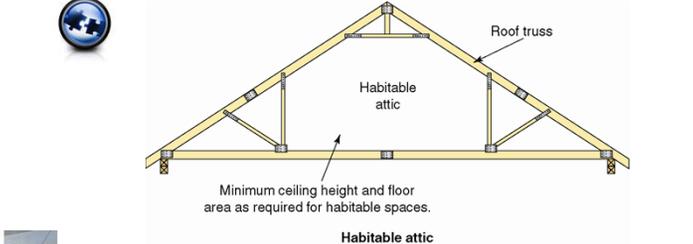
NYS- ?



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**R202 Definitions, Attic and Habitable Attic** 2009

- Attic revised
- Habitable attic: new definition



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2015

### Table R301.2(1) Climatic and Geographic Design Criteria

- The jurisdiction must indicate if it contains special wind regions or wind borne debris zones

**TABLE R301.2(1)** Climatic and Geographic Design Criteria

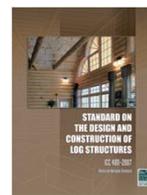
Ground Snow Load	Wind Design			Seismic Design Category <sup>f</sup>
	Speed <sup>d</sup> (Mph)	Topographic effects <sup>k</sup>	Special wind region <sup>l</sup>	
<i>(Portions of table and footnotes not shown remain unchanged)</i>				
l. In accordance with Figure R301.2(4)A, where there is local historical data documenting unusual wind conditions, the jurisdiction shall fill in this part of the table with "YES" and identify any specific requirements. Otherwise, the jurisdiction shall indicate "NO" in this part of the table.				
m. In accordance with Section R301.2.1.2.1, the jurisdiction shall indicate the wind-borne debris wind zone(s). Otherwise, the jurisdiction shall indicate "NO" in this part of the table.				

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2009

### R301.1.1 Alternative Provisions

- New standard for log construction- ICC 400
- Revised standard for cold-formed steel framing- AISI S100


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Part 2  
**Building Planning  
(Chapter 3)**

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2009

### R301.2.1.1 Design Criteria

- Structural insulated panel (SIP) construction approved for high wind areas
- ICC-600 standard for high wind areas replaces the legacy code standard SSTD 10
- Clarifies extent of referenced standards and methods
- SIP per Chapter 6, 130 mph




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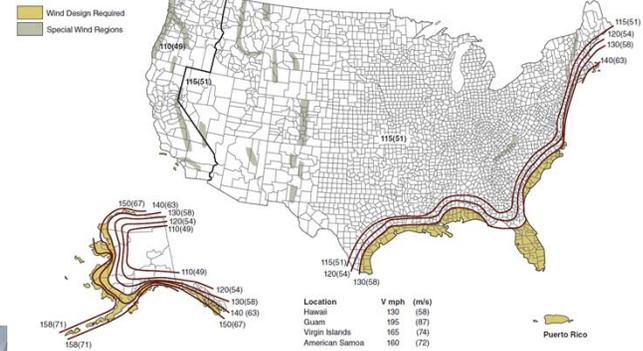
## Wind Design Criteria

2012 IRC	2015 IRC
R301.2.1	R301.2
A new map indicates the geographic locations that require wind design, which means an engineered design in accordance with the IBC or ASCE 7, or a design in accordance with the applicable provisions of ICC-600, the WFCM, or AISI S230.	Ultimate design wind speed values replace basic wind speed values for 3-sec gust wind speeds in Section R301.2.2. A wind speed conversion table has been added for conversion from ultimate design to nominal design wind speeds



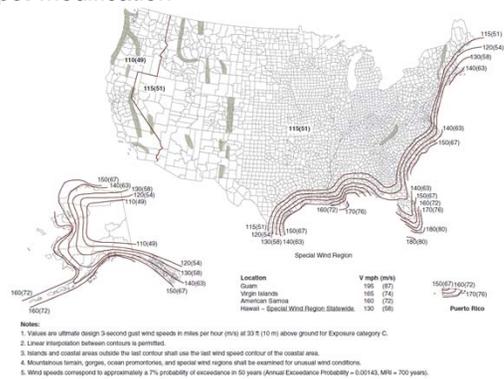
## R301.2 Wind Speed Maps

Change Type: Modification



## R301.2 Wind Speed Maps

Change Type: Modification



ATC Applied Technology Council

WINDSPEED BY LOCATION

ASCE 7 Windspeed ASCE 7 Ground Snow Load Related Resources Sponsors About ATC Contact

Search Results

Query Date: Thu Aug 11 2016  
Latitude: 43.0592  
Longitude: 77.8128

ASCE 7-10 Windspeeds (3-sec peak gust in mph):  
Risk Category I: 105  
Risk Category II: 115  
Risk Category III-IV: 120  
MRI - 10-Year: 76  
MRI - 25-Year: 84  
MRI - 50-Year: 90  
MRI - 100-Year: 95

ASCE 7-05 Windspeed: 90 (3-sec peak gust in mph)  
ASCE 7-03 Windspeed: 70 (fastest mile in mph)

Notes per hour  
Notes per hour  
Notes per hour

Print your results

2015 IRC Transition from the 2006 IRC w/NYS amendments

### R301.2.1.1.1

2015

#### Sunrooms

- The 2015 IRC requires sunrooms to comply with AAMA/NPEA/NSA 2100-12. The standard contains requirements for habitable and non-habitable sunrooms.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R301.2.1.4

2015

#### Wind Exposure Category

- Wind Exposure Category A has been deleted because it no longer exists in the IBC and ASCE 7, which is the basis for determination of wind exposure categories. Wind Exposure Category D now applies to open water, mud and salt flats, and unbroken ice fields, which includes hurricane-prone regions.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R301.2.1.2 Protection of Openings in Wind Borne Debris Regions

2015

- The mean roof height limit has been increased from 33 feet to 45 feet for the prescriptive attachment provisions for wood structural panels protecting glazing. The ASTM E 1996 standard has been modified to classify wind zones according to ultimate design wind speed.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R301.2.1.5, Table R301.2(1) Topographic Wind Effects

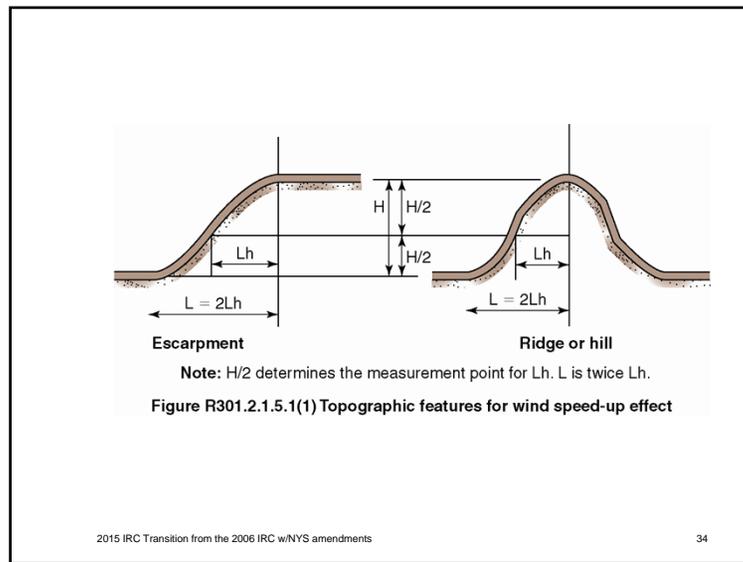
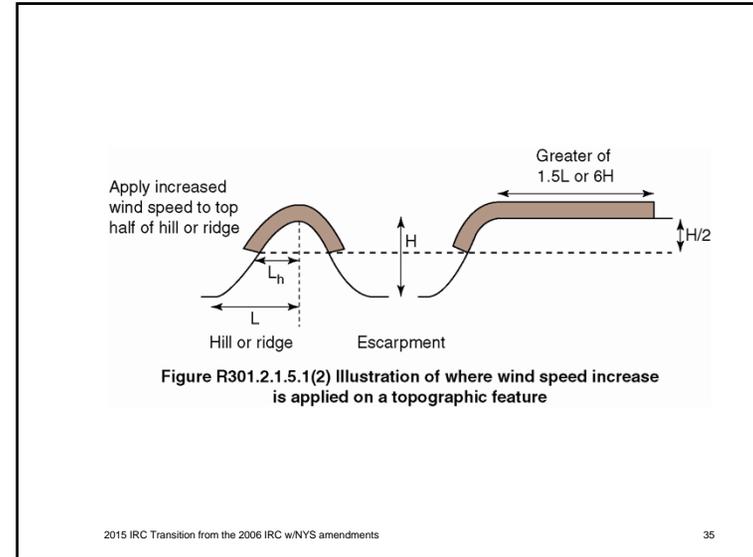
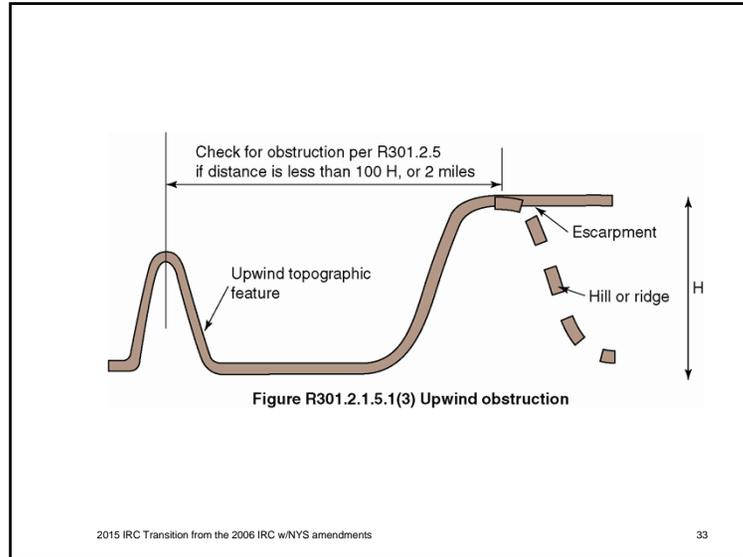
2009

- Limited circumstances
- Localized geographic areas
- Topographic wind speedup effects
  - Hill
  - Ridge
  - Escarpment



2015 IRC Transition from the 2006 IRC w/NYS amendments

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## R301.2.4 Floodplain Construction

2015

- Buildings located in a flood hazard area must comply with the provisions for the most restrictive flood hazard area and may use ASCE 24 for design.

2015 IRC Transition from the 2006 IRC w/NYS amendments 36

## R301.3 Story Height

2015

- Story height of wood and steel wall framing, insulated concrete, and SIP walls may not exceed 11ft, 7in. Masonry wall height is limited to 13ft 7in.

2015 IRC Transition from the 2006 IRC w/NYS amendments

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2015 IRC Transition from the 2006 IRC w/NYS amendments

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## Table R301.5 Minimum Uniformly Distributed Live Loads

- Balconies and decks 40 psf
- Definitions for balcony and deck removed
- Attic with limited storage 20 psf
  - 42 x 24 in. rectangle
  - Required insulation no higher than bottom chord
- Habitable attics 30 psf
- Attics served with fixed stairs 30 psf

2015 IRC Transition from the 2006 IRC w/NYS amendments

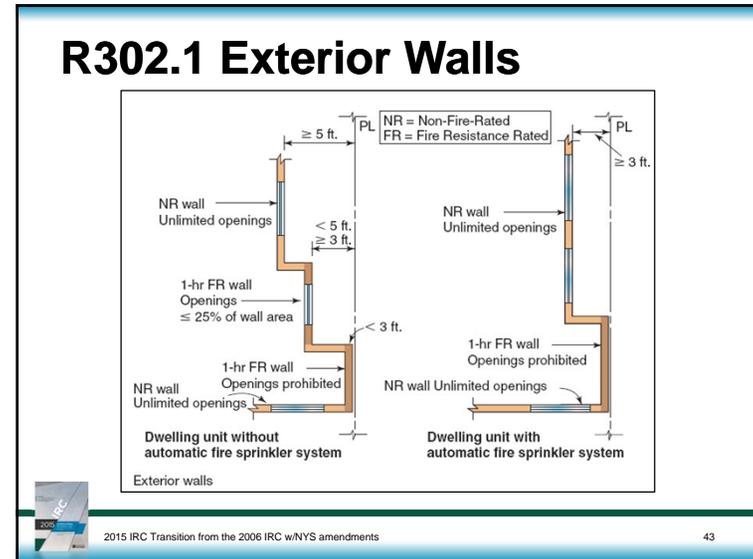
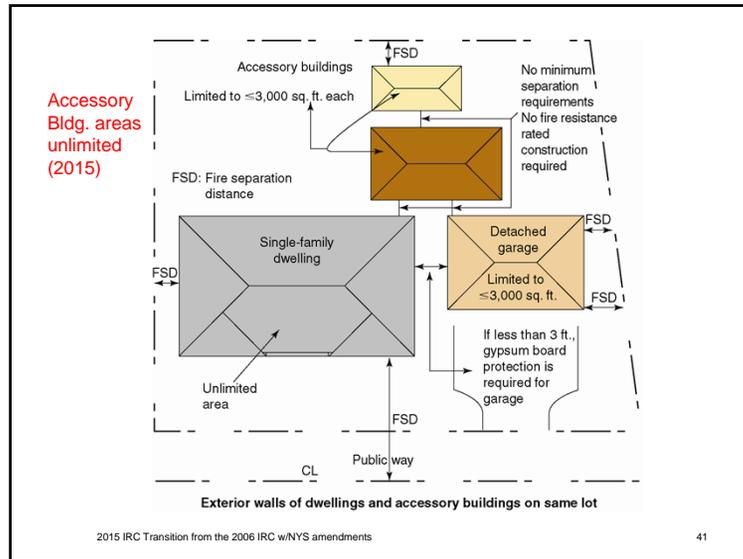
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## R302.1 and Table R302.1 Fire-resistant Construction at Exterior Walls

- R302 Fire-resistant Construction
  - Separations
  - Penetrations
  - Other fire-resistance requirements
- R302.1 Exterior walls
  - One-hour rating per ASTM E 119 or UL 263
  - Fire separation distance requirements no longer apply to buildings on the same lot
  - Changes to Table R302.1 clarify the application of the fire separation distance

2015 IRC Transition from the 2006 IRC w/NYS amendments

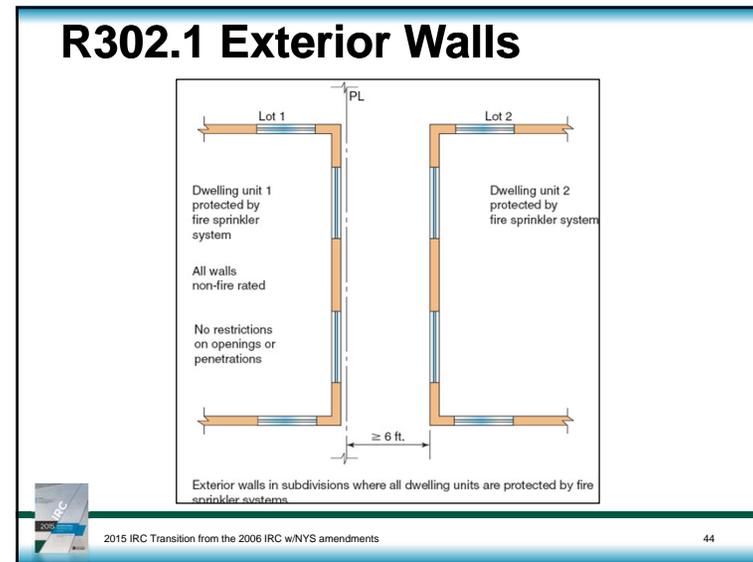
40



### Exterior Walls

2012 IRC	2015 IRC
<b>R302.1</b>	<b>R302.1</b>
The minimum clearances to lot lines have been reduced from 5 feet to 3 feet for unrated exterior walls when the dwelling is protected with a fire sprinkler system. The code now permits construction of unrated exterior walls on the lot line when all dwellings in the subdivision are protected with automatic fire sprinkler systems and the opposing lot maintains a minimum 6-foot clearance from the common lot line.	Unprotected roof overhangs are now permitted to project to within 2ft of the property line when fireblocking is installed between the top of the wall and the roof sheathing. In most cases, projections are not permitted less than 2ft from the property line. For dwellings with or without fire sprinkler protection, penetrations of exterior walls do not require fire-resistant protection unless they are located less than 3ft from the property line.

2015 IRC Transition from the 2006 IRC w/NYS amendments 42



## R302.1 Exterior Walls

2015

Fire resistance rating is not required for roof eave projections when fireblocking is installed.

2015 IRC Transition from the 2006 IRC w/NYS amendments 45

## Townhouse Separation R302.2.2 Parapet Exception

2012 IRC	2015 IRC
R302.2	R302.2

When a parapet is not installed, openings and penetrations of the roof are no longer permitted within 4 feet of the separating wall between townhouse dwelling units

The provisions for separating townhouses with structurally independent fire-resistant-rated walls in accordance with Section R302.1 have been removed in favor of the common wall provisions of Section R302.2. Common walls separating townhouses must now be rated for 2hrs when an automatic fire sprinkler system is not installed in the townhouse dwelling units.

2015 IRC Transition from the 2006 IRC w/NYS amendments 47

## Townhouse Separation R302.2

One-hour common wall for townhouses with sprinklers

Two-hour common wall for townhouses without sprinklers

2015 IRC Transition from the 2006 IRC w/NYS amendments 46

## Townhouse Separation R302.2.2 Parapet Exception

2012

No roof openings or penetrations within 4 feet of the townhouse separation are allowed when using the exception to the parapet provisions.

2015 IRC Transition from the 2006 IRC w/NYS amendments 48

## R302.5.1 Garage Opening Protection 2012

- Doors between the garage and dwelling unit now require self-closing devices.





2015 IRC Transition from the 2006 IRC w/NYS amendments

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## Fire Protection of Floors 2015

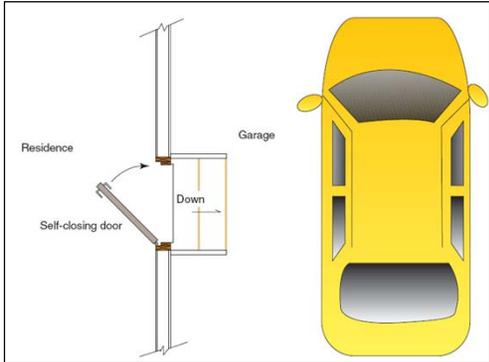
2012 IRC	2015 IRC
R302.13 (R501.3)	R302.13
With some exceptions, the code now requires 1/2-inch gypsum board or equivalent material to be applied to the underside of floor assemblies in buildings regulated by the IRC.	The provisions for fire protection of floors have been relocated from Chapter 5 to the fire-resistant construction provisions of Section R302. New language clarifies that the code does not regulate penetrations or openings in the fire protection membrane.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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## R302.5.1 Garage Opening Protection 2012

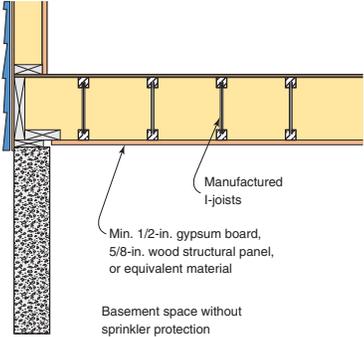




2015 IRC Transition from the 2006 IRC w/NYS amendments

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## R302.13 Fire Protection of Floors 2015





2015 IRC Transition from the 2006 IRC w/NYS amendments

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## R303 2012

### Mechanical Ventilation

- When used for satisfying the ventilation requirements for dwellings, mechanical ventilation must now comply with new provisions in Section M1507 for whole-house ventilation of habitable rooms and local exhaust of bathrooms. A whole-house mechanical ventilation system is now required for any dwelling that is tested with a blower door test and determined to have an air infiltration rate of less than 5 air changes per hour. Definitions for whole-house mechanical ventilation system and local exhaust have been added to Section R202

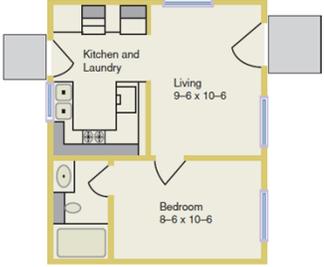


2015 IRC Transition from the 2006 IRC w/NYS amendments 53

## R304.1 2015

### Minimum Habitable Room Area

- The requirement for one habitable room with a minimum floor area of 120sf has been removed from the code.



Small dwelling complying with minimum area requirements

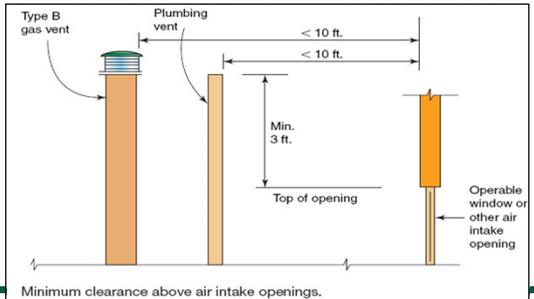


2015 IRC Transition from the 2006 IRC w/NYS amendments 55

## R303.5 2012

### Ventilation Intake Openings

- The minimum vertical clearance between a contaminant source and an outdoor air intake below has increased from 2 feet to 3 feet.



Minimum clearance above air intake openings.

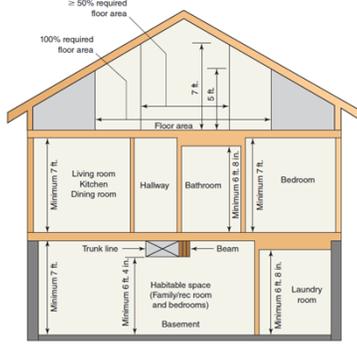


2015 IRC Transition from the 2006 IRC w/NYS amendments 54

## R305 Ceiling Height 2015

### Change Type: Modification

- The minimum ceiling height for bathrooms, toilet rooms, and laundry rooms has been reduced to 6 feet 8 inches. The exception for allowing beams, girders, ducts, or other obstructions to project to within 6 feet, 4 inches of the finished floor has been expanded to include basements with habitable space.



Ceiling height



2015 IRC Transition from the 2006 IRC w/NYS amendments 56

2012

## R308.4 Hazardous Locations for Glazing

- The provisions for hazardous locations related to the installation of glazing have been reorganized for ease of use and consistent application. Each item in the numbered list of hazardous locations has been placed in a separate subsection and given a descriptive title.



2015 IRC Transition from the 2006 IRC w/NYS amendments 57

## Glazing and Wet Surfaces

2012 IRC	2015 IRC
R308.4.5	R308.4.5
The separate provisions regulating glazing near tubs and swimming pools have been consolidated into one subsection titled Glazing and Wet Surfaces.	The exception from the safety glazing requirement for glazing that is 60 in. or greater from the water's edge of a bathtub, hot tub, spa, whirlpool, or swimming pool has been expanded to include glazing that is an equivalent distance from the edge of a shower, sauna, or steam room.

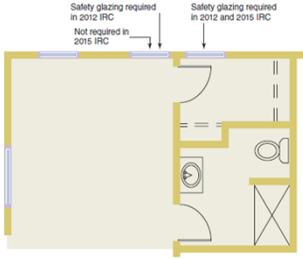


2015 IRC Transition from the 2006 IRC w/NYS amendments 59

2015

## R308.4.2 Glazing Adjacent to Doors

- Glazing installed perpendicular to a door in a closed position and within 24in of the door only requires safety glazing if it is on the hinge side of an in-swinging door.




2015 IRC Transition from the 2006 IRC w/NYS amendments 58

2012

## R308.4.6 Glazing Adjacent Stairs and Ramps

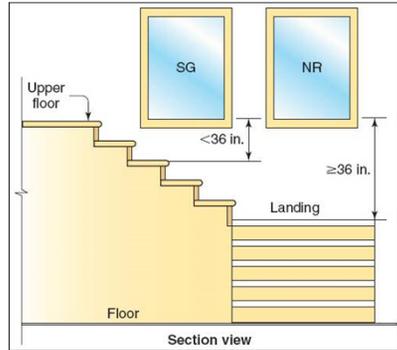
- The glazing that is not considered to be in a hazardous location, the rule for the minimum height above a tread at the side of a stairway is now 36 inches to correspond to the height of a guard as previously found in the exception. Other revisions to the text clarify the meaning and application of the glazing requirements at stairways.



2015 IRC Transition from the 2006 IRC w/NYS amendments 60

### R308.4.6 Glazing Adjacent Stairs and Ramps

2012



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### Glazing Adjacent to the Bottom Stair Landing

2012 IRC	2015 IRC
R308.4.7	R308.4.7
The provisions for glazing installed near the landing at the bottom of a stairway have been revised to clarify the application. The threshold for the minimum height above the walking surface is now 36 inches for determining that the glazing is not in a hazardous location.	Glazing adjacent to the bottom stair landing is now defined as the area in front of the plane of the bottom tread.

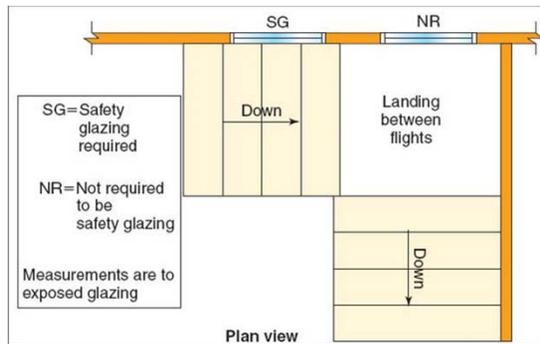


2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R308.4.6 Glazing Adjacent Stairs and Ramps

2012



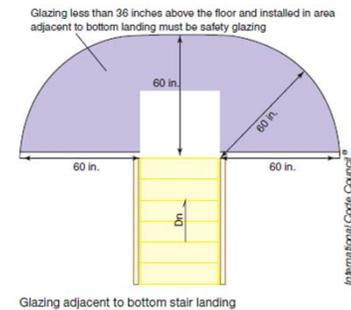
2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R308.4.7 Glazing Adjacent to the Bottom Stair Landing

#### Change Type: Clarification

- Glazing adjacent to the bottom stair landing is now defined as the area in front of the plane of the bottom tread



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## R309.5 Garage Fire Sprinklers 2012

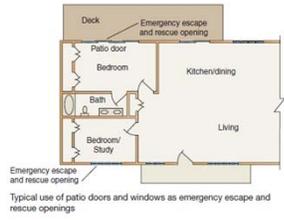
- In a subdivision where all homes are protected with dwelling fire sprinkler systems, nonrated exterior walls of garages are permitted to be constructed on a lot line when the garage is protected with a fire sprinkler system and meets the other conditions of Section R302.1.



2015 IRC Transition from the 2006 IRC w/NYS amendments 65

## R310 Emergency Escape and Rescue Openings 2015

- The emergency escape and rescue openings provisions have been reorganized. Separate provisions spell out the requirements for windows and doors used for emergency escape and rescue.

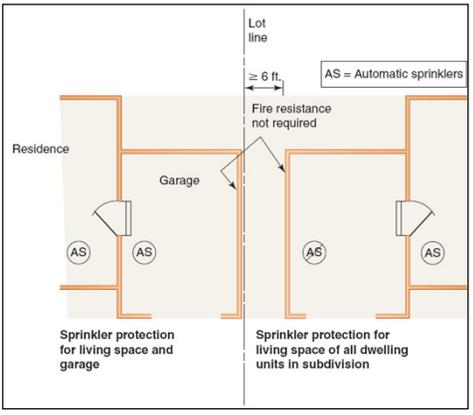


Typical use of patio doors and windows as emergency escape and rescue openings



2015 IRC Transition from the 2006 IRC w/NYS amendments 67

## R309.5 Garage Fire Sprinklers 2012



AS = Automatic sprinklers

Fire resistance not required

Lot line

≥ 6 ft.

Residence

Garage

Sprinkler protection for living space and garage

Sprinkler protection for living space of all dwelling units in subdivision



2015 IRC Transition from the 2006 IRC w/NYS amendments 66

## R310.2.2 Window Well Drainage 2012

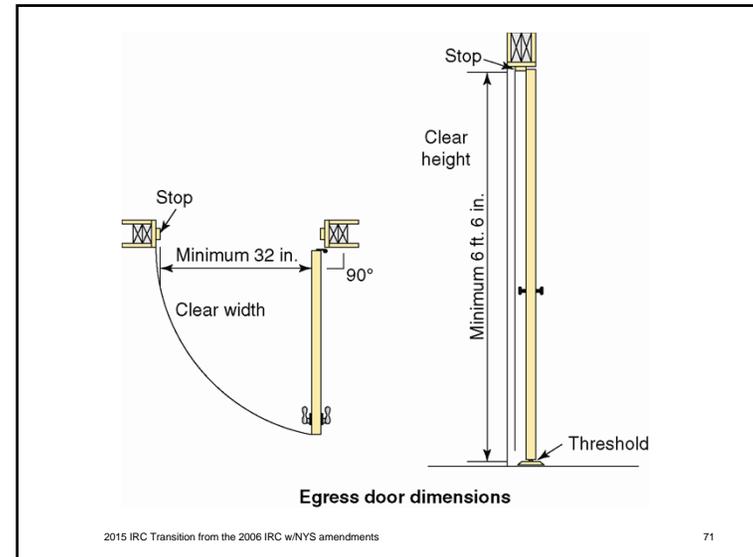
- Except for locations with well-drained soils, window wells serving emergency escape and rescue openings now require a means to drain surface water to the foundation drainage system.




2015 IRC Transition from the 2006 IRC w/NYS amendments 68

### R310.5, R310.6 Emergency Escape and Rescue Openings for Additions, Alterations and Repairs 2015

- The basement of a dwelling addition does not require an emergency escape and rescue opening if there is access to a basement that does have an emergency escape and rescue opening. Remodeling of an existing basement does not trigger the emergency escape and rescue opening requirements unless a new bedroom is created.



### R311 Means of Egress

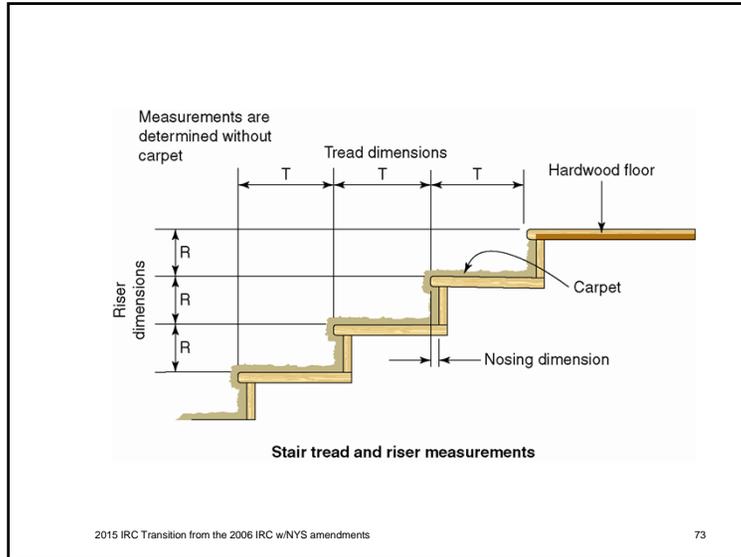
- Reorganized
- Means of egress in IRC ends when the occupant reaches grade at the exterior
- Net clear opening requirements for the required egress door to the exterior



### R311.7.3 and R311.7.4 Stair Treads and Risers 2015

- New provisions defining the walk line for winders
- Measurement of stair treads and risers exclusive of carpet
- Winders permitted in a stairway of rectangular treads

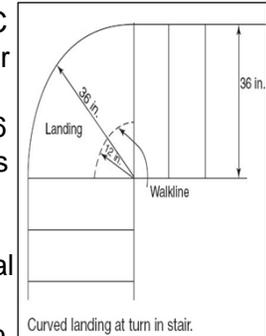




## R311.7.6 Landing for Stairways

2012

- For a turn in a stairway, the IRC now specifically permits angular and curved stair landing with certain dimensions less than 36 inches if the prescribed depth is provided at the walk line and minimum area criteria are satisfied. The maximum vertical rise requirement of 12 feet has been moved from the exception to a new Section R311.7.3.



2015 IRC Transition from the 2006 IRC w/NYS amendments

(12' 3" in 2015)

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## R311.7.3, R311.7.5.1 Stair Risers

2015

- The total vertical rise in a stairway without an intermediate landing has increased from 144in to 147 in. The provision for allowing open risers has been clarified. It is based on the distance above grade or the floor below, not on the total rise of the stair. A new exception clarifies that open risers are permitted on spiral stairways.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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## R311.7.10.1 Spiral Stairways

2015

- The code adds a definition of spiral stairway that omits any requirement for a center post to allow for design flexibility. The code now limits the size of spiral stairways by restricting the radius at the walk line to a dimension not greater than 24 ½ ins. The method of measurement for tread depth now matches the winder provisions and measures at the intersection of the walk line and the tread nosing rather than perpendicular to the leading edge of the tread.



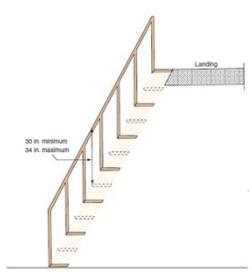
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### 2015

## R311.7.11, R311.7.12 Alternating Tread Devices and Ship Ladders

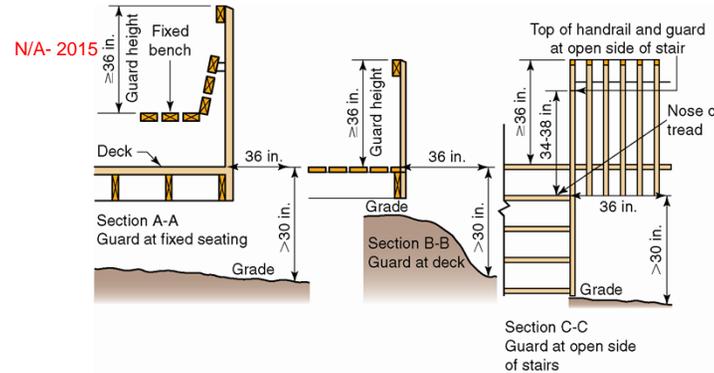
- Alternating tread devices and ship ladders have been added to the stair provisions. Neither device is approved for use as a means of egress.



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### 2015

## N/A- 2015



Determining required guard locations

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### 2015

## R312.1.2 Guard Height

- The provision requiring that the guard height be measured from the surface of adjacent fixed seating has been removed from the code.



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## Window Fall Protection

2012 IRC	2015 IRC
<p><b>R312.2</b></p> <p>The provisions for window fall protection have been relocated from Chapter 6 to Chapter 3. The terminology for window opening control devices has been updated for consistency with the referenced standard ASTM F 2090. Operation criteria found in the 2008 edition of the standard have been deleted from the prescriptive provisions of the IRC.</p>	<p><b>R312.2</b></p> <p>The window fall protection provisions have been revised to clarify the meaning, remove redundant language, and achieve consistency with the IBC provisions.</p>

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## R312.2.1 Window Fall Protection

### Change Type: Clarification

- The window fall prevention provisions have been revised to clarify the meaning, remove redundant language, and achieve consistency with the IBC provisions.

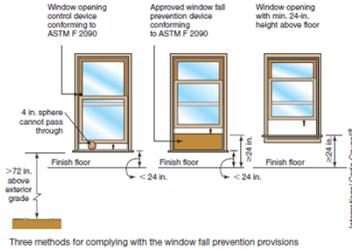


Photo Courtesy of Uponor Inc.



## R313 Automatic Fire Sprinkler Systems

- Automatic fire sprinkler system
  - IRC Section P2904 or
  - NFPA 13D
  - townhouse requirements effective upon adoption of the 2009 IRC
  - one- and two-family dwelling provisions effective January 1, 2011



## Smoke Alarms

2012 IRC	2015 IRC
R314	R314
The code now specifically recognizes wireless technology in lieu of interconnection for smoke alarm installation in both new and existing dwelling units. The interconnection provisions have been moved out of the sections related to location and power source and placed in a new section.	Battery-operated smoke alarms are permitted for satisfying the smoke alarm power requirements when alternations, repairs, and additions occur. Household fire alarm systems no longer require monitoring by an approved supervising station. New provisions address nuisance alarms related to devices installed near bathrooms and cooking appliances.



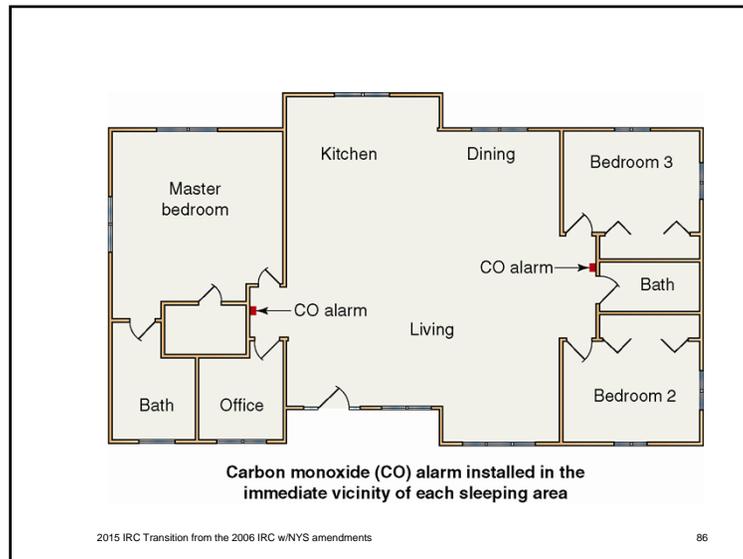
## R315 Carbon Monoxide Alarms

- New dwellings
- Existing dwellings when work requires a permit
- Immediate vicinity of sleeping areas



## Carbon Monoxide Alarms

2012 IRC	2015 IRC
R315	R315
The code now specifically recognizes carbon monoxide detection systems with separate detectors and notification appliances installed in accordance with NFPA 720.	Carbon monoxide alarms now require connection to the house wiring system with battery backup. Exterior work such as roofing, siding, windows, doors, and decks and porch additions no longer trigger the carbon monoxide alarm provisions for existing buildings. An attached garage is one criterion for requiring carbon monoxide alarms, but only if the garage has an opening into the dwelling. A carbon monoxide alarm is required in bedrooms when there is a fuel-fired appliance in the bedroom and adjoining bathroom. Carbon Monoxide detection systems only require detectors installed in the locations prescribed by the code and not those locations described in NFPA 720.



## Thermal Barrier

2012 IRC	2015 IRC
R316.4	R316.4
Reference to a new standard, NFPA 275, replaces references to previous standards for determining an acceptable thermal barrier material other than 1/2-inch gypsum wallboard.	23/32-inch wood structural panels satisfy the thermal barrier requirements for foam plastic insulation.



**R322.3** 2015  
**Coastal High-Hazard Areas**

- Coastal A Zones are defined and an exception for foundation types in Coastal A Zones is added.



2015 IRC Transition from the 2006 IRC w/NYS amendments 89

Part 3  
**Building Construction  
(Chapters 4-10)**

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**R325** 2015  
**Mezzanines**

- New provisions place limitations on the construction of mezzanines related to ceiling height and openings consistent with the IBC.



2015 IRC Transition from the 2006 IRC w/NYS amendments 90

**R403.1.1** 2015  
**Minimum Footing Size**

- The table for minimum footing size and thickness is divided into three expanded tables based on the type of construction being supported: light frame, light frame with veneer, and concrete or masonry. The values are also based on the type of foundations: slab on grade, crawl space, or basement.

2015 IRC Transition from the 2006 IRC w/NYS amendments 92

## R403.1.6 2015

### Foundation Anchorage

- Anchor bolts are now required to be placed in the middle third of the sill plate.



2015 IRC Transition from the 2006 IRC w/NYS amendments 93

## R404.1 Concrete and Masonry 2012

### Foundation Walls

- Concrete and masonry separated
- ICF walls merged with removable form walls
- References Portland Cement Association standard PCA 100



2015 IRC Transition from the 2006 IRC w/NYS amendments 95

## Tables 404.1(1) through R404.1(3) 2009

### Lateral Support for Concrete and Masonry Foundation Walls

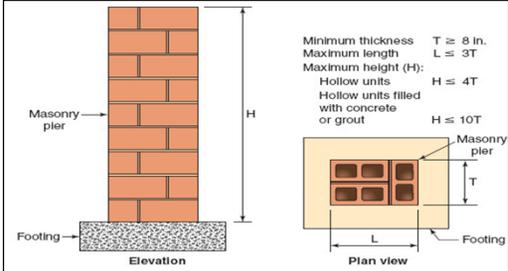
- The tables prescribing lateral restraint at the top of basement foundation walls have been deleted.

2015 IRC Transition from the 2006 IRC w/NYS amendments 94

## R404.1.9 2012

### Isolated Masonry Piers

- The IRC now includes prescriptive provisions for the construction of isolated masonry pier foundations supporting raised floor systems



Isolated masonry pier supporting floor system only.

2015 IRC Transition from the 2006 IRC w/NYS amendments 96

## R408.1 and R408.2 Underfloor Space Ventilation

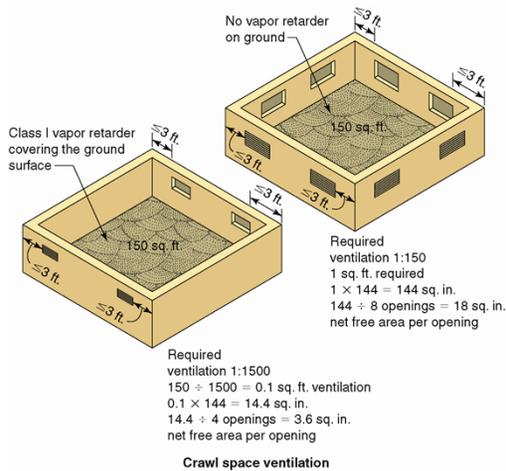
- Reduced ventilation with vapor retarder
  - Net openings  $\frac{1}{1500}$  of underfloor area



## Tables R502.3.1(1), R502.3.1(2) Floor Joist Spans for Common Lumber Species

2015

- Changes to Southern Pine (SP), Douglas Fir-Larch (DFL), and Hemlock Fir (HF) lumber capacities have changed the floor joist span length in the prescriptive tables of the IRC. Span lengths for Southern Pine have decreased: lengths for DFL and HF joists have increased.



## Tables R502.3.1(1), R502.3.1(2) Floor Joist Spans for Common Lumber Species

TABLE R502.3.1(1) Floor Joist Spans for Common Lumber Species (Residential sleeping areas. Live load = 30 psf, L/A = 360<sup>a</sup>)

Joist Spacing (inches)	Species and Grade	Dead Load = 10 psf						Dead Load = 20 psf					
		2 x 6		2 x 8		2 x 10		2 x 6		2 x 8		2 x 10	
		(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)	(ft - in.)
12	Douglas fir-larch SS	12-6	15-6	21-0	25-7	11-6	16-4	21-0	25-7				
	Douglas fir-larch #1	12-0	15-10	20-3	24-8	12-0	15-7	19-0	22-0				
	Douglas fir-larch #2	11-10	15-7	19-10	23-4	11-8	14-9	18-0	20-11				
	Douglas fir-larch #3	9-11	12-7	15-3	17-10	8-11	11-3	13-9	16-0				
	Hem-fir SS	11-10	15-7	19-10	24-2	11-10	15-7	19-10	24-2				
	Hem-fir #1	11-7	15-3	19-5	23-7	11-7	15-3	18-3	21-9				
	Hem-fir #2	11-0	14-6	18-6	22-6	11-0	14-4	17-6	20-4				
	Hem-fir #3	9-8	12-4	15-0	17-5	8-9	11-0	13-5	15-7				
	Southern pine SS	12-3	16-2	20-8	25-1	12-3	16-2	20-8	25-1				
	Southern pine #1	11-10	15-7	19-10	24-2	11-10	15-7	18-7	22-0				
	Southern pine #2	11-3	14-11	18-1	21-4	10-9	13-8	16-2	19-1				
	Southern pine #3	9-2	11-6	14-0	16-6	8-2	10-3	12-6	14-9				
Spruce-pine-fir SS	11-7	15-3	19-5	23-7	11-7	15-3	19-5	23-7					
Spruce-pine-fir #1	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7					
Spruce-pine-fir #2	11-3	14-11	19-0	23-0	11-3	14-7	17-9	20-7					
Spruce-pine-fir #3	9-8	12-4	15-0	17-5	8-9	11-0	13-5	15-7					

For S1: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa.  
 Note: Check sources for availability of lumber in lengths greater than 20 feet.  
 a. Dead load limits for townhouses in Seismic Design Category C and all structures in Seismic Design Categories D, D<sub>s</sub>, and D<sub>3</sub> shall be determined in accordance with Section R301.2.2.2.1.



## R507 Decks

2012

- All deck provisions have been relocated to a new section.
- The prescriptive provisions related to the placement of bolts and lags for deck ledger attachment to the band joist have been revised to correlate with the National Design Specifications (NDS) for Wood Construction.



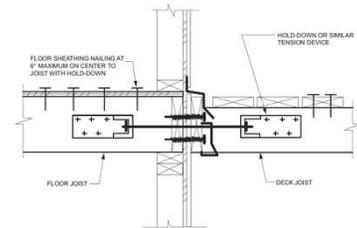
2015 IRC Transition from the 2006 IRC w/NYS amendments 101

## R507.2.4 Deck Lateral Load Connection

2015

**Change Type:** Modification

- The prescriptive deck lateral load connection requires the hold-down devices to be within 2 ft of the ends of the deck.
- A new lateral load connection option prescribes four hold-downs installed below the deck structure.

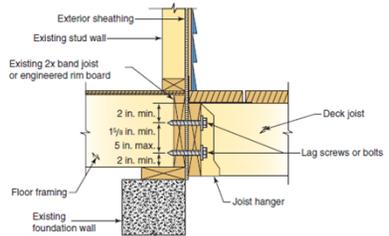


2015 IRC Transition from the 2006 IRC w/NYS amendments 103

## R507.2 Deck Ledger Connection to Band Joist

2015

- The deck ledger section is reorganized to better describe the minimum requirements for connection of deck ledgers to band joists.

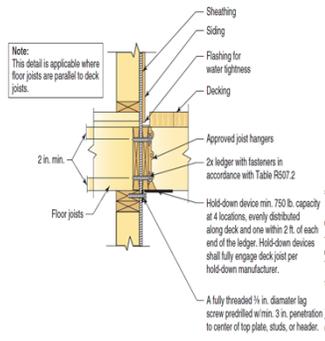


2015 IRC Transition from the 2006 IRC w/NYS amendments 102

## R507.2.4 Alternative Deck Lateral Load Connection

2015

- When the prescriptive deck lateral load connection that has appeared in the previous editions of the code is chosen as a design option, the code now requires the two hold-down devices to be within 2 feet of the ends of the deck. A new lateral load connection option prescribes four hold-downs installed below the deck structure.



2015 IRC Transition from the 2006 IRC w/NYS amendments 104

## R507.4 2015

### Decking

- The code sets the maximum allowable spacing for deck joists supporting the various types of common decking materials.

**TABLE R507.4** Maximum joist spacing

Material type and nominal size	Maximum on-center joist spacing	
	Perpendicular to joist	Diagonal to joist <sup>a</sup>
1/4-inch thick wood	16 inches	12 inches
2-inch thick wood	24 inches	16 inches
Plastic composite	In accordance with Section R507.3	In accordance with Section R507.3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.  
a. Maximum angle of 45 degrees from perpendicular for wood deck boards

2015 IRC Transition from the 2006 IRC w/NYS amendments
105

## R507.5, R507.6, R507.7 2015

### Deck Joists and Beams

2015 IRC Transition from the 2006 IRC w/NYS amendments
107

## R507.5, R507.6, R507.7 2015

### Deck Joists and Beams

- New sections and tables provide prescriptive methods for joists and beams in deck construction. Section R507.5 describes requirements for deck joists, Section R507.6 lists requirements for deck beams, and Section R507.7 describes minimum bearing requirements for joists and beams.

2015 IRC Transition from the 2006 IRC w/NYS amendments
106

## R507.8 2015

### Deck Posts

- New Section R507.8 establishes minimum sizes of wood posts supporting wood decks and describes the requirements for connection of deck posts to the footing.

2015 IRC Transition from the 2006 IRC w/NYS amendments
108

## Fastener Schedule for Structural Members

2012 IRC	2015 IRC
Table R602.3(1)	Table R602.3(1)
Table R602.3 (1) now includes requirements for nailing roof trusses to plates, abutting studs at intersecting wall corners, and connection of rim board to sill plates.	The Fastening Schedule now contains multiple nail size options. Roof rafter connections at ridge, valley, and hip are revised. Double top plate splicing is clarified. Clarification of the joist-to-band-joist (rim board) connection is added.



## R602.6.1 Drilling and Notching of Top Plate

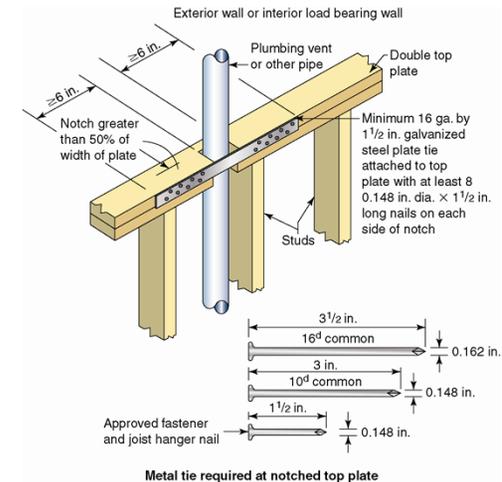
- When a metal tie is required
  - extend at least 6 inches beyond each side of the opening
  - 1 1/2 in. x 0.148 in. diameter nails (joist hanger nails)



## R602.3.1 Stud Size, Height, and Spacing

2015

- Table R602.3.1 is deleted and the exception for walls greater than 10ft tall is added to the text of Section R602.3.1. If studs in a tall wall meet Exception 2, they meet the requirements of the IRC and do not need engineering or use of an alternate standard.



## Headers

### 2012 IRC

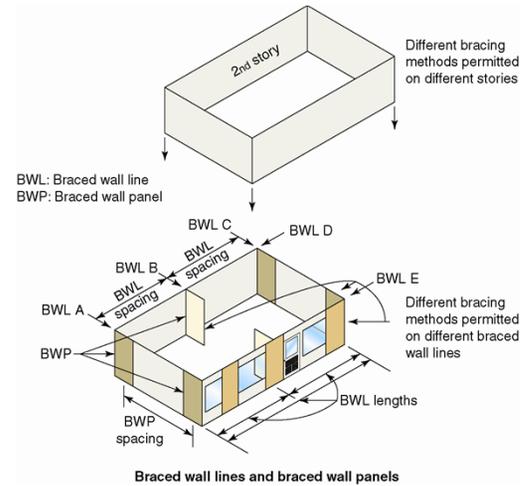
R602.7, Table R602.7.1

The code now includes prescriptive provisions for single member headers under limited conditions.

### 2015 IRC

R602.7, Tables R602.7(1), R602.7(2), R602.7(3), R602.7.5

The girder and header span tables of Chapter 5 have been moved to the header section in Chapter 6, Multiply and single header tables are combined. A new section describing rim board headers is added.



## R602.10 Braced Wall Lines and Braced Wall Panels <sup>2009</sup>

- Entirely rewritten
- Clarifies 3 distinct paths for compliance
  - intermittent bracing
  - continuous sheathing
  - engineered design



## R602.10.1.2 Length of Wall Bracing



- Wind loads and seismic loads in separate tables
- The greater tabular value applies
- All applicable adjustment factors
- Amount of required bracing now length in feet (not percentage of braced wall line)
- Minimum total length of bracing in BWL = 48 inches
- Walls perpendicular to BWL do not count
- Trade off for hold-down devices (top story)



Note: 2009 IRC

Example:  
Building location  
Wind = 90 MPH  
Exposure category B  
SDC = B

Wind controls:  
Minimum bracing length is determined from Table R602.10.1(1) based on braced wall line spacing

Intermittent bracing method  
WSP: Wood structural panel  
SFB: Structural fiber board  
PBS: Particle board  
PCP: Portland cement plaster  
OR  
HPS: Hardboard panel siding

Minimum tabular values for length of wall bracing  
1st story Q + R + S + T = 20.5 ft.\*  
2nd story U + V + W = 14 ft.\*  
3rd story X + Y + Z = 7.5 ft.\*

BWL: Braced wall line \*Subject to adjustment factors

**Determining length of required wall bracing**

2015 IRC Transition from the 2006 IRC w/NYS amendments 117

## R602.10.3.2 Method ABW: Alternate Braced Wall Panels

- New figure replaces most of text

2015 IRC Transition from the 2006 IRC w/NYS amendments 119

## R602.10.2 Intermittent Braced Wall Panel Construction Methods

2012

- *intermittent vs continuous sheathing*
- Methods 1 through 8 and two alternate BWPs in one table
- Two- or three-letter abbreviation and icon
- Typically, 1/2-inch gypsum wallboard is now required on side opposite the bracing

2015 IRC Transition from the 2006 IRC w/NYS amendments 118

Panel length per Table R602.10.3.2

For panel splice (if needed), adjoining panel edges shall meet over and be fastened to common framing

8D common or galv. box nails @ 6" OC at panel edges; for single story and at 4" OC, panel edges for the first of 2 stories

8D common or galv. box nails @ 12" OC at interior supports

(2) 1/2" diameter anchor bolts per Figure R403.1.1, located between 6 and 12 inches of each end of the segment

Minimum reinforcing of foundation. One #4 bar top and bottom of footing

Minimum footing size under opening is 12" x 12". A turned-down slab shall be permitted at door openings; reinforcing shall be as shown above

Method ABW: Alternate braced wall panel

2015 IRC Transition from the 2006 IRC w/NYS amendments 120

### R602.10.3.3 Method PFH: Portal Frame with Hold-downs

- 2006 IRC: braced wall panel adjacent to a door or window opening (overhead garage doors)
- 2009 IRC: *portal frame with hold-downs* (Method PFH)
- Figure R602.10.3.2 replaces text



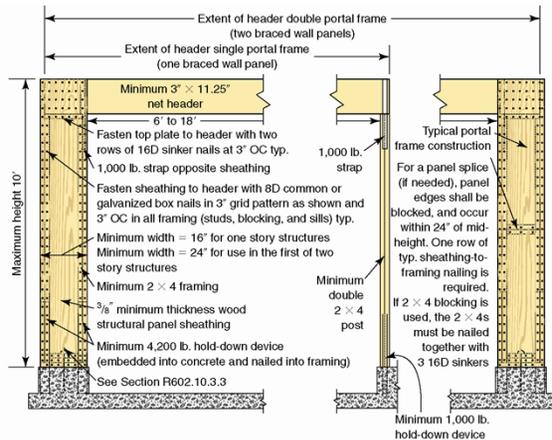
### R602.10.1 Braced Wall Lines

2012

- The section has been reorganized to address braced wall lines only, including provisions for spacing and offsets.



Note:  
2009  
IRC



Method PFH: Portal frame with hold-downs

### R602.10.2 Braced Wall Panels

2012

- Information on braced wall panels has been placed in one section. Braced wall panels now may be located up to 10 feet from both ends of the braced wall line. Maximum braced wall panel spacing is 20 ft. measured edge to edge.



## R602.10.2 Braced Wall Panels

2012

Note: Continuous sheathing methods require all framed portions of the braced wall line to be sheathed.

2015 IRC Transition from the 2006 IRC w/NYS amendments 125

## R602.10.4 Construction Methods for Braced Wall Panels

2012

- Bracing construction methods and the allowable mixing of bracing methods have been grouped into a single section. Braced wall lines that change from exterior to interior wall lines may now mix bracing methods along the braced wall line.

2015 IRC Transition from the 2006 IRC w/NYS amendments 127

## Required Length of Bracing

2012 IRC	2015 IRC
R602.10.3	Table R602.10.3(1)
Information on the required length of wall bracing is consolidated into one section. Wind wall bracing adjustments have been placed in a separate table from the bracing requirements based on wind speed	Table values for bracing requirements based on wind speed have changed slightly due to use of ultimate design wind speed values to calculate required bracing length.

2015 IRC Transition from the 2006 IRC w/NYS amendments 126

## Minimum Length of a Braced Wall Panel

2012 IRC	2015 IRC
R602.10.5	Table R602.10.5
Braced wall panel minimum lengths are combined in Table R602.10.5. Other braced wall panel length information also is placed in this section.	The contributing length of continuously sheathed portal frames (Method CS-PF) in low-seismic regions has increased by 50%

2015 IRC Transition from the 2006 IRC w/NYS amendments 128

## Construction of Methods ABW, PFH, PFG, CS-PF, and BV-WSP

2012 IRC	2015 IRC
R602.10.6	R602.10.6.2
This change places all of the alternate braced wall panel methods into one section and adds a new Method BV-WSP, Wall Bracing for Dwellings with Stone and Masonry Veneer in Seismic Design Categories D <sub>0</sub> , D <sub>1</sub> , and D <sub>2</sub> .	Due to recent testing of Method PFH (Portal Frame with Hold-downs), the minimum required capacity of the hold-downs is lowered to 3500lbs in the 2015 IRC. Additionally, the new testing confirms that two sill plates are sufficient under each braced wall panel of the portal rather than the three plates used in Method PFH for the 2012 IRC.

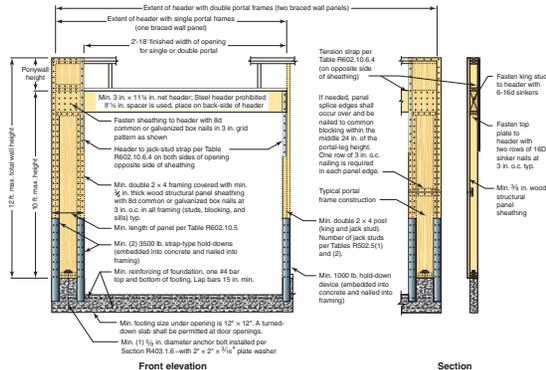


## R602.10.7 Ends of Braced Wall Lines with Continuous Sheathing 2012

- Braced wall line end conditions for continuous sheathing have been placed in one section. A fifth end condition is defined for braced wall panel connections. When a 48-inch braced wall panel is at the end of a wall line, the code does not require a return panel or hold-down at the corner.



## Construction of Methods ABW, PFH, PFG, CS-PF, and BV-WSP 2015



## Simplified Wall Bracing

2012 IRC	2015 IRC
R602.12	R602.12
This new section offers an alternative method to braced wall lines for detached dwellings located in SDC A, B, C and townhouses in SDC A or B. The code also places limitations on wind speed, exposure category, building size and other criteria.	Simplified wall bracing is now allowed for one-to three-story dwellings and townhouse in Wind Exposure Category B or C with ultimate design wind speeds ( $V_{ult}$ ) of 130 mph or less.

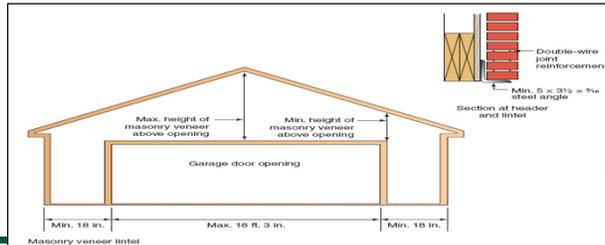


### R703.7.3.2

2012

## Masonry Veneer Lintel

- Minimum and Maximum heights of masonry veneer are established for masonry lintels spanning not greater than 18 feet 3 inches.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### R703.13, R703.14 Insulated Vinyl Siding and Polypropylene Siding

2015

- New sections set minimum requirements for insulated vinyl siding and polypropylene siding. Polypropylene siding requires a minimum 5-ft fire separation distance and must maintain 10-ft separation from buildings on other lots.

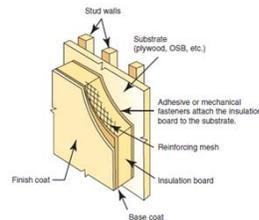
2015 IRC Transition from the 2006 IRC w/NYS amendments

135

### R703.9 Exterior Insulation and Finish Systems

2015

- Limitations for exterior insulation and finish systems (EIFS) with and without drainage have been added to the 2015 IRC. EIFS with drainage is required over all wall assemblies except concrete and masonry.



2015 IRC Transition from the 2006 IRC w/NYS amendments

134

### R703.15, R703.16, R703.17 Cladding Attachment over Foam Sheathing

2015

- Three new sections set minimum requirements for cladding attachment over foam sheathing to wood framing (R703.15), cold-formed steel framing (R703.16), and masonry or concrete walls (R703.17). For light-frame construction, prescriptive requirements are given. Connection to concrete and masonry construction continues to require engineered design in most cases when placing foam over the concrete or masonry wall.

2015 IRC Transition from the 2006 IRC w/NYS amendments

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## 2015

### Tables R802.4, R802.5 Ceiling Joist and Rafter

**TABLE R802.4(1) Ceiling Joist Spans for Common Lumber Species (Uninhabitable attics without storage, live load = 10 psf, L/A = 240)**

- Changes to Southern Pine, Douglas Fir-Larch, and Hemlock Fir capacities have changed the maximum spans for lumber in the ceiling joist and rafter span tables of the IRC.

Ceiling Joist Spacing (inches)	Species and Grade	Dead Load = 5 psf			
		Maximum ceiling joist spans			
		2 × 4	2 × 6	2 × 8	2 × 10
16	Douglas fir-larch SS	11-11	18-9	24-9	Note a
	Douglas fir-larch #1	11-6	18-1	23-10	Note a
	Douglas fir-larch #2	11-3	17-8	23-4	Note a
	Douglas fir-larch #3	9-7	14-1	17-10	21-9
	Hem-fir SS	11-3	17-8	23-4	Note a
	Hem-fir #1	11-0	17-4	22-10	Note a
	Hem-fir #2	10-6	16-6	21-9	Note a
	Hem-fir #3	9-5	13-9	17-5	21-3
	Southern pine SS	11-9	18-5	24-3	Note a
	Southern pine #1	11-3	17-8	23-10	Note a
	Southern pine #2	10-9	16-11	21-7	25-7
	Southern pine #3	8-9	12-11	16-3	19-9
	Spruce-pine-fir SS	11-0	17-4	22-10	Note a
	Spruce-pine-fir #1	10-9	16-11	22-4	Note a
	Spruce-pine-fir #2	10-9	16-11	22-4	Note a
	Spruce-pine-fir #3	9-5	13-9	17-5	21-3

*(Portions of table not shown for brevity and clarity.)*

2015 IRC Transition from the 2006 IRC w/NYS amendments 137

## 2012

### 802.11 Roof Uplift Resistance

- The provisions for roof connections to resist wind uplift forces have been updated to current standards and simplified for ease of use. Table R802.11 has been replaced to provide accurate values for both low- and high-slope roofs in Wind Exposure Categories B and C.

2015 IRC Transition from the 2006 IRC w/NYS amendments 139

## 2012

### R802.7 Cutting, Drilling, and Notching of Roof Members

- Text in Section R802.7 has been deleted in favor of referencing Section R502.8.1 for provisions related to cutting, drilling, and notching of solid lumber.
- Provisions for notching of cantilevered rafters are placed in a new section, and the nominal dimension is replaced by the actual minimum dimension of 3 ½ inches for the remaining portion of the rafter.
- A new section clarifies the limits for taper cuts on the ends of ceiling joists.
- Two new figures aid in determine the correct application of cantilevered rafters and ceiling joist taper cut requirements.

2015 IRC Transition from the 2006 IRC w/NYS amendments 138

## 2012

### R806 Roof Ventilation

- The provisions for minimum vent area have been revised by placing two exceptions after the general rule to clarify the meaning. The exception for reducing the ventilation area when a vapor retarder is installed on the ceiling now only applies to cold-weather climates. The reduction in vent area based on cross ventilation now requires no less than 40% and no more than 50% (previously 50% and 80%) of the required ventilating area to be placed in the upper portion of the roof and no more than 3 feet below the ridge. The requirement for the upper vents to be a least 3 feet above the eave vents has been removed.

2015 IRC Transition from the 2006 IRC w/NYS amendments 140

## Unvented Attic Assemblies

2012 IRC	2015 IRC
R806.5	Table R806.5
The unvented attic provisions apply to rafter assemblies typically used for vaulted or cathedral ceilings in addition to conventional attics. References to vapor retarders now specify the applicable class as defined in Section R202. Insulation board installed as an air-impermeable barrier must have the edges sealed to provide a continuous barrier.	For unvented attics and unvented rafter spaces, Table R806.5 has a new footnote allowing calculation of insulation thickness when the insulation is placed above the structural roof sheathing.



## Underlayment

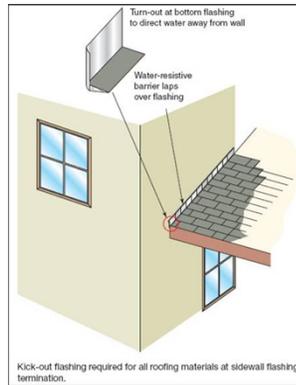
2012 IRC	2015 IRC
R905.2.7.2	R905.1.1, R905.1.2
The requirements for installation of roof covering underlayment have been added for high-wind areas. Adhered underlayment that conforms to ASTM D1970 is exempt from the fastening requirements.	Roof underlayment provisions have been combined into Section R905.1.1 with three tables listing underlayment type, application, and attachment. Sections on ice barriers from the 2012 IRC are reorganized and combined into Section R905.1.2



## R903.2.1 Roof Flashing Locations

2012

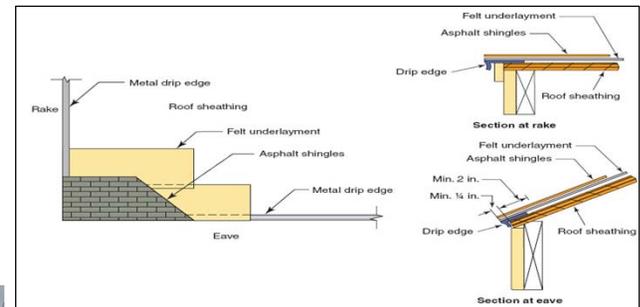
- The general roof flashing provisions for Chapter 9 now require a kick-out flashing where the eave of the roof intersects a wall to prevent water intrusion into the wall assembly.



## R905.2.8.5 Roof Drip Edge

2012

- A roof drip edge is now required for asphalt shingles.



### R905.16

2015

#### Photovoltaic Shingles

- Additional requirements and limits for photovoltaic shingles have been added to Section R905.16



2015 IRC Transition from the 2006 IRC w/NYS amendments

145

### R907.3 Recovering versus Replacement of Roofing

2012

- The hail exposure map, related definitions, and the limitations on reroofing in hail zones have been deleted from the code. A new exception clarifies that the reroofing provisions do not require the removal of self-adhered ice barrier underlayment.



2015 IRC Transition from the 2006 IRC w/NYS amendments

147

### R907 Rooftop-Mounted Photovoltaic Systems

2015

- This code provision describes the requirements and limits of rooftop-mounted photovoltaic.



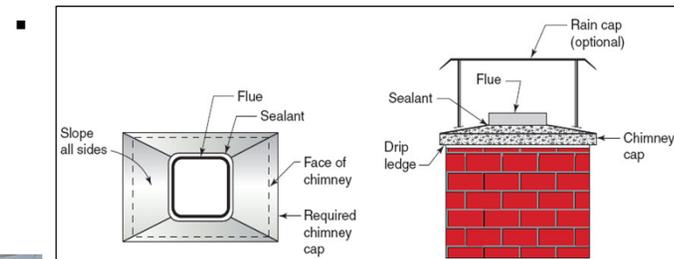
2015 IRC Transition from the 2006 IRC w/NYS amendments

146

### R1003.9.1, R1003.3.3 Masonry Chimney Caps and Rain Caps

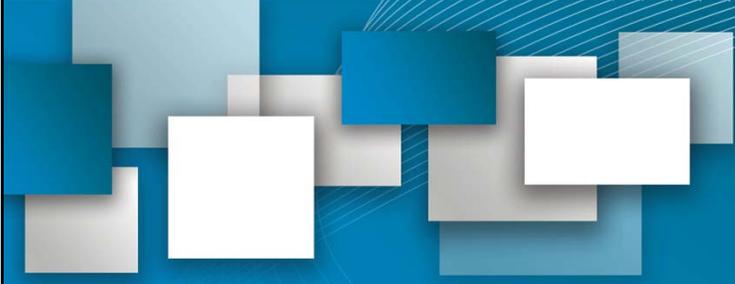
2012

- New language includes provisions for commonly used masonry chimney caps and rain caps consistent with ASTM C 1283.



2015 IRC Transition from the 2006 IRC w/NYS amendments

148



Part 4  
**Energy Conservation  
 (Chapter 11)**

2015 IRC Transition from the 2006 IRC w/NYS amendments 149

2015

**N1101.13  
 Compliance Paths**

- The compliance paths in the energy provisions have been clarified. The mandatory provisions combined with either the prescriptive provisions or the performance provisions are deemed to comply with the code.

1. Sections N1101.14 through N1104.
2. Section N1105 and the provisions of Sections N1101.14 through N1104 labeled “Mandatory.”
3. An energy rating index (ERI) approach in Section N1106.

2015 IRC Transition from the 2006 IRC w/NYS amendments 151

2012

**Chapter 11  
 Energy Efficiency**

- The IRC energy efficiency provisions have been replaced with the applicable residential requirements of the IECC.

2015 IRC Transition from the 2006 IRC w/NYS amendments 150

**Permanent Energy Certificate**

2012 IRC	2015 IRC
N1101.14 (N1101.16)	N1101.14
The permanent certificate must list the results of the blower door test for air leakage of the building envelope and the results of required duct system testing.	The code now requires the permanent energy certificate to be placed on a wall in proximity to the furnace, in a utility room, or in another approved location inside the building.

2015 IRC Transition from the 2006 IRC w/NYS amendments 152

### N1102.1.3 R-Value Computation- Insulated Siding

2015

- The code now allows insulated siding to be used in the calculation for satisfying the wall insulation *R*-value. The labeled *R*-value for the siding must be reduced by *R*-0.6 for calculation purposes when used for continuous insulation values.

Min. R-2 rigid insulating material

Siding

2015 IRC Transition from the 2006 IRC w/NYS amendments 153

### N1102.2.8, Table N1102.4.1.1 Floor Framing Cavity Insulation

2015

- The code now permits an air space above required insulation installed in a floor framing cavity above unconditioned space. Table N1102.4.1.1 has been reformatted into three columns to separate the air barrier requirements from the insulation requirements.

Component	Air Barrier Criteria	Insulation Installation Criteria
Floors (including above garage and cantilevered floors)	The air barrier shall be installed at any exposed edge of insulation	Floor framing cavity insulation shall be installed to maintain permanent contact with the underside of subfloor decking, or floor framing cavity insulation shall be permitted to be in contact with the top side of sheathing, or continuous insulation installed on the underside of floor framing; and extends from the bottom to the top of all perimeter floor framing members.

*(Portions of table not shown for brevity and clarity.)*

2015 IRC Transition from the 2006 IRC w/NYS amendments 155

### N1102.2.4 Access Hatches and Doors

2015

- Vertical doors that access unconditioned attics and crawl spaces do not require an *R*-value to match the required wall insulation. Such doors must comply with the fenestration *U*-factor requirements of Table N1102.1.2.

Unconditioned attic

Conditioned room

Min. wall *R*-value

Max. fenestration *U*-factor

2015 IRC Transition from the 2006 IRC w/NYS amendments 154

### N1102.2.8, Table N1102.4.1.1 Floor Framing Cavity Insulation

2015

A

Conditioned living space above

Exterior

Unconditioned garage area

Conditioned living space adjacent

B

Conditioned living space above

Exterior

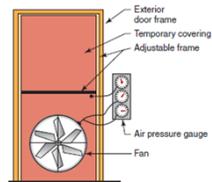
Unconditioned garage area

Conditioned living space adjacent

2015 IRC Transition from the 2006 IRC w/NYS amendments 156

### N1102.4.1.2 Building Thermal Envelope Testing 2012

- The code requires a blower door test to be performed on all dwelling units to determine compliance with the maximum air leakage rate for the applicable climate zone.



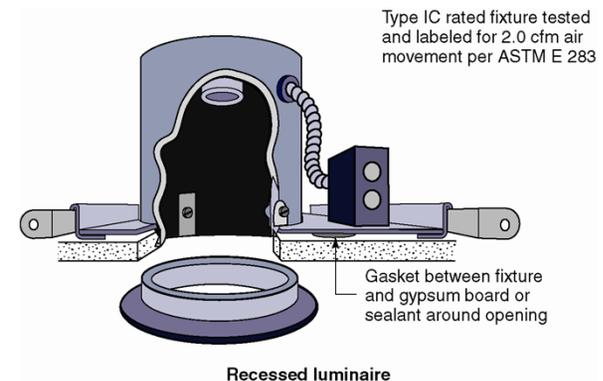
### N1102.4.5 Recessed Lighting 2009

- Recessed luminaires
  - IC rated
  - Labeled as meeting the test criteria for air movement
  - Sealed where they penetrate the finished wall or ceiling material



### N1102.4.2, Table N1102.4.1.1 Wood-burning Fireplace Doors 2015

- Doors on wood-burning fireplaces must be listed for the application. The requirement for gasketed doors on fireplaces has been removed.



### N1103.3

2015

#### Duct Sealing and Testing

- The duct sealing and testing provisions have been reorganized to clarify the application. The maximum duct leakage rates are now prescriptive rather than mandatory provisions to accommodate design flexibility.



2015 IRC Transition from the 2006 IRC w/NYS amendments

161

### N1103.5 Heated Water Circulation and Temperature Maintenance Systems

2015

- The code now requires automatic controls to maintain hot water temperature for heated water circulation systems and for heat trace temperature maintenance systems when such systems are installed. To save energy, continuously operating circulation pumps are no longer permitted. Heat trace systems must comply with one of the referenced standards.



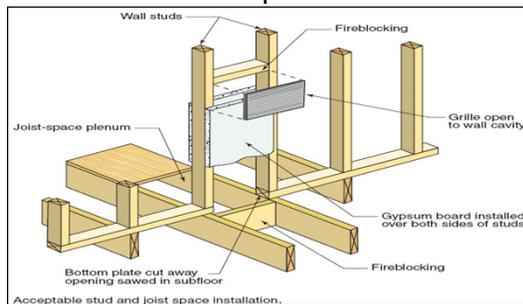
2015 IRC Transition from the 2006 IRC w/NYS amendments

163

### N1103.3.5 (N1103.2.3) Building Cavities

2012

- Building framing cavities are no longer permitted to be used for ducts or plenums.



2015 IRC Transition from the 2006 IRC w/NYS amendments

162

### N1104.1 Lighting Equipment

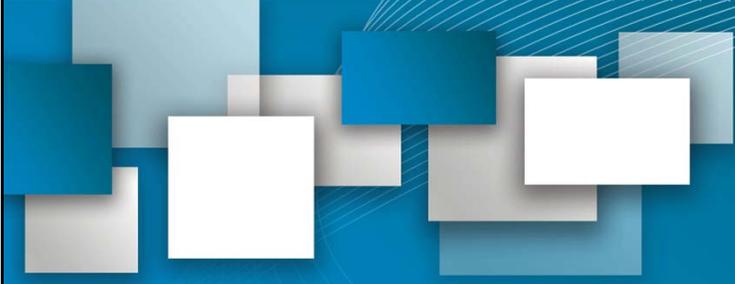
2012

- High-efficacy lamps are required in at least 75 percent of permanent lighting fixtures.



2015 IRC Transition from the 2006 IRC w/NYS amendments

164

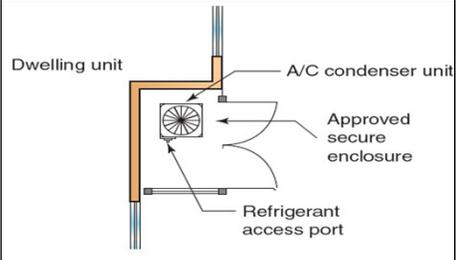


Part 5  
**Mechanical**  
 (Chapter 12 through 32)

2015 IRC Transition from the 2006 IRC w/NYS amendments 165

**M1411.6** 2012  
**Locking Access Port Caps**

- The code now recognizes any approved means to prevent unauthorized access to outdoor refrigerant ports.

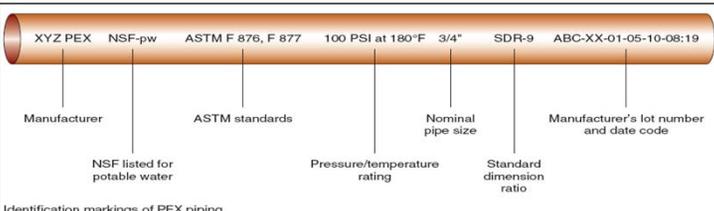


Protection of refrigerant access ports.

2015 IRC Transition from the 2006 IRC w/NYS amendments 167

**M1301 Identification and Certification of Pipe, Tubing, and Fittings** 2012

- All pipe, tubing, and fittings used in mechanical systems now require a manufacturer's mark and third-party testing or certification. New definitions supplement the provisions.



Identification markings of PEX piping.

2015 IRC Transition from the 2006 IRC w/NYS amendments 166

**M1502.4** 2012  
**Dryer Exhaust Duct**

- The maximum support spacing for dryer exhaust ducts has increased from 4 feet to 12 feet. Dryer exhaust ducts now specifically require mechanical fastening. Screw fasteners are permitted to penetrate the exhaust duct no more than 1/8 inch. The maximum specified length of dryer exhaust duct has been increased from 25 to 35 feet and now matches the corresponding dryer exhaust provisions of the IMC, IFGC, and the IRC fuel-gas provisions.

2015 IRC Transition from the 2006 IRC w/NYS amendments 168

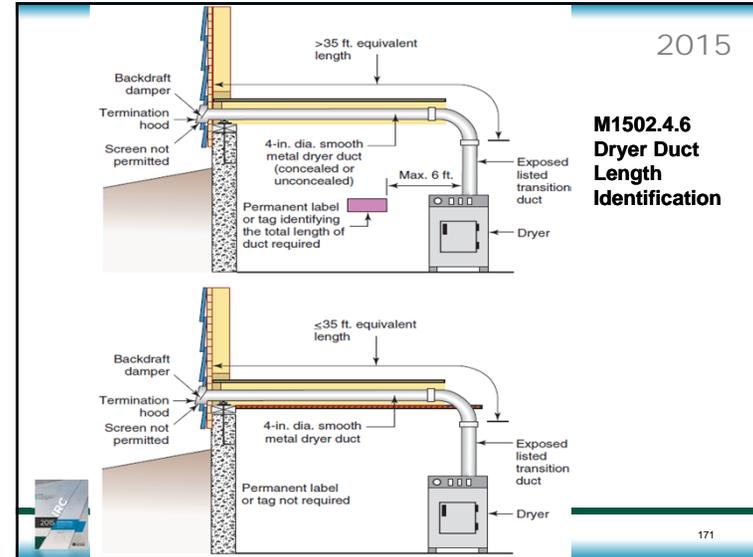
### M1502.4.4, M1502.4.5 Dryer Exhaust Duct Power Ventilators 2015

- The code now recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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### M1502.4.6 Dryer Duct Length Identification 2015

- A permanent label identifying the concealed length of the dryer exhaust duct is no longer required where the equivalent duct length does not exceed 35ft. For the dryer exhaust duct exceeding 35ft, a label or tag is required whether the duct is concealed or not



2015 IRC Transition from the 2006 IRC w/NYS amendments

170

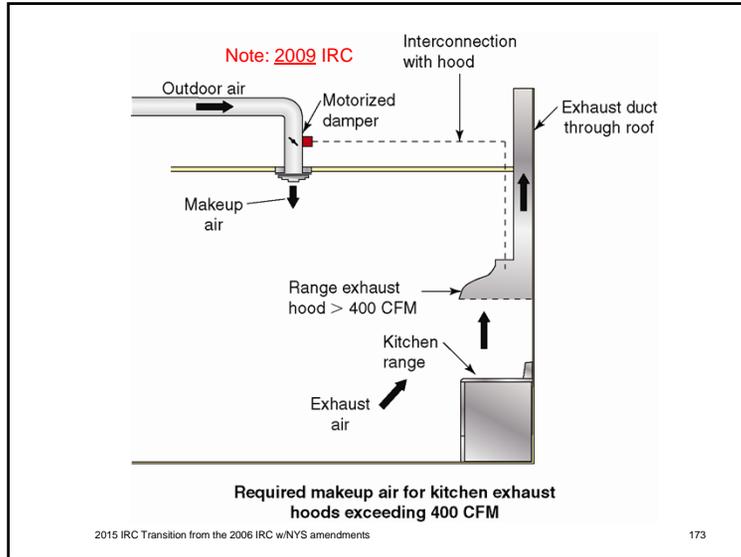
### M1503.4 Makeup Air for Range Hoods 2015

- Automatic operation of a mechanical damper is no longer required for supplying makeup air for kitchen exhaust systems exceeding a rating of 400 cubic feet per minute (cfm). Transfer openings are permitted to obtain makeup air from rooms other than the kitchen.



2015 IRC Transition from the 2006 IRC w/NYS amendments

172



## M1506.2 Exhaust Duct Length

2015

- The code establishes maximum exhaust duct lengths based on duct diameter, type of duct and the exhaust fan airflow rating.

80 cfm bathroom exhaust fan

4-in. dia. smooth wall duct

Max. 31 ft.

2015 IRC Transition from the 2006 IRC w/NYS amendments 175

## M1506 Exhaust Openings

2012

- A minimum clearance of 3 ft. is required between air exhaust terminations and openings into the building.

Bathroom or kitchen exhaust

Min. 3 ft.

Min. 3 ft.

Dryer exhaust

Minimum clearance from exhaust openings.

2015 IRC Transition from the 2006 IRC w/NYS amendments 174

## M1507 Mechanical Ventilation

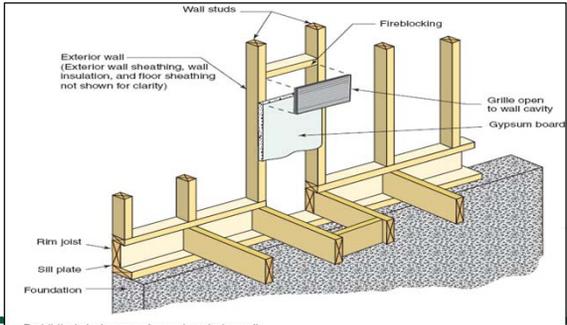
2012

- Prescriptive design criteria for whole-house ventilation systems have been added to the mechanical ventilation provisions. Mechanical ventilation of kitchens and bathrooms is now described as local exhaust. New definitions for whole-house ventilation and local exhaust have been added to Section R202.

2015 IRC Transition from the 2006 IRC w/NYS amendments 176

**M1601.1** 2012  
**Above-Ground Duct Systems**

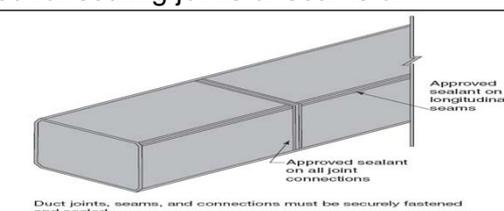
- Stud cavities of exterior walls are no longer permitted to be used for return air plenums.



Prohibited stud space plenum in exterior wall.  
2015 IRC Transition from the 2006 IRC w/NYS amendments 177

**M1601.4.1 Duct Joints, Seams and Connections** 2012

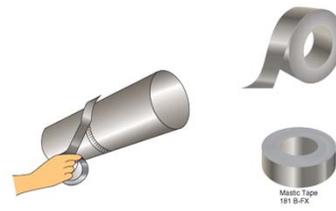
- The IRC provisions for duct connections have been replaced with language from the IMC and now reference the SMACNA HVAC Duct Construction Standards. Unlisted duct tape is not permitted for sealing joints or seams of ductwork.



Duct joints, seams, and connections must be securely fastened and sealed.  
2015 IRC Transition from the 2006 IRC w/NYS amendments 179

**M1601.4** 2015  
**Duct Installation**

- Tapes and mastics used to seal sheet metal ducts must be listed to UL 181 B as has been required for sealing flexible ducts. Snap-lock and button-lock seams are no longer exempt from the sealing requirements.



Mastic Tape 181 B-FX  
2015 IRC Transition from the 2006 IRC w/NYS amendments 178

**M1901** 2012  
**Ranges and Ovens**

- The provisions for kitchen ranges have been updated to match those for gas-fired ranges in Section G2447. References in Sections M1504.1 and M1505.1 alert the code user to specific provisions related to installation of cooking appliances above ranges and clearances for open-top broiler units. Mandatory code language now clarifies that cooking appliances used in dwellings must be listed and labeled for household use. Commercial cooking appliances are not permitted in dwelling units.



2015 IRC Transition from the 2006 IRC w/NYS amendments 180

**M2301, M2302 Thermal and Photovoltaic Solar Energy Systems** 2012

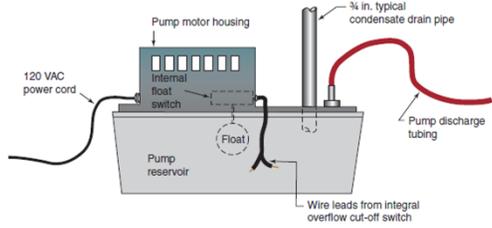
- Photovoltaic solar energy systems have been added to the mechanical provisions of the IRC to distinguish them from thermal solar energy systems.



2015 IRC Transition from the 2006 IRC w/NYS amendments 181

**G2404.11 Condensate Pumps** 2015

- Condensate pumps located in uninhabitable spaces must be connected to the appliance to shut down the equipment in the event of pump failure.



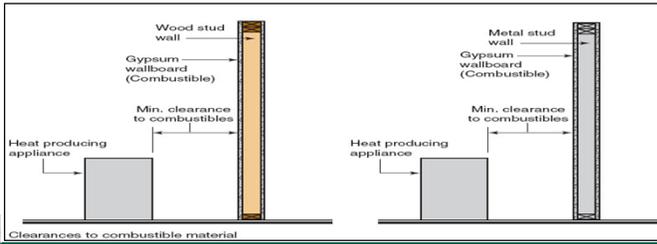
2015 IRC Transition from the 2006 IRC w/NYS amendments 183

Part 6  
**Fuel Gas (Chapter 24)**

2015 IRC Transition from the 2006 IRC w/NYS amendments 182

**G2409.1 Reduced Clearance to Combustible Materials** 2012

- Gypsum board is now specifically identified as a combustible material for purposes of determining required clearances around gas-fired appliances.



2015 IRC Transition from the 2006 IRC w/NYS amendments 184

## G2413.2 2015

### Maximum Gas Demand

- Table G2413.2 and the reference to it were deleted to clarify that the code requires the actual maximum input rating of the appliances to be known and used for gas pipe sizing purposes.



2015 IRC Transition from the 2006 IRC w/NYS amendments 185

## G2415.7 Protection of Concealed 2015

### Piping Against Physical Damage

- The section on protection of piping has been completely rewritten to address more than just bored holes and notches in structural members. It now addresses piping parallel to framing members and piping within framing members. The new text requires that the protection extend well beyond the edge of members that are bored or notched. (ie: 4 inches each side)



2015 IRC Transition from the 2006 IRC w/NYS amendments 187

## G2414.6 2015

### Plastic Pipe, Tubing and Fitting

- PVC and CPVC pipe are expressly prohibited materials for supplying fuel gas.



2 in. IPS SDR 11    MANUFACTURER NAME    GAS PE    2708 CEC    ASTM D2513    LOT 02JAN98 COIL#

2 in. IPS SDR 11

Pipe size and sizing system

MANUFACTURER NAME

Manufacturer's name

GAS PE

Pipe material designation code (polyethylene)

2708 CEC

Elevated temperature code

ASTM D2513

ASTM Standard

LOT 02JAN98 COIL#

Manufacturer's lot code, date of manufacture, coil number, third-party certification, etc.

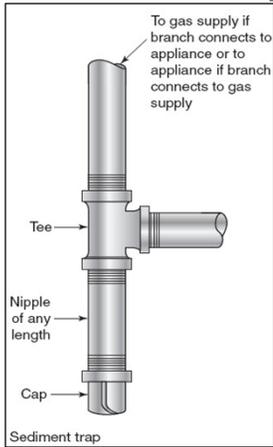


2015 IRC Transition from the 2006 IRC w/NYS amendments 186

## G2419.4 2012

### Sediment Trap

- A new figure illustrates the correct configuration of a sediment trap. Gas-fired decorative vented appliances installed in vented fireplaces and gas fireplaces are not required to be equipped with a sediment trap.



Tee

Nipple of any length

Cap

Sediment trap



2015 IRC Transition from the 2006 IRC w/NYS amendments 188

## G2421.2 2015

### Medium-Pressure Regulators

- Medium-Pressure (MP) line regulators installed in rigid piping must have a union installed to allow removal of the regulator.

Union fitting      Here or here      Union fitting

1 ft. max.      Line pressure regulator (MP)      1 ft. max.      Rigid steel pipe

(Only one union is required and it may be placed either upstream or downstream of the regulator.)

Union required for Medium-Pressure (MP) regulator connected to rigid piping

© International Code Council

2015 IRC Transition from the 2006 IRC w/NYS amendments
189

## G2426.7.1 Door Clearance to 2015

### Vent Terminals

- An appliance vent terminal is not permitted in a location with 12 inches of the arc of a swinging door.

Vent termination for direct-vent appliance

Min. 12 in.

Exterior landing and step

Dwelling unit

Patio door

Sun room

2015 IRC Transition from the 2006 IRC w/NYS amendments
191

## G2422.1 Connecting Portable 2015

### and Movable Appliances

- Where portable gas appliances are used outdoors, such as gas grills, fire pits, and patio heaters, the options for connecting to the gas distribution system are practically limited to gas hoses designed for the purpose. Such hoses must comply with ANSI Z21.54.

2015 IRC Transition from the 2006 IRC w/NYS amendments
190

## G2427.8 Venting System 2015

### Termination Location

- New text addresses the location of sidewall vent terminals with respect to adjoining buildings. A 10-foot separation is required when a vent discharges in the direction of an opening in an adjacent building.

Operable window

≥10 ft.

Vent termination of direct-vent appliance

2015 IRC Transition from the 2006 IRC w/NYS amendments
192

**G2439.4, G2439.7** 2015  
**Clothes Dryer Exhaust Ducts**

- New text recognizes the use of dryer exhaust duct power ventilators (DEDPVs) to increase the allowable exhaust duct length for clothes dryers. A permanent label identifying the concealed length of dryer exhaust duct is no longer required where the equivalent duct length does not exceed 35ft. For dryer exhaust duct exceeding 35ft, a label or tag is required whether the duct is concealed or not. Instead of prohibiting all duct fasteners such as screws and rivets, the code now limits the penetration of fasteners, where installed.

2015 IRC Transition from the 2006 IRC w/NYS amendments 193

**G2442.4 Prohibited Sources** 2012  
**of Outdoor and Return Air**

- For an HVAC system that services the garage only, return air is permitted to be taken from the garage. The requirement for a 10-foot separation between return air inlets and fuel-burning appliances applies only to the draft hood and open combustion chamber of atmospheric burner appliances, not direct vent appliances with sealed combustion chambers.

2015 IRC Transition from the 2006 IRC w/NYS amendments 195

**G2439.4, G2439.7** 2015  
**Clothes Dryer Exhaust Ducts**

The diagram illustrates a clothes dryer exhaust duct system. It shows a dryer connected to a 4-inch diameter smooth metal duct. The duct runs horizontally and then turns vertically to terminate in a termination hood with a backdraft damper. A dryer exhaust duct power ventilator (DEDPV) is installed in the duct. Labels indicate two equivalent length scenarios: one where the equivalent length is greater than 35 feet, and another where it is less than or equal to 35 feet, which is the maximum prescribed equivalent length. Other labels include 'Screen not permitted' and 'Exposed listed transition duct'.

2015 IRC Transition from the 2006 IRC w/NYS amendments 194

Part 7  
**Plumbing**  
**(Chapter 25 through 33)**

2015 IRC Transition from the 2006 IRC w/NYS amendments 196

## P2502.1, P2503.4 Inspection and Tests for Building Sewer 2015

- New text clarifies the method for examining existing building sewers and building drains when the entire sanitary drainage system is replaced. Internal examination is required to verify the size, slope, and condition of the existing piping. A new provision prescribes a pressure test for a forced sewer at a test pressure of 5psi (34.5 kPa) greater than the pump rating.



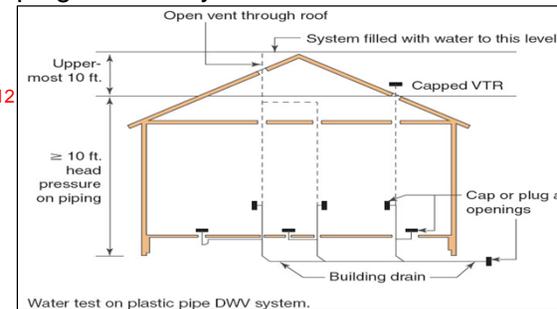
2015 IRC Transition from the 2006 IRC w/NYS amendments

197

## P2503.5.1 Rough Plumbing Test 2012

- The IRC no longer permits air testing of plastic piping in DWV systems.

Note 2012 IRC

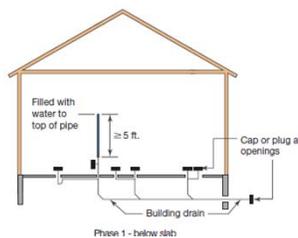


2015 IRC Transition from the 2006 IRC w/NYS amendments

199

## P2503.5 Drain, Waste, and Vent Systems Testing 2015

- The head pressure for a water test on drain, waste, and vent (DWV) systems has been reduced from 10ft to 5ft.

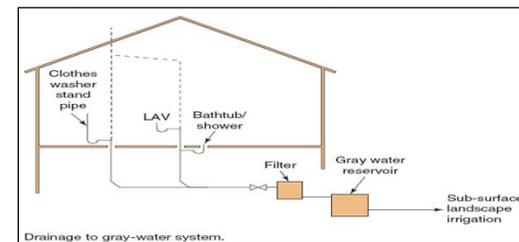


2015 IRC Transition from the 2006 IRC w/NYS amendments

198

## P2601.2 Connections to Drainage Systems 2012

- Waste water from lavatories, bathtubs, showers, clothes washers, and laundry trays are now defined as gray water and is permitted to be discharged to an approved gray-water system.



2015 IRC Transition from the 2006 IRC w/NYS amendments

200

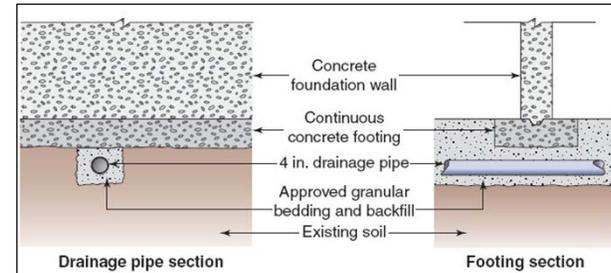
### P2603.2.1 Protection Against Physical Damage 2015

- For piping installed through bored holes or in notches, the minimum clearance distance from the concealed piping to the edge of the framing member has been reduced from 1 ½ in to 1 ¼ in. Protection is required for piping installed less than 1 ¼ in from the edge of the framing member.



### P2603.4 Pipes through Foundation Walls 2012

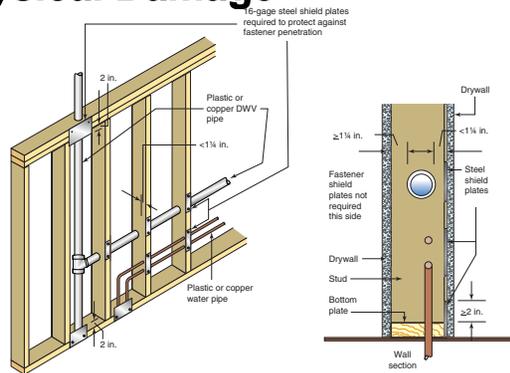
- A sleeve or relieving arch is not required for pipes passing under a footing.



Pipes passing under footings do not require a relieving arch or pipe sleeve.



### P2603.2.1 Protection Against Physical Damage 2015



### Table P2605.1 Piping Support 2015

- Support spacing requirements for PEX and PE-RT tubing 1 ¼ in and greater in diameter have been added to the table. Footnote b of Table P2605.1 clarifies the mid-story guide requirements for some types of vertical pipe 2 ins and smaller in diameter.

TABLE P2605.1 Piping Support

Piping Material	Maximum Horizontal Spacing (feet)	Maximum Vertical Spacing (feet)
Brass Pipe	4 <sup>a</sup>	4 <sup>a</sup>
Cross-linked polyethylene (PEX) pipe, 1 inch and smaller	2.67 (32 inches)	10 <sup>b</sup>
Cross-linked polyethylene (PEX) pipe, 1 ¼ inch and larger	4	10 <sup>b</sup>
Polyethylene of Raised Temperature (PE-RT) pipe, 1 inch and smaller	2.67 (32 inches)	10 <sup>b</sup>
Polyethylene of Raised Temperature (PE-RT) pipe, 1 ¼ inch and larger	4	10 <sup>b</sup>

(Portions of table not shown remain unchanged.)  
 a. (No change to text.)  
 b. Mid-story guide For sizes 2 inches and smaller, a guide shall be installed midway between required vertical supports. Such guides shall prevent pipe movement in a direction perpendicular to the axis of the pipe.



## Plumbing Fixtures, Waste Receptors

### 2012 IRC

P2702.1, P2706.1

The definition of plumbing fixture has been revised to include receptacles and devices that discharge to the drainage system but are not connected to a water supply, such as a floor drains and standpipes. The requirement for strainers on plumbing fixture outlets has been clarified by specifically excluding hub drains and standpipes. Attics and crawlspaces are now listed as prohibited locations for waste receptors and standpipes. Clothes-washer standpipes are permitted to be installed in bathrooms.

### 2015 IRC

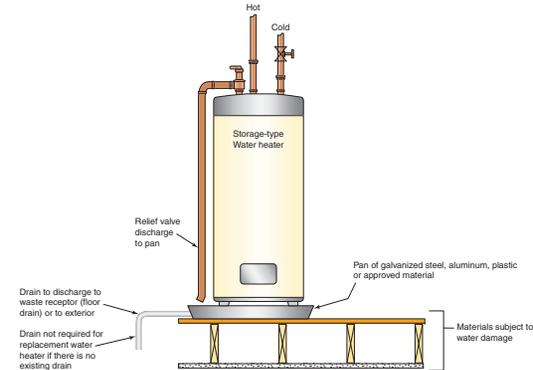
P2702.1, P2706.1

A definition of waste receptor has been added to the code. Waste receptors are now permitted in bathrooms and closets.



## Water Heater Drain Valves and Pans

2015



## Water Heater Drain Valves and Pans

### 2012 IRC

P2801.5

The provisions for safety pans under water heaters have been clarified by prescribing such protection for water heaters with storage tanks only. Tankless water heaters do not require pans.

### 2015 IRC

P2801

The code now specifically requires drain valves with a threaded outlet for water heaters. The water heater pan requirements have been expanded to accept aluminum and plastic pans of the prescribed thickness. The code clarifies that a pan drain is not required when a water heater is replaced and there is no existing drain.



## P2804.6.1 Water Heater Relief Valve Discharge Piping

2015

- The temperature and pressure (T&P) relief valve discharge pipe termination must have an air gap suitable to protect the potable water supply distribution system of the building. PEX and PE-RT tubing used for relief valve discharge piping must be one size larger than the T&P valve discharge outlet, and the outlet end of the tubing must be fastened in place.



## P2901, P2910 through P2913 2015 Nonpotable Water Systems

- Nonpotable water outlets, such as hose connections, that utilize nonpotable water must be identified with a warning and a symbol that nonpotable water is being used. The color purple is established for identifying distribution piping conveying nonpotable water. New Sections P2910 through P2913 are extracted from the IgCC and intend to provide guidance on the collection, storage, and distribution of various types of nonpotable water for residential buildings.

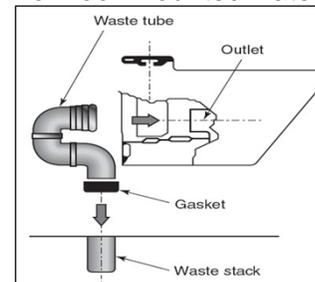


2015 IRC Transition from the 2006 IRC w/NYS amendments

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## P3003.19 Joints between 2012 Drainage Piping and Water Closets

- Use of waste connector and sealing gasket is now permitted as an alternative to a flanged connection for floor-mounted water closets.



2015 IRC Transition from the 2006 IRC w/NYS amendments

211

## P2904 Dwelling Fire Sprinkler 2009 Systems

- Simple, prescriptive approach for the design of dwelling fire sprinkler systems
  - Considered equivalent to NFPA 13D



Photo courtesy of Uponor Inc.



2015 IRC Transition from the 2006 IRC w/NYS amendments

210

## P3005.2 2015 Cleanouts

- The section on cleanouts has been completely reorganized and reworded for clarity. Brass cleanout plugs are only permitted for metallic piping. Where located at a finished wall, the cleanout must be within 1 1/2 in of the finished surface. A cleanout is no longer required at the base of each waste or soil stack.



2015 IRC Transition from the 2006 IRC w/NYS amendments

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**P3103.1, P3103.2** 2015  
**Vent Terminals**

- Where a minimum 3-inch diameter vent terminal is required to prevent frost blockage in cold climates, the 3-inch diameter pipe must extend at least 12 in inside the building's thermal envelope. The minimum 7-foot height requirement for vent terminations applies only to roofs used for purposes similar to residential decks, patios and balconies.



2015 IRC Transition from the 2006 IRC w/NYS amendments 213

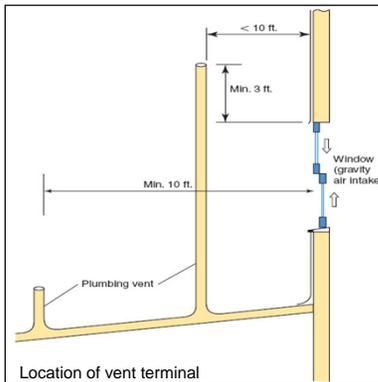
Part 8  
**Electrical**  
**(Chapter 34 through 43)**



2015 IRC Transition from the 2006 IRC w/NYS amendments 215

**P3103.5** 2012  
**Location of Vent Terminal**

- The minimum clearance to vent terminations above openings within 10 feet has been increased from 2 feet to 3 feet.



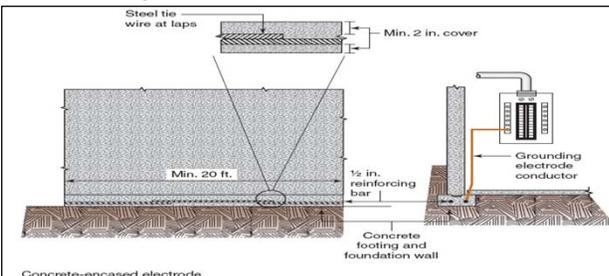
Location of vent terminal



2015 IRC Transition from the 2006 IRC w/NYS amendments 214

**E3608.1.2** 2012  
**Concrete-Encased Electrodes**

- The provisions for concrete-encased electrodes have been broken into separate parts to clarify the meaning and application.



Concrete-encased electrode



2015 IRC Transition from the 2006 IRC w/NYS amendments 216

### E3901.7 2012

#### Outdoor Outlets

- An outdoor outlet is now required for any size of deck, porch, or balcony that is accessible from inside the dwelling unit.

Outdoor receptacle outlets

2015 IRC Transition from the 2006 IRC w/NYS amendments 217

### E3901.11 2012

#### Receptacle Outlets in Foyers

- When exceeding 60 square feet in area, foyers in dwelling units now require receptacle outlets.

Receptacle outlets in foyers.

2015 IRC Transition from the 2006 IRC w/NYS amendments 219

### E3901.9 2015

#### Receptacle Outlets for Garages

- Garage receptacle outlets must be served by a separate branch circuit that does not supply other outlets. At least one receptacle outlet is required for each car space in a garage.

2015 IRC Transition from the 2006 IRC w/NYS amendments 218

### E3902.8, E3902.9, E3902.10 2015

#### Ground-Fault Circuit Interrupter Protection

- Laundry areas have been added to the list of locations requiring ground-fault circuit interrupter (GFCI) protection. Receptacles within 6 feet of bathtubs and showers, and receptacles for dishwashers also require GFCI protection.

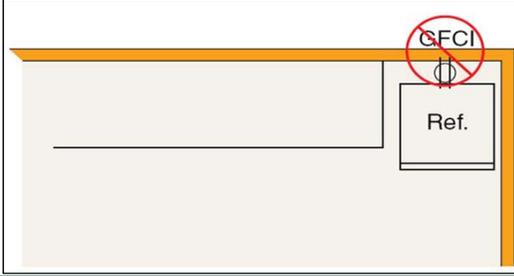
GFCI protection required for 125-volt, 15- and 20-amp receptacle outlets in laundry areas and near showers or bathtubs

2015 IRC Transition from the 2006 IRC w/NYS amendments 220

## 2012

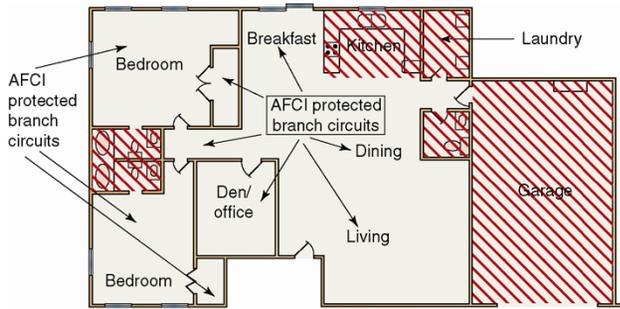
### E3902.11 Location of Ground-Fault Circuit Interrupters

- When provided, ground-fault circuit interrupter devices must be placed in a readily accessible location.



221

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**ARC-fault protection**

223

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## 2012

### E3902.11 Arc-fault Protection

- AFCI protection for branch circuits
  - all habitable spaces
    - except kitchens
  - hallways
  - closets
  - similar areas
- Only a combination type AFCI is permitted
- Must protect entire branch circuit



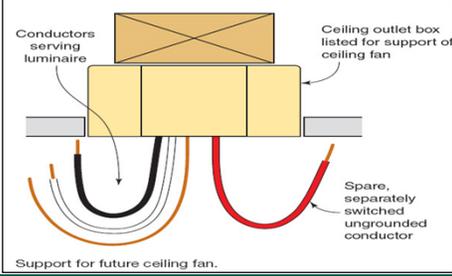
222

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## 2012

### E3905.8 Boxes at Fan Outlets

- When a ceiling outlet box is wired for a future ceiling fan, the box must be listed for the support of a ceiling fan.

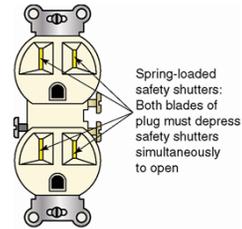


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## E4002.14 Tamper-resistant Receptacles

- Nearly all 125-volt 15- and 20-amp receptacles



Tamper resistant receptacles

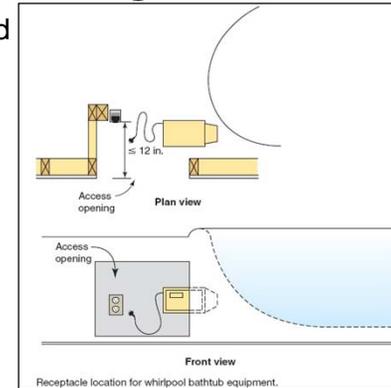
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## E4209.3 Accessibility to Electrical Equipment of Hydromassage Bathtubs

2012

- When located behind access panels and serving hydromassage bathtubs, receptacle outlets must have their face in direct view and within 1 foot of the access opening.



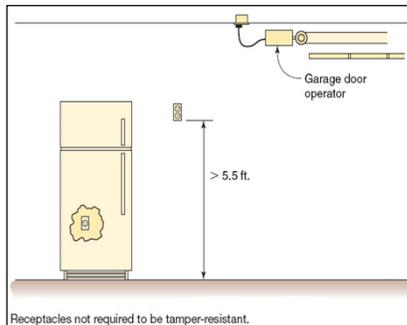
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## E4002.14 Tamper-Resistant Receptacles

2012

- Receptacles that are located more than 5-1/2 feet above the floor, are part of a luminaire or appliance, or in a dedicated space for an appliance are no longer required to be tamper-resistant.



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