

## Changes to the 2009 IRC with 2013 Draft Supplement



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## Explanation

- This program is an overview of the changes to the proposed 2009 IRC including the 2013 proposed CT. Draft Amendments

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## Observation

- Many of the changes are word changes that have different meanings as you will see as we go through the program.
- One of the changes was to expand sections into sub-sections and to relocate sections through out the code to one chapter.

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## Disclaimer

- I am using the Hogan Hero's disclaimer
- **I know nothing**



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## Chapter 1 Scope & Administration

- (NEW) (DEL) 2003 IRC-Delete the document and its amendments in their entirety & substitute with the 09 IRC as amended herein:
- Amd. R101.1 Title- These regulations shall be known as the 2009 IRC portion of the 2005 SBC, hereinafter referred to as "the code" or "this code".

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## Chapter 1 Scope & Administration

- Amd. R101.2 Scope-The provisions of the 09 IRC shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use & occupancy, location, removal and demolition of detached 1 & 2 family dwellings and multiple single-family dwellings (townhouses) not more than three stories **above grade plane** with a separate means of egress & their accessory structures.

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## Chapter 1 Scope & Administration

- Add R101.4 Referenced codes and Regulations
- Add R101.4.1 Fuel gas
- Add R101.4.2 Oil burning equipment, piping & storage
- Add R101.4.3 Private sewage disposal
- Add R101.4.4 Property maintenance
- Add R101.4.5 Fire Prevention
- Add R101.4.6 Electrical
- Add R101.4.7 Demolition of structures

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## Chapter 1 Scope & Administration

- Amd R102.4.1 Referenced codes and standards-added "Any reference to the ICC codes shall mean the Regulations of Connecticut State Agencies known as the State Building Code adopted pursuant to section 29-252 of the Connecticut General Statutes".

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## Chapter 1 Scope & Administration

- R102.4.1 EXCEPTION- Where enforcement of a code provision would violate the conditions of the listing of the equipment or appliances, the conditions of the listing and manufacturer's instructions apply.

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## Chapter 1 Scope and Administration

- Amd R102.5 Appendices-
- E- Manufactured housing used as dwellings
- G- Swimming pools, spas & hot tubs\*
- H- Patio covers
- K- Sound transmission
- O Gray water recycling systems
- P- Sizing of water piping systems
- R- Wind speeds & seismic design categories

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## Chapter 1 Scope & Administration

- Amd R102.7 Existing Structures
- Del Section R103 Department of Building Safety
- Add Section R103 Enforcement Agency
- Add R103.1 Creation of enforcement agency
- Add R103.2 Appointment
- Add R103.3 Employees

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## Chapter 1 Scope & Administration

- Add R103.4 Restriction of employees
- Amd R104.1 General
- Add R104.1.1 Rule making authority
- Amd R104.6 Right of Entry
- Amd R104.10 Modifications

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### Chapter 1 Scope & Administration

- Del R104.10.1 Areas prone to Flooding
- Add R104.10.1 Records
- Add R104.10.2 Historic structures exemption
- Add R104.10.3 Urban homesteading property exemption
- Add R104.11.2 Research reports
- Add R105.1.1 By whom application made

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### Chapter 1 Scope & Administration

- Amd R105.2 Work exempt from permit
- Amd R105.3.1 Action on application

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### Chapter 1 Scope & Administration

- Amd (New) R105.3.1.1 Determination of substantially improved or substantially damaged existing buildings in flood hazard areas.
- Any work that equals or exceeds 50% of the market value before improvement. Or before damaged.

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### Chapter 1 Scope & Administration

- Add R105.3.1.2 Zoning approval
- Amd R105.5 Expiration of permit
- Add R106.2.1 Private sewage disposal system
- Amd R106.5 Retention of construction documents

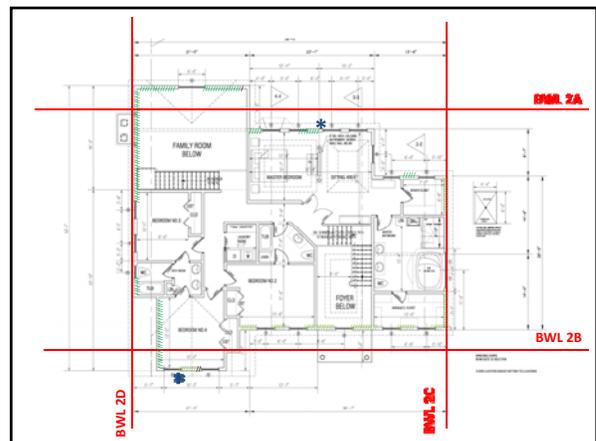
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### Chapter 1 Administration

- R106.1.1 Information on construction documents-Allows the BO to require additional information, such as braced wall lines, bracing methods, location & size on the plans.



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Wall Bracing Schedule											
Braced Wall Line #	Braced Wall Spacing	Method	Minimum Length Req'd (1602.10.3.2.1)	Adjustment Factors				Adjusted Minimum Length	Bracing Length Provided	800# Hold Down Y/N	Blocking Needed Y/N
				a. Exposure	b. Ridge Height	c. Wind Strength	d. Number of BWL's				
2A	5'-0"	CS	9.5/50K3+10.07 LF	(B)1	(15) 1.3	(F) 0.95	(2) 1	12.43 LF	22'	Y, 1	Y
2B	5'-0"	CS	10.07 LF	(B)2	(15) 1.3	(F) 0.95	(2) 1	12.43 LF	22'	N, 1	N
2C	5'-0"	CS	11.60/57.4+10.52 LF	(B)1	(15) 1.3	(F) 0.95	(2) 1	12.99 LF	13'	N	Y
2D	5'-0"	CS	10.52 LF	(B)1	(15) 1.3	(F) 0.95	(2) 1	12.99 LF	37'	N	N

----- = Braced Wall Line #

////////// = Braced Wall Panel Location

\* 800# Hold Down Device location

### Chapter 1 Scope & Administration

- Add (New) R106.6 Additional requirements-
- Nontransient residential dwellings having more than 16 units or 24,000 sq. ft. total gross area per building shall be subject to the additional requirements set forth in section 106.1.4 Of the 2003 IBC portion of the 2005 SBC.



### Chapter 1 Scope & Administration

- Amd R107.1 General
- Amd R107.3 Temporary power
- Amd R108.2 Schedule of permit fees
- Amd R108.3 Building permit valuations
- Del R108.6 Work commencing before permit
- Add R109.1.4.1 Insulation inspection

### Chapter 1 Scope & Administration

- Add R109.1.5.2 Additional Electrical Inspections
- Add R109.1.7 Posting of required inspections
- Add R109.5 Notification of inspection results
- Amd R110.1 Use and Occupancy
- Add R110.1.1 Zoning approval
- Add R110.1.2 Statement of professional opinion

### Chapter 1 Scope & Administration

- Amd R110.4 Temporary occupancy
- Add R110.6 Partial occupancy
- Add R110.7 Prefabricated assemblies
- Add R110.8 Manufactured housing used as dwellings
- Add R110.9 Certificate of approval

### Chapter 1 Scope & Administration

- Del Section R112 Board of Appeals
- Add Section R112 Means of Appeal
- Add R113.2.1 Written notice
- Amd R113.4 Violation penalties
- Amd R114.2 Unlawful continuance
- Add Section R115 Unsafe structures and equipment
- Add Section R116 Emergency measures
- Add Section R117 Vacant buildings

## Chapter 2 Definitions

- Accessory structure-is now limited to 3,000 sq. ft. and not over 2 stories in height.
- Attic, habitable-allows additional habitable space that is not considered a story above grade based on the following:
  - Minimum 70 Sq. Ft. area.
  - Ceiling height in accordance with R305
  - Enclosed by roof assembly above, knee walls if applicable, and a floor/ceiling assembly below.

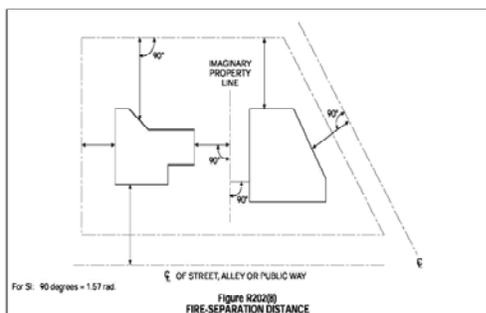


## Chapter 2 Definitions

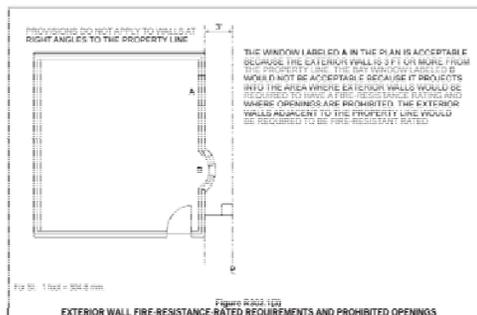
- Add R202.1 Definitions
- Amd Building, existing
- Add Complex
- Amd Fire separation distance
- Add Greenhouses
- Add One-Family dwellings
- Add Service water heating
- Add Two-Family dwelling
- Amd Sunroom

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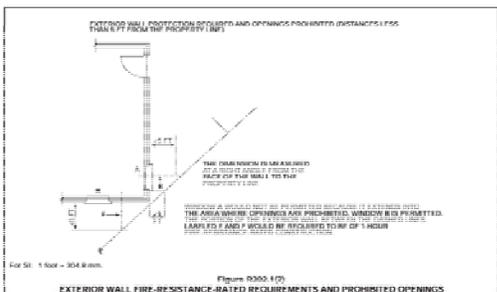
## Chapter 2 Definitions



## Chapter 2 Definitions



## Chapter 2 Definitions



## Chapter 2 Definitions

- Story above grade-Where the **finished floor** above grade meets any of the following:
  - More than 6 FT. above grade plane
  - More than 6 FT. above finished ground level for more than 50% of building perimeter
  - More than 12 FT. above finished ground level at **any point**
- Mezzanine, loft-and existing section that effects living areas.

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### Chapter 2 Definitions

- Amd Wind Borne Debris Region- Areas south of Interstate 95 in the following municipalities:
- Clinton, East Lyme, Groton, Madison, New London, Old Lyme, Old Saybrook, Stonington, Waterford and Westbrook.
- Exception: Areas that are more than one mile from the costal mean high-water line certified by a registered design professional may be classified as being outside of a wind-borne debris region.

### Chapter 3 Building Planning

- Amd R301.2.1 Wind limitations \*
- Del R301.2.1.1 Design criteria \*\*\*
- Amd Table R301.2(1) Climate and Geographic Design Criteria

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### Chapter 3 Building Planning

TABLE R301.2(1)  
COMPONENT AND CLADDING LOADS FOR A BUILDING WITH A MEAN ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B (WIND \*\*\*)

BASIC WIND SPEEDS (MPH)—3 SECOND GUST

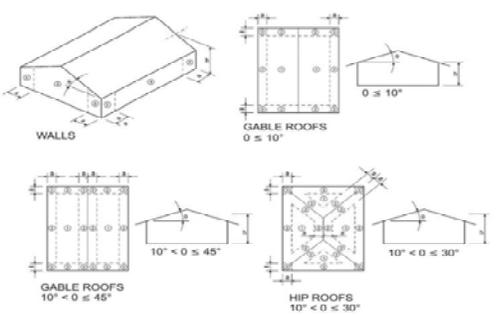
WIND DIRECTION	WIND AREA (SQ FT)	BASIC WIND SPEEDS (MPH)—3 SECOND GUST																				
		85	90	100	105	110	120	130	140	150	160											
Wind + 15% Angle	1	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	2	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	3	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	4	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	5	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	6	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	7	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	8	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	9	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300
	10	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300

### Chapter 3 Building Planning

TABLE R301.2(2)  
HEIGHT AND EXPOSURE ADJUSTMENT COEFFICIENTS FOR TABLE R301.2(1)

MEAN ROOF HEIGHT	EXPOSURE		
	B	C	D
15	1.00	1.21	1.47
30	1.00	1.20	1.55
45	1.00	1.35	1.61
60	1.00	1.40	1.66
75	1.05	1.45	1.70
90	1.09	1.49	1.74
105	1.12	1.53	1.78
120	1.16	1.56	1.81
135	1.19	1.59	1.84
150	1.22	1.62	1.87

### Chapter 3 Building Planning



### Chapter 3 Building Planning

f. For regions having basic wind speed of 110 mph or greater, 3/4" x 1/2" nails shall be used for attaching plywood and wood structural panel roof sheathing to framing within minimum 48-inch distance from gable end walls, if mean roof height is more than 25 feet, up to 35 feet maximum.

g. For regions having basic wind speed of 100 mph or less, nails for attaching wood structural panel roof sheathing to gable end wall framing shall be spaced 6 inches on center. When basic wind speed is greater than 100 mph, nails for attaching panel roof sheathing to intermediate supports shall be spaced 6 inches on center for minimum 48-inch distance from ridges, eaves and gable end walls; and 4 inches on center to gable end wall framing.



### Chapter 3 Building Planning

- (Amd) R301.2.2.1 Determination of seismic design category (IBC Table 1615.1.1 soils)
- (Del) R301.2.2.1.1 Alteration determination of seismic design category
- (Del) R301.2.2.1.2 Alteration determination of seismic design category E.
- (Del) R301.2.2.4 Seismic Design Category E

### Chapter 3 Building Planning

- Table R301.5 Minimum uniformly distributed live loads-New 30 lbs. live load for habitable attics.
- Change-Exterior balconies & decks are now 40 lbs. live load, the 03 had balconies at 60 lbs. live load.

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### Chapter 3 Building Planning

- Table R301.5 footnote g-limited attic storage with trusses has additional live load for bottom cord of trusses with the following:
  - Dimensional criteria rectangle 42"X24" wide
  - Access to attic
  - Bottom cord is less than 2:12
  - And insulation depth is lower than bottom cord.
  - The bottom cord can be designed for the actual imposed load or 10 lbs. of uniform live load.

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### Chapter 3 Building Planning

- Amd R301.6 Roof Load
- Del Table R301.6 Minimum roof live loads in pounds-force per sq. ft. of horizontal projection
- Add R301.9 Ungraded lumber

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### Chapter 3 Building Planning

- Section 302 Fire Resistance Construction-This is a complete new section made up of the following, exterior wall requirements, townhouse separation walls, 2 family separation, garage opening protection, penetrations, fire blocking, draft stopping and interior finish requirements.
- R302.1 Exterior walls & table 302.1 Exterior walls-fire separation changed from 3 ft. to 5 ft.

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### Chapter 3 Building Planning

- R302.3 Two-Family dwellings-Exception #2 allows the one hour dwelling separation to extend to the ceiling where there is 5/8" type X gypsum, the attic is draft stopped along the separation wall and the structural supporting wall are protected by 1/2" gypsum board.

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### Chapter 3 Building Planning

- (Amd) (New) Table R302.1 Exterior Walls

(Amd) TABLE R302.1 EXTERIOR WALLS.

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure from both sides	< 5 feet
	(Not fire-resistance rated)	0 hours	≥ 5 feet
Projections	(Fire-resistance rated)	1 hour on the underside	≥ 2 feet to 5 feet
	(Not fire-resistance rated)	0 hours	5 feet
	Not allowed	N/A	< 3 feet
Openings in walls	25% maximum of wall area	0 hours	3 feet
	Unlimited	0 hours	5 feet
Penetrations	All	Comply with Section R302.4.1 or R302.4.2	< 5 feet
		None required	5 feet

For SI: 1 foot = 304.8 mm.

### Chapter 3 Building Planning

- Amd R302.2 Townhouses
- Amd R302.2.4 Structural independence
- Amd R302.3 Two-family dwellings

### Chapter 3 Building Planning

- Amd R302.5.1 Opening protection
- Amd (New) R302.5.3 Other penetrations- Penetrations into or through the separation required in Table R302.6 shall be protected as required by Section R302.11 item 4.

### Chapter 3 Building Planning

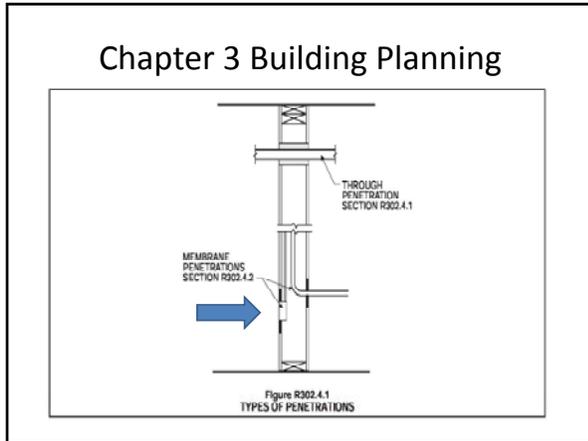
Figure R302.2  
DWELLING UNIT SEPARATION FOR TOWNHOUSES

### Chapter 3 Building Planning

Figure R302.3  
DWELLING UNIT SEPARATIONS

### Chapter 3 Building Planning

Figure R302.3.1  
SUPPORT OF DWELLING UNIT SEPARATION



### Chapter 3 Building Planning

- (Amd) R302.6 Dwelling/garage fire separation
- (Amd) (New) Table R302.6 Dwelling/Garage Separation

SEPARATION	MATERIAL
From the residence and attics	Not less than ½ inch gypsum board or equivalent applied to the garage side
From all habitable rooms above the garage	Not less than ½ inch Type X gypsum board or equivalent
Structure(s) supporting floor/ceiling assemblies used for separation required by this section	Not less than ½ inch gypsum board or equivalent
Garages located less than 10 feet from a dwelling unit on the same lot	Not less than ½ inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

### Chapter 3 Building Planning

- R303.7 Required glazed openings-allows the openings to face roofed porches if 65% unobstructed, or face under decks, balconies or cantilevers as long as there is 36" of headroom.

### Chapter 3 Building Planning

- Amd R305.1 Minimum Height
- Del R305.1.1 Basements

A simple black and white icon of a house with a chimney. A downward-pointing arrow from the front of the house indicates a basement level.

### Chapter 3 Building Planning

- Amd R309.1 Floor surfaces-Garage floor surfaces shall be of approved noncombustible material. The area of floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to an approved drain or toward the main vehicle entry doorway.
- Exception: Detached garages that are separated from the dwelling by a minimum distance of 10 FT.

### Chapter 3 Building Planning

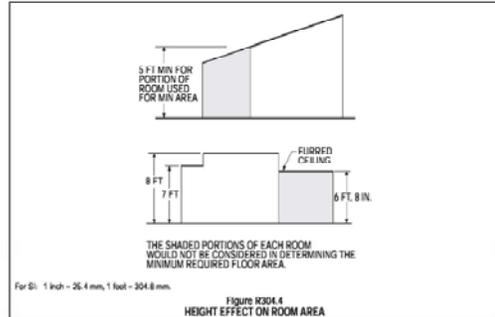
- Amd R310.1 Emergency escape and rescue openings required
- Amd R310.4 Operational constraints\*
- Amd R310.3 Bulkhead enclosures

### Chapter 63 Building Planning

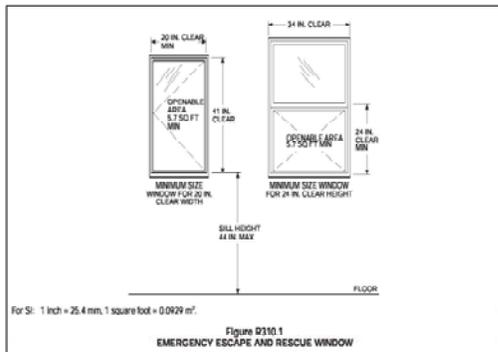
- R311.2 Egress Door-Still requires only one egress door, the change is in the description. "The door shall provide a minimum clear width of 32 inches when measured between the face of the door and the stop with the door open 90 degrees.

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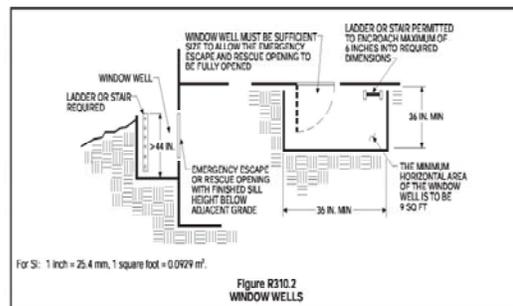
### Chapter 3 Building Planning



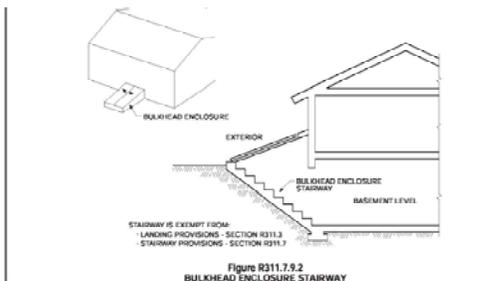
### Chapter 3 Building Planning



### Chapter 3 Building Planning



### Chapter 3 Building Planning



### Chapter 3 Building Planning

- Amd R311.3.1 Floor elevations at required egress doors-Landings or floors at the required egress door shall not be more than 1 ½ inches lower than the threshold.
- Exception: The exterior landing or floor shall not be more than 8 ¼ inches below the top of the threshold provided the door does not swing over the landing or floor.

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### Chapter 3 Building Planning

- (Amd) (New) R311.3.2 Floor elevations for other exterior doors- Doors other than the required egress door shall be provided with landings or floors not more than 8 ¼" below the top of the threshold.
- Exception: A landing is not required where a stairway of three or fewer risers, including the top riser from the dwelling to the top tread, is located on the exterior side of the door, provided the door does not swing over the stairway.

### Chapter 3 Building Planning

- R311.5.1 Attachment-Exterior landings, decks, balconies, stairs and similar facilities shall be positively anchored to the primary structure to resist both vertical and lateral forces or shall be designed to be self-supporting. Attachment shall not be accomplished by use of toenails or nails subject to withdrawal.

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### Chapter 3 Building Planning

- Amd R311.7.1 Width
- Amd R311.7.2 Headroom
- Del R311.7.3 Walkline
- Amd R311.7.4.1 Riser height
- Amd R311.7.4.2 Tread depth
- Amd R311.7.7.2 Continuity

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### Chapter 3 Building Planning

- R311.8.1 Maximum slope-Ramp slopes have changed from 1:8 to 1:12 unless there are site restrains then 1:8 allowed.
- R312.1 Where required-Now requires the 30" to grade be measured within a 36" horizontal distance to determine when guard rails are required.

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### Chapter 3 Building Planning

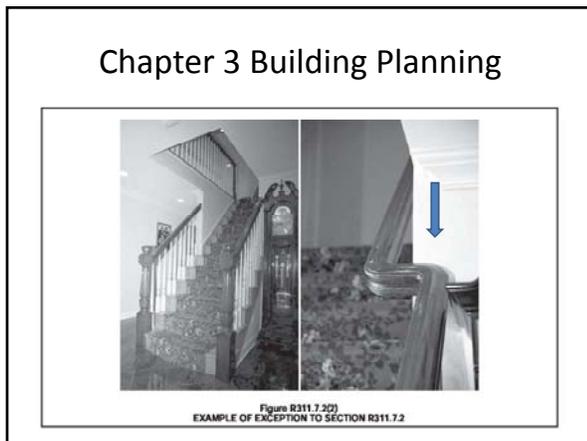
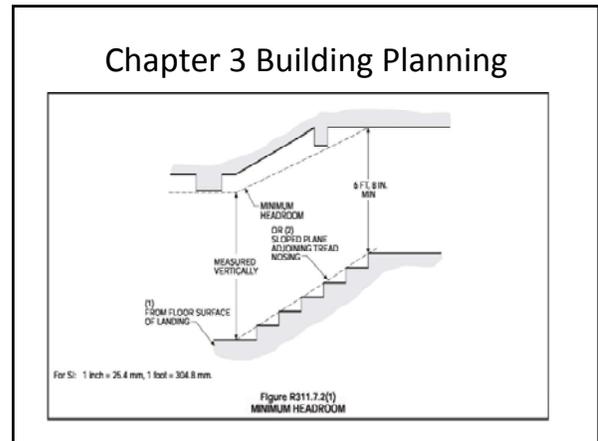
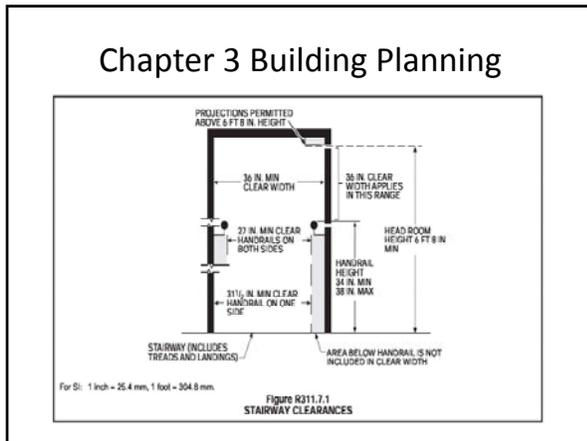
- Adds R312.1.1 Retaining wall guards-Retaining walls with a difference in finished grade from the top to the bottom of the wall that is greater than 4' shall be provided with guards complying with 312 when there is a walking surface, parking lot or driveway on the high side located closer than 2' to the retaining wall. For the purposes of this section, grass, planting beds and landscaped areas shall not be considered a walking surface.

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### Chapter 3 Building Planning

- R312.2 Height-How requires the height of the guard rails to be measured from not only the adjacent walking surface as well as the adjacent fixed seating.

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- ### Chapter 3 Building Planning
- (Amd) (New) R313.1 Townhouse automatic fire sprinkler systems-When an automatic residential fire sprinkler system is to be installed in townhouses, it shall be designed and installed in accordance with Section P2904 or NFPA 13D
  - (Del) R313.1.1 Design and installation

- ### Chapter 3 Building Planning
- (Amd) (New) R313.2 One- and two-family dwelling automatic fire sprinkler systems-When an automatic fire sprinkler system is to be installed in one- and two-family dwellings, it shall be designed and installed in accordance with Section P2904 or NFPA 13D.
  - (Del) R313.2.1 Design and installation

- ### Chapter 3 Building Planning
- R314.1 Smoke detection and notification-Adds the requirement for all smoke detectors to be listed in accordance with UL 217.
  - R314.2 Smoke detection systems-Permits an NFPA 72 household fire alarm system with smoke detection as an equivalent to smoke detectors.

### Chapter 3 Building Planning

- (Amd) R314.3.1 Alterations, repairs and additions
- (Amd) R314.4 Power source
- (Amd) R315.1 Carbon monoxide alarms
- (Add) R315.1.1 Power source
- (Amd) R315.2 Alterations, repairs and additions
- (Amd) R319.1 Address numbers

### Chapter 3 Building Planning

- (Del) Section R320 Accessibility-replace with
- (Add) Section R320 Accessibility
- (Add) R320.1 Scope
- (Add) R320.2 Single-story townhouses
- (Add) R320.3 Multi-story townhouses
- (Add) R320.4 General exceptions
- (Add) R320.4.1 Site impracticality

### Chapter 3 Building Planning

- (Add) R320.4.2 Design flood elevation
- (Add) R320.5 Accessible route
- (Add) R320.6 Parking
- (Add) R320.6.1 Parking within or beneath a building
- (Add) R320.6.2 Automobile accessible parking spaces

### Chapter 3 Building Planning

- (Add) R320.6.3 Van accessible parking spaces
- (Add) R320.6.3.1 Van access clearance
- (Amd) (New) R321.1 Elevators-Where provided, passenger elevator, limited use/limited application elevators or elevators installed in private residence shall comply with ASME A17.1 and shall be installed in accordance with the regulations adopted under authority of section 29-192 of the CGS. Where the provisions of this section conflict with other statutory or regulation provisions, those requirements shall prevail.

### Chapter 3 Building Planning

- R322.1.9 Manufactured homes-New or replacements shall be elevated in accordance with R322.2 or R322.3 in costal high-hazard Areas. (V Zones) The anchor & tie down requirement of AE604 & AE605 shall apply. The foundation and anchorage in identified floodways shall be designed and constructed in accordance with ASCE 24.

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### Chapter 4 Foundations

R401.3 Drainage-The exception requires all impervious surfaces, such as driveways, walks, patios, etc. within the required 10' shall be sloped a minimum of 2% away from the foundation.

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### Chapter 4 Foundations

- (Add) (New) R401.3.1 Drainage nuisances- Any surface or roof drainage which creates a structural or health hazard, or any other nuisance to the owners or occupants of adjacent premises, or to the public by reason of discharge into, onto or across any adjacent building, premises or public thoroughfare, shall be a violation. The building official shall require the drainage to be disposed of in an approved manner.

### Chapter 4 Foundations

- R401.4 Soils tests- Here is where some of the most interesting wording is being used.
- 2003 IRC in areas likely to have expansive, compressible, shifting or other unknown soils characteristics.
- 2009 IRC Where quantifiable data created by accepted soil science methodologies indicate.

### Chapter 4 Foundations

- (Amd) R403.1 General
- (Amd) R403.1.4 Minimum depth
- Amd R404.4 Retaining walls
- (Amd) (New) R404.4.1 Guards-Retaining walls with a difference in finished grade from the top of the wall to the bottom of the wall that is greater than 4 feet shall be provided with guards complying with section R312.2 and 312.3 where there is a walking surface, parking lot or driveway on the high side located closer than 2 feet to the retaining wall. For the purpose of this section, grass, planting beds or landscaped areas shall not be a walking surface.

### Chapter 4 Foundations

TABLE R403.3(1)  
MINIMUM FOOTING DEPTH AND INSULATION REQUIREMENTS FOR FROST-PROTECTED FOOTINGS IN HEATED BUILDINGS<sup>a</sup>

AIR FREEZING INDEX (°F-days) <sup>b</sup>	MINIMUM FOOTING DEPTH, D (inches)	VERTICAL INSULATION R-VALUE <sup>c</sup>	HORIZONTAL INSULATION R-VALUE <sup>c</sup>		HORIZONTAL INSULATION DIMENSIONS PER FIGURE R403.3(1) (inches)		
			Along walls	At corners	A	B	C
1,500 or less	12	4.5	Not required	Not required	Not required	Not required	Not required
2,000	14	5.6	Not required	Not required	Not required	Not required	Not required
2,500	16	6.7	1.7	4.9	12	24	40
3,000	16	7.8	6.5	8.6	12	24	40
3,500	16	9.0	8.0	11.2	24	30	60
4,000	16	10.1	10.5	13.1	24	36	60

a. Insulation requirements are for protection against frost damage in heated buildings. Greater values may be required to meet energy conservation standards.  
 b. See Figure R403.3(2) or Table R403.3(2) for Air Freezing Index values.  
 c. Insulation materials shall provide the stated minimum R-values under long-term exposure to moist, below-ground conditions in freezing climates. The following R-values shall be used to determine insulation thicknesses required for this application: Type II expanded polystyrene—2.48 per inch; Type IV extruded polystyrene—4.58 per inch; Type VI extruded polystyrene—4.58 per inch; Type IX expanded polystyrene—3.28 per inch; Type X extruded polystyrene—4.58 per inch.  
 d. Vertical insulation shall be expanded polystyrene insulation or extruded polystyrene insulation.  
 e. Horizontal insulation shall be extruded polystyrene insulation.

### Chapter 4 Foundations

- R403.4 Footings for precast concrete foundations- This section references the requirements for the footings as well as a new table to determine minimum depth of crushed stone footings and the requirements for concrete footings if used.
- **Note-stone footings are only allowed in seismic design categories A, B, and C.**

### Chapter 4 Foundations



### Chapter 4 Foundations

TABLE R403.4  
MINIMUM DEPTH OF CRUSHED STONE FOOTINGS (Ft., (inches))  
LOAD BEARING VALUE OF SOIL (psi)

	1000	2000				3000				4000							
		MH, CH, CL, ML				SC, GC, SM, GM, SP, SW				GP, GW							
		Wall width (inches)				Wall width (inches)				Wall width (inches)							
	6	8	12	12	6	8	12	12	6	8	12	12	6	8	12	12	
Conventional light-frame construction																	
1-story	1100 pcf	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2-story	1300 pcf	8	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4
3-story	2000 pcf	16	14	12	10	10	8	6	6	6	4	4	4	4	4	4	4
4-inch brick veneer over light-frame or 8-inch hollow concrete masonry																	
1-story	1500 pcf	6	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2-story	2700 pcf	14	12	10	8	10	8	6	4	4	4	4	4	4	4	4	4
3-story	4000 pcf	22	22	20	18	16	14	12	10	10	8	6	4	4	4	4	4
8-inch solid or fully grouted masonry																	
1-story	2000 pcf	10	8	6	4	6	4	4	4	4	4	4	4	4	4	4	4
2-story	3600 pcf	20	18	16	14	12	10	8	8	6	4	4	4	4	4	4	4
3-story	5500 pcf	32	30	28	26	22	22	20	18	14	12	10	8	10	8	6	4

For SI: 1 inch = 25.4 mm, 1 pound per square inch = 6.895 kPa.

### Chapter 4 Foundations

- R405.1 Foundation drainage-requires perforated drainage piping installed below the base of the wall, on the interior or exterior, one foot beyond the edge of the wall.
- Add R405.3 Above grade drainage.

### Chapter 4 Foundations

- R404.1.2.2 Reinforcement for foundation walls-There are now a number of tables related to foundation walls, do not assume that the walls do not need reinforcement, the tables deal with the amount of unbalanced fill and un-support section of wall. All walls will require horizontal reinforcement.

### Chapter 4 Foundations

TABLE R404.2(1)  
MINIMUM VERTICAL REINFORCEMENT FOR 10-INCH NOMINAL FLAT CONCRETE BASEMENT WALLS<sup>a, b, c, d, e, f, g</sup>

MAXIMUM UNSUPPORTED WALL HEIGHT (feet)	MAXIMUM UNBALANCED BACKFILL HEIGHT (feet)	MINIMUM VERTICAL REINFORCEMENT—BAR SIZE AND SPACING (inches)			
		GW, GP, SW, SP	GM, GC, SM, GM-SC and ML	SC, MC-CL and Inorganic CL	SH
8	4	N/R	N/R	N/R	N/R
	5	N/R	N/R	N/R	N/R
	6	N/R	N/R	N/R	N/R
	7	N/R	N/R	N/R	N/R
9	4	6 @ 18	6 @ 18	6 @ 24	6 @ 24
	5	N/R	N/R	N/R	N/R
	6	N/R	N/R	N/R	N/R
	7	N/R	N/R	N/R	N/R
10	4	N/R	N/R	N/R	N/R
	5	N/R	N/R	N/R	N/R
	6	N/R	N/R	N/R	N/R
	7	N/R	N/R	N/R	N/R
10	8	N/R	6 @ 28	6 @ 28	6 @ 28
	9	6 @ 33	6 @ 28	6 @ 28	6 @ 21
	10	6 @ 28	6 @ 28	6 @ 28	6 @ 17
	10	6 @ 28	6 @ 28	6 @ 28	6 @ 17

For SI: 1 foot = 304.8 mm, 1 inch = 25.4 mm, 1 pound per square foot per foot = 0.1571 kN/m<sup>2</sup>, 1 pound per square inch = 6.895 kPa.

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

b. Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi and concrete with a minimum specified compressive strength of 2,500 psi and vertical reinforcement being located at the centerline of the wall. See Section R404.1.2.3.7.2.

c. Bars of reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with Section 1805.1.2.3.7.2 and Table R404.1.2(1).

For SI: 1 foot = 304.8 mm, 1 inch = 25.4 mm, 1 pound per square foot per foot = 0.1571 kN/m<sup>2</sup>, 1 pound per square inch = 6.895 kPa.

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

b. Table values are based on reinforcing bars with a minimum yield strength of 60,000 psi and concrete with a minimum specified compressive strength of 2,500 psi and vertical reinforcement being located at the centerline of the wall. See Section R404.1.2.3.7.2.

c. Bars of reinforcement with a yield strength of less than 60,000 psi and/or bars of a different size than specified in the table are permitted in accordance with Section 1805.1.2.3.7.2 and Table R404.1.2(1).

### Chapter 4 Foundations

TABLE R404.1.2(1)  
MINIMUM HORIZONTAL REINFORCEMENT FOR CONCRETE BASEMENT WALLS<sup>a, b</sup>

MAXIMUM UNSUPPORTED HEIGHT OF BASEMENT WALL (feet)	LOCATION OF HORIZONTAL REINFORCEMENT
≤ 8	One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near mid-height of the wall story
> 8	One No. 4 bar within 12 inches of the top of the wall story and one No. 4 bar near third points in the wall story

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square inch = 6.895 kPa.

a. Horizontal reinforcement requirements are for reinforcing bars with a minimum yield strength of 40,000 psi and concrete with a minimum concrete compressive strength 2,500 psi.

b. See Section R404.1.2.2 for minimum reinforcement required for foundation walls supporting above-grade concrete walls.

### Chapter 4 Foundations

- Add (New) R404.6 Pier and Pile Foundations- Pier and pile foundations shall comply with the requirements set fourth in Chapter 18 of the 03 IBC portion of the 05 SBC.

### Chapter 4 Foundations

- R406.4 Precast concrete foundation system damp proofing-Allows damp proofing unless there is a high water table or other severe soil-water condition.
- NOTE: If water proofing is required all joints must be sealed full height.

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### Chapter 4 Foundations

- R408.1 Ventilation-Where the ground surface is covered with a class 1 vapor retarder the minimum net area of the openings shall not be less than 1 sq. ft. for each 1,500 sq. ft.
- R408.6 Flood resistance-Finished ground level of under-floor space must be equal to or higher than the outside finished ground level on at least one side.

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### Chapter 5 Floors

- R502.1.6 Structural log members-Of non-rectangular shapes must be in accordance with ASTM D3957. Identified by a grade mark, or if no grade mark a certificate of inspection.



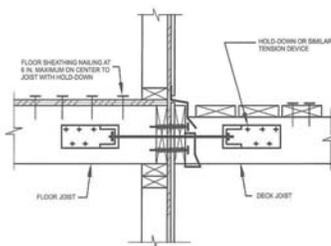
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### Chapter 5 Floors

- R502.2.2 Decks-Deck ledger connection to band joist requires ½” lags or bolts placed 2” from the bottom or top, 2 to 5” from ends staggered top to bottom. The fasteners must be installed to table R502.2.2.1 or accepted engineering, girders shall not be supported on ledgers or band joist, ledgers shall not be supported on stone or masonry veneer. There must be a minimum of two lateral load connections for each deck.

100

### Chapter 5 Floors



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### Chapter 5 Floors

- Exterior wood/plastic composite decks boards- shall comply with R317.4 and shall be installed in accordance with manufacturer’s instructions.

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## Chapter 5 Floors

- R502.7 Lateral restraints support-Has added and exception for trusses, structural composite lumber, structural glue-laminated members and I-joist to be lateral supported in accordance with manufactures specifications.
- R502.7.1 Bridging-Has added the same exception

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## Chapter 5 Floors

- R505.1.1 Applicability limits-Width parallel to joist span now 40 ft. was 36., stories now states less than or equal to 3 stories above grade plane, was not greater than 2 stories.
- R505.1.3 Floor joist-Cold form steel trusses must be designed and braced in accordance with AISI S100, section D4, no notching, cutting, or altering without and approved design.

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## Chapter 5 Floors

- R506.2.3 Vapor retarder-The two new exceptions are as follows:
- Detached garages, utility buildings, and unheated accessory structures.
- Unheated storage areas of less than 70 sq. ft. or carports.

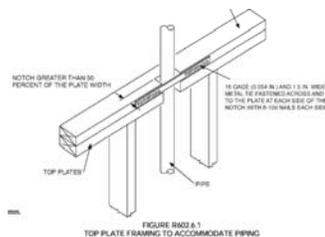
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## CHAPTER 6 – WALL CONSTRUCTION

- **R601.3.2 Vapor retarder-** completely rewritten with table for class III vapor retarders. In reviewing this new section it is important to read the definition of vapor retarder class.
  - Class I- Sheet polyethylene, unperforated aluminum foil.
  - Class II- Kraft-faced fiberglass batts.
  - Class III- Latex or enamel paint.

## Chapter 6 Wall Construction

- (Amd) Figure 602.6.1 Top Plate Framing to Accommodate Piping.



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## Chapter 6 Wall Construction

- R602.10 Wall Bracing-Many changes to wall bracing.
- The most significant was the development of wind bracing tables based on engineering principles.
- Replaced the amount of bracing required from % to actual lengths.

## Chapter 6 Wall Construction

- Separate tables for wind & seismic.
- Consolidated wood framing bracing provisions into chapter 6.
- New methods added to reflect product research.
- Clarified bracing options “Intermittent” & “Continuous”

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## Chapter 6 Wall Construction

- Methods changed from numbers to Abbreviations.
- Number of narrow wall bracing alternates increased to 5.
- Structural Fiber board sheathing (SFB) is recognized as a continuous sheathing method for low wind & earthquake loads.
- (Note Detached 1 & 2 family in SDC C exempt from seismic bracing.)

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## Chapter 6 Wall Construction

- Braced wall Panel-A full-height section of wall constructed to resist in-place shear loads through interaction of framing members, sheathing materials and anchors.
- Braced wall panel spacing-The space between each braced wall panel.

111

## Chapter 6 Wall Construction

- Braced Wall Line-A straight line through the building plan that represents the location of the lateral resistance provided by the wall bracing.
- Braced wall line spacing- The spacing along the braced wall line of the braced wall panels.

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## Chapter 6 Wall Construction

- Table R602.10.1.2(1)-Bracing requirements based on wind speed-is based on
- Exposure B
- 30' Mean Roof Height
- 10' Eave to ridge height
- 10' Wall height per story
- 2 braced wall lines per wind direction
- There are adjustment factors for variations

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## CHAPTER 6 – WALL CONSTRUCTION

- **R602.10 Wall bracing-** The exception for seismic bracing is 1&2 family dwelling in Seismic Design Category C not required still need to meet wind requirements. According to the map only the southwest tip of CT is in the C the rest is in B. Mixing of brace wall methods is allowed.

## CHAPTER 6 WALL CONSTRUCTION

- **R602.10.2 Intermittent braced wall panel construction-** Refers to table R602.10.2 for the methods of wall bracing. Minimum length if intermittent bracing is 48 to 96". There are now three alternative brace wall methods that can be substituted on a one for one basis.

## CHAPTER 6 – WALL CONSTRUCTION

**R610.10.4.1 Continuous sheathing braced wall panels-** Allows continuous sheathing for brace wall panels as long as the braced wall is constructed in accordance with table R602.10.4.1. The three methods are:

**CS-WSP-** wood structural panels

**CS-G-** wood structural panels adjacent to garage openings and supporting roof load only (see foot notes)

**CS-PF-** continuous portal frame

(Note mixing of bracing methods not permitted in continuous)

## Chapter 6 Wall Construction

- R602.10.5 Continuously-sheathed braced wall line using Method CS-SFB (structural fiberboard sheathing)-Only allowed in wind speeds of 100 mph or less and can only be used in walls 10 ft. or less in height.

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## CHAPTER 6 – WALL CONSTRUCTION

- **R612.2 Window sills-** Dwelling unit windows with the sill more than 72" above exterior grade must have the lowest part of the opening a minimum of 24" above finished floor or the operable parts cannot allow the passage of a 4" sphere.
- **Exception-** windows with fall prevention devices or window opening limiting devices normally allowing 4" maximum opening but with emergency escape release.

## Chapter 6 Wall Construction

- Section R613 Structural Insulated Panel Wall Construction-Designed in accordance with this section, limits of 60 foot long and 40 foot wide, wall bracing in accordance with R602.10, interior wall designed as exterior walls, wall thickness based on width, snow load, wind speed and exposure category.

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## CHAPTER 7 WALL COVERING

**R702.3.7 Horizontal gypsum board diaphragm ceilings-** permits gypsum board on wood joist to create the diaphragm which transmits the lateral forces to vertical resisting elements. Table R702.3.7 gives the construction requirements and shear values.

## CHAPTER 7 WALL COVERING

- **R702.4.2 Fiber cement, fiber mat reinforced cement, glass mat gypsum backers and fiber reinforced gypsum backers-** are all materials that are allowed under ceramic tile. Water resistant gypsum board no longer allowed.
- **R703.2 Water-resistive barrier-** All sidings now require a water resistive barrier such as 15# felt or other approved barrier.

## Chapter 7 Wall Covering

- R703.3.2 Horizontal siding-shall be installed in accordance with the manufacturer's recommendations, if none shall be lapped a minimum of 1 inch or ½ inch if rabbited, the ends caulked, covered with a batten or sealed and installed over a strip of flashing.

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## Chapter 7 Wall Covering

- R703.7 Stone & masonry veneer, general- When installed over wood backing or cold-formed steel shall be limited to the first story above grade and shall not exceed 5" in thickness.
- The exception allows the height to be specified from table R703.7(1)

123

## CHAPTER 8 – ROOF/CEILING CONSTRUCTION

- **R802.3.1 Ceiling joist and rafter connections-** revised to include information for when ceiling joist are raised above the wall plate such as floor joist running opposite of rafters. Joists must be installed as rafter ties as close as possible to the ceiling joist or the use of a structural ridge can be used. Collar ties or ridge straps to resist wind uplift must be in the upper 1/3 of the attic space.

## Chapter 8 Roof/Ceiling Construction

- R802.7.2 Engineered wood products-No notching, cuts or holes bored except where permitted by the manufacturer's recommendations.

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## Chapter 8 Roof-Ceiling Construction

- (Amd) (New) R802.10.2.1 Applicability limits- The provisions of this section shall control the design of truss roof framing when snow control for the buildings not greater than 60 feet in length perpendicular to the joist, rafter or truss span, not greater than 36 feet in width parallel to the joist, rafter or truss span, not greater than two stories in height with each story not greater than 10 feet high, and roof slopes not smaller than 3:12 (25-percent) or greater than 12:12 (100-percent).

### Chapter 8 Roof-Ceiling Construction

- R802.10.2.1 continued- Truss roof framing constructed in accordance with the provisions of this section shall be limited to sites subject to a maximum design wind speed of 110 miles per hour, Exposure A, B, or C, and a maximum ground snow load of 70 psf. For consistent loading of all truss types, a roof snow load of 30 pounds per square foot shall be utilized.

### Chapter 8 Roof/Ceiling Construction

- R806.4 Unvented attic assemblies-Provides for unvented attics with special conditions.
  - Within the thermal envelope
  - No vapor retarder in attic floor
  - Vented air space at wood shingles or shakes
  - Vapor retarder at underside of insulation
  - Special insulation requirements based on air-permeable or air-impermeable.

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### Chapter 8 Roof/Ceiling Construction

- R807.1 Attic access-30" clear height measured from top of ceiling joist to bottom of rafter. Now allows location in a wall as long as the opening is a minimum of 22 X 30.
- **This section references M1305.1.3 for access requirements where mechanical equipment is located in attics.**

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### Chapter 9 Roof Assemblies

- (Amd) Table R905.2.4.1(1) Classification of Asphalt Roof Shingles per ASTM D 7158

CLASSIFICATION OF ASPHALT ROOF SHINGLES PER ASTM D 7158

MAXIMUM BASIC WIND SPEED FROM APPENDIX R (mph)	CLASSIFICATION REQUIREMENT
85	D, G or H
90	D, G or H
100	G or H
110	G or H
120	G or H
130	H
140	H
150	H

For SI: 1 mile per hour = 0.447 m/s.

### Chapter 9 Roof Assemblies

- (Amd) Table R905.2.4.1(2) Classification of Asphalt Shingles Per ASTM D 3161

CLASSIFICATION OF ASPHALT SHINGLES PER ASTM D 3161

MAXIMUM BASIC WIND SPEED FROM APPENDIX R (mph)	CLASSIFICATION REQUIREMENT
85	A, D or F
90	A, D or F
100	A, D or F
110	F
120	F
130	F
140	F
150	F

For SI: 1 mile per hour = 0.447 m/s.

### Chapter 9 Roof Assemblies

- R905.2.7.1 Ice Barrier-Now determines the requirement based on historical data.
- "In areas where there has been a history of ice forming along the eaves causing a backup of water as designated in table R301.2(1)
- **Amd R905.2.7.2 Underlayment and high wind.**

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### Chapter 10 Chimneys and Fireplaces

- Chapter 10-Has been reorganized to put masonry fireplaces first, then heaters, chimneys, factory-built units and air supply. There are also additions requirements for masonry heaters for clearances.
- R1001.8 Smoke chamber-The parging must be in accordance with ASTM C199 for refractory cement.

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### Chapter 11 Energy Efficiency

- N1101.2 Compliance-Allows the use of either the now adopted 2009 International Energy Conservation code or this chapter.



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### Chapter 11 Energy Efficiency

- (Add) N1101.4.1.1 Urea-formaldehyde insulation
- (Amd) N1101.8 Above code programs
- (Add) (New) N1101.8.1 Compliance materials- The code official shall be permitted to approve specific computer software, worksheets, compliance manuals and other similar materials that meet the intent of this code.

### Chapter 11 Energy Efficiency

- N1101.9 Certificate- Requires a permanent certificate on or in the electrical panel, can't obstruct the circuit labeling, must be completed by the builder or design professional, list R-values, including ducts, u-factors, and solar heat gain, plus the types and efficiency of heating, cooling and service water heating equipment.

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### Chapter 11 Energy Efficiency

- N1102 Building thermal envelope- Table N1102.1 is the new prescriptive approach, CT. is now one climate zone 5, establishes the general requirements for components and fenestrations, allows 3 forms of compliance.
- R-value computation
- U-factor alternative or
- Total UA alternative

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### Chapter 11 Energy Efficiency

TABLE N1102.1  
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT\*

CLIMATE ZONE	FENESTRATION U-FACTOR	SKYLIGHT FENESTRATION U-FACTOR	GLAZED FENESTRATION SHGC	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT WALL R-VALUE	SLAB R-VALUE AND DEPTH	CRAWL SPACE WALL R-VALUE
1	1.2	0.75	0.35 <sup>a</sup>	30	13	3/4	13	0	0	0
2	0.65 <sup>b</sup>	0.75	0.35 <sup>a</sup>	30	13	4/8	13	0	0	0
3	0.55 <sup>b</sup>	0.65	0.35 <sup>a</sup>	30	13	5/8	19	5/12 <sup>c</sup>	0	5/12
4-except Marine	0.35	0.60	NR	38	13	5/10	19	10/13	10, 2 ft	10/13
5 and Marine d	0.35	0.60	NR	38	20 or 13 + 5 <sup>e</sup>	13/17	30 <sup>f</sup>	10/13	10, 2 ft	10/13
6	0.35	0.60	NR	49	20 or 13 + 5 <sup>e</sup>	15/19	30 <sup>f</sup>	10/13	10, 4 ft	10/13
7 and 8	0.35	0.60	NR	49	21	19/21	30 <sup>f</sup>	10/13	10, 4 ft	10/13

a. R-values are minimum. U-factors and solar heat gain coefficient (SHGC) are maximum. R = 19 means compressed or in-situ mineral 2 x 4 framing cavity such that the R-value is reduced by R-1 or more shall be treated with the compressed batt R-value in addition to the full thickness R-value.  
 b. The fenestration U-factor value excludes skylights. The SHGC column applies to all glazed fenestration.  
 c. The floor R-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.  
 d. R-5 shall be added to the required slab edge R-values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less, in zones 1 through 3 for heated slabs.  
 e. There are no SHGC requirements in the Marine Zone.  
 f. Basement wall insulation is not required in warm-humid locations as defined by Figure N1101.2 and Table N1101.2.  
 g. Or insulation sufficient to fill the framing cavity, 8-19 minimum.  
 h. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25% or less of the exterior, R-5 sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25% of exterior, structural sheathing shall be implemented with insulated sheathing of at least R-2.  
 i. For impact-rated fenestration complying with Section R301.2.1.2, the maximum U-factor shall be 0.75 in zone 2 and 0.65 in zone 3.  
 j. For impact-resistant fenestration complying with Section R301.2.1.2 of the International Residential Code, the maximum SHGC shall be 0.40.  
 k. The second R-value applies when more than half the insulation is on the interior.

### Chapter 11 Energy Efficiency

- N1102.2 Specific insulation requirements- allows ceilings with attic space to reduce from R-38 to R-30 if not compressed as it extends over top plate at eaves.
- This reduction is not allowed to be used with the U-factor or UA-alternative method.

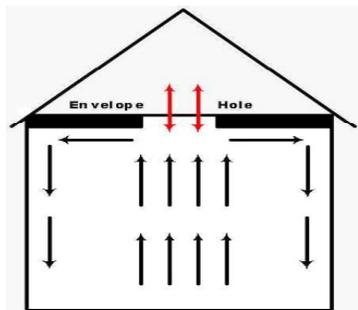
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### Chapter 11 Energy Efficiency

- N1102.2.3 Access hatches & doors-Access doors from conditioned spaces to unconditioned spaces shall be weather stripped and insulated to a level equivalent to the insulation on the surrounding surfaces. A wood framed or equivalent baffle or retainer is required when loose fill insulation is used. This is to provided and maintain the required R-value.

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### Chapter 11 Energy Efficiency



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### Chapter 11 Energy Efficiency

- **Amd N1102.2.11 Thermally isolated sunroom insulation-Comply with 09 IECC 402.2.11**
- **Del N1102.3.5 Thermally isolated sunroom U-factor**

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### Chapter 11 Energy Efficiency

- N1102.2.10 Masonry Veneer-Insulation shall not be required on the horizontal portion of the foundation that supports masonry veneer.
- N1102.3.3 Glazed fenestration exemption- 03 IRC allowed 1% of total glazing area from U-factor requirements, the 09 IRC states up to 15 sq. ft.
- This exemption can not be used with U-factor or UA alternative methods.

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### Chapter 11 Energy Efficiency

- N1102.4 Air leakage-12 Areas that must be sealed to limit infiltration, two forms of compliance. 1) blower door test with specific requirements. 2) a visual inspection of the 12 items by BO or approved independent party, Table N1102.4.2 gives the inspector the criteria for air barrier and insulation inspection.

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## Chapter 11 Energy Efficiency



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## Chapter 11 Energy Efficiency

- N1102.4.1 Building thermal envelope-Shall be durably sealed to limit infiltration. The following shall be caulked, gasketed, weatherstripped or otherwise sealed with an air barrier material, suitable film or solid material.

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## Chapter 11 Energy Efficiency

- All joints, seams & penetrations
- Site-built windows, doors & skylights
- Openings between windows & doors & their jambs & framing
- Utility penetrations
- Dropped ceilings or chases against thermal envelope.
- Knee walls

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## Chapter 11 Energy Efficiency

- Walls & ceilings between garages & condition spaces.
- Behind tubs & showers on exterior walls
- Common walls between units
- Attic access openings
- Rim Joist junction
- Other sources of infiltration

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## Chapter 11 Energy Efficiency

- N1102.4.3 Fireplaces-Wood burning fireplaces shall have gasketed doors and outside combustion air.



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## Chapter 11 Energy Efficiency

- N1103.1.1 Programmable thermostat- Requires forced air furnace systems to have at least one per dwelling.
- N1103.2.1 Insulation-Requires supply ducts in attics have a minimum R-8 and all others R-6, except for ducts within thermal envelope.
- N1103.2.2 Sealing-Duct tightness verified by 2 methods post construction or rough in test.

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### Chapter 11 Energy Efficiency

- Amd (New) N1103.2.3 Building cavities-shall not be used as supply or return ducts.
- N1103.3 Mechanical system piping insulation- Minimum required pipe insulation R-3
- N1103.4 Circulating hot water systems- minimum R-2 as well as either an automatic or readily accessible manual switch to turn of circulating pump when not in use.

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### Chapter 11 Energy Efficiency

- Add N1103.4.1 Pipe Insulation
- Add N1103.8.3 Pool covers



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### Chapter 11 Energy Efficiency

- N1104.1 Lighting equipment-50% of all permanent lighting fixtures require high-efficiency lamps.



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### Chapter 13 General Mechanical System Requirements

- (Amd) (New) M1301.1 Scope-
- The provisions of this chapter shall govern the installation of mechanical systems not specifically covered in other chapters applicable to mechanical systems. Installations of mechanical appliances, equipment and systems not addressed by this code shall comply with the applicable provisions of the International Mechanical Code and Fuel Gas requirements as noted in section R101.4.1

### Chapter 13 General Mechanical System Requirements

- M1302.1 Listed and labeled-appliances must be listed and labeled for the application they are installed for.
- M1305.1.3 Appliances in the attics-new exception permits 50' long access when unobstructed and at least 6' high and 22" wide.

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### Chapter 13 General Mechanical System Requirements

- M1305.1.4.1 Ground clearance-requires the slab or other approved material to be 3" above grade.
- M1307.3.1 Protection from impact-appliances in locations subject to vehicular damage must be protected by approved barriers. (This will include garages, carports, etc.)

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## Chapter 14 Heating and Cooling

- M1411.3.1 Auxiliary and secondary drain system-adds 4<sup>th</sup> method of water level device that shuts the equipment off when the primary drain is blocked.
- M1411.5 Auxiliary drain pan-Applies to category 4 condensing appliances that create condensate from combustion fuel.

157

## Chapter 14 Heating and Cooling

- M1411.6 Locking access port caps- Refrigerant circuit access ports located **outdoors** shall be fitted with **locking-type tamper-resistant caps**.
- This applies to all new installations in 2015 this will add whenever refrigerant is added or recovered from refrigeration or air conditioning systems the access port must have the locking caps.

158

## Chapter 15 Exhaust Systems

- M1502 Clothes dryer exhaust-rewritten and expanded, there is new information on termination, installation, length, and protection. Ducts to exterior must be installed where there is a dryer space.
- M1503.4 Makeup air required-Now requires make up air for exhaust hoods in excess of 400 CFM, must start simultaneously with exhaust.

159

## Chapter 15 Exhaust Systems

- Section 1505 Overhead Exhaust Hoods
- R1505.1 General-Requires 1/4 " clearance between hood and combustibles, 24" clearance between cooking surface and combustible materials, hood equal to broiler, discharge to exterior, and equipped with a backdraft damper. If broiler is listed and labeled for use without hood no hood needed.

160

## Chapter 16 Duct Systems

- (Amd) (New) M1601.1.1 Above-ground duct system- Above-ground duct systems shall conform to the following:
- 1. Equipment connected to duct systems shall be designed to limit the discharge of air temperature to a maximum of 250 degrees.
- 2. Factory-made air ducts shall be constructed of Class 0 or Class 1 materials as designated in Table M1601.1.1(1)

## Chapter 16 Duct Systems

- M1601.1.1 continued
- 3. Fibrous duct construction shall conform to the SMACNA Fibrous Glass Construction Standards or NAIMA Fibrous Glass Duct Construction Standards.
- 4. Minimum thickness of metal duct material shall be as listed in table M1601.1.1(2). Galvanized steel shall conform to ASTM A653

## Chapter 16 Duct Systems

- M1601.1.1 continued
- 5. Use of gypsum products to construct return air ducts or plenums is permitted, provided that the air temperature does not exceed 125 degrees and exposed surfaces are not subject to condensation.
- 6. Duct systems shall be constructed of materials having a flame spread index not greater than 200.

## Chapter 16 Duct Systems

- M1601.3 Duct insulation materials-Allows polyurethane spray foam, flame spread 25 smoke development 450, protected in accordance with R316, installed thickness given to owner at time of install.
- M1601.5 Under-floor plenums-No longer allowed in new construction and modifications or repairs to existing must comply with this section.

164

## Chapter 17 Combustion Air

- M1701.1 Scope-All new with reference to NFPA 31-2006 (31-92 adopted by state)
- M1701.2 Opening locations-Requires that combustion air openings must be located above the design flood elevation.
- (You think)

165

## Chapter 19 Special Fuel-Burning Systems

- (Amd) (New) M1904.1 Installation- Gaseous hydrogen systems shall be installed in accordance with the applicable requirements of Section M1307.4 and M1903.1 and the Connecticut Fuel Gas Code, the Connecticut Fire Safety Code and the International Building Code.

## Chapter 21 Hydronic Piping

- M2103 Floor heating system-Radiant heat for slabs must have R-5 insulation under piping, R-11 in the floor, thermal break at slab to foundation and 2 new pipe joints for PE, socket-type heat-fused and PEX, cold expansion insert or compression fittings.

167

## Chapter 22 Special Piping and Storage

- M2201.2 Above ground tanks-Allows more than 660 gals. of fuel oil above ground or inside a building in compliance with NFPA 31.
- M2201.7 Tank abandoned or removed- Requires abandonment and removal of fuel oil tanks in accordance with the IFC and the removal of all exterior above-grade piping.

168

## Chapter 24 Fuel Gas

- **Amd G2402.3 Terms defined in other codes-** Where terms are not defined in this code and are defined in other portions of the 05 SBC, such terms shall have the meaning ascribed to them as in those portions of the code.

169

## Chapter 24 Fuel Gas

- G2407.4 Makeup air provisions-Where exhaust fans, clothes dryers & kitchen vent systems interfere with appliance operation makeup air shall be provided.
- **Amd G2411.1.1 Corrugated Stainless steel tubing (CSST)-CSST gas piping shall be bonded in accordance with the manufacturer's installation instructions.**

170

## Chapter 24 Fuel Gas

- G2408.2.1-Installation in residential garages- Appliances installed in a separate enclosed space having access from outside the garage is permitted at floor level as long as combustion air is taken from exterior of the garage.

171

## Chapter 24 Fuel Gas

- **Amd G2412.2 Liquefied petroleum gas storage-Must comply with Ct. liquefied petroleum gas and liquefied natural gas code adopted by CT.**
- G2414.6 Plastic pipe, tubing and fittings-This section no longer states for outside use only, it simply says to supply gas and the piping shall be labeled Gas.

172

## Chapter 24 Fuel Gas

- **Amd G2415.1 Prohibited locations**
- G2415.4 Underground penetrations-No longer allowed must enter and exit above grade.
- G2417.6.2 Turning gas on-Before turning on the entire system shall be inspected to determine there are no open fittings, and all valves at unused outlets are closed, plugged or capped.

173

## Chapter 24 Fuel Gas

- G2420.5.2 Vented decorative appliances & room heaters-Shall be permitted to be installed in an area remote, must have ready access and permanently identified and shall only serve no other appliance.

174

## Chapter 24 Fuel Gas

- G2421.3.1 Venting piping-The regulator vent pipe shall not exceed the manufactures specified length.
- **Amd G2423.1 General**
- G2427.5.5.1 Chimney lining-Now requires chimneys to be lined in accordance with NFPA 211. Exception-Existing that's inspected has same size appliance installed and clean out approved.

175

## Chapter 24 Fuel Gas

- G2427.10.4.1 Two or more openings-How allows the openings to be opposite each other as long as the connectors are at a 45 and the angle shall not cause restrictions.

176

## Chapter 24 Fuel Gas

- G2447.5 Vertical clearance above cooking top- Requires 30" from top to combustible unless it can meet one of 3 requirements:
- The underside is protected with 1 1/4" insulating millboard covered with sheet metal.
- A metal ventilating hood with a 1/4" clearance or
- A listed cooking appliance or microwave oven installed to manufactures specifications, then the clearance is 24".

177

## Chapter 24 Fuel Gas

- G2449.4-Installation-Air conditioning appliances shall be installed to manufactures instructions. Unless listed to be installed on a combustible surface it must be installed on a non-combustible surface.

178

## Chapter 25 Plumbing Administration

- P2503.6 Shower liner test-Now requires liners be tested with a minimum of 2" of standing water at the threshold. If no threshold a temp. must be installed to test.

179

## Chapter 26 General Plumbing Requirements

- **(Amd) (New) P2601.2 Connection- Plumbing fixtures, drains and appliances used to receive or discharge liquid waste or sewage shall be connected to the sanitary drainage system of the building or premises in accordance with the requirements of this code. This section shall not be construed to prevent indirect waste systems.**

## Chapter 26 General Plumbing Requirements

- P2601.2 continued
- Exception: Bathtubs, showers, lavatories, clothes washers and laundry trays are not required to discharge to the sanitary drainage system where those fixtures discharge to an approved gray water recycling system.
- (Add) P2602.1.1 Individual sewage disposal systems and individual water supply systems.
- (Del) P2603.6.1 Sewer depth

## Chapter 27 Plumbing Fixtures

- P2703.6 General-Allows for a 25" dimension in a shower as long as the compartment has 1,300 sq. ins.
- P2708.1.1 Access-Allows a clear and unobstructed opening the minimum width being 22".
- P2713.3 Bathtub and whirlpool bathtub- Maximum temperature 120, ASSE 1070 device.

182

## Chapter 27 Plumbing Fixtures

- P2720.1 Access to pump-Requires a 12X12 access to the pump, if the pump is 2' from the access opening the opening must be 18X18 Or manufactures requirements.
- P2721.2 Bidet water temperature- Limited to 110 by use of a ASSE 1070 device.

183

## Chapter 28 Water Heaters

- P2801.3 Location- References M1305 for additional requirements for level working space in front, minimum width for access and removal, support on ground and illumination for service.
- P2803.7 Vacuum relief valve-Bottom fed water heaters and tanks will require vacuum relief valves complying with ANSI Z21.22

184

## Chapter 29 Water Supply and Distribution

- P2904 Dwelling unit fire sprinkler systems-It is important to realize that P2904 applies to stand alone and multipurpose wet pipe systems it can't be used with anti-freeze systems or dry systems.
- Add P2902.5.3.1-Automatic lawn sprinkler system sensor device.
- Amd P2905.9.1.3 PVC plastic pipe

185

## Chapter 30 Sanitary Drainage

- P3007 Sumps and ejectors-Other than existing buildings sumps shall not receive drainage from gravity piping. Sumps & ejectors handling waste from a water closet must pass a 2" solid and all others must pass a 1" solid.

186

### Chapter 31 Vents

- (Amd) P3103.1 Roof extensions-Terminate at least 12" above roof unless roof used for other purpose than 7'.
- (Del) P3103.2 Frost enclosure

### Chapter 32 Traps

- P3201.2 Trap seals & trap seal protection- Requires the trap seal primer valves be connected to the trap at a point above the level of the trap seal.

188

### Chapter 33 Storm Drainage

- A new chapter with requirements for subsoil drains, including standards for pipe, and requirements for sumps and pumping systems that are part of the storm drainage.

189

### Chapter 34 General Requirements Chapter 36 Services

- (Add) E3401.2.1 Alternative compliance
- (Add) E3609.7.1 Corrugated Stainless Steel Tubing

### Chapter 34-36 General Requirements/Services

- E3404.5 Protection of equipment-Not identified for outdoor use, identified for indoor use only, dry or damp locations shall be protected against permanent damage from the weather during building construction.

191

### Chapter 34-36 General Requirements/Services

- E3405.4 Location of working space & equipment-Can't install a panel or over current protection device over stairs.
- E3608.1.5 Plate electrodes-Allows a 2 sq. ft. plate electrode not less than 30" below grade as an alternative to rod & pipe.

192

### Chapter 37 Branch circuit & feeder requirements

- E3705.4.4 Conductors of type NM cable- Requires adjustment factor of table E3705.3 for 3 or more NM cables in the same hole of wood framing sealed or 3 NM cables in contact with insulation without maintaining spacing.

193

### Chapter 38 Wiring Methods

- (Amd) Table 3802.1 General Installation and Support Requirements for Wiring Methods

INSTALLATION REQUIREMENTS (Requirements applicable only to wiring methods identified in Table 3802.1)	AC SIC	EMF EMC RMC	ENT	FMC LFC	NM UF	RNC	SE	SR*	USE
Where run parallel with the framing member or framing studs, the wiring shall be not less than 1 1/2 inches from the edge of a framing member or framing member such as a joist, rafter or stud or shall be physically protected.	A	--	A	A	A	--	A	--	--
Bored holes in framing members for wiring shall be located not less than 2 inches from the edge of the joist or rafter and 1 1/2 inch from the edge of studs or shall be physically protected with a minimum of 0.0625-inch steel plate or other approved material.	A*	--	A*	A*	A*	--	A*	--	--
Where installed in grooves, or not covered by wallboard, ceiling, paneling, carpeting, or similar finish, wiring methods shall be protected by 0.0625-inch thick steel plate, cleave, or equivalent, a listed steel plate or its not less than 1 1/2-inch free space for the full length of the groove in which the cable or raceway is installed.	A	--	A	A	A	--	A	A	A

### Chapter 38 Wiring Methods

Where installed in grooves, to be covered by wallboard, ceiling, paneling, carpeting, or similar finish, wiring methods shall be protected by 0.0625-inch thick steel plate, cleave, or equivalent, a listed steel plate or its not less than 1 1/2-inch free space for the full length of the groove in which the cable or raceway is installed.	A	--	A	A	A	--	A	A	A
Securely fastened bushings or grommets shall be provided to protect wiring run through openings in metal framing members.	--	--	A <sup>1</sup>	--	A <sup>1</sup>	--	A <sup>1</sup>	--	--
The maximum number of 90-degree bends shall not exceed four between junction boxes.	--	A	A	A	A	--	A	--	--
Bushings shall be provided where entering a box, fitting or enclosure unless the box or fitting is designed to afford equivalent protection.	A	A	A	A	A	--	A	--	A
Runs of raceways shall be run to remove enough slack.	--	A	A	A	A	--	A	--	A
Maximum allowable on center support spacing for the wiring method in feet.	4.5 <sup>a</sup>	10 <sup>b</sup>	3 <sup>b</sup>	4.5 <sup>b</sup>	4.5 <sup>b</sup>	3 <sup>b,1</sup>	2.5 <sup>c</sup>	--	2.5 <sup>c</sup>
Maximum support distance in inches from box or other terminations.	12 <sup>b,1</sup>	36	36	12 <sup>b,1</sup>	36	12	--	12	

### Chapter 38 Wiring Methods

- For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.0175 rad.
- a. Installed in accordance with listing requirements.
  - b. Supports not required in accessible ceiling spaces between light fixtures where lengths do not exceed 6 feet.
  - c. Six feet for MC cable.
  - d. Five feet for trade sizes greater than 1 inch.
  - e. Two and one-half feet where used for service or outdoor feeder and 4.5 feet where used for branch circuit or indoor feeder.
  - f. Twenty-four inches where flexibility is necessary.
  - g. Thirty-six inches where flexibility is necessary.
  - h. Within 8 inches of boxes without cable clamps.
  - i. Flat cables shall not be stapled on edge.
  - j. Bushings and grommets shall remain in place and shall be listed for the purpose of cable protection.
  - k. See Sections R502.8, 602.6, and R802.7 for additional limitations on the location of bored holes in framing members.
  - l. Where oversized, concentric or eccentric knockouts are not encountered, a raceway not greater than 18 inches in length shall not require support where it is a continuous length without couplings. Such raceways shall terminate at an outlet box, junction box, device box, cabinet, or other termination at each end of the raceway.

### Chapter 38 Wiring Methods

- E3802.4 In unfinished basements and crawl spaces- Allows NM or SE cable to be run in listed conduit or tubing on walls, requires insulated bushings and the cables to be secured within 12" of conduit or tubing.

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### Chapter 39 Power & Lighting Distribution

- E3901.4 Counter top receptacles-Has added the following areas; pantries, breakfast rooms, and similar areas. Also if the area behind a range, counter-mounted cooking unit or sink is less than 12" in a peninsular or island it is considered separate areas each requiring a receptacle.

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### Chapter 39 Power and Lighting Distribution

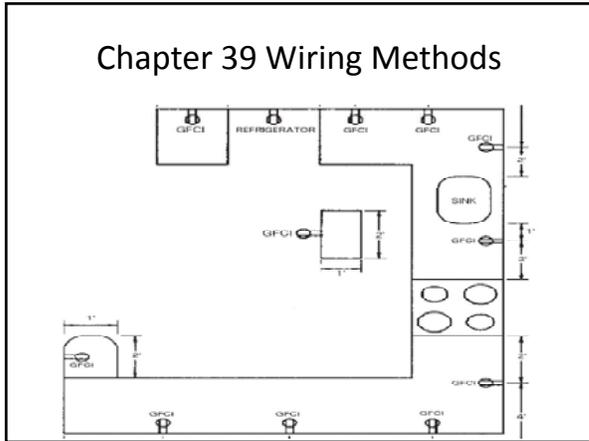
- (Amd) Figure E3901.4 Countertop Receptacles
- (Amd) E3902.2 Garage and accessory building receptacles
- (Amd) E3902.11 Arc-fault circuit-interrupter protection

### Chapter 39 Power & lighting distribution

- E3901.3 Bathroom-Allows the required receptacle to be installed on the side of the cabinet within 12" of the top of the counter.
- E3901.7 Outdoor outlets-Balconies, decks and porches 20 sq. ft. or larger that are accessible from inside, requires an outlet a maximum of 6'6" above the floor.

### Chapter 39 Power & lighting distribution

- E3902.7 Laundry, utility and bar sink receptacles-Outlets within 6' of laundry and utility sinks must be GFCI protected.
- E3905.9 Boxes at fan outlets-Requires boxes specially made to support fans up to 70 LBS. Must be marked for that purpose.



### Chapter 40 Devices & Luminaires

- (Amd) E4002.14 Tamper-resistant receptacles-In areas specified in section E3901.1, 125-volt, 15- and 20-ampere receptacles shall be listed tamper-resistant receptacles.
- Located 5.5 FT. above grade.
- Receptacles that are part of luminaire or appliance.
- Single for a single appliance or a duplex for 2 appliances plug cord-and-plug.

### Chapter 40 Devices and Luminaires Chapter 41 Appliance Installation

- (Amd) E4003.12 Luminaires in clothes closets
- (Amd) (New) E4101.6 Support of ceiling-suspended paddle fans- Ceiling-suspended fans (paddle) shall be supported independently of an outlet box or by a listed outlet box or outlet box system identified for use and installed in accordance with Section E3905.9

## Chapter 42 Swimming Pools

- E4203.1.1 Location-The location of the pool pump outlet has moved from 10' to 6'.
- E4203.1.2 Where required-Now allows the convenience outlet to be between 6' and 20'.
- E4203.1.3 GFCI protection-Now requires the pump outlet to be GFCI protected no matter where it is, even if direct wired as well as 240 volts single phase.

205

## Chapter 40 Devices & Luminaries

- E4003.11 Bathtub and shower areas- Luminaries above tubs or showers within 8' vertically of the rim must be listed for damp locations, if subject to spray must be listed for wet locations.

206

## Chapter 42 Swimming pools

- E4204 Bonding-Completely rewritten. Not required to extend or attach to remote panel boards, service equipment or **electrodes**, 3 feet horizontally from pool wall including unpaved surfaces, most important change is the requirement for the **pool water** to be bonded.

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## Chapter 42 Swimming Pools

- (Amd) (New) E4204.5.2 Connections- Connections shall be made by exothermic welding or listed pressure connections or clamps that are labeled as being suitable for the purpose and that are made of stainless steel, brass, copper or copper alloy. Connection devices shall not be used to connect bonding conductors or connection devices. Thread forming machine screws that engage not less than two threads are permitted.
- (Amd) E4209.3 Accessibility

## Appendix E Manufactured Housing Used As Dwellings

- (Amd) AE101.1 General
- (Amd) AE600.1 General
- (Amd) Section AE606 Referenced Standards
  - ASTM C 270-07 Specifications for Mortar for Unit Masonry AE602
  - NFPA 501-05 Standard on Manufactured housing AE201

## Appendix G Swimming Pools, Spas and Hot Tubs

- (Amd) Residential
- (Amd) AG105.2 Outdoor swimming pool
- (Amd) AG105.6 Temporary enclosure
- (Add) AG105.7 Pool alarm



### Appendix R

Pianfield	105	B	B
Plainville	100	B	B
Plymouth	100	B	B
Pomfret	105	B	B
Portland	100	B	B
Preston	105	B	B
Prospect	100	B	B
Pulliam	105	B	B
Reading	100	B	C
Ridgefield	100	B	C
Rocky Hill	100	B	B
Rosbury	100	B	B
Salem	105	B	B
Salisbury	100	B	B
Scotland	105	B	B
Scymour	100	B	B
Sharon	100	B	B
Shelton	100	B	C
Sherman	100	B	C
Simsbury	100	B	B
Somers	100	B	B
South Windsor	100	B	B
Southbury	100	B	C
Southampton	100	B	B
Springe	105	B	B
Stafford	100	B	B
Stamford	100	B	C
Starling	105	B	B
Stonington <sup>1</sup>	110	B	B

### Appendix R

Stratford	100	B	C
Suffield	100	B	B
Thomaston	100	B	B
Thomson	100	B	B
Tolland	100	B	B
Torrington	100	B	B
Trumbull	100	B	C
Union	100	B	B
Vernon	100	B	B
Voluntown	105	B	B
Wallingford	100	B	B
Warren	100	B	B
Washington	100	B	B
Waterbury	100	B	B
Waterford <sup>2</sup>	110	B	B
Watertown	100	B	B
West Hartford	100	B	B
West Haven	100	B	B
Westbrook <sup>3</sup>	105	B	B

### Appendix R

Weston	100	B	C
Westport	100	B	C
Wethersfield	100	B	B
Willington	100	B	B
Wilton	100	B	C
Winchester	100	B	B
Windham	105	B	B
Windsor	100	B	B
Windsor Locks	100	B	B
Wolcott	100	B	B
Woodbridge	100	B	B
Woodbury	100	B	B
Woodstock	100	B	B

- Footnotes:**
1. If Site Class F is present, the Short Period Design Spectral Response Acceleration ( $S_{sp}$ ) shall be determined according to Section 1615.1 of the *International Building Code*, and the Seismic Design Category shall be determined in accordance with Table 301.2.2.1.1.
  2. Areas south of Interstate 95 in this municipality are classified as a Wind-Borne Debris Region. See Section R202 for exceptions.

### Questions, Concerns, Resignations

