



Office of Education
and Data Management

Spring 2018
Career Development

March 2018

Significant Changes to the 2018 State Building Code

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2018 Connecticut State Building Code Introduction Today's Presentation



- A guided tour of the most significant changes
- The model code changes

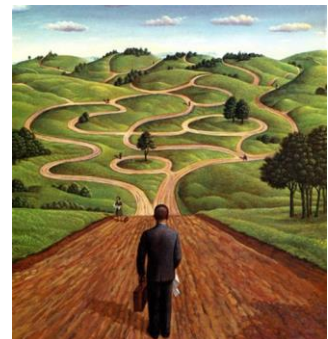


- Connecticut amendments



2012 → 2015

Take time to review all
changes



2018 Connecticut State Building Code Introduction The 2018 CSBC



- Based on:
 - 2015 ICC model codes
 - IBC, IRC, IPC, IMC, IEBC, IECC
 - 2017 NEC (NFPA 70)
 - 2009 ICC/ANSI A117.1
- Coming into effect:
 - July 1, 2018 (projected)
- Apply to projects with primary permit application on or after that date
- Will consider approving modification requests to use 2016 SBC under extenuating circumstances.



2018 Connecticut State Building Code Introduction The 2018 CSBC



- Amendments of model codes
- ICC and NFPA model codes:
 - <https://codes.iccsafe.org/public/collections/I-Codes>
 - <http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards>
- CT versions of IBC and IRC from ICC will be developed
- Keep track of errata by model code bodies



2018 Connecticut State Building Code Introduction The Adoption Process



- Late 2016 to mid 2018
- Codes & Standards Committee
 - Codes Amendment Subcommittee
 - Work groups
- Meetings open to public
- Code change proposals early 2017
- Public comment period early 2018
- Codes & Standards review and approval spring 2018
- Regulatory review and approval spring 2018
- **THIS IS STILL A DRAFT CODE.
ADDITIONAL CHANGES MAY OCCUR**



2018 Connecticut State Building Code Introduction The 10,000 Foot View



- Restructure Connecticut amendments to follow model code organization
- Revisit need for many Connecticut specific amendments
- Reach forward to 2018 model codes to help address some of today's issues



2018 Connecticut State Building Code Introduction The 5,000 Foot View



- IBC Chapter 34 is no more
- IBC Heights & areas major rework
- Model IBC/IRC refer to pool & spa code – not adopted in CT SBC
- Some new amendments deal with frequent modification requests
- Reduce repetition in chapter 1s



2018 Connecticut State Building Code Introduction Into the Weeds We Go...



- Book by book, chapter by chapter
- IBC, IEBC, A117.1, IECC
- Break
- IPC, IMC, NEC, IRC



2015 International Building Code

2018 Connecticut State Building Code

IBC

Chapter 1 – Scope & Administration

- 104.10.2 Accessibility exemption
 - No longer a joint decision. Now only OSBI.
 - Public Act 17-96, effective 7/1/17



2018 Connecticut State Building Code IBC Chapter 1 – Scope & Administration



- 107.7 Threshold limits
 - No change to Connecticut General Statute 29-276b
 - Presentation of threshold limits in IBC now clearer
 - Clarified revised plans, deferred submittals also covered
- Reminder:
 - Threshold limits only trigger additional requirements when they are exceeded
 - Horizontal additions considered in own right
 - Vertical additions >4 stories or >60' covered
 - 1991 State Building Inspector opinion

Any proposed structure or addition thereto that exceeds one or more of the following threshold limits:

- (1) Having four stories;
- (2) 60 feet in height;
- (3) With a clear span of 150 feet in width;
- (4) Containing 150,000 square feet of total gross floor area;
Exception: For Group S (Storage) the limit shall be 250,000 total gross square feet.
- (5) With an occupancy of 1,000 persons.
- (6) Group I (Institutional) use with 150 beds or persons;
- (7) Group R-1 (Residential) hotels or motels with 200 rooms in a single structure;
- (8) Group R-2 (Residential) multi-family with 100 dwelling units in a single structure;
- (9) Group S (Storage) parking structures with 1,000 cars.

2018 Connecticut State Building Code IBC Chapter 2 – Definitions



- Lodging house
 - New concept and definition in model code
 - Care to not confuse with *bed & breakfast establishment*.
- Registered design professional
 - Amended to recognize landscape architects
- Technically infeasible
 - No longer a joint determination. Now only OSBI.
 - Public Act 17-96, effective 7/1/17



2018 Connecticut State Building Code

IBC

Chapter 4 – Special Detailed Requirements...



- Atriums
- 404.3 Automatic Sprinkler Protection
 - CT previously removed model code exception #2
 - Where the ceiling of the atrium is more than 55 feet (16 764 mm) above the floor, sprinkler protection at the ceiling of the atrium is not required.*
 - No longer removed.
 - *Commentary: A ceiling height of more than 55 feet (16 764 mm) is the height at which the system is no longer effective and installing such systems provides little benefit.*



2018 Connecticut State Building Code

IBC

Chapter 4 – Special Detailed Requirements...



- Private Garages (406.3)
- New definition (202)
- Shall be classified as Group U occupancies (406.3.1)
- New area limitation – 1,000 sq.ft. (406.3.1)
- Can have multiple garages, with 1-hr fire barrier separation

2018 Connecticut State Building Code



IBC

Chapter 5 – General Building Heights & Areas

- Building heights and areas
 - Old table 503 now three separate tables.
- A “user-friendliness” change by ICC
- Height separated into two tables:
 - Height in feet (504.3)
 - Number of stories (504.4)
- Area in own table (506.2)
- Shows allowable sprinkler increases in tables

2018 Connecticut State Building Code



IBC

Chapter 5 – General Building Heights & Areas

TABLE 504.3^a
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V		
		A	B	A	B	A	B	HT	A	B	
A, B, E, F, M, S, U	NS ^b	UL	160	65	55	65	55	65	50	40	
	S	UL	180	85	75	85	75	85	70	60	

TABLE 504.4^{b, c}—continued
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V		
		A	B	A	B	A	B	HT	A	B	
R-1	NS ^{d, h}	UL	11	4	4	4	4	4	3	2	
	S13R	4	4	4	4	4	4	4	4	3	
	S	UL	12	5	5	5	5	5	4	3	
R-2	NS ^{d, h}	UL	11	4	4	4	4	4	3	2	
	S13R	4	4	4	4	4	4	4	4	3	
	S	UL	12	5	5	5	5	5	4	3	

2018 Connecticut State Building Code



IBC

Chapter 5 – General Building Heights & Areas

TABLE 506.2^{a, b}
ALLOWABLE AREA FACTOR (A_i = NS, S1, S13R, or SM, as applicable) IN SQUARE FEET

OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION									
		TYPE I		TYPE II		TYPE III		TYPE IV	TYPE V		
		A	B	A	B	A	B	HT	A	B	
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	15,000	11,500	5,500	
	S1	UL	UL	62,000	34,000	56,000	34,000	60,000	46,000	22,000	
	SM	UL	UL	46,500	25,500	42,000	25,500	45,000	34,500	16,500	

Note: UL = Unlimited; NP = Not Permitted; NS = Buildings not equipped throughout with an automatic sprinkler system; S = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

NS = Buildings not equipped throughout with an automatic sprinkler system; S1 = Buildings a maximum of one story above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; SM = Buildings two or more stories above grade plane equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1; S13R = Buildings equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.2.

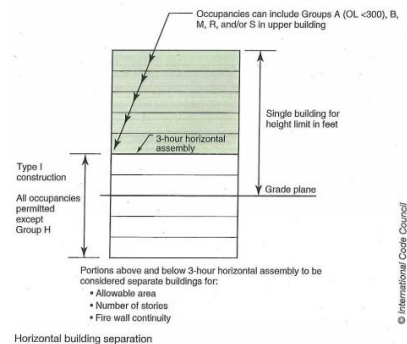
2018 Connecticut State Building Code



IBC

Chapter 5 – General Building Heights & Areas

- Pedestal buildings - special provisions in 510.2
- Below 3-hr horizontal assembly
 - No longer limited to one story above grade plane
 - Can also now be any occupancy other than Group H



2018 Connecticut State Building Code

IBC

Chapter 6 – Types of Construction



- **602.3 Type III.** Type III construction is that type of construction in which the exterior walls are of noncombustible material and the interior building elements are of any material permitted by this code. Fire-retardant-treated wood framing **and sheathing** complying with Section 2303.2 shall be permitted within exterior wall assemblies of a 2-hour rating or less.
- **602.4.1 Fire-retardant-treated wood in exterior walls.** Fire-retardant-treated wood framing **and sheathing** complying with Section 2303.2 shall be permitted within exterior wall assemblies with a 2-hour rating or less.
- Brings forward 2018 IBC change per ICC code change G 175-15.



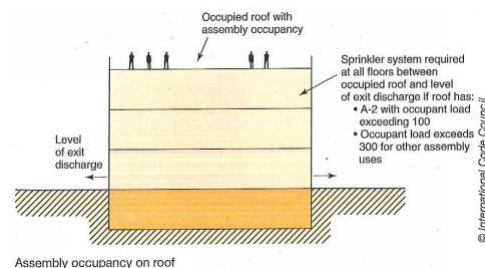
2018 Connecticut State Building Code

IBC

Chapter 9 – Fire Protection Systems



- Assembly occupancies on roofs (903.2.1.6)
- New requirement
- If A occupancy on roof, building below required to be sprinklered if:
 - Occupant load >100 for A-2
 - Occupant load >300 for other A uses.
- Sprinkler coverage for all floors between occupied roof and level of exit discharge.



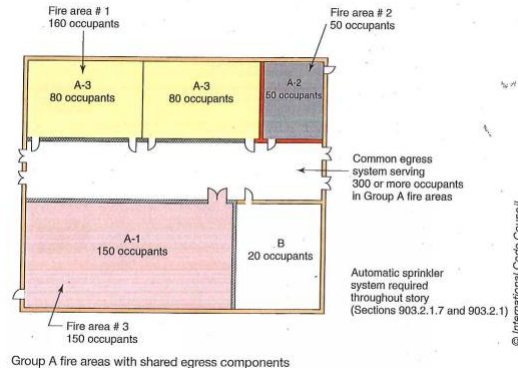
2018 Connecticut State Building Code

IBC

Chapter 9 – Fire Protection Systems



- Multiple A use fire areas (903.2.1.7)
- New requirement to prevent elimination of sprinklers by use of fire areas in Group A uses.
- Applies where multiple fire areas share exit or exit access components and combined occupant load is 300 or more.



2018 Connecticut State Building Code

IBC

Chapter 9 – Fire Protection Systems



Carbon Monoxide (915)

- Many of the CT amendments now removed as model code covers topics.
- Maintains CT amendments for:
 - Group E occupancies (915.2.3, 915.5.4)
 - Interconnection (915.4.4)
 - Maintenance (915.6)
 - Alterations & additions (915.7)



2018 Connecticut State Building Code IBC Chapter 10 – Means of Egress



- Numbers of exits and exit access doorways
- Requirements for rooms and spaces, and stories now consolidated into one table
- Includes common path of travel

TABLE 1006.2.1
SPACES WITH ONE EXIT OR EXIT ACCESS DOORWAY

OCCUPANCY	MAXIMUM OCCUPANT LOAD OF SPACE	MAXIMUM COMMON PATH OF EGRESS TRAVEL DISTANCE (feet)			
		Without Sprinkler System (feet)		With Sprinkler System (feet)	
		Occupant Load			
		OL ≤ 30	OL > 30		
A, E, M	49	75	75	75*	
B	49	100	75	100*	
F	49	75	75	100*	
H-1, H-2, H-3	3	NP	NP	25*	
H-4, H-5	10	NP	NP	75*	
I-1, I-2, I-4	10	NP	NP	75*	
I-3	10	NP	NP	100*	
R-1	10	NP	NP	75*	
R-2	10	NP	NP	125*	
R-3*	10	NP	NP	125*	
R-4*	10	75	75	125*	

2018 Connecticut State Building Code IBC Chapter 10 – Means of Egress



Emergency Lighting (1008)

- Model code (1008.3.3) extends requirement to:
 - Electrical equipment rooms.
 - Fire command centers.
 - Fire pump rooms.
 - Generator rooms.
 - Public restrooms with an area greater than 300 sq.ft.
- Also included is CT's B&B requirement:
 - Means of egress components, other than those within sleeping rooms, of Group R-1 bed and breakfast establishments.



2018 Connecticut State Building Code
IBC
 Chapter 10 – Means of Egress



I-4 Day Care Facilities

- Fix disconnects in model code
- 903.2.6 exception 2 allows unsprinklered I-4 day care facilities
- Not recognized in two chapter 10 requirements:
 - Table 1017.2 – Exit Access Travel Distance
 - New footnote (e): 150'
 - Table 1020.1 – Corridor Fire Resistance Rating
 - New footnote (d): 0 hr



2018 Connecticut State Building Code
IBC
 Chapter 10 – Means of Egress



- Exit Access Stairways & Ramps (1019)
- Continuing CT's restriction of the use of these.
- Model code has been restructured.
 - Previous 1009.2.2 and 1009.3 amendments now under 1019.3
 - I-3 now in separate section (1019.4)
 - Stages, platforms etc. now 410.6.2 in model code
 - Other changes per model code changes.

2018 Connecticut State Building Code IBC Chapter 10 – Means of Egress

CT



Emergency Escape and Rescue

- 2012 IBC changed wording – has been causing confusion.
- 2015 IBC kept 2012 wording.
- 2018 IBC has amended wording. CT adopting early for 2018 SBC.
- Intent has always been:
 - R-2, stories with two or more exits or access to two or more exits, and sprinklered - emergency escape and rescue openings not required.
- See ICC code change proposals E 141-15 & E 145-15.



2018 Connecticut State Building Code IBC Chapter 11 – Accessibility

CT



- Automatic Entrances (1105.2)
- 2016 SBC and earlier... confusing...

(Add) **1105.2 Automatic entrances.** Pursuant to section 29-270a of the Connecticut General Statutes, at least one primary entrance to any covered mall building, anchor store or retail business (Group M) with more than 50,000 square feet of floor space shall be equipped with an automatically operating door or doors in sequence, installed in accordance with applicable provisions of this code. Where controls for automatic doors are provided they shall be in an accessible location outside the swing of the door, located within a space that is a minimum of 5 feet in length and 3 feet in width that has a surface gradient of not more than one unit vertical in 50 units horizontal (1:50), within 10 feet of the entrance and set at a maximum height of 30 inches above the walking surface.

Exception: Nothing in this section shall require the installation of an automatically operating door in a primary entrance which is open and unobstructed by any door during the hours the retail business is open to the public.

2018 Connecticut State Building Code

IBC

Chapter 11 – Accessibility



- Automatic Entrances (1105.2)
- (Add) **1105.2 Automatic entrances.** Where controls for automatic doors are provided they shall be in an accessible location within 10 feet of the entrance.
 - (Add) **1105.2.1 Primary entrances.** Pursuant to section 29-270a of the Connecticut General Statutes, at least one primary entrance to any covered mall building, anchor store or retail business (Group M) with more than 50,000 square feet of floor space shall be equipped with an automatically operating door or doors in sequence, installed in accordance with applicable provisions of this code.
 - **Exception:** Nothing in this section shall require the installation of an automatically operating door in a primary entrance which is open and unobstructed by any door during the hours the retail business is open to the public.

2018 Connecticut State Building Code

IBC

Chapter 11 – Accessibility



- 1109.2.3 Lavatories; and
1009.2.4 Single Occupancy Toilet
- Removes CT requirement for 13" reach ranges at lavatory faucet etc.
- Instead defers to model code requirement for enhanced reach range, with slight amendment.
- Where the total lavatories provided in a toilet room or bathing facility is ~~six~~ four or more, at least one lavatory with enhanced reach ranges shall be provided.
- The "enhanced reach range" of 11" is found in ICC A117.1-2009, section 606.5.

2018 Connecticut State Building Code IBC Chapter 16 – Structural Design



- Roof loads for vegetative roof loads
- New definition (202)
 - **Vegetative roof.** *As assembly of interacting components designed to waterproof and normally insulate a building's top surface that includes, by design, vegetation and related landscape elements.*
- Vegetative and landscaped roofs (1607.12.3.1)
 - Landscaping materials considered as dead load - basis assumes saturated soil per ASTM D 2397
 - Live load either 20 psf for unoccupied areas or per table 1607.1 for occupied roofs



Green roof

2018 Connecticut State Building Code IBC Chapter 17 – Special Inspections & Tests



- 1704.2 Special Inspections and Tests
- New exception #5:
 - The contractor is permitted to employ the approved agencies for the verification of the **temporary installation restraint/bracing** required for cold-formed steel trusses in Section 1705.2.4 and metal-plate connected wood trusses in Section 1705.5.2.
- Temporary bracing is a means and methods issue which is typically the responsibility of the contractor.
- Does not apply to permanent bracing.



2018 Connecticut State Building Code

IBC

Chapter 17 – Special Inspections & Tests



- Submittals to the Building Official (1704.5)
- Adds detailed requirements to special inspection reporting – certifications / reports for:
 - Fabrication of certain structural elements
 - Non structural seismic components
 - Designated seismic systems
 - Preconstruction tests for shotcrete
 - Open web steel joists and joist girders
 - Material properties for weldability for rebar, if not to ASTM A 706
 - Mill tests for rebar under certain seismic design conditions

2018 Connecticut State Building Code

IBC

Chapter 17 – Special Inspections & Tests



- New requirements for special inspections of site built:
 - Cold-formed steel light-frame structural members and assemblies (1705.2.5)
 - Wood structural members and assemblies (1705.5)
- New tables 1705.2.5 and 1705.5 detail requirements
- Exceptions:

Special inspections, other than items 5(a) and 5(b) of table...shall not be required in the following cases:

 1. Buildings and structures in risk category I, per Table 1604.5
 2. Buildings and structures in risk category II per table 1604.5, which are in wind exposure categories B or C per 1609.4.3 and are not more than three stories high.



2018 Connecticut State Building Code

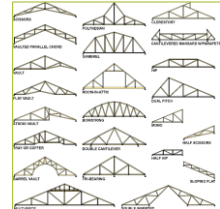
IBC

Chapter 22 – Steel

Chapter 23 - Wood



- (Amd) **2211.3.3 Trusses spanning 60 feet or greater.** The owner, the owner's authorized agent or the contractor, shall contract with a qualified registered design professional for the design of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing for all trusses with clear spans 60 feet (18 288 mm) or greater.
- (Amd) **2303.4.1.3 Trusses spanning 60 feet or greater.** The owner, the owner's authorized agent or the contractor, shall contract with a qualified registered design professional for the design of the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing for all trusses with clear spans 60 feet (18 288 mm) or greater.



2018 Connecticut State Building Code

IBC

Chapter 29 – Plumbing Systems



- Amendments to remove barriers to gender neutral single-user bathrooms
- 2902.1.2 Single-user toilet facility and bathing room fixtures:
 - Shall contribute towards the total number of required fixtures
 - Shall be identified for use by any person
 - Not seeking to regulate the specific sign graphics, beyond when symbol of access is required.
- 2902.2 Separate facilities
 - Exception #6 confirms single-user bathrooms are excepted from separate facility requirement



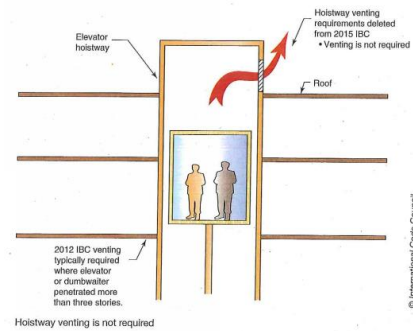
2018 Connecticut State Building Code

IBC

Chapter 30 – Elevators & Conveying Systems



- Hoistway Venting (3004)
- Requirement deleted.
- Decades-long requirement gone, due to changes in requirements for:
 - Elevator lobbies
 - Energy conservation
 - Automatically operated dampers
 - Smoke control
 - Sprinkler coverage
- ICC believes purpose for vents is no longer clear
- Also removed from 2010 ASME A17.1



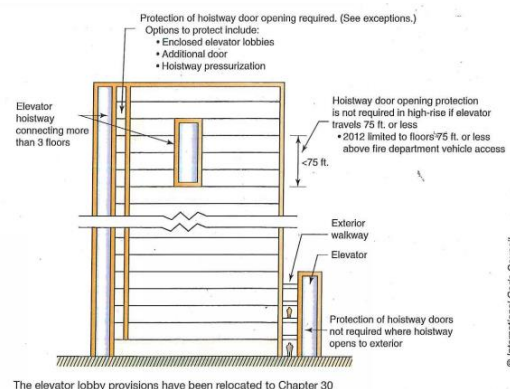
2018 Connecticut State Building Code

IBC

Chapter 30 – Elevators & Conveying Systems



- General consolidation of elevator lobby and hoistway opening protection requirements into one place (3006)
- Elevator lobby requirements moved from 713.14.1 and reworked (3006.3)



2018 Connecticut State Building Code

IBC

Chapter 31 – Special Construction

- 2015 IRC & IBC model codes both defer to the International Swimming Pool and Spa Code (ISPSC)
- CT proposing to readopt language from 2012 model codes (as amended) for both IRC and IBC.
- Will not reference ISPSC.
- **Note:** the 2015 IBC model code 1st printing has swimming pool requirements at S.3109, but they were removed by errata.
- The 2015 IRC model code 1st printing always deferred to the ISPSC.

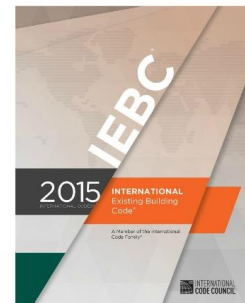


2018 Connecticut State Building Code

IBC

Chapter 34 – Existing Structures

- R.I.P. Chapter 34
- IEBC now prevails
- Connecticut amendments relocated to IEBC

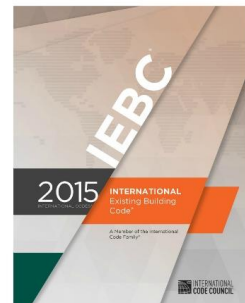


2015 International Existing Building Code

2018 Connecticut State Building Code IEBC General



- Relocation of old chapter 34 provisions:
 - 101.7 – Connecticut State Fire Safety Code Abatement
 - 407.3 – Stairways
 - 408.1.1 – Historic buildings
 - 410.8.15 – Assembly seating
 - 1104.1 – Smoke alarms in existing portions of buildings



2018 Connecticut State Building Code

IEBC

Chapter 4 – Prescriptive Compliance Method



- Glass Replacement and Replacement Windows (406)
 - Replacement Glass
 - Replacement window opening control devices
 - Replacement window emergency escape & rescue openings
- See also Section 702 under *Level 1 Alterations*

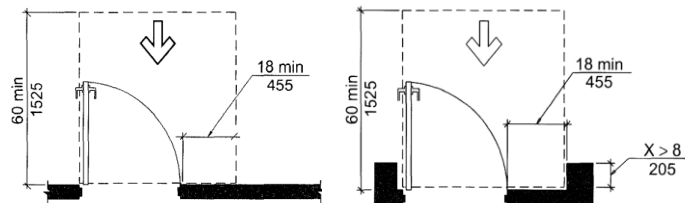
A vertical decorative bar on the left side of the slide, consisting of a thin green line and a wider blue line.

2009 ICC A117.1

2018 Connecticut State Building Code
ICC A117.1-2009
 Chapter 4 – Accessible Routes



- Maneuvering Clearances at Doors
 - Defaulting to model code 18" on pull side (not 24")
 - Various locations in code



2018 Connecticut State Building Code
ICC A117.1-2009
 Chapter 5 – General Site and Building Elements



- Parking Spaces / Access Aisles (502.4.1)
 - *Two parking spaces shall be permitted to share a common access aisle. If a car and a van space share a common access aisle, that aisle shall be 96 inches minimum in width.*

• *I KNOW, THERE ARE MANY OTHER VIOLATIONS IN THIS PICTURE...*



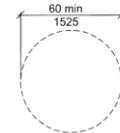
2018 Connecticut State Building Code

ICC A117.1-2009

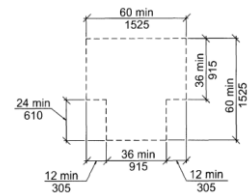
Chapter 10 – Dwelling Units & Sleeping Units



- Turning Space (1004.3.3)
 - *Previous CT Amendment requiring turning space in Type B dwellings now removed.*



(a) Circular



(b) T-shaped

2015 International Energy Conservation Code

2018 Connecticut State Building Code IECC Commercial Energy Efficiency



- **C401.2 Application.** Commercial buildings shall comply with one of the following:
 1. The requirements of ANSI/ASHRAE/IESNA 90.1 with Appendix G excerpt.
 2. The requirements of Sections C402 through C405. In addition, commercial buildings shall comply with Section C406 and tenant spaces shall comply with Section C406.1.1.
 3. The requirements of Section C402.5, C403.2, C404, C405.2, C405.3, C405.4, C405.6 and C407. The building energy costs shall be equal to or less than 85 percent of the standard reference design building.
- A stand-alone Standard 90.1-2013 Appendix G: Performance Rating Method Excerpt from ANSI/ASHRAE/IES Standard 90.1-2013 (I-P) was published by ASHRAE in 2015. It allows the use of Appendix G as a code compliance path. We can modify the IECC but not Standard 90.1.

2018 Connecticut State Building Code IECC Residential Energy Efficiency



- **Air Leakage**
 - **R402.4.1.2 Testing**
 - Testing shall be conducted in accordance with [ANSI/RESNET/ICC 380](#), ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inches w.g. (50 Pascals).
 - Also recognized in other places in code with CT amendments.
- **Ducts**
 - **R403.3.3 Duct testing** (Mandatory)
 - **Exception #2:** Where ducts from an existing heating and cooling system are extended to an addition or are extended due to an alteration, duct systems with less than 40 linear feet (12.19 m) **of new duct** in unconditioned spaces shall not be required to be tested in accordance with Section 403.3.3.

2018 Connecticut State Building Code IECC Residential Energy Efficiency



- **Energy Rating Indexx**

- **R406.4 ERI-based compliance.** Compliance based on an ERI analysis requires that the rated design be shown to have a maximum ERI of 61 without the use of renewable energy when compared to the ERI reference design.
- ERI of 61 is used instead of 55 because the 61 will be used in the 2018 IECC.
- ICC code proposals RE168-16, RE173-16, RE174-16, RE177-16 discuss this at length.



Office of Education
and Data Management

Spring 2018
Career Development

Break...

2015 International Plumbing Code

2018 Connecticut State Building Code
IPC
Chapter 2 – Definitions



- **Cleanout.** An access opening in the drainage system utilized for the removal of obstructions. Types of cleanouts include a removable plug or cap, and a removable fixture or fixture trap. Floor drains, floor sinks, mop sinks and roof drains are not acceptable cleanouts.
- See also 708.1.1
Horizontal drainage pipes, including horizontal branch drains consisting of one or more fixtures, in buildings shall have cleanouts...

2018 Connecticut State Building Code

IPC

Chapter 2 – Definitions



- **Alternate Onsite Nonpotable Water.** Nonpotable water from other than public utilities, onsite surface sources and subsurface natural freshwater sources. Examples of such water are graywater, on-site reclaimed water, collected rainwater, captured condensate, and rejected water from reverse osmosis systems.
 - Added by ICC to aid understanding of different classes of nonpotable water.
- **Toilet facility.** A room or space that contains not less than one water closet and one lavatory.
 - Added by ICC to define a term that is used many times in the code.
- **Waste receptor.** A floor sink, standpipe, hub drain or a floor drain that receives the discharge of one or more indirect waste pipes.
 - Added by ICC to define a term that is used many times in the code.

2018 Connecticut State Building Code

IPC

Chapter 2 – Definitions



- **Drinking fountain / Water Dispenser / Water Cooler**
 - ICC change to recognize changing trends for water dispensers to increase use of individual containers.
- **Fats, Oils and Greases (FOG) Disposal System**
 - ICC change to recognize modern methods of FOG disposal.

2018 Connecticut State Building Code



IPC

Chapter 4 – Fixtures, Faucets & Fixture Fittings

- Amendments to remove barriers to gender neutral single-user bathrooms
- 403.1.2 Single-user toilet facility and bathing room fixtures:
 - Shall contribute towards the total number of required fixtures
 - Shall be identified for use by any person
 - Not seeking to regulate the specific sign graphics
- 403.2 Separate facilities
 - Exception #6 confirms single-user bathrooms are excepted from separate facility requirement



2018 Connecticut State Building Code



IPC

Chapter 4 – Fixtures, Faucets & Fixture Fittings

- Separate sex facilities not required in B use group, 25 or fewer (403.2, exc. 4)
 - Same amendment made to IBC 2902.2
- Required Public Toilet Facilities (403.3)
 - ICC amendment to add exception for small ($\leq 300\text{ft}^2$) quick transaction places.
- Directional Signage for restrooms (403.4.1)
 - Amended ICC requirement to require signage at the entrance of a building or tenant space to make people aware of existence and location of restrooms.
- Footbaths, Pedicure Baths and Head Shampoo Sinks (423.3)
 - New ICC requirement of temperature limitation – 120°F

2018 Connecticut State Building Code
IPC
 Chapter 5 – Water Heaters



- Pan Drain Termination (504.7.2)
 - ICC amendment of requirement to allow no pan drain for water heater replacements where no pan drain was previously installed.

2018 Connecticut State Building Code
IPC
 Chapter 7 – Sanitary Drainage



- Solvent Cementing (705.11.2) – same in IRC (R3009.9.2)
- The application of a primer to drain, waste and vent PVC pipe and fittings prior to solvent cementing is not required for 4-inch pipe size and smaller.
- Subject to two criteria:
 - The solvent cement is third-party certified as conforming to ASTM D 2564; and
 - The solvent cement is used only in non-pressure applications.
- Read manufacturers' installation instructions too.
 - Suggested, recommended or required?



2018 Connecticut State Building Code

IPC

Chapter 7 – Sanitary Drainage



- **708.1.1 Horizontal Branch Drains and Building Drains.** Horizontal drainage pipes, including horizontal branch drains consisting of one or more fixtures, in buildings shall have cleanouts...

Exception: Horizontal fixture drain piping serving a non-removable trap shall not be required to have a cleanout for the section of piping between the trap and the connection to a horizontal or vertical drain if located within four feet of developed length of such connection. The four feet shall be measured from the fixture trap weir to the connection at the horizontal or vertical piping.

- Adds clarification that clean outs are required on all branch drains and building drains, and limits applicability of exception to four feet.

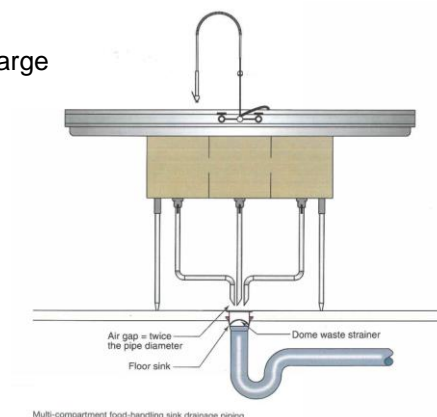
2018 Connecticut State Building Code

IPC

Chapter 8 – Indirect / Special Waste



- Food Handling (802.1.1)
 - Each well of a multi-compartment sink shall discharge independently to a waste receptor.



2018 Connecticut State Building Code

IPC

Chapter 10 – Traps, Interceptors & Separators

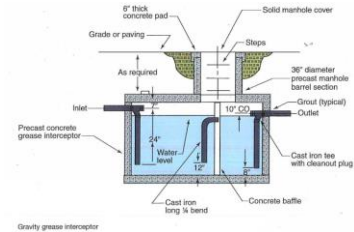


- Gravity Grease Interceptors and Gravity Grease Interceptors with Fats, Oils and Greases Disposal Systems (1003.3.6)

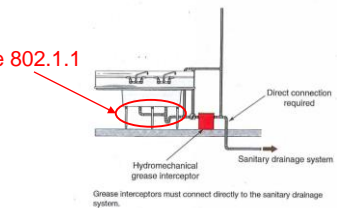
- New model code requirement added.
- References various standards for design, installation and testing.

- Direct Connection (1003.3.7)

- Model code now requires grease interceptors to be directed connected to the sanitary drainage system.
- Could impact new installation in existing buildings most.



See 802.1.1



2015 International Mechanical Code

2018 Connecticut State Building Code

IMC

Commercial Kitchen Ventilation – Clearances

CT



- Changes made to recognize *limited-combustible material* and allow for reduced clearances.
- Definition of limited-combustible material added (202)
 - Based on NFPA 96.
- Amendments also made to:
 - 506.3.6 – Grease Duct Clearances
 - 507.2.6 – Clearances for Type 1 Hood
- In response to code change proposal received.



2018 Connecticut State Building Code

IMC

Commercial Kitchen Ventilation – Grease Duct Testing

CT



- Model code only requires light test of grease duct.
- CT amendment lists four options for testing grease duct (506.3.2.5)
 - Light test
 - Positive pressure test
 - Negative pressure test
 - Positive pressure smoke test.
- Contractor's choice.
- In response to code change proposal received.



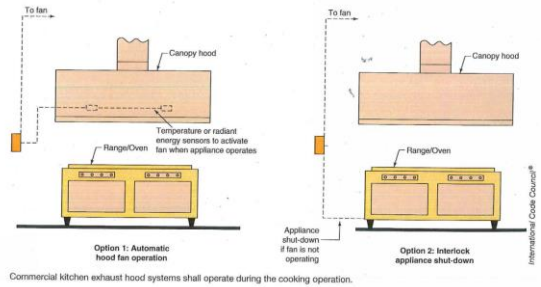
2018 Connecticut State Building Code



IMC

Commercial Kitchen Ventilation – Other Changes

- 507.1 General
 - Clearer requirement that a Type I hood is required to meet all requirements, whether the hood was required or provided voluntarily.
- 507.1.1 Operation
 - Clarification of interlock / automatic operation of hood requirements



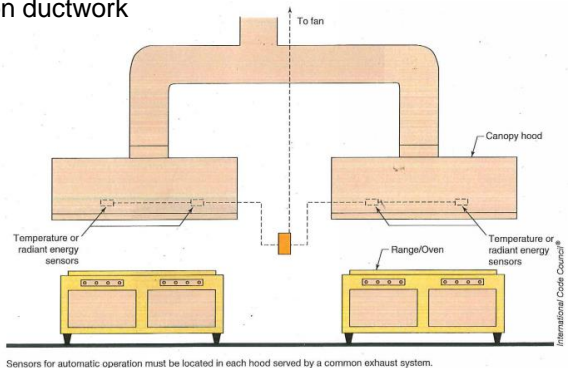
2018 Connecticut State Building Code



IMC

Commercial Kitchen Ventilation – Other Changes

- 507.1.1.1 Multiple Hoods Utilizing a Single Exhaust System
 - Added to prohibit single sensor in common ductwork
- 508.1.2 Air Balance
 - Requires air balance schedule be submitted with the design plans.





2017 National Electrical Code

2018 Connecticut State Building Code NEC General



- Detailed presentation scheduled for April.
- Minimal Connecticut specific changes.
- Many NEC model code changes have a future effective date; we are deleting those with this adoption.
- 406.4(D)(4) Arc-fault circuit-interrupter protection for replacement receptacles.
 - Inconsistency between IRC & NEC
 - CT proposing exception for one- and two-family dwellings where not replacing an existing arc-fault receptacle.

2015 International Residential Code

2018 Connecticut State Building Code

IRC

Chapter 1 – Scope & Administration

- Live / work units
- CT amendments provide clarity:
- One- and two-family dwellings (R101.2.1)
 - Professional services, max one employee
 - Can be to IRC
- Townhouses (R101.2.2)
 - Complying with IBC s.419, inc. sprinkler requirement
 - Can be to IRC for other requirements



2018 Connecticut State Building Code IRC Chapter 1 – Scope & Administration



- Applicant's choice of codes
- Electrical code (R101.4.5)
- IEBC (R101.4.7)
- Language clarified to emphasize that it is the applicant's choice



2018 Connecticut State Building Code IRC Chapter 3 – Building Planning



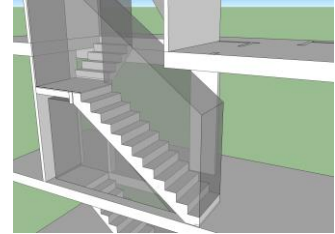
- Townhouse Separating Walls (R302.2)
- 2015 IRC removed the two-wall option
- 2018 IRC added the two-wall option back in.
- The 2018 SBC will use the 2018 IRC language as an amendment of the 2015 IRC.
 - R302.2.1 Double walls
 - R302.2.2 Common walls
- Will also include other minor changes from 2018 IRC



2018 Connecticut State Building Code IRC Chapter 3 – Building Planning



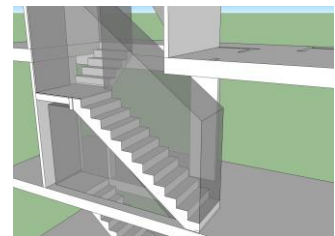
- Headroom
 - R305.1 – Basements being converted
~~6'10"~~ **6'8"** (6'4" under obstructions)
 - R305.1.1 – Basements without habitable space
~~6'8"~~ **6'6"** (6'4" under obstructions)
 - R311.7.2 - Existing or replacement stairs for basements/attics being converted to habitable ~~6'6"~~ **6'4"**
- Landings for stairways
 - R311.7.6 adds exception 2 for existing basement stairs' bottom landing. Min 32". Allows landing to be same width as stair.



2018 Connecticut State Building Code IRC Chapter 3 – Building Planning



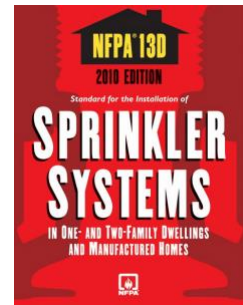
- Replacement stairs - width, risers, treads (various R311.7 requirements)
- Clarifying that stairs not serving basement or attic can still can also get benefits due to space constraints.



2018 Connecticut State Building Code IRC Chapter 3 – Building Planning



- Residential sprinklers
- Current 2018 SBC proposal:
 - Require sprinklers in townhouses (per model code)
 - Do not require sprinklers in one- and two-family dwellings.
- Codes and Standards, Codes Amendment Subcommittee
 - Discussed public comments at February 28, 2018, meeting
 - Vote at March 14, 2018, meeting



2018 Connecticut State Building Code IRC Chapter 3 – Building Planning



- Photovoltaic Systems
- Model code doesn't address access and pathways
 - Errata removed requirements from 2015 IRC
- Connecticut adding specific requirements (R324.7):
 - Roof access points
 - Size of array
 - Separation of arrays
 - Access pathways for different roof types
 - Exceptions for shallow roofs and roofs with panels on one side



2018 Connecticut State Building Code

IRC

Chapter 3 – Building Planning

CT



- 2015 IRC & IBC model codes both defer to the International Swimming Pool and Spa Code (ISPSC)
- CT proposing to readopt language from 2012 model codes (as amended) for both IRC and IBC.
- Will not reference ISPSC.
- **Note:** the 2015 IBC model code 1st printing has swimming pool requirements at S.3109, but they were removed by errata.
- The 2015 IRC model code 1st printing always deferred to the ISPSC.



2018 Connecticut State Building Code

IRC

Chapter 4 – Foundations

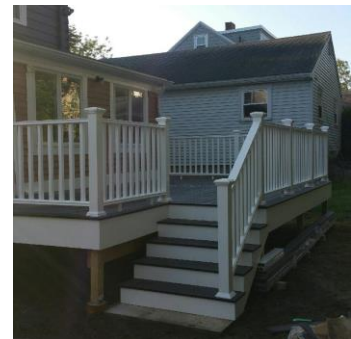
CT



- Frost protection (R403.1.4.1)
 - New CT exception for grade level termination of stairs and ramps off of decks.

Exception #4:

The footing for the grade level termination of stairs or ramps attached to decks, whether the deck is supported by a dwelling or not, shall only be required to be placed at least 12 inches (305 mm) below the undisturbed ground surface in accordance with R403.1.4.



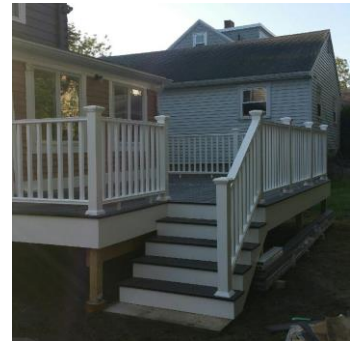
2018 Connecticut State Building Code

IRC

Chapter 6 – Wall Construction

Chapter 8 – Roof-Ceiling Construction

- Linear Interpolation for snow loads
- Girder / header spans, exterior bearing walls
 - Table R602.7(1) – Footnote (e)
- Girder / header spans, open porches
 - Table R602.7(3) – Footnote (b)
- Rafter spans
 - R802.5 – for certain conditions.



2018 Connecticut State Building Code

IRC

Chapter 9 – Roof Assemblies

- Underlayment (R905.1.1)
- New CT requirement to tape all joints in roof deck
 - ASTM D 1970 compliant product in min. 4" width
- Applies to new roofs and strip/re-roof projects
- Exceptions:
 - Roofs completely covered with self-adhered membrane
 - Roof sheathing with nominal width less than 3-feet.



2018 Connecticut State Building Code

IRC

Chapter 11 – Energy Efficiency

CT



Duct Testing (N1103.3.3)

Exceptions:

1. A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.
2. Where ducts from an existing heating and cooling system are extended to an addition or are extended due to an alteration, duct systems with less than 40 linear feet (12.19 m) of new duct in unconditioned spaces shall not be required to be tested in accordance with Section 1103.3.3.



2018 Connecticut State Building Code

IRC

Chapter 22 – Special Piping & Storage Systems

CT



- Tank Abandonment & Removal (M2207.1)
- Three options:
 1. Removal from service (tanks & related equipment)
 2. Temporary removal from service
 3. Permanent abandonment of underground tanks



2018 Connecticut State Building Code IRC Chapter 24 – Fuel Gas



- Bonding of Gas Piping / CSST - Adopts 2018 IRC language into CT's adoption of the 2015 IRC
- Amended section G2411 gives three code paths:
 - G2411.1 – Pipe and tubing other than CSST
 - G2411.2 – CSST
 - G2411.3 – Arc-resistant CSST



2018 Connecticut State Building Code IRC Chapter 24 – Fuel Gas



Bonding of Gas Piping / CSST - Adopts 2018 IRC language into CT's adoption of the 2015 IRC

"Regular" CSST

- (Add) **G2411.2 (310.1.1) CSST.** This section applies to corrugated stainless steel tubing (CSST) that is not listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. CSST gas *piping* systems and piping systems containing one or more segments of CSST shall be electrically continuous and bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.
- (Add) **G2411.2.1 (310.1.1.1) Point of connection.** The bonding jumper shall connect to a metallic pipe, pipe fitting or CSST fitting.
- (Add) **G2411.2.2 (310.1.1.2) Size and material of jumper.** The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.
- (Add) **G2411.2.3 (310.1.1.3) Bonding jumper length.** The length of the bonding jumper between the connection to a gas piping system and the connection to a grounding electrode system shall not exceed 75 feet (22 860 mm). Any additional grounding electrodes installed to meet this requirement shall be bonded to the electrical service grounding electrode system or, where provided, the lightning protection grounding electrode system.
- (Add) **G2411.2.4 (310.1.1.4) Bonding connections.** Bonding connections shall be in accordance with NFPA 70.
- (Add) **G2411.2.5 (310.1.1.5) Connection devices.** Devices used for making the bonding connections shall be listed for the application in accordance with UL 467.

2018 Connecticut State Building Code
IRC
 Chapter 24 – Fuel Gas



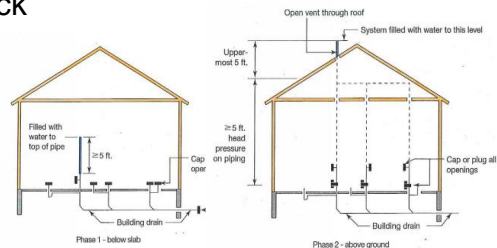
Arc-Resistant CSST

- (Add) **G2411.3 Arc-resistant CSST.** This section applies to corrugated stainless steel tubing (CSST) that is listed with an arc-resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26. The CSST shall be electrically continuous and bonded to an effective ground fault current path. Where any CSST component of a piping system does not have an arc-resistant jacket or coating system, the bonding requirements of Section G2411.2 shall apply. Arc-resistant-jacketed CSST shall be considered to be bonded where it is connected to an appliance that is connected to the appliance grounding conductor of the circuit that supplies that appliance.
- “Arc-resistant-jacketed CSST shall be considered to be bonded where it is connected to an appliance that is connected to the appliance grounding conductor of the circuit that supplies that appliance.”

2018 Connecticut State Building Code
IRC
 Chapter 25 – Plumbing Administration



- Rough Plumbing Test – DWV Water Test
 - 10 feet reduced to 5 feet in IRC
- IPC remains at 10 feet, even in 2018 IPC
- Connecticut amendment putting IRC back to 10 feet (P2503.5.1)





**Office of Education
and Data Management**

**Spring 2018
Career Development**

Questions?

Use of Office of Education and Data Management (OEDM) training materials must be approved in writing by the State of Connecticut, Department of Administrative Services' Office of Communications.