DEPARTMENT OF ADMINISTRATIVE SERVICES

CODE CHANGE PROPOSALS

FOR THE PROPOSED 2018 CONNECTICUT STATE BUILDING & FIRE SAFETY CODES

COMPILATION OF PUBLIC PROPOSALS

Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

INDEX OF CODE CHANGE PROPOSALS

BC: Building Code FC: Fire Safety Code BC-FC: Applies to both

General						Steering Committee
CCP Number	**Proponent**	**Model Code**	**Code Section**	**Presentation Request**	**Dated**	**Assigned to**
CP001-BC	Kirk Grundahl	IRC	R501.3 - Fire Protection of Floor	No	5/16/16	IRC
CP002-BC	Bill Ethier	IEBC	101.2	No	1/6/17	OSBI
CP003-BC	Bill Ethier	IRC	R311.7.5 - Stair Treads and Risers	No	1/6/17	IRC (Gen)
CP004-BC	Bill Ethier	IRC	R312.2 - Window Fall Protection	No	1/6/17	IRC (Gen)
CP005-BC	Bill Ethier	IRC	R313 - Automatic Fire Sprinkler Systems	No	1/6/17	Residential Sprinkler
CP006-BC	Bill Ethier	IRC	R322.3.5.1 - Protection of Building Envelope	No	1/6/17	IRC (Gen)
CP007-BC	Bill Ethier	IRC	R403.1.6 - Foundation Anchorage	No	1/6/17	Structural
CP008-BC	Bill Ethier	IRC	N1101.4(R102.1.1)	No	1/6/17	Energy
CP009-BC	Bill Ethier	IRC	N1102.1.2 (R402.1.2) - Ceiling R-Value / U-Factor Reduction	No	1/6/17	Energy
CP010-BC	Bill Ethier	IRC	N1102.1.2 (R402.1.2) - Basement Wall R-Value / U-Factor Reduction	No	1/6/17	Energy
CP011-BC	Bill Ethier	IRC	N1102.4 (R402.4) Comprehensive Energy Amendment	No	1/6/17	Energy
CP012-BC	Bill Ethier	IRC	N1102.4 (R402.4) Multi-Family Air Leakage Testing	No	1/6/17	Energy
CP013-BC	Bill Ethier	IRC	E3902.16; E3902.17	No	1/6/17	NEC / Electrical
CP014-BC	Tim Mikloiche	NEC	110.3(A)(1); 110.16(B); 210.52(A)(2)(1); 210.71; 400.12; 404.2; 422.5(A)(2); CT amd of 700.7, 701.7, 702.7	No	1/11/17	NEC / Electrical
CP015-BC	Brian Mitchell	ANSI A117.1	404.2.3.2	Yes	1/13/17	Accessibility
CP016-BC	Christopher Laux	ANSI A117.1	404.2.3.2; 404.2.3.5	No	1/21/17	Accessibility
CP017-BC	Christopher Laux	ANSI A117.1	1004.3.3	No	1/21/17	Accessibility
CP018-BC	Christopher Laux	IBC	1109.2.3; 1109.2.4	No	1/25/17	Accessibility
CP019-BC-FC	Patrick Walsh	IBC	1005.3.1, 1005.3.2	No	2/8/17	IFC / Fire Safety
CP020-BC	Christopher Laux	IBC	1109.2.1.4	No	2/14/17	Accessibility
CP021-BC	Michael Jager	IRC	G2419.4 (408.4)	No	2/23/17	IMC/IRC-M
CP022-FC	Bill Ether	IFC	102.5 Applicability to One- Two-Family	No	1/6/17	OSBI / OSFM
CP023-BC	Roger LeBrun	IECC	Tables R405.5.2(1) and C407.5.1	No	2/24/17	IECC
CP024-BC	James Quish	IMC	1001.1 Scope	No	3/8/17	IMC
CP025-BC	Peter Cloudas	IRC	R106 - Acceptable Engineering Practice	Yes	3/14/17	OSBI
CP026-BC	Robin McHaelen	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/22/17	OSBI
CP027-BC	Don Vigneau	IECC	C202 - Toplight definition	No	3/23/17	Energy
CP028-BC	Giovanna Shay	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/23/17	OSBI
CP029-BC	Shawn Lang	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/24/17	OSBI
CP030-BC	Sarah Gavis-Hughson	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/25/17	OSBI
CP031-BC	Stephen Karp	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/27/17	OSBI
CP032-BC	Gayathri Vijayakumar	IECC	R402.4.1.2, R403.3.3 add ANSI 380	No	3/27/17	Energy
CP033-BC	John O'Connell	IBC	1006.3.2 #3 - emerg. lighting CT amd.	No	3/27/17	IFC / Fire Safety
CP034-BC	John O'Connell	IFC	7.9.2.2 #3 - emerg. lighting CT amd.	No	3/27/17	IFC / Fire Safety
CP035-BC	Robert Torbin	IRC	G2411.2 (IRC); 310.2 (NFPA 54)	Yes	3/27/17	IMC/IRC-M
CP036-BC	Karen Jarmoc	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/27/17	OSBI
CP037-FC	Jim Tidwell	IFC	13.6.1.2 - Fire Extinguishers	No	3/8/2017 (Rec. 3/27)	IFC / Fire Safety
CP038-BC	Irwin Krieger	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/28/17	OSBI
CP039-BC	Leigh Elijah	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/29/17	OSBI
CP040-BC	Gayathri Vijayakumar	IECC	R406 - ERI calculation standard	No	3/29/17	Energy
CP041-BC	Jacki Alessio	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/22/2017 (Rec. 3/30)	OSBI
CP042-BC	Miriam Hasbun	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/29/2017 (Rec. 3/30)	OSBI
CP043-BC	Linda Estabrook	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/30/17	OSBI
CP044-BC	Sarah Brafman	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/30/17	OSBI
CP045-BC	Alexis Smith	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/30/17	OSBI
CP046-BC	Lauren Ruth	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP047-BC	Arli Christian	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP048-BC	Stephanie Spangler	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP049-BC	Emily Lewis O'Brien	IRC	Electric Vehicle Charging - New Section Proposed	No	3/31/17	NEC / Electrical
CP050-BC	Ellen Cosgrove	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/30/2017 (Rec. 3/31)	OSBI
CP051-BC	Silas Levine	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP052-BC	Maya Menlo	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2 (Submitted as 3 separate proposals)	Yes	3/31/17	OSBI
CP053-BC	Maria Karpman	IECC	IECC: C401.2, ASHRAE 90.1: 3.2, 4.2.1, App. G	No	3/31/17	Energy
CP054-BC	Marc Anthony Gallucci	IPC	Accessbility / Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP055-BC	Deborah Stanley-McAu	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP056-BC	Manuel Silva	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI
CP057-BC	Kevin George Miller	IRC / NEC	Electric Vehicle Charging - New Section Proposed	No	3/31/17	NEC / Electrical
CP058-BC	Maria Trumpler	IPC	Bathroom Gender 2902.1.2; 2901.1.3; 2902.2	No	3/31/17	OSBI

CONNECTICUT PROPOSED CODE CHANGE FORM

APPLICATION FOR CODE CHANGE PROPOSALS TO THE STATE BUILDING CODE

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP001-BC

DATE: May 16, 2016 TELEPHONE: 608-274-4849 FAX: (608) 274-3329

NAME: Kirk Grundahl

ADDRESS: 6300 Enterprise Lane Madison WI 53719
STREET TOWN ZIP CODE

EMAIL:

AFFILIATION: Structural Building Components Association (SBCA)

PROPOSED CHANGE TO: ☒ STATE BUILDING CODE

I PROPOSE TO:
☐ REVISE TEXT ☐ DELETE AND SUBSTITUTE TEXT
☐ ADD NEW TEXT ☐ DELETE WITHOUT SUBSTITUTION

MODEL CODE TITLE AND EDITION: International Residential Code for One and Two Family Dwellings

SPECIFIC CODE SECTION REFERENCE: Section R501.3 Fire protection of floors

PROPOSAL: (Include proposed new or revised wording, or identification of wording to be deleted.)

Omit exception 4 of Section R501.3

R501.3 Fire protection of floors.

Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a 1/2-inch (12.7 mm) gypsum wallboard (GWB) membrane, 5/8-inch (16 mm) wood structural panel (WSP) membrane, or equivalent on the underside of the floor framing member as defined by performance equivalent to 26 minutes using ASTM E119 standard fire endurance testing with a superimposed load simulating a maximum load condition (i.e. 100% design load). Penetrations or opening for ducts, vents, electrical outlets, lighting, devices, luminaries, wires, speakers, drainage, piping and similar openings or penetrations shall be permitted.

Exceptions:

1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA13D, or other approved equivalent sprinkler system.
2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
3. Portions of floor assemblies can be unprotected when complying with the following:
3.1. The aggregate area of the unprotected portions shall not exceed 80 square feet per story
3.2. Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.

~~4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.~~

STATEMENT OF PROBLEM AND SUBSTANTIATION FOR PROPOSAL:

. No change in cost for other floor systems that already require this protection.

Adoption of this code language has generally created an artificial market preference for 2x10s (as well as products like Flak Jacket coated I-joists) because they are deemed to be equivalent to a 15-minute membrane time provided by a ½" gypsum wallboard membrane ceiling, as defined by code (IBC-12 Section 722.6.2). Yet testing shows that they do not reach a 15-minute level of performance. Both 2012 test data and analysis by Underwriters Laboratories (UL) and confirmation testing performed in 2015 by SBCA support this action as it relates to life safety. We believe failing to eliminate IRC-15 R302.13 Exception 4 could result in a fire fighter falling through an unprotected 2x10 floor, potentially causing injury or death due to an erroneous assumption the floor adheres to the traditional "20-minute performance rule." This potential risk is cause for significant concern. To address all the issues surrounding IRC-12 R501.3 (IRC-15 R302.13), SBCA has compiled the following resources which provides a summarized set of facts and links to more detailed information:

1. Answering the Question: What Is Equivalent Protection to a 1/2-inch Gypsum Wallboard Membrane?
2. SBCA's R501.3 and R302.13 Resource Page

☒ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought, or research and, to the best of his/her knowledge, is not copied from another source.)

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SIGNATURE (Required): Kirk Grundahl

SBCA
Structural Building Components Association
6300 Enterprise Lane ▲ Madison, WI 53719 ▲ 608-274-4849 ▲ sbcindustry.com

May 16, 2016

Codes & Standards Committee
Department of Administrative Services, Division of Construction Services
Office of the State Building Inspector
165 Capitol Avenue, Room 265
Hartford, CT 06106

Dear Codes & Standards Committee:

SBCA understands that your state is considering adopting and accepting public comments with respect to the residential code. This includes the following language from the International Residential Code (IRC) IRC-12 R501.3 (and also IRC-15 R302.13):

> **R501.3 Fire protection of floors.**
> Floor assemblies, not required elsewhere in this code to be fire-resistance rated, shall be provided with a $^{1}/_{2}$-inch (12.7 mm) gypsum wallboard (GWB) membrane, $^{5}/_{8}$-inch (16 mm) wood structural panel (WSP) membrane, or equivalent on the underside of the floor framing member.
>
> **Exceptions:**
>
> 1. Floor assemblies located directly over a space protected by an automatic sprinkler system in accordance with Section P2904, NFPA13D, or other approved equivalent sprinkler system.
> 2. Floor assemblies located directly over a crawl space not intended for storage or fuel-fired appliances.
> 3. Portions of floor assemblies can be unprotected when complying with the following:
>
> 3.1. The aggregate area of the unprotected portions shall not exceed 80 square feet per story
>
> 3.2. Fire blocking in accordance with Section R302.11.1 shall be installed along the perimeter of the unprotected portion to separate the unprotected portion from the remainder of the floor assembly.
>
> 4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.

As groups evaluate the issues surrounding this code provision, SBCA recommends that the following action be taken given the potential life safety issues involved:

> Floor assemblies……shall be provided with a $^{1}/_{2}$-inch (12.7 mm) gypsum wallboard membrane……. …or equivalent… on the underside of the floor framing member."
>
> Exceptions: ……
>
> ~~4. Wood floor assemblies using dimension lumber or structural composite lumber equal to or greater than 2-inch by 10-inch (50.8 mm by 254 mm) nominal dimension, or other approved floor assemblies demonstrating equivalent fire performance.~~

Both 2012 test data and analysis by Underwriters Laboratories (UL) and confirmation testing performed in 2015 by SBCA support this action as it relates to life safety. Please see the table at the end of this letter for supportive ASTM E119 test data.

To address all the issues surrounding IRC-12 R501.3 (IRC-15 R302.13), SBCA has compiled the following resources which provides a summarized set of facts and links to more detailed information:

1. Answering the Question: What Is Equivalent Protection to a 1/2-inch Gypsum Wallboard Membrane?
2. SBCA's R501.3 and R302.13 Resource Page

You may also download and review the sets of PowerPoint slides or PDF versions for the states where we have provided presentations at Fire Protection of Floors.

We believe failing to eliminate IRC-12 R501.3 (IRC-15 R302.13) Exception 4 could result in a fire fighter falling through an unprotected 2x10 floor, potentially causing injury or death due to an erroneous assumption the floor adheres to the traditional "20-minute performance rule." This potential risk is cause for significant concern.

As everyone who has been exposed to this code language is aware, all the considerations surrounding IRC-12 R501.3 (IRC-15 R302.13) are challenging and certainly critical to the floor system markets that have been reliably served by structural building component manufacturers via their supply of I-joists, floor trusses, etc. Adoption of this code language has generally created an artificial market preference for 2x10s (as well as products like Flak Jacket coated I-joists) because they are deemed to be equivalent to a 15-minute membrane time provided by a ½" gypsum wallboard membrane ceiling, as defined by code (IBC-12 Section 722.6.2). Yet testing shows that they do not reach a 15-minute level of performance.

Please provide us with feedback if you have any thoughts, alternative opinions, recommendations or questions. Thank you so very much again for your consideration of our information.

Respectfully yours,

Kirk Grundahl, P.E.
Executive Director

In March of this year SBCA undertook ASTM E119 standardized fire endurance testing to determine if unprotected 2x10s perform equivalently to trusses, I-joists, etc. protected by ½" GWB, and as such, truly deserve an economically advantaged position in the floor assembly market by providing an equivalently safe floor. SBCA test data follows:

UL ASTM E119, Unprotected Floor Assembly, 100% Design Load Fire Endurance Performance Benchmark Tests

Test Member Recent UL[1] Test Data	UL Test [% design load]	Time of Total Structural Failure	Time of Failure Load Bearing
2x10 Dimension Lumber	UL Data [100%]	7:04 (min:sec)	7:04 (min:sec)
9-1/2" I-Joist	UL Data [100%]	2:20 (min:sec)	2:20 (min:sec)

SBCA ASTM E119, Unprotected Floor Assembly, 100% Design Load Fire Endurance Performance Benchmark Tests

Test Member March 2015 SBCA Test Data	NGC Test [% design load]	Total Applied Load (psf)	Time to Failure (min:sec)
2x10 Southern Pine (16" o.c.)	NGC FC-853 [100%]	42.0	10:35 (min:sec)
12" Trusses no SPs (24" o.c.) (1)	NGC FC-858 [100%]	48.5	6:54 (min:sec)
9-1/2" Flak Jacket I-joist (19.2" o.c.) (3)	NGC FC-855 [100%]	84.0	6:37 (min:sec)
12" Trusses no SP (24" o.c.) (2)	NGC FC-854 [100%]	48.5	6:02 (min:sec)
9-1/2" I-Joist (19.2" o.c.) (4)	NGC FC-855 [100%]	84.0	4:25 (min:sec)
12" Trusses w/SPs (24" o.c.) (2)	NGC FC-856 [100%]	52.3	3:33 (min:sec)

Notes on this table: (1) SP=splice joint & this test had strong-back to bearing. (2) SP=splice joint & this test had strong-back but NOT to bearing. (3) Flak Jacket was ICC-ES ESR -1153 approved 2013 product from market to be sold inventory. ICC-ES approved design values and holes were incorporated. (4) ICC-ES approved design values and holes were incorporated.

This shows that performance is not markedly different by any unprotected floor assembly types. The two products expected to achieve more than 15-minute performance burn up in 10 minutes or less.

[1] Please see highlighted portions of UL report entitled, "Improving Fire Safety by Understanding the Performance of Engineered Floor Systems and Providing the Fire Service with Information for Tactical Decision Making

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP002-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): IEBC [A] 101.2 Scope

PROPONENT INFORMATION

Name: Bill Ethier, Chief Executive Officer

Representing: Home Builders & Remodelers Association of CT

Telephone: 860-216-5858

Email: bethier@hbact.org

Address: 3 Regency Avenue, Suite 204 | Bloomfield | CT | 06002

Street Address | *Town* | *State* | *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment removes language that would apply the provisions of the IEBC on 1&2 family dwellings constructed using the IRC.

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

Combination of original material and material from the National Association of Home Builders (NAHB)

Release

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Wm Ethier

Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

Printed Name

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IEBC [A] 101.2 Scope.

This amendment removes language that would apply the provisions of the International Existing Building Code on one- and two family dwellings that are constructed using the International Residential Code.

Revise as follows:

IEBC [A] 101.2 Scope. The provisions of the *International Existing Building Code* shall apply to the *repair, alteration, change of occupancy, addition* and relocation of *existing buildings*.

Exception: Detached one- and two-family *dwellings* and multiple single-family *dwellings (townhouses)* not more than three *stories* above *grade plane* in height with a separate *means of egress* and their accessory structures and not required to comply with the International Existing Building Code.

Reason:

Now that Chapter 34 has been removed from the 2015 International Building Code, the following exception needs to be added to the International Existing Building Code. The IEBC was not meant to apply to one- and two-family dwellings and townhouses, yet there was some confusion at the code hearings as to whether or not the IEBC would apply to structures built under the IRC. When you look at the scoping of the International Residential Code, it is clear that the IRC shall apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and townhouses not more than three stories above grade plane in height with a separate means of egress and their accessory. By clearly stating in the IEBC that one- and two family dwellings and townhouses are exempt from the provisions of this code, there will be less chance of confusion when code officials begin utilizing the IEBC.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP003-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R311.7.5 Stair treads and risers.

PROPONENT INFORMATION

Name: Bill Ethier, Chief Executive Officer

Representing: Home Builders & Remodelers Association of CT

Telephone: 860-216-5858

Email: bethier@hbact.org

Address: 3 Regency Avenue, Suite 204 | Bloomfield | CT | 06002

Street Address | *Town* | *State* | *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

The amendment revises the IRC to return to the 8 1/4 inch riser by 9 inch tread depth stair geometry

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Wm Ethier

Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

Printed Name

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R311.7.5 Stair treads and risers.

Revise as follows:

R311.7.5 Stair treads and risers. Stair treads and risers shall meet the requirements of this section. For the purposes of this section, dimensions and dimensioned surfaces shall be exclusive of carpets, rugs or runners.

R311.7.5.1 Risers. The riser height shall be not more than 8 ¼ inch (210mm) ~~73/4 inches (196 mm)~~. The riser shall be measured vertically between leading edges of the adjacent treads. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm). Risers shall be vertical or sloped from the underside of the nosing of the tread above at an angle not more than 30 degrees (0.51 rad) from the vertical. Open risers are permitted provided that the openings located more than 30 inches (762 mm), as measured vertically, to the floor or grade below do not permit the passage of a 4-inch-diameter (102 mm) sphere.

Exceptions:

1. The opening between adjacent treads is not limited on spiral stairways.
2. The riser height of spiral stairways shall be in accordance with Section R311.7.10.1.

R311.7.5.2 Treads. The tread depth shall be not less than 9 inches (229mm) ~~10 inches (254 mm)~~. The tread depth shall be measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's leading edge. The greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 inch (9.5 mm).

Reason:

CT has adopted this amendment historically in prior code cycles. The purpose of this amendment is to retain the stair geometry requirements to those that have historically been allowed under the Building Officials and Code Administrators National Building Code (BOCA). This amendment will allow for the continued use of the 8¼" x 9" geometry, which is also the historically accepted requirement of many other state and local jurisdictions across the country. Many others actually adopt stair geometry requirements of 8 ¼" x 9."

These dimensions, originally accepted in the First Draft of the International Residential Code (IRC) and the historic dimensions in the Council of American Building Official's CABO One- and Two-family Building Code, adequately provide for stair safety in residential occupancies.

The 8¼" x 9" geometry has always adequately provided for occupant safety in residential occupancies. No sound documentation or data has ever been presented demonstrating that the 8 ¼" x 9" geometry is any less safe than a stair geometry of 7 ¾" x 10" or other even more stringent geometries. More specifically, there is no sound data showing or otherwise indicating a stair geometry of 8 1/4" x 9" is a contributing factor in accidental residential falls any more than a stair geometry of 7 ¾" x 10" or any other stair geometry that has been proposed.

The safety benefits of the 7 ¾"riser and 10" tread stair geometry are technically unsubstantiated and are not practical in many home designs. If the footprint of the house must be increased to accommodate the additional space needed for 7 ¾" x 10" vs. an 8 ¼" x 9" geometry, adequately sized living spaces are sacrificed without any demonstrated gain. This can lead to an economic hardship upon first-time homebuyers of smaller homes, and in particular for construction on smaller lots, in-fill projects, and townhomes. Also, this is particularly more an issue because more and more new homes are constructed with 9' or 10' ceiling heights.

As outlined in Section R101.3 of the IRC, the purpose of the requirements in the code are to provide minimum requirements for occupant safety and health. There is adequate substantiation to show that 8¼" x 9" geometry provides this minimum level of occupant safety.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP004-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R312.2 Window fall protection

PROPONENT INFORMATION

Name: Bill Ethier, Chief Executive Officer

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Address: 3 Regency Avenue, Suite 204 (*Street Address*) Bloomfield (*Town*) CT (*Stote*) 06002 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment deletes the language that requires window fall protection devices to be installed and replaces it with new language

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Wm Ethier

Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

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R312.2 Window fall protection

Revise as follows:

R312.2 Window fall protection. Where window fall protection is provided it shall be installed ~~provided~~ in accordance with Sections R312.2.1 ~~and R312.2.2~~

~~**R312.2.1** Window sills. In dwelling units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished grade or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow a 4 inch (102mm) diameter sphere where such openings are located within24 inches (610 mm) of the finished floor.~~

~~Exceptions:~~

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

~~**R312.2.2**~~ **R312.2.1 Window opening control devices.** Window opening control devices shall comply with ASTM F2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section R310.1.1

Reason:
This amendment deletes the language that requires window fall protection devices from being installed and replaces with language that governs how they must be installed when provided.

The purpose of this amendment is to retain the provision for the installation of window opening limiting devices or window fall prevention devices where they are installed, and delete the reference of requiring these devices based on a window sill height. This change will allow the builder to use his or her judgment for when these devices shall be installed and insure that where these devices are provided they will conform with the referenced industry standard.

During the 2007/2008 Code Development Cycle and the International Code Council's Code Technology Committee (CTC) meetings, the Window and Door Manufacturers Association (WDMA) presented credible information that raised questions and concerns regarding the established minimum window sill heights. Despite the Consumer Product Safety Commission (CPSC) reports indicating a decrease in the number of injuries and deaths from children falling from windows, WDMA had discovered that in Denver, Colorado, one of the few areas in the country that has had a minimum sill height requirement for the past decade, the number of child injuries and deaths were increasing. One of the many concerns is that there is the potential for the occupant to place furniture or other objects under the window that a child could climb upon. It is our opinion that the CTC needs to earnestly review the information presented by the WDMA and reconsider their position on minimum window sill heights.

Furthermore, the recommendation to require window opening limiting devices contradicts conclusions of the CTC Work Study Group. It was clear to many in the CTC Work Group that public education was the most effective means of reducing the number of falls by children through windows.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP005-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R313 Automatic fire sprinkler systems

PROPONENT INFORMATION

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Street Address | *Town* | *State* | *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment deletes the mandatory requirement for residential sprinklers from the IRC

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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R313 Automatic fire sprinkler systems

Revise as follows:

Delete Section R313 entirely

~~**SECTION R313**~~

~~**AUTOMATIC FIRE SPRINKLER SYSTEMS**~~

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

~~**Exception:** An automatic residential fire sprinkler system shall not be required where additions or alterations are~~

~~made to existing townhouses that do not have an automatic residential fire sprinkler system installed.~~

~~**R313.1.1 Design and installation.** Automatic residential fire sprinkler systems for townhouses shall be designed~~

~~and installed in accordance with Section P2904 or NFPA 13D.~~

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

~~**Exception:** An automatic residential fire sprinkler system shall not be required for additions or alterations to existing buildings that are not already provided with an automatic residential sprinkler system.~~

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

Reasons:

Since the inclusion of the mandatory requirement for residential sprinklers in the 2009 Edition of the International Residential Code, more than 42 states have amended or passed legislation prohibiting communities from mandating residential sprinklers in new one- and two family dwellings. Only two states have adopted mandatory sprinkler requirements; Connecticut should not be the third. Indeed, in the 2016 legislative session, the General Assembly's Public Safety & Security Committee considered proposals to mandate fire sprinklers in 1& 2 family new homes, one such proposal to allow local adoption of such a requirement. The only bill that proceeded to a vote in the 25 member committee was substitute language that would have mandated fire sprinklers in 2-family homes only. Despite the support and favorable vote of both committee chairs, the bill died on a 7-18 vote. This is an overwhelming repudiation of the sprinkler mandate proposal by the committee of cognizance.

NAHB and the HBRA of CT urges Connecticut to oppose the mandatory requirement and continue to support the voluntary installation of residential sprinklers as the buyer's choice.

The IRC clearly states, "The purpose of this code is to provide minimum requirements to safeguard life or limb, health and public welfare." The IRC Commentary states that the IRC is intended to provide reasonable minimum standards that reduce the factors of hazardous and substandard conditions that would otherwise put the public at risk to damaging their health, safety or welfare. Any imposition of a mandated sprinkler requirement is excessive and is not a reasonable minimum standard for meeting the "purpose" of the code. It is important to remember that the code is composed of many life-safety standards that have been proven

to meet the "purpose" of the code. Proposals to mandate sprinklers as a requirement in the body of the IRC rather than an adoptable appendix exceed this "purpose" and should not approved.

We are also well aware of the technical difficulties facing a mandate requirement. And, even if the proponents could figure out solutions to all those issues, we would continue to urge you and the state to oppose a sprinkler mandate for any and all of the following reasons:

Costs and Home Buyer Choice:

- **The cost for individual new home buyers would be $10,000 for a very small home to $20,000 and up for a typical new 1 or 2 family home. Based on real quotes from CT sprinkler installers for real new home plans, installation costs are about $6.00/sq ft or more, much higher (3 times higher) than the $2/sq.ft costs promoted by proponents.**
- **Adding costs to new homes keeps potential buyers in older homes, potentially increasing their risk of fire-related injuries or death.** Nationally, every $1,000 in increased price for a home knocks 217,000 buyers out of that market. Some portion of those buyers will, therefore, be forced to stay put in older homes or choose a less expensive, perhaps older, existing home versus a new home. **Since the vast majority of fire-related deaths occur in older homes, requiring sprinklers in newly constructed homes – even just 2-family homes, could actually increase a person's risk of injury and death from a home fire by keeping them in an older home.**
- **Fire sprinklers are a choice home buyers should make for themselves.** All home builders would be happy to install a fire sprinkler system in a new home if requested to do so by their customer – and all home builders must by law inform every buyer about fire sprinklers. But, almost ALL home buyers DO NOT WANT sprinklers; they're viewed as a liability. The solution for proponents to gain more market acceptance is to conduct an education or marketing campaign to convince more buyers to request their installation. Again, builders will install them if their buyers want them.

Benefits of a Sprinkler Mandate Are Not What Proponents Claim and Are Not Cost Effective:

- **Sprinklers in NEW 1&2 Family Homes Will Not Save the Lives Proponents Claim** because most residential fires (88 – 90%) and **almost all fire deaths and serious injuries occur in homes that are 30 or more years old**. The bottom line, even if a sprinkler mandate is adopted, most residential fire deaths in Connecticut will continue to occur because the vast majority are in much older homes built to prior codes.
- **Installing sprinklers in new 1&2 family homes addresses the wrong homes. Homes built to older codes are far more dangerous. New homes are simply built better than they used to be,** incorporating better fire stopping materials, better electrical systems and installations, better egress (i.e., ways to get out of a home), and the hard wired, interconnected (with battery backup) smoke detectors. **And, light frame (i.e., truss) construction – blamed by sprinkler proponents for safety issues – is not new;** it's been used in home construction for over 50 years. Despite that, the 2012 IRC as now adopted in CT, requires fire protection on I-joists as of Oct. 1, 2016.
- **Fire deaths in homes have been decreasing nationally and recent data shows one death for every 92,000 homes in CT.** Therefore, even if we ignored the reality that the vast majority of fire deaths occur in much older homes, we will have to put sprinklers in at least 92,000 new homes to protect, on average, that one life. That's a societal cost of far over $1 billion per life saved. And, this assumes

sprinklers work 100% of the time (**they don't**) and that home owners pay for necessary annual maintenance (**they won't**). Add in the fact that most deadly fires occur in homes built before 1985, the societal cost of requiring sprinklers in new homes would be, on average per life saved, in the multi-billions of dollars. Finally, proponents argue that new homes today will eventually become old homes, so we need to start somewhere. That argument would be true if codes never changed. The reason many more fire deaths occur in thirty-year old and older homes is because they were built to older codes that did not have the many fire safety features of home built today.

- **A local option mandate would destroy 45 years of having a statewide mandatory building code –** one of the few regulatory benefits available in CT to the building and design industry. **We urge you to NOT adopt a sprinkler mandate even by local option.**

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP006-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R322.3.5.1 Protection of building envelope

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment deletes the requirement to provide an exterior-rated door at the top of a stairway that is enclosed by breakaway walls ...

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

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R322.3.5.1 Protection of building envelope.

Revise as follows:

~~**R322.3.5.1 Protection of building envelope.** An exterior door that meets the requirements of Section R609 shall be installed at the top of stairs that provide access to the building and that are enclosed with walls designed to break away in accordance with Section R322.3.4.~~

Reason:

The purpose of this amendment is to delete the requirement added in the 2015 IRC that an exterior door be provided at the top of a stairway enclosed by breakaway walls and providing access to a dwelling located in a Coastal A Zone or Zone V special flood hazard area and elevated on piers or piles.

While having a door at the top of such a stair may be good practice, the additional requirements associated with that door being an exterior door are overly conservative, particularly if the door at the bottom of the enclosed stair is also an exterior door. By requiring compliance with all of the requirements of Section R609, the specified door would need to have a design pressure rating consistent with the design wind speed for the site, the door frame would need to be stiffened to resist the loads from such a door, proper anchorage of the door to the frame would need to be provided, and the door opening would need to be provided with head, jamb, and sill flashing. The minimum added cost to provide a standard exterior door with flashing in lieu of a standard interior door is around $300; a hurricane wind-rated door would add an additional $200-$300 to the minimum costs.

It is noted that this requirement does not appear in the basic construction requirements of the National Flood Insurance Program in accordance with 44 CFR 60.3. It is also not specified as a practice that a community would earn credit for mandating and enforcing under FEMA's Community Rating Service, and would not lead to discounted flood insurance premiums.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP007-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): R403.1.6 Foundation anchorage

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment provides a new exception to the requirement for attaching bottom plates of braced wall panels ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Proponent's Signature

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R403.1.6 Foundation anchorage.

This amendment provides an exception to the requirement for attaching bottom plates of braced wall panels on the interior of a dwelling to foundations with anchor bolts. The exception applies in low-wind, low-seismic areas where gypsum board is used as the bracing method for the interior wall in question.

Revise as follows:

R403.1.6 Foundation anchorage. Wood sill plates and wood walls supported directly on continuous foundations shall be anchored to the foundation in accordance with this section.

Cold-formed steel framing shall be anchored directly to the foundation or fastened to wood sill plates anchored to the foundation. Anchorage of cold-formed steel framing and sill plates supporting cold-formed steel framing shall be in accordance with this section and Section R505.3.1 or R603.3.1.

Wood sole plates at all exterior walls on monolithic slabs, wood sole plates of *braced wall panels* at building interiors on monolithic slabs and all wood sill plates shall be anchored to the foundation with minimum 1/2-inch diameter (12.7 mm) anchor bolts spaced a maximum of 6 feet (1829 mm) on center or *approved* anchors or anchor straps spaced as required to provide equivalent anchorage to 1/2-inch-diameter (12.7 mm) anchor bolts. Bolts shall extend a minimum of 7 inches (178 mm) into concrete or grouted cells of concrete masonry units. The bolts shall be located in the middle third of the width of the plate. A nut and washer shall be tightened on each anchor bolt. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Interior bearing wall sole plates on monolithic slab foundations that are not part of a *braced wall panel* shall be positively anchored with approved fasteners. Sill plates and sole plates shall be protected against decay and termites where required by Sections R317 and R318.

Exceptions:

1. Walls 24 inches (610 mm) total length or shorter connecting offset braced wall panels shall be anchored to the foundation with a minimum of one anchor bolt located in the center third of the plate section and shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).
2. Connection of walls 12 inches (305 mm) total length or shorter connecting offset braced wall panels to the foundation without anchor bolts shall be permitted. The wall shall be attached to adjacent braced wall panels at corners as shown in Item 9 of Table R602.3(1).
3. Where the basic wind speed in accordance with Figure R301.2(4)A does not exceed 115 miles per hour (51 m/s), the seismic design category is A or B and Method GB in accordance with Section R602.10 is used for a *braced wall line* on the interior of the dwelling, anchor bolts shall not be required for the wood sole plates of the *braced wall panels*. Positive anchorage with approved fasteners shall be provided.

Reason:

The purpose of this amendment is to revise the language for anchorage of light-frame wood stud walls to the foundations of the house. As currently stated, the provisions require anchor bolts for the portions of a wall on the interior of a dwelling that are designated as braced wall panels for a braced wall line passing through the dwelling. To provide the required 7" embedment depth, a

thickened slab or other continuous footing would be necessary. Chapters 4 and 6 of the IRC do not explicitly require a continuous foundation in these locations in low-wind, low-seismic areas, and they are not traditionally provided. If interpreted and enforced by plan reviewers and inspectors in these areas, disputes and project delays will result and/or homeowners will incur significant additional construction costs.

The ICC Ad-Hoc Committee on Wall Bracing revised this section during the 2007/2008 code cycle with the intent of insuring that sufficient anchorage is provided along braced wall lines inside a dwelling to transfer lateral loads to either monolithic (thickened) slab foundations or continuous footings. While NAHB and the HBRA of CT agree that providing a continuous load path is important, the new language is overly broad in its application and not technically justified for many common conditions.

The typical bracing method used for braced wall lines on the interior of a one- or two-story dwelling in a low-wind, low-seismic area is Method GB, consistent with the use of gypsum board as the typical interior wall finish material. The allowable shear capacity for Method GB when used on both sides of a braced wall is 200plf (pounds per linear foot). The standard fastener schedule, Table R602.3(1), specifies 3-16d nails at 16" spacing for fastening the bottom plate of a braced wall panel on the interior of a dwelling to floor framing below (such as a raised floor system over a crawlspace or pier-and-beam foundation). This standard nailing provides a 200plf allowable capacity, as would many typical post-installed anchors (e.g. wedge or expansion anchors) that are short enough to be installed in just a slab-on-grade without the need for thickened footings, or even power-actuated fasteners. 1/2" diameter anchor bolts at 6 foot spacing are not necessary for the proper anchorage of these walls.

The proposed amendment provides an exception to the requirement that an interior wall that also used as part of a braced wall line be fastened to a slab-on-grade with anchor bolts, rather than other methods of making a "positive connection" such as wedge or expansion anchors, power fasteners, or concrete nails. The exception is limited to areas of low wind and low seismic hazards and to walls braced using gypsum board, with its lower allowable shear capacity.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP008-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): N1101.4 (R102.1.1) Above code programs

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment eliminates the need to meet all "Mandatory" requirements in IRC Chapter 11 as long as ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Proponent's Signature

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N1101.4 (R102.1.1) Above code programs.

This amendment eliminates the need to meet all "Mandatory" requirements identified by the IRC Chapter 11 as long as the program exceeds the energy-efficiency levels required.

Revise as follows:

N1101.7 (R102.1.1) Above code programs. The *building official* or other authority having jurisdiction shall be permitted to deem a national, state or local energy-efficiency program to exceed the energy efficiency required by this code. Buildings *approved* in writing by such an energy-efficiency program shall be considered in compliance with this code. ~~The requirements identified as "mandatory" in Chapters 4 and 5 of this code, as applicable, shall be met.~~

Reason:

The key element of an above code program is that it must meet or exceed the energy efficiency requirements of the IRC Chapter 11. Requiring such a program to also meet the detailed prescriptive requirements labeled as "mandatory" defeats the purpose of performance based above code program. This amendment will allow flexibility in the methodology used for any above code program to meet or exceed the minimum energy efficiency requirements.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP009-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): Table N1102.1.2 (R402.1.2) Ceiling R-Value/U-Factor Reduction.

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment reinstates the appropriate minimum ceiling R-values in climate zones 2-5 ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Table N1102.1.2 (R402.1.2) Ceiling R-Value/U-Factor Reduction (Climate Zones 2-5).

This amendment reinstates the appropriate minimum ceiling R-Values in climate zones 2, 3, 4 and 5, those published in the 2009 IRC CHAPTER 11.

Revise as follows:

TABLE N1102.1.1 (R402.1.1)

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUEi	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE AND DEPTH	CRAWL SPACE[c] WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	~~38~~ 30	13	4/6	13	0	0	0
3	0.35	0.55	0.25	~~38~~ 30	20 or 13+5[h,i]	8/13	19	5/13f	0	5/13
4 except Marine	0.35	0.55	0.40	~~49~~ 38	20 or 13+5[h,i]	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	~~49~~ 38	20 or 13+5[h,i]	13/17	30[g]	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10[h,i]	15/20	30[g]	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20+5 or 13+10[h,i]	19/21	38[g]	15/19	10, 4 ft	15/19

Footnotes remain unchanged

TABLE N1102.1.3 (R402.1.3)
EQUIVALENT U-FACTORS[a]

Climate Zone	Fenestration U-Factor	Skylight U-Factor	Ceiling U- Factor	Frame Wall U-Factor	Mass Wall U-Factor[b]	Floor U-Factor	Basement Wall	Crawl Space Wall
1	0.50	0.75	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	~~0.030~~ 0.035	0.084	0.165	0.064	0.360	0.477
3	0.35	0.55	~~0.030~~ 0.035	0.060	0.098	0.047	0.091c	0.136
4 except Marine	0.35	0.55	~~0.026~~ 0.030	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.32	0.55	~~0.026~~ 0.030	0.060	0.082	0.033	0.050 0.059	0.055
6	0.32	0.55	0.026	0.045	0.060	0.033	0.050	0.055
7 and 8	0.32	0.55	0.026	0.045	0.057	0.028	0.050	0.055

Footnotes remain unchanged

Reason:

There were four changes in the Ceiling R-value requirements in the 2012 IECC Edition, none of which should have been considered cost-effective. An energy and cost analysis was performed to show that the simple paybacks are in the 80-130 year range.

Climate Zone	Representative City	Change	Energy Savings	Incremental Cost	Simple Payback
2	Orlando, FL	R-38->R-30	$10/yr	$1,305	130 years
3	Atlanta, GA	R-38->R-30	$16/yr	$1,305	82 years
4	Richmond, VA	R-49->R-38	$15/yr	$1,379	92 years
5	Indianapolis, IN	R-49->R-38	$15/yr	$1,379	92 years

The energy modeling was done using the Energy Plus simulation engine and BEopt version 1.4, Cost figures came from ASHRAE RP-1481. Vaulted or cathedralized ceiling are very problematic when trying to achieve R-49, which is about 16 inches thick. This would require a rafter at least 17" tall (which does not exist) or an insulated panel, which represents a very small portion of the market.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP010-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): Table N1102.1.2 (R402.1.2) Basement wall R-Value/U-Factor Reduction.

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment reduces the basement wall R-Value requirement in Climate Zone 5 to a more reasonable R-Value based on ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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William H. Ethier (for HBRA of Connecticut)

Proponent's Signature **Printed Name**

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Table N1102.1.2 (R402.1.2) Basement Wall R-Value/U-Factor Reduction (Climate Zone 5).

This amendment reduces the basement wall R-Value requirement in Climate Zone 5, to a more reasonable R-value based on values that were acceptable to both NAHB and DOE in the 2009 IRC.

Revise as follows:

TABLE N1102.1.1 (R402.1.1)

INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	5KYLIGHTb U-FACTOR	GLAZED FENESTRATION 5HGCb,[e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MA55 WALL R-VALUEi	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	5LAB[d] R-VALUE AND DEPTH	CRAWL 5PACE[c] WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13+5h'[i]	8/13	19	5/13f	0	5/13
4 except Marine	0.35	0.55	0.40	49	20 or 13+5[h,i]	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5h,[i]	13/17	30g	10/13 ~~15/19~~	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10h'[i]	15/20	30g	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20+5 or 13+10[h,i]	19/21	38[g]	15/19	10, 4 ft	15/19

Footnotes remain unchanged

TABLE N1102.1.3 (R402.1.3) EQUIVALENT U-FACTORS[a]

Climate Zone	Fenestration U-Factor	5kylight U-Factor	Ceiling U-Factor	Frame Wall U-Factor	Mass Wall U-Factorb	Floor U-Factor	Basement Wall U-Factor	Crawl 5pace Wall U-Factor
1	0.50	0.75	0.035	0.084	0.197	0.064	0.360	0.477
2	0.40	0.65	0.030	0.084	0.165	0.064	0.360	0.477
3	0.35	0.55	0.030	0.060	0.098	0.047	0.091c	0.136
4 except Marine	0.35	0.55	0.026	0.060	0.098	0.047	0.059	0.065
5 and Marine 4	0.32	0.55	0.026	0.060	0.082	0.033	~~0.050~~ 0.059	0.055
6	0.32	0.55	0.026	0.045	0.060	0.033	0.050	0.055
7 and 8	0.32	0.55	0.026	0.045	0.057	0.028	0.050	0.055

Footnotes remain unchanged

Reason:

The prescriptive basement wall requirement increased from R-10 to R-15 in the 2012 IRC CHAPTER 11. Calculations used to justify the change were based on energy models that had less sophisticated algorithms than Energy Plus, which is now the preferred modeling software of the Department of Energy.

When using Energy Plus, the energy savings in a 700 square foot basement totaled $7/yr in Chicago (Climate zone 5). The additional cost for this is conservatively estimated at $590. This makes the simple payback in excess of 84 years. This also will create a negative cash flow for the consumer. The values being modified by this amendment are the same as what was proposed by the Department of Energy in their proposal EC13 from the last cycle. The values currently adopted were an increase from proposals not submitted by the Department of Energy.

The energy modeling was done using the Energy Plus simulation engine and BEopt version 1.4, Cost figures came from ASHRAE RP-1481.

Climate Zone	sentative City	Basement Wall R-Value Change	Energy Savings	Incremental Cost	Simple Payback
5	Chicago, IL	R-10->R-15	$7/yr	$590 ($0.82/ft2)	84 years

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP011-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): N1102.4 (R402.4) Comprehensive energy amendment

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This is a comprehensive energy amendment, providing flexibility for meeting the energy code requirements while ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Proponent's Signature

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N1102.4 (R402.4) Comprehensive energy amendment.

This amendment is a comprehensive amendment, providing flexibility for meeting the energy code requirements while maintaining the energy performance. It will provide a "true" unrestricted performance path that will allow for cost-optimized construction of an energy equivalent house.

Revise as follows:

N1102.4 (R402.4) Air leakage ~~(Mandatory)~~. The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections N1102.4.1 through N1102.4.4.

N1102.4.1 (R402.4.1) Building thermal envelope. The *building thermal envelope* shall comply with Sections N1102.4.1.1 and N1102.4.1.2. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

R402.4.1.1 Installation (Mandatory). The components of the *building thermal envelope* as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the *code official*, an *approved* third party shall inspect all components and verify compliance.

N1102.4.1.2 (R402.4.1.2) Testing (Mandatory). The building or dwelling unit shall be tested ~~and verified as having an air leakage rate of not exceeding 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8~~ for air leakage. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*. During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures;
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures;
3. Interior doors, if installed at the time of the test, shall be open;
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling systems, if installed at the time of the test, shall be turned off; and
6. Supply and return registers, if installed at the time of the test, shall be fully open.

N1102.4.1.3 (R402.4.1.3) Leakage rate (Prescriptive). The building or dwelling unit shall have an air leakage rate not exceeding 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8, when tested in accordance with Section N1102.4.1.2.

TABLE N1105.5.2(1) (R405.5.2(1))

SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Glazing[a]	Total area[b] =	
	~~(a) The proposed glazing area; where proposed glazing area is less than 15% of the conditioned floor area.~~	~~As proposed~~
	~~(b)~~ 15% of the conditioned floor area~~; where the proposed glazing area is 15% or more of the conditioned floor area.~~	As proposed
	Orientation: equally distributed to four cardinal compass orientations (N, E, S, & W)	As proposed
	U-factor: from Table R402.1.3	As proposed
	SHGC: From Table R402.1.1 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.	As proposed
	Interior shade fraction: 0.92-(0.21 × SHGC for the standard reference design)	0.92-(0.21 × SHGC as proposed)
	External shading: none	As proposed
Heating Systems[f, g]	~~As proposed for other than electric heating without a heat pump, Where the proposed design utilizes electric heating without a heat pump the standard reference design shall be an air source heat pump meeting the requirements of Section C403 of the IECC Commercial Provisions.~~	~~As proposed~~
	Fuel type: same as proposed design	
	Efficiencies:	As proposed
	Electric: air-source heat pump with prevailing federal minimum standards	As proposed
	Nonelectric furnaces: natural gas furnace with prevailing federal minimum standards Nonelectric boilers: natural gas boiler with prevailing federal minimum standards	As proposed
	Capacity: sized in accordance with Section N1103.6	As proposed
Cooling Systems[f,h]	~~As proposed~~	
	Fuel type: Electric	
	Efficiency: in accordance with prevailing federal minimum standards	As proposed
	Capacity: sized in accordance with Section N1103.6	As proposed
Service Water Heating[f,g,h,i]	~~As proposed~~	
	Fuel type: same as proposed design	~~As proposed~~ As proposed
	Efficiency: in accordance with prevailing federal minimum standards	
	Use: gal/day = 30 + 10 × *Nbr* Tank temperature: 120°F	Same as standard reference Same as standard reference ~~gal/day = 30 + (10 × *Nbr*)~~
	~~Use: same as proposed design~~	

Reason:

This amendment is a comprehensive amendment which provides flexibility for meeting the energy code requirements while maintaining the energy performance. It will provide a "true" unrestricted performance path that will allow for cost-optimized construction of an energy equivalent house. The proposed changes provide alternatives that encourage innovation and the use of materials and equipment which will result in a home which is at least equivalent of that prescribed in the energy code.

The modifications will reinstate many of the changes made since the 2006 IRC CHAPTER 11 which restricted the flexibility of the builder/designer to construct an energy efficient code compliant home while still meeting the energy performance levels of the current code.

Items included in this amendment:

- Energy neutral building tightness trade-offs
- Credit for more energy efficient buildings which incorporate reduced window area
- Energy neutral heating, cooling and water heating equipment efficiency trade-offs

Currently, under the I-codes, all homes have a mandatory requirement to be equal to or tighter than 3ACH50 or 5ACH50, depending on climate zone. Proposed changes will allow for homes to be less tight provided other efficiency changes are made to the house which offset energy lost due to the change in air infiltration.

Currently, when conducting a performance analysis, a building glazing area greater than 15% of the conditioned floor area (CFA) is penalized for using more energy. However, a building with less than 15% window to CFA does not get credit for saving energy. This amendment allows the builder/designer to optimize window area that is both energy efficient and pleasing to the consumer.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP012-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): N1102.4 (R402.4) Multi-family air leakage testing

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment adds an exception to allow compliance to the air barrier requirements and allow ... (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

Printed Name

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N1102.4 (R402.4) Multi-family air leakage testing.

This amendment will remove requirements to test dwelling units individually and allow builders to test the entire building as a whole, as is done in commercial buildings.

Revise as follows:

N1102.4 (R402.4) Air leakage (Mandatory). The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Section N1102.4.1 through N1102.4.4.

Exception: Dwelling units of R-2 Occupancies and multiple single family dwellings shall be permitted to comply with IECC Section C402.4

Reason:

We already have this in the CT Supplement. It's a good idea and should be kept in our code.

Air tightness testing for single family detached homes is very straightforward; however, it is much more difficult to accurately test attached dwelling units including multi-family buildings. Currently the IECC treats low-rise multi-family buildings, which are 3 stories or less, like single family homes and multi-family buildings of 4 stories or more like commercial buildings. Regardless of height, all multi-family buildings have the same air tightness testing complications, such as: Does the entire building need to be tested at one time? What about multi-family buildings with open corridors? Does every dwelling need to be tested? Can the leakages be averaged between units? Is the leakage tested only to the "outside" or should it include leakage to adjacent units?

By approving this change, low-rise multi-family buildings and attached single family dwellings will avoid these complications, but yet will still held to the same level of performance as high rise (R-2) residential building as well as all commercial buildings.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP013-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): E3902.16, E3902.17

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

These amendments delete the mandate to install arc-fault circuit interrupters

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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William H. Ethier

Proponent's Signature

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Proposed amendments to the ICC International Residential Code, 2015 Edition

Revise as follows:

E3902.16 Arc-fault circuit-interrupter protection.

Delete Section E3902.16 in its entirety.

E3902.17 Arc-fault circuit interrupter protection for branch circuit extensions or modifications.

Delete Section E3902.17 in its entirety.

Reasons:

The Home Builders and Remodelers Association of Connecticut, Inc. is opposed to mandating the installation of AFCIs. No accurate Connecticut-specific data substantiates a need. Indeed, data collected over a 12-year period (2002-2013) shows the following:

- No civilian deaths were reported in fires caused by electrical arcing in one- and two-family homes.
- There were an estimated total of 2 civilian injuries over the entire 12-year period. This is equal to an average of only 0.1 injuries per year. Connecticut has a population of 3,596,080.
- There was an average of only 7.8 fires caused by electrical arcing annually over that time period. Connecticut has 1,086,377 one- and two-family dwellings.
- The average annual total damage from fires caused by electrical arcing in both property and contents adjusted to 2013 dollars was $228,689.

(The data set used included structural fires in all ages of one- and two-family homes involving electrical branch circuits or outlet receptacle fires, the type of fires AFCIs are said to prevent.)

AFCI requirements were introduced into the 1999 edition of the National Electrical Code (NEC) and the number of circuits where they are required greatly expanded in the following editions. Attached you will find a white paper describing AFCIs and how they were introduced into the model code. An electrical manufacturer representative who served on the code-making panel at that time summed up the issue well: "The question of whether this [AFCI] mandate will have a meaningful impact in reducing the number of dwelling fires of electrical origin in new homes as they age (beyond the reduction already resulting from previous Code mandated improvements) is speculative at best."

The June 2015 issue of the U.S. Fire Administration's Topical Fire Report Series reported "A strong relationship between housing age and the rate of electrical fires has been observed, **with housing over 40 years old having the strongest association with electrical distribution fires** [emphasis added]." The median age of one- and two-family housing in Connecticut is 52 years. The share of housing units built before 1970 is 57.6%, and those built before 1950 is 29.3%. According to a study conducted by the U.S. Consumer Product Safety Commission, dwellings built before 1965 may still have fuses instead of circuit breakers, and those built before 1945 may still have knob and tube wiring.

These older homes were also wired with a very limited number of receptacle outlets, resulting in extensive use of extension cords or improper alterations and additions to the original electrical system, both recognized fire hazards. In addition, they are more likely to have outdated appliances, space

heaters or other characteristics that might lead to a greater risk of a fire starting. Newer homes have fire blocking, hardwired smoke alarms and egress windows installed to today's codes, all of which increase the chances of surviving a fire. **Even as homes built to today's residential code get older, they will continue to provide protection for families through their improved safety.**

It is reasonable to ask if there is a demonstrated Connecticut-specific need for the AFCI requirement or if an acceptable level of safety can be achieved through other, less expensive means. The cost of an incremental increase in the margin of safety can be quite high.

Higher regulatory costs have real consequences for working American families. These regulations end up pushing the price of housing beyond the means of many teachers, police officers, firefighters and other middle-class workers. In Connecticut 270,835 families cannot afford to buy a home costing more than the median home price of $489,156. Every $838 increase in construction costs adds an additional $1,000 to the final price of the home, and in Connecticut, 1,067 households would no longer qualify for a mortgage based on a $1,000 increase to a median-priced home.

Mandating costly incremental increases in safety will only protect those who can afford them and will often decrease safety for those who cannot. Families who cannot qualify to purchase homes due to the increased costs from mandatory code requirements such as AFCIs will have to live in housing that is less safe, because that housing was built to less stringent code requirements.

The total annual cost to Connecticut home buyers to install AFCIs is $2,361,113. **This is 10 times the cost of damage per year**, and it is clear that requiring AFCIs in new construction will not prevent most damage. This is due to the fact that AFCIs cannot prevent all fires and, more importantly, that electrical fires occur overwhelmingly in older houses.

See attached White Paper from NAHB.

Arc-Fault Circuit Interrupters: National Electrical Code Inclusion Was Based on Faulty Reasoning

What Are AFCIs?

Arc-fault circuit interrupters (AFCIs) are devices "intended to provide protection from the effects of arc faults by recognizing characteristics unique to arcing and by functioning to de-energize the circuit when an arc fault is detected." (National Fire Protection Association, Inc., 2016) Specifically, AFCIs are meant to protect against a sustained arc at a loose connection or between conductors that have damaged insulation. (Lee, Trotta, & King, 2000)

Limitations of AFCIs

These unwanted arcs can sometimes reach conditions that will ignite adjacent combustible material, and while AFCIs can mitigate the arc's potential effects, it cannot prevent them. (Hansen, 2012) Also, while AFCI devices detect some ground faults, they do not protect against as many as a ground-fault circuit interrupter (GFCI). This is by design, since each device is made for a different purpose.

AFCIs and the National Electrical Code

AFCIs were first introduced in the 1999 edition of the National Electrical Code (NEC) with an effective date of Jan. 1, 2002. Code Making Panel 2, which had responsibility over branch circuits where AFCIs are addressed, largely based its approval of the code change on several U.S. Consumer Product Safety Commission (CPSC) reports. **However, the number of incidents cited at the time were several times higher than in later reports, and where the data showed that AFCIs would have a minimal benefit, the results were ignored.** The resulting expected benefits led to AFCI requirements being included in the NEC, but were overblown.

The problems with the rationale were so evident that even electrical manufacturers spoke against the proposal. During the 1998 code development cycle comment period, manufacturers' representatives stated that a large body of information was available to support rejecting an AFCI mandate. (National Fire Protection Association, 1998) The main issue: the electrical problems AFCIs are designed to prevent occur overwhelmingly in older dwellings.

A 1990 CPSC epidemiological study, "Residential Electrical Distribution System Fires," showed that 85% of fires of electrical origin occur in homes that are more than 20 years old. (Linda & Dennis, Residential Electrical Distribution System Fires, 1987) This means that the bulk of these homes were wired in accordance with the 1965 or earlier editions of the NEC. Further, they were wired with products manufactured to product safety standards of a similar vintage. In the years since, numerous changes have been made in both the NEC and product safety standards which mitigate against similar fires in newer homes—even as they age.

The strongest association with electrical distribution fires was observed in dwellings over 40 years old, and with more than half of the housing stock older than 35 years, electrical issues have become an increasingly larger player in residential fires. (U.S. Fire Administration, 2016)

Differences between Older and Newer Homes

The 1990 CPSC study confirmed the logical assumption that older homes with smaller services, few GFCIs, overloaded circuits and lots of extension cords have a greater risk of electrical fires than a new home built a recent edition of the NEC. Homes built before 1965 may still have fuses instead of circuit breakers, and those built before 1945 may still have knob and tube wiring. As of 2011, roughly 41% of the nation's occupied detached single-family homes had been built before 1965, which suggests fuses are still present in about 20% of all homes. (John R. Hall, 2013)

Many older homes were wired with a very limited number of receptacle outlets, necessitating extensive use of extension cords or improper alterations and additions to the original electrical system, both recognized fire hazards. However, in the intervening years, the NEC has required significant increases in the number of required receptacle and lighting outlets, significantly reducing the need for extension cords in newer homes.

Grounding provisions in the NEC have expanded to require electrical enclosures and boxes to be grounded and an equipment grounding conductor in the wiring. In technical language, these grounding methods increase the likelihood of low-level arcing faults progressing rapidly to arcing ground faults of a magnitude sufficient to activate conventional circuit breakers. As non-metallic sheathed cable (Romex) with its dedicated grounding wire has become the norm, the likelihood of arcing faults of the hot-to-ground type, detectable by a conventional circuit breaker, increased significantly. (National Fire Protection Association, 1998) And conversely, there has been an equally significant decrease in the probability of arc faults occurring that an AFCI device can detect.

Ever since the 1978 edition of the NEC, electrical wires must be run not less than 1 ¼ inches from the front edge of the framing members or be protected with a steel plate or other means. This almost eliminates the chance of wires getting hit by nails or screws because it offers a margin of safety against such damage. Standard screws for ½-inch drywall are 1 ¼ inches long, leaving ½ inch of space between the nail or screw and where a wire might run.

Further code provisions that protect wiring from damage include requiring a maximum support spacing of 4 ½ feet, a maximum support distance from an electrical box of 12 inches to reduce vibrations that might cause the wire to rub where it enters the box, and requiring bushings where wiring runs through openings in metal framing members and where entering an electrical box or fitting. (National Fire Protection Association, Inc., 2016)

Even advocates for AFCI requirements have stated, "The preponderance of fires is clearly in dwellings over 10 years old. With improvements in the NEC over the past decade, a dwelling

constructed with proper wiring methods and equipment by present standards should not be prone to fire." But they then argue that "all new dwellings eventually get old" and so AFCIs are necessary. **These two rationales are contradictory, and the improvements in the NEC as cited above remain as the home ages.**

The Data Used to Support AFCIs

In 1998, when AFCI requirements were added to the NEC, data from the CPSC report "Revised Residential Fire Loss Estimates 1980-1998" was integral to that decision. The report stated that approximately 41,000 fires per year could be attributed to electrical distribution equipment (e.g. installed wiring, lighting). (Linda & Jean, Revised Residential Fire Loss Estimates 1980-1998, 1998) This was equal to about 10% of all residential fires. The report claimed that these fires also accounted for about 350 deaths and 1,400 injuries each year. The CPSC's later report, "Residential Fire Loss Estimates 2010-2012," showed a much different picture. There were an estimated 9,600 fires annually which could be attributed to electrical distribution equipment, or 2.7% of all residential fires. (David, 2012) For this time period, these fires accounted for an estimated 130 deaths and 470 injuries annually.

There is a reason for the discrepancy: These fire loss estimates are based on the National Fire Protection Association's national fire loss estimates and the U.S. Fire Administration's National Fire Incident Reporting System (NFIRS) data. Beginning with 1999 data, a major revision to the NFIRS data coding system considerably affected the estimates of residential fires and related deaths, injuries, and property losses. Because of these changes, the pre-1999 numbers should not be compared with estimates from subsequent years. That being said, if the inclusion of AFCIs in the NEC were being debated after the later report had been published, proponents of the change would have had a much weaker case.

Data in the reports also included fires that occurred in mobile homes and motor homes. Both are outside the scope of the NEC and, therefore, inflated the occurrences of fires. The 1998 report only referred to "residential" fires, but did not define which specific types of residences were included. The 2012 report clarified that the data included not only single-family and multifamily dwellings, but also mobile and motor homes while used as a structure and not in transit.

Conclusions

AFCI requirements in the NEC apply predominantly to new construction, whereas it is in older homes, built to outdated electrical code requirements and using outdated technology, where they would be most effective. An electrical manufacturer representative during the 1998 committee meetings stated it best: "The question of whether this [AFCI] mandate will have a meaningful impact in reducing the number of dwelling fires of electrical origin in new homes as they age (beyond the reduction already resulting from previous code-mandated improvements) is speculative at best."

References

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Proposed Amendments to the 2017 NEC

By Tim Mikloiche

1. Section 110.3(A)(1) Information note No 1 was added. I feel for clarity the words “see 110.21(A)(2) for additional information on reconditioned equipment” should be added to the new informational note. This additional language will provide code users a path to go to for additional information on reconditioned equipment.

2. Section 110.16(B) Exception was added. I feel for clarity of the intent, the words “in accordance with acceptable industry practice” should be replaced. What is acceptable industry practice? Changing “in accordance with acceptable industry practice” with the words – “by a method approved by the authority having jurisdiction” I believe would be a clearer way to basically say the same thing.

3. Section 210,52(A)(2)(1) Wall space. The words “fixed cabinets” have been an issue ever since they were added into the 2011 NEC. The original intent was for kitchen type cabinets, though as written is being used for “fixed cabinets” in other areas, meaning there is no general area receptacle outlet requirement that could be cited for a room that has built-ins all the way around it. For example (that I have seen which has come up several times as we have big “closets” in town). A clothes closet with a big island in the middle of it. The island has a chandelier type light fixture (open bulb fixture) over it. The homeowner wants to keep the fixture so on the plan they simply change “closet” to “changing room”. Now the open bulb fixture is code compliant, and since there are built -ins all the way around the room receptacle outlets are not code required. The “fix” for the problem in the 2017 NEC was to add the words “that do not have countertops or similar work surfaces”. In my opinion that is a little better but is still questionable. This is once again being discussed for the 2020 NEC. I feel for clarity of what the intent of this requirement is the words “that do not have counter tops or similar work surfaces” should be removed and replaced with the words “in a kitchen area”.

4. Section 210.71 Meeting rooms was added. As a committee I believe this new section should be reviewed to determine if it should be deleted, amended, or left as is. There was a lot of discussion on this section when it was proposed. Some people thought that the lack of receptacles in meeting rooms was a safety hazard while others thought it to be a design issue. In my opinion, if it is a safety issue then there should not be a minimum size limit for the room before outlets are required.

5.Section 400.12 Uses not permitted (for flexible cords and flexible cables).In an effort to clear up the recent confusion in reference to the use of “flexible cords and cables” plugging into receptacles located

above drop type ceilings this section was amended. When the section was amended the words “flexible cords” were left out. I am not exactly sure why, but I think leaving the words “ flexible cords” out of the section makes things very confusing. Especially since those two words are found in the title of the article. I believe the words “flexible cords” should be added back into the section right before the words flexible cables. That would be consistent with the title of the article and clear the intent of this section up tremendously.

6. Section 404.2(C) Switches controlling lighting loads. I feel for clarity to show the intent that this section applies to all installations: industrial, institutional, medical, commercial and residential installations a new informational note would be helpful.

Informational Note #2: The requirements of this section shall apply to all installations.

If this note is added a #1 would need to be added to the existing informational note.

7. Section 422.5(A)(2) GFCI protection for personnel. “Drinking water coolers” was added instead on “drinking fountains” because “drinking water coolors” are defined in UL 399. I feel for clarity on what a “drinking water cooler” is an informational note should be added.

Informational Note: UL 399 contains information on drinking water coolers

8. Ct has current amendments to the signage requirements required in 700.7, 701.7, and 702.7 that I feel would be beneficial to carry over. Sections 700.7(A) and 702.7(A) make reference to the location of the sign being at the “service entrance equipment” while 701.7(A) states at the “service entrance”. Shouldn’t all 3 be the same? Carrying the amendments over would make the language the same (at the service entrance equipment) for all 3 and add “at the meter location” which, though I had no real substantiation when I submitted to add “meter location” to the section a few cycles back, I think is very important for first responders. In a lot of cases the power company “cuts” the power at the pole during incidents. When this is done, unless the “service entrance equipment” is located outside, first responders may not be aware that a secondary source of power is available to the structure.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP015-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 13 January 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2009 ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities Section and Table 404.2.3.2

PROPONENT INFORMATION

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Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Clarify the intent of Table 404.2.3.2

Proposed text change, addition or deletion (attach additional information as needed):

Please refer to attached document.

Supporting data and documents (attach additional information as needed)

Please refer to attached document.

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Proponent's Signature Brian Mitchell CBO, BO **Printed Name**

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12/29/16

CODE CHANGE PROPOSAL

Legend Key to below proposal: ~~text~~ = delete
[text] = add

Proposed Change:

(Amd) **Table 404.2.3.2 - Maneuvering Clearances at Manual Swinging Doors**

TYPE OF USE		MINIMUM MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS	
Approach Direction	**Door Side**	**Perpendicular to Doorway**	**Parallel to Doorway (beyond latch unless noted)**
From front	Pull	60 inches	24 inches
From front	Push	48 inches	0 inches[3]
From hinge side	Pull	60 inches	36 inches
From hinge side	Pull	54 inches	42 inches
From hinge side	Push	42 inches[1]	**[0 Inches[3] /]**22 inches[~~3 &~~ 4]
From latch side	Pull	48 inches[2]	24 inches
From latch side	Push	42inches[2]	24 inches

[1] Add 6 inches if closer and latch provided.
[2] Add 6 inches if closer provided.
[3] ~~Add~~ **[Provide]** 12 inches beyond latch if closer and latch provided.
[4] Beyond hinge side **[only].**

Substantiation:

Currently the table column titled "Parallel to Doorway (beyond latch unless noted)" presents a confusing issue as follows. Table note [3] after the 22 inch dimension implies that there is a base tabular requirement of 22 inches minimum needed on the latch side. The superscript note would then imply that an additional 12 inches would be needed to be added to the base requirement, for a total dimension of 34 inches, if a closer and latch are provided.

Figure "e" to this Table, and the ICC/ANSI published commentary, accurately depicts the intent of the this scenario as only requiring 12 inches beyond the latch side in the event the door is provided with both a closer and a latch. This results in contradictory language between the Table and the explanatory Figure.

The proposed changes shown above would properly alien the language in the Table and any published explanatory figures and commentary.

Thank you for your consideration towards this Proposal.

Respectfully,

Brian Mitchell
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2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP016-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1/21/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): ICC/ANSI A117.1-2009 Table 404.2.3.2, Fig. 404.2.3.2, 404.2.3.5, and Fig. 404.2.3.5

PROPONENT INFORMATION

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Representing: Self

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Address: PO Box 636 (Street Address) Woodbury (Town) CT (State) 06798-0636 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Delete the CT amendments that increase pull-side, latch-side clearance from 18" to 24"

Proposed text change, addition or deletion (attach additional information as needed):

Delete the CT amendments

Supporting data and documents (attach additional information as needed)

Please see attached

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Proponent's Signature

Christopher R. Laux

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ADDITIONAL SUPPORTING DATA: Laux proposed change to ICC/ANSI A117.1 Table 404.2.3.2, Fig. 404.2.3.2, 404.2.3.5, Fig. 404.2.3.5

There is no demonstrable proof that CT wheelchair users or others in CT with mobility impairments are less adept at opening doors than residents of the other 49 states that use the standard as written. Providing the additional clearance provides no known benefit. Deleting the CT amendments will bring the standard in line with the model document and the requirements of the 2010 ADA.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP017-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1/21/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): ICC/ANSI A117.1-2009 Section 1004.3.3

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Address: PO Box 636 (Street Address) Woodbury (Town) CT (State) 06798-0636 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Delete the CT amendment that requires a turning circle in Type B Units

Proposed text change, addition or deletion (attach additional information as needed):

Delete the CT amendment

Supporting data and documents (attach additional information as needed)

Please see attached

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Proponent's Signature Christopher R. Laux **Printed Name**

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ADDITIONAL SUPPORTING DATA: Laux proposed change to ICC/ANSI A117.1 Section 1004.3.3

There is no demonstrable proof that CT wheelchair users or others in CT with mobility impairments are less adept at travelling through a Type B unit than residents of the other 49 states that use the standard as written. There is no “substantial evidence” as required by statute that CT residents benefit from this amendment. Deleting the CT amendments will bring the standard in line with the model document and the requirements of the Federal Fair Housing Amendment.

Requiring the turning space in Type B units, especially kitchens, bathrooms and laundry rooms in such units, greatly increases the size of each unit and adds to the cost of housing due to the increased area of these otherwise nominally sized spaces. Alternately, the increased area in the mentioned spaces is carved out of the other living spaces, which become less functional for the user.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP018-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: January 25, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): IBC 1109.2.3; 1109.2.4; ICC/ANSI A117.1 606.5

PROPONENT INFORMATION

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Address: PO Box 636 (Street Address) Woodbury (Town) CT (State) 06798-0636 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Reinstate 1109.2.3 per IBC; renumber current 1109.2.3 as 1109.2.4; delete current 1109.2.4

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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currrent code; proposed 2015 IBC and 2009 ICC/ANSI A117.1 Standard

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Proponent's Signature Christopher R. Laux **Printed Name**

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12/29/16

Christopher Laux – proposed building code change to 1109.2.3 and 1109.2.4

Proposed language:

IBC:

1109.2.3 Lavatories. Use the language of 2015 IBC model code unchanged

(Add) **1109.2.4 Single occupancy toilet.** Required accessible toilet rooms designed for single occupancy in other than Group R shall meet the requirements of ICC/ANSI A117.1. Each such room shall contain both toilet and lavatory, shall have a lever handle privacy lockset and shall have an emergency call system that actuates a visible and audible alarm in a normally occupied area. An alarm pull switch, identified with emergency instruction, shall be provided within 3 feet of the water closet with a pull cord extending to within 12 inches of the floor. Emergency instructions shall be provided outside the toilet room at the normally occupied location.

Note: this proposal deletes the current 2016 CT Amendment numbered 1109.2.4:

~~(Add) **1109.2.4 Faucets and controls.** The controls to operate a faucet shall be located no more than 25 inches from the front face of a lavatory, kitchen sink, counter or vanity. At least one lavatory per gender per toilet room shall have its faucet and soap dispenser control located within 13 inches or, if automatic, shall be activated within a reach depth of 13 inches from the face of the fixture or vanity front. Water and soap flow shall be provided with a reach depth of 13 inches maximum. Lavatory faucets on accessible fixtures shall comply with the requirements of ICC/ANSI A117.1.~~

ICC/ANSI A117.1:

608.5 Lavatories with enhanced reach range. Use the language of the 2009 standard unchanged

Supporting Data/Justification:

The current CT Amendment dates back to a time (2003 IBC and ICC/ANSI A117.1 Standard) when the model code did not contain requirements for enhanced reach ranges in lavatories. Now that this issue is adequately covered by the model code and the referenced ICC/ANSI A117.1 standard there is no justification for a CT Amendment. There is no demonstrable proof that people with mobility impairments in CT are any more or less able to use a lavatory than people in the other 49 states. CT should make every effort to refrain from amending the model codes where there is no evidence that the amendment is necessary. To do so in the field of accessibility puts the CT code at risk of not being considered safe harbor for FFHA and ADA.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP019-BC-FC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 02/08/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☑ Fire Safety Code

Code section(s): 1005.3.1 1005.3.2

PROPONENT INFORMATION

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Address: 47 Weaver Rd (*Street Address*) Storrs (*Town*) CT (*State*) 06269 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Do not amend / delete exception 1 in both sections.

Proposed text change, addition or deletion (attach additional information as needed):

Supporting data and documents (attach additional information as needed)

Emergency voice / alarm communication system was added to the exception requirements.

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Attached is the ICC code change ES21-09/10 to the 2009 IBC that was adopted in 2012.

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Patrick Walsh

Proponent's Signature

Patrick Walsh

Printed Name

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E521-09/10

1005.1 (IFC [B] 1005.1); 3404.6, 3412.6.11, Table 3412.6.11(1) [IEBC [B] 303.6, 1301.6.11, Table 1301.6.11(1)]; IFC 4604.7, Table 4604.7

Proponent: Ray Grill, Arup, representing self

THIS IS A 2 PART CODE CHANGE. BOTH PARTS WILL BE HEARD BY THE MEANS OF EGRESS COMMITTEE AS 2 SEPARATE CODE CHANGES. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

PART I – IBC MEANS OF EGRESS

Revise as follows:

1005.1 (IFC [B] 1005.1) Minimum required egress width. The means of egress width shall not be less than required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.3 inches (7.62 mm) per occupant for stairways and by 0.2 inches (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.

~~**Exception**~~ **Exceptions**:

1. Means of egress complying with Section 1028.
2. For other than H and I-2 occupancies, the total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by 0.2 inches (5.1 mm) per occupant for stairways and by 0.15 inches (3.8 mm) per occupant for other egress components in buildings that are provided with sprinkler protection in accordance with 903.3.1.1 or 903.3.1.2 and an emergency voice/alarm communication system in accordance with 907.5.2.2.

~~**3404.6 (IEBC [B] 303.6) Means of egress capacity factors.** Alterations to any existing building or structure shall not be subject to the egress width factors in Section 1005.1 of the International Building Code for new construction in determining the minimum egress widths or the minimum number of exits in an existing building or structure. The minimum egress widths for the components of the means of egress shall be based on the means of egress width factors in the building code under which the building was constructed, and shall be considered as complying means of egress for any alteration if, in the opinion of the code official, they do not constitute a distinct hazard to life.~~

3412.6.11(IEBC [B] 1301.6.11) Means of egress capacity and number. Evaluate the means of egress capacity and the number of exits available to the building occupants. In applying this section, the means of egress are required to conform to the following sections of this code: 1003.7, 1004, 1005.1, 1014.2, 1014.3, 1015.2, 1021, 1024.1, 1027.2, 1027.6, 1028.2, 1028.3, 1028.4 and 1029 ~~[except that the minimum width required by this section shall be determined solely by the width for the required capacity in accordance with Table 3412.6.11(1)].~~ The number of exits credited is the number that is available to each occupant of the area being evaluated. Existing fire escapes shall be accepted as a component in the means of egress when conforming to Section 3406.

Under the categories and occupancies in Table 3412.6.11~~(2)~~, determine the appropriate value and enter that value into Table 3412.7 under Safety Parameter 3412.6.11, Means of Egress Capacity, for means of egress and general safety.

2. Delete without substitution:

~~**TABLE 3412.6.11(1) (IEBC [B] 1301.6.11(1))**~~
~~**EGRESS WIDTH PER OCCUPANT SERVED**~~

~~OCCUPANCY~~	~~WITHOUT SPRINKLER SYSTEM~~		~~WITH SPRINKLER SYSTEM[a]~~	
	~~Stairways (inches per occupant)~~	~~Other egress components (inches per occupant)~~	~~Stairways (inches per occupant)~~	~~Other egress components (inches per occupant)~~
~~Occupancies other than those listed below~~	~~0.3~~	~~0.2~~	~~0.2~~	~~0.15~~
~~Hazardous: H-1, H-2, H-3 and H-4~~	~~0.7~~	~~0.4~~	~~0.3~~	~~0.2~~
~~Institutional: I-2~~	~~NA~~	~~NA~~	~~0.3~~	~~0.2~~

~~For SI: 1 inch = 25.4 mm. NA = Not applicable.~~

~~a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~

Revise as follows:

TABLE 3412.6.11(2) (IEBC [B] TABLE 1301.6.11(2))
MEANS OF EGRESS VALUES
(No change to table)

PART II – IFC

Delete without substitution:

~~**4604.7 Minimum required egress width.** The means of egress width shall not be less than as required by the code under which constructed but not less than as required by this section. The total width of means of egress in inches (mm) shall not be less than the total occupant load served by the means of egress multiplied by the factors in Table 4604.7 and not less than specified elsewhere in this section. Multiple means of egress shall be sized such that the loss of any one means of egress shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any story of a building shall be maintained to the termination of the means of egress.~~

~~**TABLE 4604.7**~~
~~**EGRESS WIDTH PER OCCUPANT SERVED**~~

~~OCCUPANCY~~	~~WITHOUT SPRINKLER SYSTEM~~		~~WITH SPRINKLER SYSTEM[a]~~	
	~~Stairways (inches per occupant)~~	~~Other egress components (inches per occupant)~~	~~Stairways (inches per occupant)~~	~~Other egress components (inches per occupant)~~
~~Occupancies other than those listed below~~	~~0.3~~	~~0.2~~	~~0.2~~	~~0.15~~
~~Hazardous: H-1, H-2, H-3 and H-4~~	~~0.7~~	~~0.4~~	~~0.3~~	~~0.2~~
~~Institutional: I-2~~	~~NA~~	~~NA~~	~~0.3~~	~~0.2~~

~~For SI: 1 inch = 25.4 mm. NA = Not applicable.~~
~~a. Buildings equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2.~~

(Renumber subsequent sections)

Reason: The egress factors for sprinklered buildings were eliminated during the last cycle with no technical justification. The exception reinstates the egress factors for sprinklers buildings but also would require an emergency voice/alarm communication system (EVAC) to be provided.

The EVAC system provides the ability to communicate instructions to occupants that would facilitate evacuation or relocation that may be necessary in fire or other emergencies. This would also lead to more efficient use of the egress system.

The original submitter of this code change had also submitted a code change (E17-07/08) to reduce the occupant load in office buildings by changing the occupant load factor from 1/100 sq.ft. to 1/175 sq.ft. The change in occupant load factor was rejected even though that proposal had a scientific study published by NIST to back the proposal.

Cost Impact: The code change proposal will not increase the cost of construction.

PART I – IBC MEANS OF EGRESS

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

PART II – IFC

Public Hearing:	Committee:	AS	AM	D
	Assembly:	ASF	AMF	DF

ICCFILENAME:Grill-E1-1005.1

E22–09/10 AM PC 1

Exceptions:

1. For areas not confined by barriers, the path of egress travel from the outdoor areas are permitted to pass through the building. Means of egress requirements for the building shall be based on the sum of the occupant loads of the building plus the outdoor areas.
2. ~~1~~ Outdoor areas used exclusively for service of the building need only have one means of egress.
3. ~~2~~ Both outdoor areas associated with Group R-3 and individual dwelling units of Group R-2.

Committee Reason: The proposal is not clear in what would be considered a barrier. The code should allow for egress back through the building from areas such as balconies, central court yards and occupied roofs. There is a conflict in the text in that if there is a barrier you cannot egress through the building, but if there is not a barrier you can egress through the building. There are no allowances for exterior stairways for egress.

Assembly Action: **None**

E20-09/10

This is a 2 part code change. Both parts were heard by the IBC Means of Egress Code Development Committee.

PART I- IBC MEANS OF EGRESS
Committee Action: **Disapproved**

Committee Reason: The proponent's reason statement mentioned the NIST study for the World Trade Center. Because there was an election that day, the building was not fully occupied. This report does not cover if the building was fully occupied. If the building had been fully occupied many people would not have gotten out. In the towers there were three means of egress, however, two of the stairways were compromised that day, so we do need a third staircase. Another committee member clarified that the official finding were not as indicated in the reason statement, but if the building had been fully occupied, it was predicated that possibly 14,000 people would have died.

Assembly Action: **None**

PART II- IFC
Committee Action: **Disapproved**

Committee Reason: With the disapproval of Part I, the text in the IFC needs to remain for corridor width in existing buildings.

Assembly Action: **None**

E21-09/10

This is a 2 part code change. Both parts were heard by the IBC Means of Egress Code Development Committee.

PART I IBC MEANS OF EGRESS
Committee Action: **Approved as Submitted**

Committee Reason: Studies have shown that most people do not react to an initial alarm, therefore, requiring a voice alarm will increase safety by providing occupants with additional information about the emergency and evacuation. The current egress width requirement will mostly affect buildings with high occupant loads that are not highrise buildings. With the addition of many safety features to highrise buildings, such as the fire service access elevators, and occupant evacuation elevators, highrise buildings will be much safer. One of the other concerns in the NIST report was counter flow in the stairways. That has also been addressed through the new highrise requirements. No technical justification for the increased width for means of egress was provided in the original change in the last cycle. The additional width requirements for all buildings went too far. This is a good compromise.

Assembly Action: **None**

PART II- IFC
Committee Action: **Approved as Submitted**

Committee Reason: Part II was approved for consistency with the committee's action on Part I.

Assembly Action: **None**

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP020-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 2/10/2017

CODE INFORMATION

Proposed change to: ☒ Building Code ☐ Fire Safety Code

Code section(s): Amend IBC Section 1109.2.1.4

PROPONENT INFORMATION

Name: Christopher Laux

Representing: Self

Telephone: (203) 586-8864

Email: codeguy22@gmail.com

Address: PO Box 636 (*Street Address*) Woodbury (*Town*) CT (*State*) 06798-0636 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See attached

Proposed text change, addition or deletion (attach additional information as needed):

See attached

Supporting data and documents (attach additional information as needed)

N/A

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Proponent's Signature

Christopher Laux

Printed Name

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Reason for change: Assembly and mercantile spaces large enough to require family or assisted-use toilet and bathing rooms are generally unfamiliar to the occupants. When looking for a rest room, the occupants will naturally follow general signage directing one to the location of the public toilet facilities. If the family or assisted-use toilets are not in the same location as the separate-sex toilet rooms it places an additional burden on the user, who will likely be seeking the facility due to the presence of young children or a person with mobility impairments. This will result in additional travel and time spent, which may be a commodity in short supply at the time of need.

This proposal will also prevent the building's designer from using toilet rooms not generally intended for the public as the family or assisted-use toilet room. The roadmap to Section 1111.2 is purely informational as a reminder that signage is required.

Proposed change:

(Amd) 1109.2.1.4 Location. Family or assisted-use toilet and bathing rooms shall be located on an *accessible route* in the same general vicinity as public separate-sex toilet rooms. In buildings, anchor stores or tenant spaces with multiple separate-sex toilet room locations, such family or assisted use toilet rooms shall be located in the same general vicinity of at least one group of separate-sex toilet rooms not more than one *story* above or below ~~separate-sex toilet rooms. The~~ and on an *accessible route* ~~from any separate-sex toilet room to a family or assisted-use toilet room~~ that shall not exceed 500 feet (152 m). Signage in accordance with item 4, Section 1111.2 shall be provided.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP021-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 02-23-2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): G2419.4 (408.4) Sediment trap

PROPONENT INFORMATION

Name: Michael Jager Representing: Jager Professional Gas Svc

Telephone: 860-388-3422 Email: mjager@jagergas.com

Address: 93 Elm ST Old Saybrook CT 06475

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

The devices not requiring this include vent fireplaces, gas fireplaces.

Proposed text change, addition or deletion (attach additional information as needed):

strike the word "vented" and insert, "all vented, vent free fireplaces and gas log sets."

Supporting data and documents (attach additional information as needed)

A sedimant trap operates regardless of equipment type

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Proponent's Signature Michael Jager **Printed Name**

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12/29/16

capable of withstanding the pressure of gas.

G2417.7.3 (406.7.3) Purging appliances and equipment. After the *piping system* has been placed in operation, *appliances* and *equipment* shall be purged before being placed into operation.

SECTION G2418 (407) PIPING SUPPORT

G2418.1 (407.1) General. *Piping* shall be provided with support in accordance with Section G2418.2.

G2418.2 (407.2) Design and installation. *Piping* shall be supported with metal *pipe* hooks, metal *pipe* straps, metal bands, metal brackets, metal hangers or building structural components suitable for the size of *piping*, of adequate strength and quality, and located at intervals so as to prevent or damp out excessive vibration. *Piping* shall be anchored to prevent undue strains on connected *appliances* and shall not be supported by other *piping*. *Pipe* hangers and supports shall conform to the requirements of MSS SP-58 and shall be spaced in accordance with Section G2424. Supports, hangers and anchors shall be installed so as not to interfere with the free expansion and contraction of the *piping* between anchors. All parts of the supporting *equipment* shall be designed and installed so that they will not be disengaged by movement of the supported *piping*.

SECTION G2419 (408) DRIPS AND SLOPED PIPING

G2419.1 (408.1) Slopes. *Piping* for other than dry gas conditions shall be sloped not less than 0.25 inch in 15 feet (6.4 mm in 4572 mm) to prevent traps.

G2419.2 (408.2) Drips. Where wet gas exists, a *drip* shall be provided at any point in the line of *pipe* where *condensate* could collect. A *drip* shall also be provided at the outlet of the *meter* and shall be installed so as to constitute a trap wherein an accumulation of *condensate* will shut off the flow of gas before the *condensate* will run back into the *meter*.

G2419.3 (408.3) Location of drips. *Drips* shall be provided with *ready access* to permit cleaning or emptying. A *drip* shall not be located where the *condensate* is subject to freezing.

G2419.4 (408.4) Sediment trap. Where a sediment trap is not incorporated as part of the appliance, a sediment trap shall be installed downstream of the appliance shutoff valve as close to the inlet of the appliance as practical. The sediment trap shall be either a tee fitting having a capped nipple of any length installed vertically in the bottommost opening of the tee as illustrated in Figure G2419.4 or other device approved as an effective sediment trap. Illuminating appliances, ranges, clothes dryers, decorative vented appliances for installation in vented fireplaces, gas fireplaces, and outdoor grills need not be so equipped.

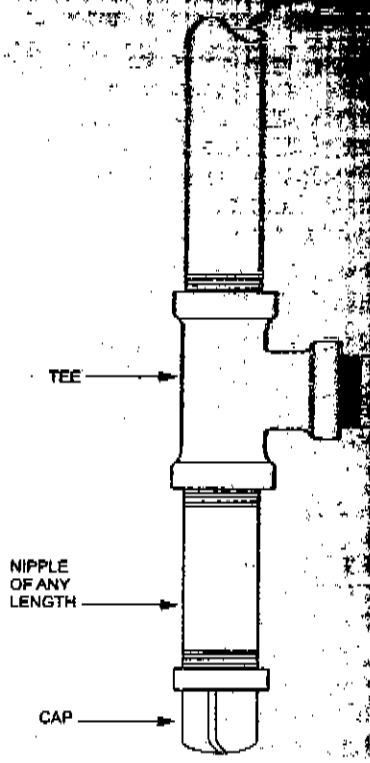

FIGURE G2[illegible]
METHOD OF INSTALLING A TEE FI[illegible]

SECTION G242[illegible]
GAS SHUTOFF V[illegible]

G2420.1 (409.1) General. *Piping s[illegible]* with shutoff *valves* in accordance wi[illegible]

G2420.1.1 (409.1.1) Valve appro[illegible] be of an *approved* type; shall be c[illegible] compatible with the *piping*; and [illegible] standard that is applicable for the p[illegible] in accordance with Table G2420.1.1[illegible]

G2420.1.2 (409.1.2) Prohibited loc[illegible] shall be prohibited in *concealed loca[illegible] nums*.

G2420.1.3 (409.1.3) Access to s[illegible] *valves* shall be located in places so as [illegible] operation and shall be installed so as [illegible] damage.

G2420.2 (409.2) Meter valve. Every *m[illegible]* with a shutoff *valve* located on the supply

G2420.3 (409.3.2) Individual buildi[illegible] tem serving more than one building, sh[illegible] installed outdoors at each building.

G2420.4 (409.4) MP regulator valves. A[illegible] shall be installed immediately ahead of e[illegible]

Page 2 of 2

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP022-FC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 1-6-17

CODE INFORMATION

Proposed change to: ☐ Building Code ☑ Fire Safety Code

Code section(s): IFC [A] 102.5 Application of residential code

PROPONENT INFORMATION

Name: Bill Ethier, Chief Executive Officer

Representing: Home Builders & Remodelers Association of CT

Telephone: 860-216-5858

Email: bethier@hbact.org

Address: 3 Regency Avenue, Suite 204 (*Street Address*) Bloomfield (*Town*) CT (*State*) 06002 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

This amendment removes language that would apply the provisions of the International Fire Code on 1&2 family dwellings constructed using the IRC

Proposed text change, addition or deletion (attach additional information as needed):

see attached

Supporting data and documents (attach additional information as needed)

see attached

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Combination of original material and material from the National Association of Home Builders (NAHB)

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Wm Ethier

Proponent's Signature

William H. Ethier (for HBRA of Connecticut)

Printed Name

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IFC [A] 102.5 Application of residential code.

This amendment removes language that would apply the provisions of the International Fire Code on one- and two family dwellings that are constructed using the International Residential Code.

Revise as follows:

IFC [A] 102.5 Application of residential code. Where structures are designed and constructed in accordance with the International Residential Code, the provisions of this code shall apply as follows:

1. Construction and design provisions: Provisions of this code pertaining to the exterior of the structure shall apply including, but not limited to, premises identification, fire apparatus access and water supplies. ~~Where interior or exterior systems or devices are installed, construction permits required by Section 105.7 of this code shall also apply~~.

2. Administrative, and operational ~~and maintenance~~ provisions: All such provisions of this code shall apply.

Reason:

The purpose of this code change is to address some of the controversy that has risen since the passage of a public comment on F3-07/08. The original purpose was to clear up the vagueness between the interaction between the IRC and the IFC and how they apply to one- and two- family dwellings and townhouses. The Fire Code Committee did not approve the original proposal which clearly stated that the IFC does not regulate the construction and design features of the structure built in accordance with the International Residential Code, but it does regulate the fire protections features leading up to the structure (such as premise identification, fire protection water supplies and fire apparatus access). A public comment was submitted and approved at the final action hearing which resulted in the current code text. Unfortunately, instead of clearing up where the scope of IFC ends and the scope of IRC begins. the current language has created more controversy over which code regulates the construction, design and maintenance of interior features in one- and two- family dwellings and townhouses.

One of the significant problems with the current language is found in the last sentence of the first application, regarding the construction permits required by section 105.7. All of the required construction permits that would apply to these types of structures, as indicated in this section, are already addressed within the scope of the International Residential Code. The concept of the IRC being a single source construction code is specifically stated within the commentary to R101.1 where it states that the intent of the IRC is to be a "stand-alone residential code that establishes minimum regulations for one- and two-family dwellings and townhouses." The IFC commentary to 102.5 further emphasizes this concept by stating "The IRC is designed and intended for use as a stand-alone code for the construction of detached one- and two-family dwellings and townhouses not more than three stories in height. As such, the construction of detached one- and two-family dwellings and townhouses is regulated exclusively by the IRC and not subject to the provision of any other I-Codes, other than to the extent specifically referenced. The intent of providing a stand-alone residential code is that there is no need for duplicative construction or permitting requirements within the I-Codes that would require a builder or homeowner to go out and get separate permits under the IRC and IFC for the same scope of work. Approval of this proposal will ensure the intent of the IRC scope,

as a stand-alone construction document, is maintained while ensuring that the exterior fire protection features are still regulated under the scope of the IFC.

Another problem with the current language is the reference to all maintenance requirements of the IFC for IRC constructed structures. Prior to the approval of the public comment on F3-07/08, there was no specific language in the IFC that required maintenance for IRC structures in accordance with the IFC. Due to the language that was approved in F3-07/08 public comment, all of the maintenance provisions in the IFC should be being applied right now.

Looking over some of the maintenance requirements for fire alarm systems and carbon monoxide detectors it raises the questions, has the fire service been enforcing these provisions and if so how? In many states, once a one- and two family dwelling or townhouse receives its certificate of occupancy there is no more involvement with the building official. The IFC states that it is the fire official's responsibility to insure existing building meet the requirements of this code and that all buildings are maintained in accordance with its provisions? How many departments have requested entry to ensure that every existing one- and two- family dwelling is equipped with a carbon monoxide detector as required by the 2012 IFC? The current language of the IFC leaves the fire service open to liability if they are not enforcing the provisions of this code as it is written and adopted. Although some of the referenced standards in the IFC do not require maintenance on some of the system in a one-and two-family dwelling or townhouse, the inference is that maintenance is required since the term "maintenance" is utilized in 102.5 (2).

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP023-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: Feb. 24, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): IECC - Tables R405.5.2(1) and C407.5.1

PROPONENT INFORMATION

Name: Roger LeBrun

Representing: VELUX America LLC

Telephone: 864-941-4828

Email: roger.lebrun@velux.com

Address: 1418 Evans Pond Road (*Street Address*) Greenwood (*Town*) SC (*State*) 29649 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See reason statements.

Proposed text change, addition or deletion (attach additional information as needed):

Incorporate CE259-16 Parts I & II from the ICC Group B cycle in 2016

Supporting data and documents (attach additional information as needed)

See reason statements.

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ICC approved Part I - Part II disapproved on a disproven technicality, then approved at PC

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Roger LeBrun

Proponent's Signature

Roger LeBrun

Printed Name

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CE259-16

Part I:
IECC: C407.5.1.
Part II:
IRC: N1105.5.2.

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IECC-COMMERCIAL CODE COMMITTEE. PART II WILL BE HEARD BY THE IECC-RESIDENTIAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

Proponent : Julie Ruth, representing American Architectural Manufacturers Association (julruth@aol.com)

Part I

2015 International Energy Conservation Code

Revise as follows:

TABLE C407.5.1(1)
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT CHARACTERISTICS	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Space use classification	Same as proposed	The space use classification shall be chosen in accordance with Table C405.5.2 for all areas of the building covered by this permit. Where the space use classification for a building is not known, the building shall be categorized as an office building.
Roofs	Type: Insulation entirely above deck	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
	Solar absorptance: 0.75	As proposed
	Emittance: 0.90	As proposed
Walls, above-grade	Type: Mass wall where proposed wall is mass; otherwise steel-framed wall	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
	Solar absorptance: 0.75	As proposed
	Emittance: 0.90	As proposed
Walls, below-grade	Type: Mass wall	As proposed
	Gross area: same as proposed	As proposed
	U-Factor: as specified in Table C402.1.4 with insulation layer on interior side of walls	As proposed
Floors, above-grade	Type: joist/framed floor	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
Floors, slab-on-grade	Type: Unheated	As proposed
	F-factor: as specified in Table C402.1.4	As proposed
Opaque doors	Type: Swinging	As proposed
	Area: Same as proposed	As proposed
	U-factor: as specified in Table C402.1.4	As proposed
	Area	

Vertical fenestration other than opaque doors	1. The proposed ~~glazing~~ vertical fenestration area; where the proposed ~~glazing~~vertical fenestration area is less than 40 percent of above-grade wall area.	As proposed
	2. 40 percent of above-grade wall area; where the proposed ~~glazing~~ vertical fenestration area is 40 percent or more of the above-grade wall area.	
	U-factor: as specified in Table C402.4	As proposed
	SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used	As proposed
	External shading and PF: None	As proposed
Skylights	Area	As proposed
	1. The proposed skylight area; where the proposed skylight area is less than that permitted by Section C402.1 ~~3 percent of gross area of roof assembly~~.	
	2. The area permitted by Section C402.1 ~~3 percent of gross area of roof assembly~~; where the proposed skylight area exceeds that permitted by Section C402.1 ~~is 3 percent or more of gross area of roof assembly~~	
	U-factor: as specified in Table C402.4	As proposed
	SHGC: as specified in Table C402.4 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.	As proposed
Lighting, interior	The interior lighting power shall be determined in accordance with Section C405.4.2. Where the occupancy of the building is not known, the lighting power density shall be 1.0 Watt per square foot (10.7 W/m^2) based on the categorization of buildings with unknown space classification as offices.	As proposed
Lighting, exterior	The lighting power shall be determined in accordance with Table C405.5.2(2). Areas and dimensions of tradable and nontradable surfaces shall be the same as proposed.	As proposed

SWHF = Service water heat recovery factor, DWHR = Drain water heat recovery.

a. Where no heating system exists or has been specified, the heating system shall be modeled as fossil fuel. The system characteristics shall be identical in both the standard reference design and proposed design.

b. The ratio between the capacities used in the annual simulations and the capacities determined by sizing runs shall be the same for both the standard reference design and proposed design.

c. Where no cooling system exists or no cooling system has been specified, the cooling system shall be modeled as an air-cooled single-zone system, one unit per thermal zone. The system characteristics shall be identical in both the standard reference design and proposed design.

d. If an economizer is required in accordance with Table C403.3 and where no economizer exists or is specified in the proposed design, then a supply-air economizer shall be provided in the standard reference design in accordance with Section C403.3.

e. The SWHF shall be applied as follows:

1. Where potable water from the DWHR unit supplies not less than one shower and not greater than two showers, of which the drain water from the same showers flows through the DWHR unit then SWHF = [1 – (DWHR unit efficiency · 0.36)].

2. Where potable water from the DWHR unit supplies not less than three showers and not greater than four showers, of which the drain water from the same showers flows through the DWHR unit then SWHF = [1 – (DWHR unit efficiency · 0.33)].

3. Where potable water from the DWHR unit supplies not less than five showers and not greater than six showers, of which the drain water from the same showers flows through the DWHR unit, then SWHF = [1 – (DWHR unit efficiency · 0.26)].

4. Where Items 1 through 3 are not met, SWHF = 1.0.

Part II: Replace with the following.

CE259-16

Part I:
IECC: C407.5.1.
Part II:
IECC-R: Table R405.5.2(1) [IRC Table N1105.5.2(1)]

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IECC-COMMERCIAL CODE COMMITTEE. PART II WILL BE HEARD BY THE IECC-RESIDENTIAL CODE COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

Proponent : Julie Ruth, representing American Architectural Manufacturers Association (julruth@aol.com)

Part II

2015 International Residential Code

TABLE R405.5.2(1)
[N1105.5.2(1)] SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Above-grade walls	Type: mass wall if proposed wall is mass; otherwise wood frame.	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table R402.1.4	As proposed
	Solar absorptance = 0.75	As proposed
	Emittance = 0.90	As proposed
Basement and crawl space walls	Type: same as proposed	As proposed
	Gross area: same as proposed	As proposed
	U-factor: from Table R402.1.4, with insulation layer on interior side of walls	As proposed
Above-grade floors	Type: wood frame	As proposed
	Gross area: same as proposed	As proposed
	U-factor: as specified in Table R402.1.4	As proposed
	Type: wood frame	As proposed

Ceilings	Gross area: same as proposed	As proposed
	U-factor: as specified in Table R402.1.4	As proposed
Roofs	Type: composition shingle on wood sheathing	As proposed
	Gross area: same as proposed	As proposed
	Solar absorptance = 0.75	As proposed
	Emittance = 0.90	As proposed
Attics	Type: vented with aperture = 1 ft^2 per 300 ft^2 ceiling area	As proposed
Foundations	Type: same as proposed	As proposed
	Foundation wall area above and below grade and soil characteristics: same as proposed	As proposed
Opaque doors	Area: 40 ft^2	As proposed
	Orientation: North	As proposed
	U-factor: same as fenestration from Table R402.1.4	As proposed
Vertical fenestration other than opaque doors	Total vertical fenestration area[h] = (a) The proposed ~~glazing~~ vertical fenestration area, where the proposed ~~glazing~~ fenestration area is less than 15 percent of the conditioned floor area (b) ~~15 percent of the conditioned floor area,~~ The adjusted vertical fenestration area, where the proposed ~~glazing~~ fenestration area is 15 percent or more of the conditioned floor area. The adjusted vertical fenestration area shall be calculated as follows: AVF_{adj} - AVF x 0.15 X CFA/AF Where AVF_{adj} = Adjusted Vertical Fenestration Area AVF = Proposed Vertical Fenestration Area CFA = Conditioned Floor Area AF = Proposed Total Fenestration Area	As proposed
	Orientation: equally distributed to four cardinal compass orientations (N, E, S	As proposed

	& W).	
	U-factor: as specified in Table R402.1.4	As proposed
	SHGC: as specified in Table R402.1.2 except that for climates with no requirement (NR) SHGC = 0.40 shall be used.	As proposed
	Interior shade fraction: 0.92-(0.21 × SHGC for the standard reference design)	0.92-(0.21 × SHGC as proposed)
	External shading: none	As proposed
Skylights	~~None~~ Skylight Area = (a) The proposed skylight area where the proposed fenestration area is less than 15 percent of the conditioned floor area, or, (b) The adjusted skylight area where the proposed fenestration area is 15 percent or greater of the conditioned floor area. The adjusted skylight area shall be calculated as follows: $ASKY_{adj}$ = ASKY * 0.15 * CFA/AF $ASKY_{adj}$ = Adjusted Skylight Area ASKY = Proposed Skylight Area CFA = Conditioned Floor Area AF = Proposed Total Fenestration Area	As proposed
continue skylights	Orientation: As Proposed	As Proposed
continue skylights	U-factor: As specified in Table R402.1.4	As Proposed
continue skylights	SHGC: As specified in Table R402.1.2 including footnore (b) of that table, except that for climates with no requirement (NR): SHGC = 0.40	As Proposed
continue skylights	Interior shade fraction for the area of proposed skylights with SHGC ratings that include a pre-installed interior shade: 0.92 - 0.21 x SHGC for the standard reference design	As Proposed with shades assumed closed 50% of the time.

continue skylights	External Shading: None	As Proposed
Thermally isolated sunrooms	None	As proposed
Air exchange rate	Air leakage rate of 5 air changes per hour in Climate Zones 1 and 2, and 3 air changes per hour in Climate Zones 3 through 8 at a pressure of 0.2 inches w.g (50 Pa). The mechanical ventilation rate shall be in addition to the air leakage rate and the same as in the proposed design, but no greater than $0.01 \times CFA + 7.5 \times (N_{br} + 1)$ where: CFA = conditioned floor area N_{br} = number of bedrooms Energy recovery shall not be assumed for mechanical ventilation.	For residences that are not tested, the same air leakage rate as the standard reference design. For tested residences, the measured air exchange rate[a] . The mechanical ventilation rate[b] shall be in addition to the air leakage rate and shall be as proposed.

For SI: 1 square foot = 0.93 m^2, 1 British thermal unit = 1055 J, 1 pound per square foot = 4.88 kg/m^2, 1 gallon (US) = 3.785 L, Â°C = (Â°F-32)/1.8, 1 degree = 0.79 rad.

a. Where required by the *code official*, testing shall be conducted by an *approved* party. Hourly calculations as specified in the ASHRAE *Handbook of Fundamentals*, or the equivalent shall be used to determine the energy loads resulting from infiltration.

b. The combined air exchange rate for infiltration and mechanical ventilation shall be determined in accordance with Equation 43 of 2001 ASHRAE *Handbook of Fundamentals*, page 26.24 and the "Whole-house Ventilation" provisions of 2001 ASHRAE *Handbook of Fundamentals*, page 26.19 for intermittent mechanical ventilation.

c. Thermal storage element shall mean a component not part of the floors, walls or ceilings that is part of a passive solar system, and that provides thermal storage such as enclosed water columns, rock beds, or phase-change containers. A thermal storage element must be in the same room as fenestration that faces within 15 degrees (0.26 rad) of true south, or must be connected to such a room with pipes or ducts that allow the element to be actively charged.

d. For a proposed design with multiple heating, cooling or water heating systems using different fuel types, the applicable standard reference design system capacities and fuel types shall be weighted in accordance with their respective loads as calculated by accepted engineering practice for each equipment and fuel type present.

e. For a proposed design without a proposed heating system, a heating system with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and proposed design.

f. For a proposed design home without a proposed cooling system, an electric air

conditioner with the prevailing federal minimum efficiency shall be assumed for both the standard reference design and the proposed design.

g. For a proposed design with a nonstorage-type water heater, a 40-gallon storage-type water heater with the prevailing federal minimum energy factor for the same fuel as the predominant heating fuel type shall be assumed. For the case of a proposed design without a proposed water heater, a 40-gallon storage-type water heater with the prevailing federal minimum efficiency for the same fuel as the predominant heating fuel type shall be assumed for both the proposed design and standard reference design.

For residences with conditioned basements, R-2 and R-4 residences and townhouses, the following formula shall be used to determine ~~glazing~~fenestration area:
$AF = A_S \times FA \times F$ where:

AF = Total ~~glazing~~fenestration area.

A_S = Standard reference design total ~~glazing~~fenestration area.

FA = (Above-grade thermal boundary gross wall area)/above-grade boundary wall area + .0.5 x below-grade boundary wall area).

F = (Above-grade thermal boundary wall area)/(above-grade thermal boundary wall area + common wall area) or 0.56, whichever is greater.

and where:

Thermal Boundary wall is any wall that separates conditioned space from unconditioned space or ambient conditions.

Below-grade boundary wall is any thermal boundary wall in soil contact. Common wall area is the area of walls shared with an adjoining dwelling unit. *L* and *CFA* are in the same units.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP024-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 8, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): IMC 1001.1 Scope

PROPONENT INFORMATION

Name: James Quish Representing: Self

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Address: 89 Cedar Ridge Terrace (Street Address) Glastonbury (Town) CT (State) 06033 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

IMC Portion 1001.1 Scope - Suggest deletation of exception #7 to eliminate conflict with CGS

Proposed text change, addition or deletion (attach additional information as needed):

Delete exception 7 of IMC 1001.1 and carry forward the 2016 Code CT amended 1001.1.1

Supporting data and documents (attach additional information as needed)

CT General Statutes, Chapter 540, section 29-232 and 29-231.

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

☑ **I would like to make an in-person presentation of my proposal.** , if required.

Release

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Proponent's Signature James M Quish **Printed Name**

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

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Affirmative Action/Equal Opportunity Employer

12/29/16

CHAPTER 10

BOILERS, WATER HEATERS AND PRESSURE VESSELS

SECTION 1001 GENERAL

1001.1 Scope. This chapter shall govern the installation, *alteration* and repair of boilers, water heaters and pressure vessels.

Exceptions:

1. Pressure vessels used for unheated water supply.
2. Portable unfired pressure vessels and Interstate Commerce Commission containers.
3. Containers for bulk oxygen and medical gas.
4. Unfired pressure vessels having a volume of 5 cubic feet (0.14 m^3) or less operating at pressures not exceeding 250 pounds per square inch (psi) (1724 kPa) and located within occupancies of Groups B, F, H, M, R, S and U.
5. Pressure vessels used in refrigeration systems that are regulated by Chapter 11 of this code.
6. Pressure tanks used in conjunction with coaxial cables, telephone cables, power cables and other similar humidity control systems.
7. Any boiler or pressure vessel subject to inspection by federal or state inspectors.

SECTION 1002 WATER HEATERS

1002.1 General. Potable water heaters and hot water storage tanks shall be listed and labeled and installed in accordance with the manufacturer's instructions, the *International Plumbing Code* and this code. All water heaters shall be capable of being removed without first removing a permanent portion of the building structure. The potable water connections and relief valves for all water heaters shall conform to the requirements of the *International Plumbing Code*. Domestic electric water heaters shall comply with UL 174 or UL 1453. Commercial electric water heaters shall comply with UL 1453. Oil-fired water heaters shall comply with UL 732. Solid-fuel-fired water heaters shall comply with UL 2523. Thermal solar water heaters shall comply with Chapter 14 and UL 174 or UL 1453.

1002.2 Water heaters utilized for space heating. Water heaters utilized both to supply potable hot water and provide hot water for space-heating applications shall be *listed* and *labeled* for such applications by the manufacturer and shall be installed in accordance with the manufacturer's instructions and the *International Plumbing Code*.

1002.2.1 Sizing. Water heaters utilized for both potable water heating and space-heating applications shall be sized to prevent the space-heating load from diminishing the required potable water-heating capacity.

1002.2.2 Temperature limitation. Where a combination potable water-heating and space-heating system requires water for space heating at temperatures higher than 140°F (60°C), a temperature-actuated mixing valve that conforms to ASSE 1017 shall be provided to temper the water supplied to the potable hot water distribution system to a temperature of 140°F (60°C) or less.

1002.3 Supplemental water-heating devices. Potable water-heating devices that utilize refrigerant-to-water heat exchangers shall be *approved* and installed in accordance with the *International Plumbing Code* and the manufacturer's instructions.

SECTION 1003 PRESSURE VESSELS

1003.1 General. All pressure vessels, unless otherwise approved, shall be constructed and certified in accordance with the ASME *Boiler and Pressure Vessel Code*, and shall be installed in accordance with the manufacturer's instructions and nationally recognized standards. Directly fired pressure vessels shall meet the requirements of Section 1004.

1003.2 Piping. All piping materials, fittings, joints, connections and devices associated with systems utilized in conjunction with pressure vessels shall be designed for the specific application and shall be *approved*.

1003.3 Welding. Welding on pressure vessels shall be performed by an R-Stamp holder in accordance with the *National Board Inspection Code, Part 3* or in accordance with an *approved* standard.

SECTION 1004 BOILERS

1004.1 Standards. Boilers shall be designed, constructed and certified in accordance with the ASME *Boiler and Pressure Vessel Code*, Section I or IV. Controls and safety devices for boilers with fuel input ratings of 12,500,000 Btu/hr (3,662,500 W) or less shall meet the requirements of ASME CSD-1. Controls and safety devices for boilers with inputs greater than 12,500,000 Btu/hr (3,662,500 W) shall meet the requirements of NFPA 85. Packaged oil-fired boilers shall be listed and labeled in accordance with UL 726. Packaged electric boilers shall be listed and labeled in accordance with UL 834. Solid-fuel-fired boilers shall be listed and labeled in accordance with UL 2523.

1004.2 Installation. In addition to the requirements of this code, the installation of boilers shall conform to the manufacturer's instructions. Operating instructions of a permanent

CHAPTER 6 – DUCT SYSTEMS

(Amd) **606.2 Where required.** Smoke detectors shall be installed where indicated in Sections 606.2.1 to 606.2.3, inclusive.

> **Exception:** Smoke detectors shall not be required where air distribution systems are incapable of spreading smoke beyond the enclosing walls, floors and ceilings of the room or space in which the smoke is generated, or where the sole purpose of the air distribution system is to remove air from the inside of the building to the outside of the building.

(Amd) **606.2.1 Supply air systems.** Smoke detectors shall be installed in supply air systems with a design capacity greater than 2,000 cubic feet per minute in the supply air duct downstream of any filters and ahead of any branch connections.

(Amd) **606.2.2 Common supply and return air systems.** Where multiple air-handling systems share common supply or return air ducts or plenums with a combined design capacity greater than 2,000 cubic feet per minute, the supply air system shall be provided with smoke detectors in accordance with Section 606.2.1.

> **Exception:** Individual smoke detectors shall not be required for each fan-powered terminal unit, provided such units do not have an individual design capacity greater than 2,000 cubic feet per minute and will be shut down by the activation of the smoke detectors required by Section 606.2.1.

In all cases the smoke detectors shall comply with Sections 606.4 and 606.4.1.

(Amd) **606.2.3 Return air risers.** Where return air risers serve two or more stories and serve any portion of a return air system having a design capacity greater than 15,000 cubic feet per minute, smoke detectors shall be installed at each story. Such smoke detectors shall be located upstream of the connection between the return air riser and any air ducts or plenums.

> **Exception:** Smoke detectors are not required in the return air system where all portions of the building served by the air distribution system are protected by area smoke detectors connected to a fire alarm system in accordance with the 2016 Connecticut State Fire Safety Code. The area smoke detection system shall comply with Section 606.4.

CHAPTER 10 - BOILERS, WATER HEATERS AND PRESSURE VESSELS

(Add) **1001.1.1 Boilers and water heaters.** Boilers and water heaters shall also be governed by the regulations adopted under authority of chapter 540 of the Connecticut General Statutes.

CHAPTER 540
BOILERS AND WATER HEATERS

Table of Contents

Sec. 29-231. (Formerly Sec. 19-426). Exceptions. The provisions of this chapter shall not apply to: (1) Boilers under federal control; (2) portable boilers used in pumping, heating, steaming and drilling in the open field; (3) portable boilers used solely for agricultural purposes; (4) boilers on steam fire engines brought into the state for temporary use in checking conflagrations; (5) steam heating boilers carrying a pressure of not more than fifteen pounds per square inch, when used in private homes or apartment houses of not more than five families, provided they are equipped with adequate safety devices; (6) hot water heating boilers carrying a pressure of not more than thirty pounds per square inch, when used in private homes or apartment houses of not more than five families, provided they are equipped with adequate safety devices; (7) boilers installed and inspected under any city, town or borough system of boiler inspection under standards equivalent to those established under the provisions of this chapter; (8) hot water heaters approved by a nationally recognized testing agency which are equipped with adequate safety devices including a temperature and pressure relief valve, having a nominal water capacity of not more than one hundred twenty gallons and a heat input of not more than two hundred thousand British thermal units per hour and used solely for hot water supply carrying a pressure of not more than one hundred sixty pounds per square inch and operating at temperatures of not more than two hundred and ten degrees Fahrenheit provided such heaters are not installed in schools, day care centers, public or private hospitals, nursing or boarding homes, churches, public buildings or other places of public assembly; (9) antique or model boilers used in public, nonprofit engineering or scientific museums and operated for educational, historical or exhibition purposes having a shell diameter of less than twelve inches and a grate surface area of less than one square foot; and (10) public service companies as defined in section 16-1.

(1949 Rev., S. 4739; 1953, S. 2364d; P.A. 86-83, S. 1.)

History: Sec. 19-426 transferred to Sec. 29-231 in 1983; P.A. 86-83 eliminated reference to boilers of railroad locomotives, portable boilers used in construction and repair of roads, railroads and bridges and boilers carrying pressure of less than fifteen pounds psi., equipped with safety devices and included boilers under federal control, certain steam heating boilers, hot water heaters and antique or model boilers.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-232. (Formerly Sec. 19-428). Regulations. The Commissioner of Public Safety shall formulate regulations for the design, construction, installation, repair, use and operation of boilers in Connecticut. Such regulations shall conform as nearly as possible to the Boiler Code of the American Society of Mechanical Engineers, and the National Board Inspection Code, both as amended, and shall prescribe requirements as to the construction, installation, repair, use and inspection of boilers in the interest of public safety. The Commissioner of Public Safety shall hold hearings for the purpose of securing aid in the formulation of such regulations. Such hearings shall be public and representatives of all parties interested shall be given an opportunity to be heard.
(1953, S. 2366d; P.A. 77-614, S. 502, 610; P.A. 86-83, S. 2.)
History: P.A. 77-614 replaced "board", i.e. boiler safety board, with commissioner of public safety, effective January 1, 1979; Sec. 19-428 transferred to Sec. 29-232 in 1983; P.A. 86-83 required that boiler regulations also conform to the National Board Inspection Code and included provision re repair.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-233. (Formerly Sec. 19-430). Department of Public Safety boiler inspectors. The Department of Administrative Services may call upon the Commissioner of Public Safety to assist in formulating the examination requirements and the examination questions for candidates for the positions of boiler inspectors within the Department of Public Safety. The Commissioner of Public Safety shall issue a commission as boiler inspector to any person employed as boiler inspector who has been in the Department of Public Safety after being appointed in accordance with the provisions of chapter 67 or certified as competent as a result of such examination.
(1949 Rev., S. 4738; 1953, S. 2366d; P.A. 77-614, S. 503, 610.)
History: P.A. 77-614 replaced "board", i.e. boiler safety board with commissioner of public safety, labor department and commissioner with department and commissioner of public safety and personnel department with department of administrative services, effective January 1, 1979; Sec. 19-430 transferred to Sec. 29-233 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-234. (Formerly Sec. 19-431). Special inspectors. In addition to department boiler inspectors, the Commissioner of Public Safety shall, upon the application of any company authorized to insure against loss from explosion of boilers in this state, issue to any boiler inspectors of said company commissions as special inspectors, provided each such inspector before receiving his commission shall pass satisfactorily the examination provided for in section 29-235. The Commissioner of Public Safety may recognize in lieu of such examination a certificate of competency as an inspector of boilers for a state that has a standard of examination substantially equal to that of the state of Connecticut, or a commission as an inspector of boilers from the National Board of Boiler and Pressure Vessel Inspectors. Such special inspectors shall receive no salary from, nor shall any of their expenses be paid by, the state, and the continuance of a special inspector's commission shall be conditioned upon his continuing in the employ of such a boiler inspection and insurance company, and upon his maintenance of the standards imposed by this chapter. Each such company shall promptly notify the commissioner of any special inspector's termination of employment. Such special inspectors shall inspect all boilers insured by their respective companies, and the owners or users of such insured boilers shall be exempt from the payment of inspection fees, as provided for in this chapter. Each company employing such special inspectors shall, within fifteen days following each internal inspection made by such inspectors, file a report of such inspection with the Department of Public Safety upon appropriate forms as promulgated by the Commissioner of Public Safety, who may use the standards of the American Society of Mechanical Engineers.

(1953, S. 2367d; P.A. 77-614, S. 504, 610.)
History: P.A. 77-614 replaced labor commissioner and department with commissioner and department of public safety and deleted reference to boiler safety board's approval of examinations or certificates issued by other states, effective January 1, 1979; Sec. 19-431 transferred to Sec. 29-234 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-235. (Formerly Sec. 19-432). Examination for special inspector's commission. Examinations for candidates for special inspectors' commissions shall be given at least once each year by the Commissioner of Public Safety or by at least two examiners appointed by said commissioner. All examinations shall be in writing, shall be uniform for all candidates and shall be confined to questions formulated by the commissioner and designed to determine fitness and competency as a boiler inspector. The written examination may be supplemented by an oral examination or an interview by the commissioner or his designee which shall conform in general character with the written examination. Each candidate whether he passes the examination or not shall be notified by the board of his standing and grade as soon as possible after the examination has been completed. If an applicant for a special inspector's commission fails to pass the examination, he may appeal to the commissioner or his designee for a hearing on his grade. The decision after such hearing shall be final, but an applicant who desires to improve his rating shall have the right to take another examination within ninety days. The record of an applicant's examination, whether original or modified after appeal, shall be accessible to him and his employer.
(1953, S. 2368d; P.A. 77-614, S. 505, 610.)
History: P.A. 77-614 replaced boiler safety board with commissioner of public safety and allowed designee of commissioner to conduct examinations and interviews and to receive appeals, effective January 1, 1979; Sec. 19-432 transferred to Sec. 29-235 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-236. (Formerly Sec. 19-433). Commission required. Suspension or revocation. Appeal. No person shall inspect boilers under this chapter unless he holds a commission issued to him by the Commissioner of Public Safety as provided in this chapter. This provision shall not apply to boiler inspectors in the state classified service on October 1, 1953. Such commission may be suspended or revoked by the commissioner upon evidence of incompetency or untrustworthiness of the holder thereof or for falsification of any matter or statement contained in his application or in a report of any inspection. A person whose commission is suspended or revoked shall have the right to appeal to the commissioner within two weeks after such suspension or revocation. The commissioner or his designee shall hold a hearing on such appeal at which the appellant may be present in person. Any person aggrieved thereby may appeal in accordance with section 4-183.
(1953, S. 2368d; P.A. 77-603, S. 21, 125; 77-614, S. 506, 610.)
History: P.A. 77-603 allowed appeals from decisions of boiler safety board in accordance with Sec. 4-183; P.A. 77- 614 replaced labor commissioner with commissioner of public safety as issuer of commissions and replaced boiler safety board with commissioner of public safety as appeal authority, allowed commissioner's designee to hold hearings and deleted provision whereby board was formerly required to report recommendations re suspensions and revocations to labor commissioner, effective January 1, 1979; Sec. 19-433 transferred to Sec. 29-236 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-237. (Formerly Sec. 19-434). Inspection. All boilers included under this chapter shall be inspected by a state boiler inspector or by a special inspector employed by an insurance company licensed to insure boilers in this state as follows:

(1) Power boilers, meaning boilers operating at steam or vapor pressures in excess of fifteen pounds per square inch gauge, except power boilers that operate with internal water treatment under the direct supervision of a qualified engineer, shall be inspected each year. Such boiler inspection shall consist of (A) a thorough internal and external inspection while not under pressure, and (B) an external inspection under operating conditions not more than six months after the internal and external inspection. No more than fourteen months shall elapse between internal inspections and between external inspections while under pressure.
(2) Power boilers that operate with internal water treatment under the direct supervision of a qualified engineer shall be inspected every eighteen months. Such boiler inspection shall consist of (A) a thorough internal and external inspection while not under pressure and (B) an external inspection under operating conditions not more than nine months after the internal and external inspection.
(3) Where construction will permit, low pressure steam or vapor heating boilers, hot water heating boilers, hot water supply boilers and hot water heaters shall be inspected externally biennially and internally at the discretion of the boiler inspector. If a boiler inspector decides a hydrostatic test is necessary to determine the safety of a boiler or heater, such test shall be made under the inspector's direction. The Commissioner of Public Safety may order inspections by the Department of Public Safety or the insurance carrier in addition to the regular annual or biennial inspections to clear up any doubts as to the safety of continuing the operation of any boiler or heater included in this chapter, but no additional fee shall be charged or allowed for such additional inspections, unless the owner or user is found to have operated or ordered or permitted the operation of such boiler or heater, intentionally or negligently, in violation of this chapter or the boiler regulations. Each boiler insurance carrier shall forward to the commissioner, within thirty days following each inspection as required by this chapter, a report of such inspection upon appropriate forms as promulgated by the commissioner, who may use the form suggested by the American Society of Mechanical Engineers.
(1949 Rev., S. 4739; 1953, S. 2370d; 1963, P.A. 161; P.A. 77-614, S. 507, 610; P.A. 85-6; P.A. 86-83, S. 5; P.A. 99- 138, S. 1.)
History: 1963 act added that yearly inspection shall apply only to power boilers, lowering time lapse between internal inspections and external inspections under pressure from fifteen to fourteen months, added provisions re biennial inspection of certain boilers and changed technical language; P.A. 77-614 replaced labor commissioner and department with commissioner and department of public safety in Subsec. (b), effective January 1, 1979; Sec. 19-434 transferred to Sec. 29-237 in 1983; P.A. 85-6 amended Subsec. (b), providing that low pressure steam or vapor heating boilers, hot water heating and supply boilers be inspected internally at the boiler inspector's discretion, where previously both internal and external inspections were required "where construction will permit"; P.A. 86-83 amended Subsec. (b) to require inspection of hot water heaters; P.A. 99-138 redesignated former Subsec. (a) as Subdiv. (1), added Subdiv. (2) re provisions for inspection of boilers that operate with internal water treatment under the supervision of an engineer and redesignated former Subsec. (b) as Subdiv. (3).

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-238. (Formerly Sec. 19-435). Inspection fees. Operating certificate. The owner or user of a boiler required by this chapter to be inspected by the Commissioner of Public Safety or by state boiler inspectors shall pay to the commissioner at the time of inspection a fee as follows:
(1) Boilers of fifty square feet or less of heating surface, thirty dollars; boilers of over fifty square feet of heating surface and less than one thousand square feet, forty dollars; boilers of over one thousand square feet of heating surface and less than four thousand square feet, sixty dollars; boilers of at least four thousand square feet of heating surface and less than ten thousand square feet of heating surface, eighty dollars; boilers of at least ten thousand square feet of heating surface, one hundred dollars. External inspection: Boilers having fifty square feet or less of heating surface, twenty dollars; boilers having over fifty square feet of heating surface, twenty-five dollars. Not more than the equivalent of the internal and external inspection fees shall be charged or collected for any and all such inspections of any boiler in

any one year.
(2) Inspection of heating boilers without a manhole, thirty dollars; inspection of heating boilers with a manhole, fifty dollars; inspection of hot water supply boilers and hot water heaters, thirty dollars. Not more than one fee shall be charged or collected for any and all such inspections of any low pressure boiler in any two-year period.
(3) An additional fee based on the scale of fees applicable to an internal inspection of the boiler shall be charged in any instance where it is necessary to make a special trip to witness a hydrostatic test. No fee shall be required of the state or any agency of the state. All fees collected by the commissioner under authority of this chapter shall be transferred by the commissioner to the State Treasurer for deposit in the General Fund. If the report of inspection by the Department of Public Safety inspector indicates that any boiler meets the requirements of this chapter and the boiler regulations, an operating certificate shall be issued by the commissioner to the owner or user. Such certificate shall state the pressure and other conditions under which such boiler may be lawfully operated. An operating certificate shall be valid for a period of not more than twelve months from the date of internal inspection, in the case of power boilers inspected pursuant to subdivision (1) of section 29-237, except that the certificate shall be valid for a period of not more than two months beyond the period set by the Commissioner of Public Safety in accordance with section 29-237. An operating certificate shall be valid for a period of not more than eighteen months from the date of internal inspection in the case of power boilers inspected pursuant to subdivision (2) of section 29-237. Operating certificates shall be valid for twenty-four months in the case of low pressure steam or vapor heating boilers, hot water heating boilers, hot water supply boilers and hot water heaters approved by a nationally recognized testing agency. If a boiler inspected by a special inspector commissioned by said commissioner is found to conform with the requirements of this chapter and the boiler regulations, an operating certificate shall be issued by said commissioner to the owner or user upon the receipt of the insuring company's report and such owner or user shall be exempt from the inspection fees provided by this section, except that for each certificate so issued the owner or user of the boiler shall pay to said commissioner the sum of twenty dollars. Said commissioner may order reinspection if reasonable doubt exists regarding any inspection. Such certificate shall state the pressure and other conditions under which such boiler may be lawfully operated and shall be valid not more than the period indicated in this section and shall be renewed each year in the case of power boilers inspected pursuant to subdivision (1) of section 29-237, every eighteen months in the case of power boilers inspected pursuant to subdivision (2) of section 29-237, and biennially in the case of hot water heating or hot water supply boilers and hot water heaters. An operating certificate shall be immediately invalid if the boiler is relocated or altered, unless such relocation or alteration has been approved in accordance with this chapter or the boiler code and regulations. No boiler shall be operated unless a valid operating certificate is displayed under glass in a conspicuous place in the room in which such boiler is located. If the boiler is not located within the building, the certificate shall be posted in a location convenient to the boiler inspected. In the case of a portable boiler such certificate shall be kept in a metal container to be fastened to the boiler or kept in a tool box accompanying the boiler.
(1949 Rev., S. 4741, 4744; 1953, S. 2371d; 1961, P.A. 408; 1963, P.A. 642, S. 21; P.A. 73-574, S. 1, 3; P.A. 77-614, S. 508, 610; P.A. 80-297, S. 9, 20; P.A. 86-83, S. 3; May Sp. Sess. P.A. 92-6, S. 64, 117; P.A. 99-138, S. 2.)
History: 1961 act added distinctions re inspection fees for power boilers and low heating power boilers, changing amounts of and limitations on these fees, provided for additional fees rather than fee not exceeding five dollars for hydrostatic tests, exempted state or state agency from fees, changed requirements re period of validity for operating certificates, raised fee for boiler inspected by special inspector from one to two dollars and added provisions re certificates where boiler is located without the building and for portable boilers; 1963 act provided in Subdiv. (a) that fee applies to boilers of "at least" rather than "over" four and ten thousand square feet of heating surface; P.A. 73-574 raised fees in Subdiv. (a) for internal inspection from five to six dollars, from twelve to fifteen dollars, from fifteen to twenty dollars and from twenty to twenty-five dollars for ordered classes and for external inspection from three to five dollars and from five to eight dollars for ordered classes, in Subdiv. (b) for boilers

without manhole from five to eight dollars, for boilers with manhole from ten to twelve dollars and for hot water supply boilers from three to five dollars and in Subdiv. (c) for certificates issued upon inspection by special inspector from two to five dollars; P.A. 77-614 replaced labor commissioner and department with commissioner and department of public safety, effective January 1, 1979; P.A. 80-297 increased fees in Subdiv. (a) for internal inspection to twelve, twenty-five, thirty and forty dollars from previous respective amounts, imposing a new twenty dollar fee for new class of boilers over fifty but less than one thousand square feet and making twenty-five dollar fee applicable to boilers over one thousand and less than four thousand square feet, and for external inspection raised fees to ten and fifteen dollars from previous respective amounts, in Subdiv. (b) to twelve, sixteen and eight dollars from previous respective amounts and in Subdiv. (c) to ten dollars; Sec. 19-435 transferred to Sec. 29-238 in 1983; P.A. 86-83 increased all boiler inspection fees, increased the fee for the issuance of an operating certificate from ten to fifteen dollars and added references to hot water heaters; May Sp. Sess. P.A. 92-6 increased various inspection fees and made technical changes; P.A. 99-138 added provisions in Subdiv. (3) re operating certificates for boilers that operate with internal water treatment under the supervision of an engineer and made provisions gender neutral.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-239. (Formerly Sec. 19-436). Certificate required. Conformity to standards. No owner or user of a boiler shall operate such boiler under pressure in this state without an operating certificate as provided for in section 29-238. Any person who operates a boiler without such certificate or at pressure exceeding that specified in such certificate shall be subject to the penalty provided by section 29-243. No boiler which does not conform to the provisions of this chapter or to the boiler regulations formulated or adopted by the board shall be installed in this state. All boilers shall be inspected during construction by an inspector authorized to inspect boilers in this state or, if constructed outside the state, by an inspector holding a commission from the National Board of Boiler and Pressure Vessel Inspectors and a report of each such inspection made available to the Commissioner of Public Safety. Said chapter shall not be construed as preventing the use or sale of boilers in this state which have been installed or in use in this state prior to October 1, 1953, and which have been made to conform to regulations for existing installations.
(1953, S. 2372d; P.A. 79-560, S. 7, 39.)
History: P.A. 79-560 replaced labor commissioner with commissioner of public safety for conformity with changes enacted in chapter through P.A. 77-614 and made technical corrections; Sec. 19-436 transferred to Sec. 29-239 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-240. (Formerly Sec. 19-437). Report of violations. Orders to comply. Boiler and factory inspectors of the state, in their routine inspections, may examine the operating certificates and the operating conditions of all boilers and shall report any violations of this chapter or the boiler regulations immediately to the Department of Public Safety. The Commissioner of Public Safety shall forthwith order the owner or user of such boiler to comply with the law and the regulations at once and, if the violation may endanger life or property, said commissioner shall order the boiler closed down until the defect or violation is eliminated.
(1949 Rev., S. 4740; 1953, S. 2373d; P.A. 79-560, S. 8, 39.)
History: P.A. 79-560 replaced labor commissioner and department with commissioner and department of public safety for conformity with changes enacted in chapter through P.A. 77-614; Sec. 19-437 transferred to Sec. 29-240 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-241. (Formerly Sec. 19-439). Registration of boilers. The installer of any newly installed or reinstalled boiler included in this chapter shall register, upon forms furnished by the department, every such boiler installed by him, stating the type, dimensions, description and any other facts required by the department together with the name and address of the manufacturer and of the insurance carrier, if any. Failure to fill out and return such registration forms shall be a violation of this chapter.
(1953, S. 2374d; P.A. 86-83, S. 4.)
History: Sec. 19-439 transferred to Sec. 29-241 in 1983; P.A. 86-83 required the installer to register boilers installed by him, eliminating reference to registration by owners or users.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-242. (Formerly Sec. 19-440). Enforcement. The commissioner and his authorized agents shall enforce the provisions of this chapter and any regulations relating to boilers, and for this purpose shall have access to the location of any boiler at any reasonable time.
(1953, S. 2375d.)
History: Sec. 19-440 transferred to Sec. 29-242 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-243. (Formerly Sec. 19-441). Penalties. Any person who violates any provision of this chapter or of the code or other regulations relating to this chapter, or who obstructs the commissioner or his agents engaged in their duties under this chapter, for a first offense, shall be fined not more than one hundred dollars and, for each subsequent offense, shall be fined not more than five hundred dollars or imprisoned not more than four months or both.
(1949 Rev., S. 4742, 4743; 1953, S. 2377d; P.A. 77-614, S. 515, 610.)
History: P.A. 77-614 deleted reference to labor commissioner, referring instead to "commissioner", i.e. commissioner of public safety, effective January 1, 1979; Sec. 19-441 transferred to Sec. 29-243 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Sec. 29-244. (Formerly Sec. 19-442). Failure to post valid operating certificate. In the examination and inspection of premises provided for in sections 29-305 and 31- 9, the officer making the inspection shall ascertain whether there is a valid operating certificate displayed as required in section 29-238 and, if there is no such certificate displayed, he shall at once inform the Commissioner of Public Safety.
(1949 Rev., S. 4745; P.A. 77-614, S. 516, 610.)
History: P.A. 77-614 replaced labor commissioner with commissioner of public safety, effective January 1, 1979; Sec. 19-442 transferred to Sec. 29-244 in 1983.

(Return to TOC) (Return to Chapters) (Return to Titles)

Secs. 29-245 to 29-249. Reserved for future use.

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2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP025-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/14/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): IRC Chapter 2 - Definitions

R106 the IRC portion of the Connecticut State Building Code

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Defining "acceptable engineering practice" for Public Safety

Proposed text change, addition or deletion (attach additional information as needed):

See attached

Supporting data and documents (attach additional information as needed)

See attached

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter s own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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☑ **I would like to make an in-person presentation of my proposal.**

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Peter J. Cloudas, PE

Proponent s Signature **Printed Name**

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12/29/16

PETER J. CLOUDAS, PE
Architectural/Structural Engineer
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March 14, 2016

Codes and Standards Committee
Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

Subject: Defining "acceptable engineering practice" in the 2018 State Building and Fire Safety Codes

Dear Codes and Standards Committee;

I would like to propose changes to the model code language for the 2018 State Building Code related to "acceptable engineering practice" and the IRC Portion of the code.

QUESTION:

What is the meaning or definition of "acceptable engineering practice"?

PREAMBLE:

The mission of the Connecticut State Department of Public Safety is to promote the health and safety of the people of Connecticut. The mission of the Connecticut Department of Consumer Protection is to ensure a fair and equitable marketplace as well as safe products and services for consumers. When there exists a potential ambiguity in the building code these two missions can become less effective posing a risk to the people of Connecticut. This is particularly evident in technical situations where the general public, as well as town code officials, might not fully understand the complexity of the legal relationships. Such a situation exists because the Connecticut State Building Code indicates in several locations of the IRC portion of the Connecticut State Building Code that a structural element shall be designed in accordance with "acceptable engineering practice" but leaves this undefined and open to interoperation that might undermine other Connecticut statues.

PURPOSE:

The intent of the IRC portion of the Connecticut State Building Code is to facilitate the design and construction of residential dwelling without the need of an Architect or Engineer, however,

such design is limited to the scope as outlined in Section R301. Most homes can easily fit into the scope of the prescriptive codes, however, many dwellings in whole or in part deviate from the code. The model code offers a robust solution to accommodate this deviation by including a broad language phrase. That is, in multiple locations throughout the IRC portion of the Connecticut State Building Code there are references to "Accepted Engineering Practice." It is a phrase that on the surface seems very simple, but it is not.

The definition of this phrase, and any phrase with the general same intent, needs to be defined clearly, and anchored in the context of the Connecticut General Status. Connecticut General Statute Chapter 391 provides a clear mechanism for determining "Accepted Engineering Practice" and assigns it through the Connecticut Department of Consumer Protection. But the presence of the ambiguous phrase "Accepted Engineering Practice" repeated throughout the code opens the door to the possibility of broad interpretation at local level.

Further, the use of software for the production of documents that specify structural elements should be included under this definition and limited in section R106 of the IRC portion of the Connecticut State Building Code.

DANGER:

It appears to be a relatively common practice for building officials in many towns to accept computer printouts, placement plans and material takeoff plans as demonstrating of "acceptable engineering practice." These documents are provided by builders, developers, and in some cases homeowners, but are often prepared by persons not conforming to Connecticut General Statute regarding the practice of engineering.

The computer applications are often supplied by big corporate entities. Specifically, engineered product suppliers are providing software developed with the intention of preparing material take-off and which produces Layout and Material Drawings. The software applications also performs engineering calculations. It is not just proprietary software, there are many engineering software application available on the open market that preform analysis, design, and specification

Software for the production of documents that specify structural elements is becoming more available and easier to use, but users of such software do not have sufficient understanding of the engineering principles behind the software. These Users lack the ability to understand when the software is in appropriate to use and cannot accept the legal responsibility for the application of the software. Further the software uses license routinely exempts the software maker from defects rising out of the software use, requiring the user to independently verify

the validity of its output. Simply requiring "Accepted Engineering Practice" without a fine definition exposes the public to an unreasonable risk.

It is legitimate that such software be employed to produce Layout and Material Drawings for submission to the architect, engineer and project owners for approval. It is also legitimist that this software incorporates some quality assurance into the process to help protect the supplier from claims of supplying the improper material. In fact, these software applications are a fundamental part of a BIM system and will increasingly be used as technology advances. But, when these items are used in the permit application there is a question whether the practice violates state law if such use is not done under the direct supervision of a licensed engineer. This is acutely important in the residential construction industry, where proper controls and checks are often left out of the construction process. The phrase "acceptable engineering practice" might be too broad and might allow enforcement inconsistent with the intent of the Connecticut General Statute regarding the practice of engineering.

A private home is the property of a private citizen; however, public safety is not suspended at the door of a private home. The state has a duty to protect the children in that home, the guests that visit that home, and all subsequent owners of the home. There are three scenarios of concern:

1) A home owner might attempt to study the engineering principles and then provide a "do-it-yourself" calculation to submit to the building department for code approval. Similarly, the home owner might purchase software to do the calculation with little understanding of the software proper use and limits. Where it might be easy to find sample calculations and text book explanations of numerical solutions, or even software, the considerations that a professional engineer makes requires more than simply doing the math. Very often it requires engineering judgment, understanding of underlining assumptions, and a professional appreciation of the broader implications of engineering decisions. A quick study of engineering or the use of computer applications can give both the home owner and the code official a false sense of security. For example, computer produce neat and clean output, diagrams, and specification based on input given, but computer programs do not provide judgment. Can a home owner under these situations provide "Accepted Engineering Practice" for code approval despite the home owner not having a license to provide Professional Engineering service from the Department of consumer Protection?
2) A builder may wish provide a set of calculation to the building department for code approval on a project he was hired to build. Builders and contractors are required to be licensed, but they are not required to study engineering or to pass the same level of qualification which is a prerequisite for a professional engineer. Builder, looking to

make a bigger profit margin, are also much more likely to invest in computer software to do the job of engineering calculations instead of hiring a licensed professional engineer. In this case, they are providing both contractor services and engineering services. Based on the code, can a builder under these situations provide on the behalf of the owner "Accepted Engineering Practice" for code approval despite not having a license to provide Professional Engineering service from the Department of Consumer Protection?

3) A material suppliers (e.g. Lumber yards) may wish to provide a set of calculation to the builder or to the homeowner to demonstrate that they are providing a suitable product. These calculations are intern used for submission to the building department for code approval. Material suppliers have a vested interest in selling material for construction. In modern construction these materials included pre-engineered products such as I-Joists, LVL, PSL, LSL, glue-lam lumber, prefabricated trusses, steel beams, braced wall panels, anchor bolts, and other similar items. To facilitate the sale of construction material large national corporations provide suppliers with proprietary software for the production of documents that specify structural elements. Such proprietary software is becoming more available and easier to use, but not all users of such software have sufficient understanding of the engineering principles behind the software. Many users fail to understand design scenarios where the software is inappropriate to use and they cannot accept the legal responsibility for the application of the software. Further the software users-license routinely exempts the software maker from defects rising out of the software use, requiring the user to independently verify the validity of its output. Can placement plans and material take-off plans, and other similar documents provided by a material suppliers be considered "Accepted Engineering Practice" for code approval despite the user not having a license to provide Professional Engineering service from the Department of Consumer Protection?

Simply stating in the code that "Accepted Engineering Practice" is required without a fine definition exposes the public to an unreasonable risk. Code Enforcement offices in the State of Connecticut, as well qualified as they are, are not required to study engineering, to practice engineering prior to becoming a code official, nor to be professionally licensed as an engineer. Considering this, how does a Code Enforcement officer determine whether "Accepted Engineering Practice" was provided to a sufficient level to meet code requirements and to protect the public safety?

The determination of "Accepted Engineering Practice" comes in two parts. The obvious part is determining if the "Engineering Practice" is "acceptable." This part is determined by the Standard of Care required by law and goes beyond the building code. But, before we get to determining if the "Engineering Practice" is "acceptable," it must first be determined if the person providing the "Engineering Practice" is qualified in the States of Connecticut to provide

"Engineering Practice". The second part is equally important and within scope of the code's capacity to define. "Accepted Engineering Practice" should be defined in terms of who can provide it.

PROPOSED CHANGE TO THE IRC PORTION OF THE CONNECTICUT STATE BUILDING CODE

Add: Definition

Accepted Engineering Practice: The analysis, design, and specification of structural elements is the practice of engineering. Connecticut General Statute Chapter 391 (and Chapter 390, for Architects) limits individuals and businesses that can engage in the practice of engineering to Professional Engineers licensed by the Connecticut Department of Consumer Protection. The only designs that shall be approved by any code official as meeting the requirements of the Connecticut State Building Code, including those of the IRC portion of the Connecticut State Building Code, as conforming to the "Accepted Engineering Practice" are those bearing the seal of a Professional Engineers licensed by the Connecticut Department of Consumer Protection. This definition shall apply to any like phrase in the IRC portion of the Connecticut State Building Code with the general same intent.

Exception:

1) Engineering preformed under the direct supervision of a licensed Professional Engineers (or Architect) in accordance with Connecticut General Statute Chapter 391 (and Chapter 390, for Architects) provisions;

2) Activities covered under the exemptions of Connecticut General Statute Chapter 391 (and Chapter 390, for Architects);

3) The analysis, design, and specification of structural elements by the permit applicant provided the permit applicant is the owner and resident of the single family dwelling and has demonstrated to the building official that he/she has sufficient understand of engineering practice and capacity to provide engineering design, and provided they are not preforming the analysis, design, and specification of structural elements for another consumer's benefit. This exemption excluded designers, builders, developers, suppliers, detailers, who are not direct owners of the property having the intend to reside in the building for the foreseeable future. This exemption excluded otherwise qualifying individuals that intend to sell the dwelling in five years or less. This exemption excluded otherwise qualifying individuals that use software for the analysis, design, and specification without the understand of engineering practice and capacity to provide engineering design without the use of the software. This exemption excluded designs provided for two-family dwellings, multi-family dwellings, or multiple single family dwellings.

Design in accordance with accepted engineering practice. See Accepted Engineering Practice

Engineer. See Accepted Engineering Practice and Registered Design Professional.

Engineering. See Accepted Engineering Practice

Qualified Engineer. See Accepted Engineering Practice and Registered Design Professional.

Professional Engineer. See Accepted Engineering Practice and Registered Design Professional.

Amend:

R106.1 Submittal documents. Submittal documents consisting of *construction documents*, and other data shall be submitted in two or more sets with each application for a *permit*. The *construction documents* shall be prepared by a registered *design professional* where required by the statutes of the *jurisdiction* in which the project is to be constructed. Where special conditions exist, the *building official* is authorized to require additional *construction documents* to be prepared by a registered *design professional*.

Exception: The *building official* is authorized to waive the submission of *construction documents* and other data not required to be prepared by a registered *design professional* if it is found that the nature of the work applied for is such that reviewing of *construction documents* is not necessary to obtain compliance with this code.

Add: This exemption excluded designs for buildings and structures exceeding the scope as outlined in Section R301of the IRC portion of the Connecticut State Building Code. No waiver shall be provided under these conditions.

Add:

R106.1.4 Unqualified Submittal Documents. Documents prepared using software for the analysis, design, and specification of structural element for buildings, structures, or structural element exceeding the scope as outlined in Section R301of the IRC portion of the Connecticut State Building Code and requiring conformance with the definition of Accepted Engineering Practice as provided in Chapter 2 of the IRC portion of the Connecticut State Building Code shall not be accepted by any building official without the seal of a Professional Engineers licensed by the Connecticut Department of Consumer Protection.

CONCLUSION:

The role of the professional engineering is changing, but it has not been made obsolete by advancements in technology. Non-professional technologists that specialize in creating placement plans and material take-off plans play an important role in the construction industry. Use of such software as a component of a greater BIM System is leading the industry to a more integrated product design stream. This is the future of construction were the relationship between engineering and advances is material merge to yield a better preforming safer building. But, along the way we need to keep an eye on public safety. The software that aids

these technologists in their role are becoming increasingly capable, and inadvertently causing unqualified people to cross the line and provide engineering services without a professional engineering license.

State licensed Professional Engineers must follow the state code of ethics. Further, many engineers belong to professional societies. I am a member of the American Society of Civil Engineers. The ASCE Code of Ethics states that professional "Engineers shall hold paramount the safety, health, and welfare of the public in the performance of [our] professional duties." What code do an unlicensed under-qualified technicians or salesman prescribe to when delivering engineering services without a license?

A clear definition of "acceptable engineering practice" is needed to close the gap. In the past "acceptable engineering practice" may have been easily understood as "hire a professional engineer", but today it could be misinterpreted as "use a computer to tell you what you need", and this threatens public safety. Further, code enforcement officials do not universally have the capacity, experience, or education to make qualified judgment of "acceptable engineering practice." The Connecticut state general statues have addressed this qualification issue and provides a mechanism through the Department of Consumer Protection. Connecticut consumer protection laws are intended to establish a fair and equitable marketplace, as well as safe products and services for consumers. If "acceptable engineering practice" is too broadly interpreted by some local building officials to include calculations prepared by any builder, any material supplier, or any homeowner who does not meet the strict prerequisite for a professional engineer then the code official inadvertently undermines consumer protection laws.

It is my hope that a well thought out definition by the Codes and Standards Committee will eliminate ambiguity; create continuity of mission between the Connecticut State Department of Public Safety the the Connecticut Department of Consumer Protection; and will preserve the original intent related to public safety.

Respectfully Submitted,

Peter J. Cloudas, P.E.
Structural/Architectural Engineer
CT PE # 20916

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP026-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/22/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

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Proponent's Signature Robin P. McHaelen **Printed Name**

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Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

True Colors

Sexual Minority Youth and Family Services

March 22, 2017

To Whom It May Concern:

I am writing in support of 2902.1.2; 2901.1.3 (add new); 2902.2, a code change that would make it easier for building owners to create gender neutral bathroom facilities. I am the Executive Director of True Colors, Inc. a CT non-profit that focuses on the needs and concerns of lesbian, gay, bisexual and transgender youth. In that role, I have worked with countless young people who have experienced harassment and even been assaulted because someone thought they were in the 'wrong' bathroom. Many transgender students report that they try not to use the facilities at all, including at school. That is bad for their bodies, let alone their hearts and minds.

It is my firm belief that access to gender-neutral bathrooms benefits many people in our communities. Gender-neutral or unisex bathrooms, which are open to anybody regardless of sex, gender identity, or gender expression, enhance individual safety and dignity. Consider:

- Transgender and gender-nonconforming individuals often face stigma, violence, and anxiety around something as simple and necessary as using a bathroom because their gender expression may not match the sign on the bathroom door, or other bathroom users' expectations. Gender neutral bathrooms address this problem.
- Gender-neutral bathrooms also make it easier for caregivers of all genders to help seniors and people with disabilities access facilities.
- Providing gender-neutral bathrooms also contributes to gender equity by reducing disproportionate wait times for women, and allowing parents of all genders to comfortably accompany their children into bathrooms.

Under the current code, building owners have to meet separate numerical requirements for male and female bathroom fixtures (toilets and urinals). The Plumbing Code does not currently count gender-neutral bathrooms toward the total number of fixtures required in a public building. This makes it unnecessarily difficult for building owners to provide gender neutral bathrooms while meeting the code's fixtures requirement. If building owners could count gender-neutral restrooms toward the total fixture requirement, facilities could have more gender-neutral restrooms while still complying with the code.

It is such a simple, yet profound fix. The suggested revision simply counts gender neutral options toward the total number of fixtures. It works for everybody. I hope you will consider this much needed change. Please feel free to contact me at (860) 232-0050, x 302 should you have further questions or concerns,

Respectfully,

Robin P. McHaelen, MSW
Executive Director

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP027-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 23,2017

CODE INFORMATION

Proposed change to: ☐ Building Code ☐ Fire Safety Code

Code section(s): 2012 IECC Section C202 Definitions

PROPONENT INFORMATION

Name: Donald Vigneau

Representing: Donald J. Vigneau AIA

Telephone: 860-742-1102

Email: dvigneau@akfgroup.com

Address: 3 Wormwood Hill Rd (*Street Address*) Mansfield Center (*Town*) CT (*State*) 06250-1134 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Add a definition for "Toplight" as the term is used in Section C405.2.3 and in several illustrative

Proposed text change, addition or deletion (attach additional information as needed):

Section C202 Definitions. (ADD) Toplight. Lighting of building interior spaces with daylight adm

Supporting data and documents (attach additional information as needed)

(see 90.1-2013 Section 3.2 Toplightiing

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

ASHRAE 90.1-2013 Section 3.2 Definitions

☐ **I would like to make an in-person presentation of my proposal.**

Release

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Proponent's Signature

Donald J. Vigneau (signature on mailed

Printed Name

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

12/29/16

94-2/6
04/24/17

From: Rita Vigneau <rita.vigneau@yahoo.com>
Sent: Thursday, March 23, 2017 4:58 PM
To: CodesStandards, DAS
Cc: Don Vigneau; rita.vigneau@yahoo.com rita.vigneau@yahoo.com
Subject: Code Change Proposal / IECC C202

Attached please find proposed change to Section C202 Definitions to coordinate IECC with ASHRAE 90.1. A signed original is forwarded under separate cover to support the requested change.

The terms are not readily understood by the general public and need the specific definition for use in the building codes.

The proposal is coordinated with the alternative energy standard. The only difference is that the term “toplighting” used in 90.1-2013 is replaced in IECC [CE] by the term “toplight” which I have proposed in order to keep the remainder of the IECC terminology intact.

Don Vigneau AIA

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP028-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/23/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Giovanna Shay

Representing: Greater Hartford Legal Aid

Telephone: 860-541-5061

Email: gshay@ghla.org

Address: 999 Asylum Ave., 3rd Fl. (*Street Address*) Hartford (*Town*) CT (*State*) 06105 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B, letter of support from GHLA.

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

Attachment A was prepared by Yale Law OutLaws. Attachment B is a letter from GHLA.

☐ **I would like to make an in-person presentation of my proposal.**

Release

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Proponent's Signature

Giovanna Shay

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
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12/29/16

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

ghla
Greater Hartford Legal Aid

March 24, 2017

VIA EMAIL

DAS.CodesStandards@CT.GOV

Dear Office of the State Building Inspector:

I write on behalf of Greater Hartford Legal Aid (GHLA) to support the change to the plumbing code that has been proposed by Yale Law OutLaws. This simple, common sense change to Code provisions 2902.1.2; 2901.1.3 (NEW); 2902.2 will ensure that gender neutral and single user bathrooms count toward the total number of fixtures in a building, instead of only counting bathroom fixtures designated as "male" or "female."

This proposed Code change will remove a legal disincentive to constructing gender neutral bathrooms. It will help make the built environment a bit more friendly, welcoming, and accessible to transgender and gender non-conforming people.

Thank you for your consideration.

Sincerely,

Giovanna Shay
Litigation & Advocacy Director
(860) 541-5061
gshay@ghla.org

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP029-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 24 March 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Shawn M Lang

Representing: AIDS CT

Telephone: 860.247.2437

Email: slang@aids-ct.og

Address: 110 Bartholomew Ave, Suite 30[illegible] Hartford CT 06106

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

Release

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Proponent's Signature

Shawn M Lang

Printed Name

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Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP030-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/25/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Sarah Gavis-Hughson Representing: Trans @ Yale

Telephone: 609-751-1026 Email: sarah.gavis-hughson@yale.edu

Address: 206 Elm Street #205596 New Haven CT 06511

Street Address | Town | State | Zip Code

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Proponent's Signature **Printed Name** Sarah Gavis-Hughson

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Office of the State Building Inspector
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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

To Whom It May Concern:

We write as Trans@Yale, an organization for trans and nonbinary undergraduates of Yale University. We wish to reaffirm the importance of gender-neutral restrooms to our lives and to the lives of our trans siblings elsewhere.

Bathrooms are a place where trans people often feel especially unsafe or unwelcome. This is because trans people are frequently policed in bathrooms. In addition, bathrooms are heavily gendered spaces where people who identify outside a gender binary frequently are not accommodated. Gender-neutral bathrooms are a simple solution to these problems. They create spaces of inclusivity where gender is not a factor in who can use which bathroom.

The current Connecticut Plumbing Code actively discourages building owners from providing gender neutral bathrooms, since such bathrooms do not count towards a building's total number of restrooms. Thus, even building owners that would like their buildings to be gender-inclusive face a barrier to providing such inclusivity. Furthermore, it is simply logical that all restrooms in a building be counted toward the total number of restrooms.

As college undergraduates, we are frequently in the position of using public restrooms on Yale's campus. Currently, most buildings at Yale have at least one single-stall, gender neutral restroom. While the presence of these restrooms is important to us, we recognize that we are privileged to attend an institution that prioritizes trans issues enough to provide such restrooms. We hope you will change the Plumbing Code to allow more institutions to provide inclusive restrooms, and to allow Yale to provide more resources to its trans students without undue financial burden.

Thank you for your time and your consideration.

–Trans@Yale: An Undergraduate Organization

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP031-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: MARCH 27, 201

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Stephen Karp

Representing: National Association of So

Telephone: 860-257-8066

Email: skarp@naswct.net

Address: 2139 Silas Deane Hwy. Ste. 205 Rocky Hill CT 06067

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

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Proponent's Signature Stephen A. Karp **Printed Name**

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Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

12/29/16

Attachment A

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

Attachment B

NASW National Association of Social Workers / Connecticut Chapter

2139 Silas Deane Highway
Suite 205
Rocky Hill, CT 06067
(860) 257-8066

Kurt Fuchs, LCSW, President
Stephen A Karp, LMSW, Executive Director
naswct@naswct.net

Comments on Proposed Code Revision Sections 2902.1.2; 2901.1.3 (add new) 2902.2

On behalf of the National Association of Social Workers and the CT Alliance of School Social Workers, we support changes that will create gender-neutral bathroom access.

Gender neutral bathrooms offer comfort and safety to individuals who are transgender or gender-nonconforming. It also makes it easier for caregivers to assist the person they are caring for when there is a need to use a bathroom outside of the person's home. Gender neutral bathrooms also will create greater equity between men and women as it equals out the line and wait time for bathroom usage, unlike now when women often have far greater lines and waiting for use of a bathroom.

Our members who work with transgender teens and adults report that bathroom use in public is of significant concern. Safety concerns arise, including fears of harassment or physical harm are very real possibilities and not having access to a bathroom that matches one's self-affirmed identity can be mentally distressful.

The proposed change will allow for building owners to meet requirements for the total number of fixtures required and at the same time meet the needs of all individuals.

In 2017 it is time that we recognize the full gender identification continuum and have bathrooms that reflect our society.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP032-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/27/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2015 IECC R402.4.1.2
2015 IECC R403.3.3

PROPONENT INFORMATION

Name: Gayathri Vijayakumar
Representing: Steven Winter Associates

Telephone: 203-857-0200 x 223
Email: gayathri@swinter.com

Address: 61 Washington Street | Norwalk | CT | 06854
Street Address | *Town* | *State* | *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):
Adding a testing standard for the air-leakage and duct leakage test (ANSI 380)

Proposed text change, addition or deletion (attach additional information as needed):
See attached Word doc for current 2015 IECC text and tracked changes for the proposal

Supporting data and documents (attach additional information as needed)
Copies of the original IECC proposals and the Committee Action hearing results/modifications

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)
From 3 proposals submitted by RESNET & Mike Moore; 2 are approved for 2018 IECC

Release

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Proponent's Signature

Gayathri Vijayakumar
Printed Name

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Division of Construction Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

A new standard, ANSI/RESNET/ICC 380-2016, was published in 2016 and provides testing protocols for air-leakage tests and duct leakage tests, specific to residential dwelling units.

The 2015 IECC references 2 standards for air-leakage tests (ASTM E779 and ASTM 1827) and has no referenced standard for duct leakage tests, which leads to inconsistent test protocols and results.

The 2018 IECC will include ANSI 380 as the 3rd referenced standard for air-leakage tests. While it will not reference ANSI 380 with respect to duct leakage test, many members of the building industry supported the proposal, RE104, since having a testing standard is much better than not having one at all.

The IECC proposals, RE83, RE84, and RE104, are the sources of the proposed changes below (and are attached, along with the IECC Committee Action Hearing and OGCV results and modifications to RE83 which was ultimately approved for 2018 IECC and is shown below).

Current text in 2015 IECC-R (Blower door testing), with tracked changes to reflect proposal

R402.4.1.2 Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. 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 inch w.g. (50 Pascals). Where required by the code official, testing shall be conducted by an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the code official. Testing shall be performed at any time after creation of all penetrations of the building thermal envelope.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.

2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.

3. Interior doors, if installed at the time of the test, shall be open.

4. Exterior ~~doors~~ or interior terminations for continuous ventilation systems ~~and heat recovery ventilators shall be closed and~~ sealed.

5. Heating and cooling systems, if installed at the time of the test, shall be turned off.

6. Supply and return registers, if installed at the time of the test, shall be fully open.

Current text in 2015 IECC-R (Duct Testing) , with tracked changes to reflect proposal

R403.3.3 Duct testing (Mandatory). Ducts shall be pressure tested in accordance with ANSI/RESNET/ICC 380 to determine air leakage by one of the following methods:

Comment [g1]: RE83 proposed this ANSI 380 Standard as the only standard for 2018 IECC. The Committee preferred retaining the other Standards as options as well. They also wanted to keep the procedures listed below, rather than deleting, as was proposed by RE83. This version is the version that will be in 2018 IECC.

Comment [g2]: RE84 proposed this for 2018 IECC and it was accepted as is.

Comment [g3]: RE104 proposed this for 2018 IECC. It was not accepted, but it should have been.

RE84-16
R402.4.1.2 (IRC N1102.4.1.2)

Proponent : Mike Moore, Newport, representing Broan-NuTone (mmoore@newportventures.net)

2015 International Energy Conservation Code

Revise as follows:

R402.4.1.2 (N1102.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ASTM E 779 or ASTM E 1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior ~~doors~~ or interior terminations for continuous ventilation systems ~~and heat recovery ventilators~~ shall be ~~closed and~~ sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Reason: This change provides clarification and flexibility to the current requirement as follows, without reducing stringency:

1. Replace the reference to "doors" with a reference to "terminations". Residential ventilation systems do not have doors.

2. Permit interior or exterior terminations to be sealed. This increases flexibility and can promote safety while reducing time and costs.

3. Remove the reference to "heat recovery ventilators". HRVs are a type of ventilation system, so the reference here is redundant.

4. Remove the requirement to "close" the termination. This is not necessary if the termination is sealed.

Cost Impact: Will not increase the cost of construction

This change increases flexibility for conducting the blower door test and can potentially reduce associated costs.

RE83-16
R402.4.1.2 (IRC N1102.4.1.2)

Proponent : Eric Makela, Cadmus Group, representing RESNET

2015 International Energy Conservation Code

Revise as follows:

R402.4.1.2 (N1102.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with ~~ASTM E 779 or ASTM E 1827~~ BRS/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

~~During testing:~~

1. ~~Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.~~
2. ~~Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.~~
3. ~~Interior doors, if installed at the time of the test, shall be open.~~
4. ~~Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.~~
5. ~~Heating and cooling systems, if installed at the time of the test, shall be turned off.~~
6. ~~Supply and return registers, if installed at the time of the test, shall be fully open.~~

Reference standards type: This reference standard is new to the ICC Code Books
Add new standard(s) as follows:

BRS/RESNET/ICC 380-2016 Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems. Republished January 2016. Addendum A-2015 and Addendum B-2015.

Reason: BSR/RESNET/ICC 380-2016 provides needed guidance for performing envelope air leakage, duct leakage and air flow testing. Building off of existing standards (e.g. ASTM E779-10) the standard allows for multiple test procedures to provide flexibility for the testing industry. Standard 380 also covers testing for single-family and 3-story and less multi-family projects and will be referenced as the protocol for testing for the rating industry. The E 779 standard requires multi-point testing under both pressurized and depressurized conditions. BSR/RESNET/ICC 380-2016 allows E 779 tests but expands the test methodology to allow single point tests under only one pressurization/depressurization condition and includes correction factors to account for test bias and uncertainty. Thus, 380 can be a substantially less expensive protocol than E 779.
The standard provides a consistent, uniform methodology for evaluating the airtightness of building envelopes and heating and cooling air ducts. The test procedures can be used as building diagnostics, in quality assurance and control, for determining compliance with codes and standards and to determine input to energy simulations and ratings. The standard provides a step-by-step approach to testing for building envelop leakage with the goal of standardizing how testing should performed in the field.
Standard 380 provides guidelines for calculating common air leakage testing metrics e.g. CFM50, ACH50, NLA, SLA and ELA. Referencing a standard with this type of flexibility allows the testing metric to change in the code without the need to change the reference standard (e.g. changing from ACH50 to SLA).

Why Use BSR/RESNET/ICC 380-2016 in Place of ASTM Standard E779-10. ASTM Standard E779-10 requires multi-point testing at a range of 10 to 60 Pa in 5 to 10 Pa increments using both pressurization AND depressurization of the building and the reporting requirements include: fan pressurization measurements (inside-outside zero flow building pressure differences), inside and outside temperatures (at start and end of test), the product of the absolute value of the indoor/outdoor air temperature difference multiplied by the building height, tabular list of all air leakage measurements and calculations (time, building pressure difference, air density, nominal airflow, fan airflow rate, air leakage rate, deviations from standard procedure, wind speed and direction and whether it is estimated or measured on site (if measured on site, the height above ground at which the wind speed was measured), and the calculation details (leakage coefficient, pressure exponent, effective leakage area for pressurization and depressurization and combined results, whether a reference pressure other than 4 Pa was used, and an estimate of confidence limits). This is a test method more suitable for research testing than code enforcement, so we adopted BSR/RESNET/ICC 380-2016 with references to specific calculation procedures found in ASTM Standard E779-10.
BSR/RESNET/ICC 380-2016 has been developed to provide a consensus national standard for consistent measurement of several air-flow related residential building metrics. It builds off of existing American National Standards to provide standard procedures essential to the evaluation of the energy performance of residential buildings energy.

Cost Impact: Will not increase the cost of construction
RESNET Standard 380 allows for single point testing to demonstrate compliance with the air leakage requirements verses multi-point testing now required by E 779. The results of the two tests, as decribed in the reason statement, are comparable so that a house constructed to meet the E 779 standard will cost no different than a house constructed to meet Standard 380. The code change may lead to a reduction in the costs to conduct the tests as the envelope testing industry may charge more for a multi-point test than a single-point test given the time needed for the multi-point test.

Analysis: A review of the standard proposed for inclusion in the code, BRS/RESNET/ICC 380-2016, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2016)

RE76-16

Committee Action: **Disapproved**

Committee Reason: What are similar penetrations? It is not known.

Assembly Action: **None**

RE77-16

Committee Action: **Disapproved**

Committee Reason: It is preferred to keep provisions in section language. People have been trained to understand section language.

Assembly Action: **None**

RE78-16

Committee Action: **Disapproved**

Committee Reason: This is dealing with a nuance that is better off in a user's guide, not the code.

Assembly Action: **None**

RE79-16

Committee Action: **Disapproved**

Committee Reason: This proposal would increase the cost of construction, contrary to what the proposal cost impact states. There is insufficient information regarding the benefit of doing this.

Assembly Action: **None**

RE80-16

Committee Action: **Disapproved**

Committee Reason: Consistent with Committee's action on RE75-16 on the same subject.

Assembly Action: **None**

RE81-16

Committee Action: **Disapproved**

Committee Reason: The definition is problematic. Suggest a public comment to make the proposal specific to knee walls.

Assembly Action: **None**

RE82-16

Committee Action: **Disapproved**

Committee Reason: Consistent with action on RE81-16 regarding the issue with the definition.

Assembly Action: **None**

RE83-16

Committee Action: **Approved as Modified**

Modification:

R402.4.1.2 (N1102.4.1.2) Testing. The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding five air changes per hour in Climate Zones 1 and 2, and three air changes per hour in Climate Zones 3 through 8. Testing shall be conducted in accordance with BRS/RESNET/ICC 380, ASTM E779 or ASTM E1827 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Where required by the *code official*, testing shall be conducted by an *approved* third party. A written report of the results of the test shall be signed by

the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Committee Reason: The modification was made to reinstate details that RESNET 380 might not have in it.

The proposal was approved as modified because the committee agreed with the published reason statement.

Assembly Action: **None**

RE84-16

Committee Action: **Approved as Submitted**

Committee Reason: Provides good clarity to make sure there is not leakage at these points.

Assembly Action: **None**

RE85-16

Committee Action: **Disapproved**

Committee Reason: Detached buildings don't seem to belong. A detached building could be a horse barn where energy is not being used.

We already have a widely used testing standard that is still not completely understood. To bring in another testing standard is going to be confusing to what is already being done..

The new defintion is unecessary. The terms of building thermal envelope and conditioned space are how we describe what we are talking about. This new term doesn't add clarity.

It is unclear what is meant by attached and detached buildings within the scope of this section.

Assembly Action: **None**

RE86-16

Committee Action: **Disapproved**

Committee Reason: The garage-to-conditioned space separation is required to be sealed. Testing of the garage seems to be more of a health and safety issue that isn't something that the energy code should be involved with.

Assembly Action: **None**

RE87-16

Committee Action: **Disapproved**

Committee Reason: Approval of this proposal would be in direct conflict with the Committee's approval of RE58-16.

Assembly Action: **None**

RE89-16

Committee Action: **Disapproved**

Committee Reason: The UL Standard is applicable to the fireplace, not the tight-fitting door.

Assembly Action: **None**

RE90-16

Committee Reason: The proposal reduces flexibility for meeting requirements. There isn't any evidence of widespread issues of contractors taking advantage of not having a high leakage number as a "backstop".

Assembly Motion: As Submitted
Online Vote Results: Failed
Support: 38.2% (89) Oppose: 61.8% (144)
Assembly Action: None

RE104-16

Committee Action: Disapproved

Committee Reason: There are problems in RESNET 380 with mandatory language. The scope of that standard doesn't fit well with multi-family dwellings having common areas.

Assembly Action: None

RE105-16

Committee Action: Approved as Submitted

Committee Reason: There is no concern about duct leakage for ducts for HRV units. Air is purposely moved across the air barrier by these systems.

Assembly Action: None

RE106-16

Committee Action: Disapproved

Committee Reason: Leakage is measured to outdoors only.The code does not need to be concerned with loss of energy inside the thermal envelope or comfort.

Assembly Action: None

RE107-16

Committee Action: Disapproved

Committee Reason: The language isn't getting to the point about the testing and doesn't cover everything that it needs to. The cost impact statement is not accurate.

Assembly Action: None

RE108-16

Committee Action: Disapproved

Committee Reason: Leakage to inside the thermal envelope isn't really a concern--only leakage to outdoors.

Assembly Action: None

RE109-16

Committee Action: Disapproved

Committee Reason: It is poor practice to allow airflow in wall cavities. If a jumper duct system is needed, the proposal needs to be worded for that purpose.

Assembly Action: None

RE110-16

Committee Action: Approved as Modified

Modification:

~~**R403.3.6 Ducts buried within ceiling insulation** Supply and return ducts shall be permitted to be installed partially, or fully buried within~~

RE104-16
R403.3.3 (IRC N1103.3.3)

Proposed Change as Submitted

Proponent : Eric Makela, Cadmus Group, representing RESNET

2015 International Energy Conservation Code

Add new text as follows:

R403.3.3 (N1103.3.3) Duct testing (Mandatory). Ducts shall be pressure tested in accordance with BRS/RESNET/ICC 380 to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.

Exception: A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.

A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*.

Reference standards type: This reference standard is new to the ICC Code Books
Add new standard(s) as follows:

BRS/RESNET/ICC 380-2015 Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems. Republished January 2016. Addendum A-2015 and Addendum B-2015.

Reason: R403.3.3 Duct testing, currently provides no guidance for testing duct systems to determine if they meet the maximum duct leakage rate. The current code language sets a duct leakage metric and essentially leaves it up to those that are testing the system to determine how to arrive at the results. The lack of guidance can lead to inconsistent test results from house to house. This code change proposal solves this problem by requiring testing to conform to ANSI/RESNET/ICC Standard 380 - Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems. This standard provides a standardized methodology that is currently in use throughout the industry. The methodology will provide consistent results that can be replicated by testing organizations and enforcement personnel.

Why RESNET/ICC Standard 380 Instead of Other Standards. RESNET/ICC Standard 380 has been developed to provide a consensus national standard for consistent measurement of several air-flow related residential building metrics. It builds off of existing American National Standards to provide standard procedures essential to the evaluation of the energy performance of residential buildings energy. Other standards are in existence but are more suitable for research and not code enforcement. For example, ASTM Standard E1554-13 describes 4 different test methods (A, B, C, and D) for performing a duct leakage test. Method A requires multi-point testing of both the enclosure and the distribution system at a range of 5 to 50 Pa in 5 Pa increments using both pressurization AND depressurization of the building enclosure AND distribution system. Method B requires a physical separation of the supply and return distribution systems and that each are tested separately at a 25 Pa pressure difference, while measuring the pressure difference between any buffer zones and the outside. This procedure requires several iterations of each test (supply, return, buffer zone). Method C measures distribution system leakage to the outside using a 25 Pa pressure difference across the building enclosure with reference to the outside using a location sheltered from wind and sunshine. The distribution system is tested at a 25 Pa pressure difference with reference to the outside and the recording of inside temperature, outside temperature, and barometric pressure at the start and end of each test. This method requires testing under pressurization, while Standard 380 allows pressurization or depressurization (field conditions may require depressurization in order to maintain seals on the supply outlets and return inlets). Method D measures total distribution system leakage at a 25 Pa pressure difference with reference to the outside without using a fan (blower door) to create a 25 Pa pressure difference across the building enclosure to isolate leakage to the outside. Conditions of integrated mechanical ventilation dampers are not mentioned in E1554, while Standard 380 provides explicit instructions regarding mechanical ventilation systems integrated with the distribution system. ASTM E1554 also has extensive reporting requirements including calibration of air flow meter, a tabular listing of all air leakage data (air flows, time, all pressures), and floor areas and volumes of building (conditioned floor area, attic, basement, and crawlspace).

Cost Impact: Will not increase the cost of construction
The protocol for duct testing described in Standard 380 is consistent with the testing protocols presented in RESNET certifications for HERS raters and also with the Duct and Envelope Testing (DET) training sessions that are being deployed in several states to meet the testing needs of the IECC. This protocol is considered industry standard and will not increase the time for testing ductwork, so the cost of testing will not increase, but will lead to more compliant duct systems for duct testing professionals that may not be following a protocol. The protocol does not change the target duct air leakage rate so there are no additional costs to seal the duct system to make it code compliant.

Analysis: A review of the standard proposed for inclusion in the code, BRS/RESNET/ICC 380-2016, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2016)

RE104-16 : R403.3.3-MAKELA12645

Public Hearing Results

Committee Action: **Disapproved**

Committee Reason: There are problems in RESNET 380 with mandatory language. The scope of that standard doesn't fit well with multi-family dwellings having common areas.

Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Eric Makela, representing RESNET (eric.makela@cadmusgroup.com) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Energy Conservation Code

R403.3.3 (N1103.3.3) Duct testing (Mandatory). Ducts shall be pressure tested in accordance with ~~BRS~~ ANSI/RESNET/ICC 380 to determine air leakage by one of the following methods:

1. Rough-in test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the system, including the manufacturer's air handler enclosure if installed at the time of the test. All registers shall be taped or otherwise sealed during the test.
2. Postconstruction test: Total leakage shall be measured with a pressure differential of 0.1 inch w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. Registers shall be taped or otherwise sealed during the test.
    - **Exception:** A duct air leakage test shall not be required where the ducts and air handlers are located entirely within the building thermal envelope.

A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*.

Reference standards type: This reference standard is new to the ICC Code Books
Add new standard(s) as follows:

Commenter's Reason: R403.3.3 Duct testing, currently provides no guidance for testing duct systems to determine if they meet the maximum duct leakage rate. The current code language sets a duct leakage metric and essentially leaves it up to those that are testing the system to determine how to arrive at the results. The lack of guidance can lead to inconsistent test results from house to house. This code change proposal solves this problem by requiring testing to conform to ANSI/RESNET/ICC Standard 380-2016 - Standard for Testing Airtightness of Building Enclosures, Airtightness of Heating and Cooling Air Distribution Systems, and Airflow of Mechanical Ventilation Systems. This standard provides a standardized methodology that is currently in use throughout the industry. The methodology will provide consistent results that can be replicated by testing organizations and enforcement personnel.
This proposal was disapproved at the 2018 IECC Code Change Hearings for the following reasons:

1. Unenforceable language was found in Standard 380 during a review of the standard even after the ICC staff review

reported:

"Appears to be written in enforceable language. Does not appear to require proprietary materials or agencies. Promulgated according to a consensus procedure."

2. It was felt that there should be more than one testing option available for compliance with the code, and
3. The standard did not address multi-family buildings.

Unenforceable Language. The RESNET Standards committee reviewed and addressed the few instances in question in the Standard. Standard 380 was republished in June, 2016 with the corrections.

Testing Options. Standard 380 includes a reference to Test Method A from ASTM E1554-13 as an alternative duct leakage test method. ASTM E1554-13 is for testing air distribution systems in low-rise residential and commercial buildings. This allows the user to follow either test method for duct leakage testing.

Multi-family Buildings. Section 2 Scope of Standard 380 states

"The procedure for measuring the airtightness of heating and cooling air distribution systems is also ***applicable to dwelling units in multifamily buildings,*** where each dwelling unit has its own duct system separate from other dwelling units."

It is very common for each dwelling unit to have its own duct system separate from other dwelling units in low-rise multi-family as they typically install a separate heating and cooling system for each apartment. The IECC has special provisions for HVAC systems serving multiple dwelling units. Section R403.8 requires that systems serving multiple dwelling units must comply with Section C403 Building Mechanical Systems. Section C403 contains requirements for Duct and Plenum insulation and Sealing (Section C403.2.9) which includes Duct Construction (Section C403.2.9.1).

ASTM E1554-13, which applies to low-rise residential and commercial buildings, can be used to test duct systems in the non-dwelling unit areas of multi-family buildings e.g. offices, lobbies, common areas, etc.

Why ANSI/RESNET/ICC Standard 380 Instead of Other Standards. ANSI/ RESNET/ICC Standard 380 has been developed as an American National Standard under the auspices of ANSI to provide a consensus-based national standard for consistent measurement of several air-flow related residential building metrics. It builds on existing American National Standards to provide standard procedures essential to the evaluation of the energy performance of residential buildings energy. It also references ASTM Standard E1554-13 which allows 4 different test methods (A, B, C, and D) for performing duct leakage tests.

RE104-16

PRELIMINARY 2016 GROUP B
ONLINE GOVERNMENTAL CONSENSUS VOTE (OGCV) RESULTS

The 2016 Group B OGCV was conducted during the period of November 8 – 27, 2016. This document includes the PRELIMINARY RESULTS. THESE RESULTS ARE NOT FINAL as they are subject to certification by the Validation Committee and confirmation by the ICC Board of Directors in accordance with Section 10.1 of CP 28 *Code Development (CP28).* The 2016 Group B Final Action results, including vote tallies from the OGCV, will be posted following certification in accordance with Section 10.4 of CP 28.

LEGEND:

AS **Approved as Submitted**
AM **Approved as Modified at the Committee Action Hearing**
AMPC **Approved as Modified by Public Comment**
D **Disapproved**

Code Change Number	PCH Action	OGCV Result
INTERNATIONAL ADMINISTRATIVE PROVISIONS		
ADM2-16 Part IV	AS	D
ADM4-16 Part I	AS	AS
ADM4-16 Part II	AS	AS
ADM4-16 Part III	AS	AS
ADM6-16 Part I	AMPC1	AMPC1
ADM6-16 Part II	AM	AM
ADM6-16 Part III	AM	AM
ADM6-16 Part IV	AM	AM
ADM9-16 Part I	AMPC1, 2	AMPC1,2
ADM9-16 Part II	AMPC2	AMPC2
ADM9-16 Part III	D	D
ADM9-16 Part IV	D	D
ADM10-16 Part II	AMPC1	AMPC1
ADM13-16 Part I	AMPC1	AMPC1
ADM13-16 Part II	AMPC1	D
ADM26-16 Part I	AMPC1	AMPC1
ADM27-16 Part I	AS	D
ADM31-16	AS	AS
ADM32-16	AMPC1	AMPC1
ADM33-16	AMPC1	AMPC1
ADM35-16 Part III	D	D
ADM36-16	AMPC1	AMPC1
ADM40-16	AMPC1	AMPC1
ADM42-16 Part I	D	D
ADM42-16 Part II	D	D
ADM43-16 Part I	D	D
ADM43-16 Part II	D	D
ADM45-16 Part I	D	D
ADM45-16 Part II	D	D
ADM46-16 Part I	D	D
ADM46-16 Part II	D	D
ADM50-16	D	D
ADM52-16	AS	D
ADM54-16 Part I	D	D
ADM54-16 Part II	D	D
ADM55-16 Part I	D	D
ADM56-16 Part II	AMPC1	D
ADM57-16 Part I	AMPC1	D
ADM57-16 Part II	AMPC1	D
ADM58-16 Part IV	D	D
ADM60-16 Part I	AMPC1	D
ADM60-16 Part II	AMPC1	D
ADM60-16 Part III	AMPC1	AMPC1
ADM60-16 Part IV	AMPC1	AMPC1
ADM66-16 Part I	D	D
ADM66-16 Part II	D	D
ADM68-16	D	D
ADM71-16	AMPC1	AMPC1
ADM74-16	D	D
ADM76-16	D	D
ADM77-16	AMPC1	AMPC1
ADM78-16 Part I	D	D
ADM78-16 Part II	D	D
ADM87-16	AMPC1, 2	AMPC1, 2
ADM88-16 Part I	D	D
ADM88-16 Part II	D	D
ADM94-16 (See Note 1 below.)		
ASCE 7-16	AS	AS
ICC A117.1-16	AS	D
SJI-200-16	AMPC11	AMPC11
ASTM F2006-16	AMPC10	AMPC10
ASTM F2090-16	AMPC9	AMPC9
ASTM E108-16	AMPC8	AMPC8
ANSI/SPRV/VFI-16	AS	D
ASTM D7158-16	AMPC3	AMPC3
ASHRAE 140-16	AMPC4	AMPC4
FM4996-16	AMPC5	AMPC5
ASTM D2859-16	AMPC6	AMPC6
ASTM E84-16	AMPC7	AMPC7
ANSI/SPRI/FM 4435-16	D	D
INTERNATIONAL BUILDING CODE – FIRE SAFETY		
FS6-16	AS	AS

Code Change Number	PCH Action	OGCV Result

INTERNATIONAL BUILDING CODE – GENERAL

G4-16	AMPC1	D
G6-16 Part II	D	D
G10-16 Part III	AS	D
G16-16	D	D
G17-16 Part I	AS	D
G19-16 Part II	D	D
G29-16	D	D
G32-16	AMPC1	AMPC1
G35-16	AMPC1	AMPC1

INTERNATIONAL BUILDING CODE – STRUCTURAL

S5-16 Part I	D	D
S7-16	AMPC1	AMPC1
S13-16	D	D
S16-16	D	D
S17-16	D	D
S18-16 Part II	AS	AS
S19-16	AMPC1, 2	D
S22-16	D	D
S28-16 Part II	AS	AS
S37-16	D	D
S46-16	AMPC1	D
S53-16	AS	AS
S61-16	D	D
S63-16	AM	AM
S71-16	D	D
S72-16	AS	AS
S73-16	D	D
S74-16	D	D
S77-16	AS	AS
S78-16	AMPC1	D
S88-16	AMPC1	AMPC1
S93-16	AS	AS
S95-16	AMPC1	AMPC1
S101-16	AMPC1	D
S103-16	AMPC1	D
S105-16	D	D
S109-16	AS	AS
S110-16	AMPC1	D
S112-16	D	D
S113-16	D	D
S114-16	AM	AM
S116-16	D	D
S118-16	D	D
S120-16	D	D
S121-16	D	D
S122-16	D	D
S125-16	D	D
S136-16	AS	D
S145-16	AM	AM
S146-16	AMPC1	AMPC1
S149-16	AMPC1	AMPC1
S153-16	AS	D
S154-16	AMPC1	D
S163-16	D	D
S166-16	AS	AS
S169-16	D	D
S179-16	AMPC1	D
S189-16	AMPC1	D
S196-16	D	D

Code Change Number	PCH Action	OGCV Result

S203-16	D	D
S206-16	AMPC1, 2, 3	D
S209-16	AMPC1	D
S218-16	AMPC1	D
S220-16	AMPC1	D
S225-16	AMPC1	D
S226-16	AMPC1	D
S231-16	AMPC1	D
S232-16	AMPC1	D
S235-16	AMPC1	D
S236-16	D	D
S238-16	AMPC1	D
S241-16	D	D
S242-16	AM	AM
S245-16 Part I	AMPC1	AMPC1
S245-16 Part II	AMPC1	AMPC1
S250-16	AS	D
S252-16	AMPC1	AMPC1
S259-16	AMPC1	D
S260-16	D	D
S263-16 Part I	D	D
S263-16 Part II	D	D
S264-16	D	D
S268-16	AS	D
S277-16	AMPC1	D
S279-16	AMPC1	AMPC1
S296-16	AMPC1	AMPC1
S303-16	D	D
S304-16	D	D
S306-16	AMPC1	D
S308-16	AMPC1	D
S313-16	D	D
S314-16	D	D
S315-16	AS	AS
S316-16	D	D
S317-16	D	D
S318-16	D	D

INTERNATIONAL EXISTING BUILDING CODE - STRUCTURAL

EB2-16	D	D
EB10-16	D	D
EB13-16	AMPC1	AMPC1
EB19-16	AMPC1	D
EB25-16	D	D
EB35-16	AMPC1	D
EB39-16	D	D
EB41-16	AMPC1	AMPC1
EB55-16	D	D
EB56-16	D	D
EB57-16	D	D
EB58-16	AMPC1	AMPC1

INTERNATIONAL ENERGY CONSERVATION CODE - COMMERCIAL

CE3-16 Part I	AMPC1	AMPC1
CE5-16 Part I	AS	AS
CE5-16 Part II	AS	D
CE8-16 Part II	D	D
CE11-16 Part II	AMPC1	AMPC1
CE18-16 Part II	D	D

Code Change Number	PCH Action	OGCV Result
CE19-16	D	D
CE21-16 Part I	AMPC2	D
CE21-16 Part II	AMPC2	D
CE23-16 Part I	D	D
CE23-16 Part II	D	D
CE24-16 Part I	D	D
CE25-16 Part II	D	D
CE28-16 Part II	D	D
CE29-16 Part II	AMPC1	D
CE31-16 Part I	D	D
CE31-16 Part II	D	D
CE37-16	D	D
CE38-16 Part I	AS	D
CE38-16 Part II	AS	D
CE40-16	AS	D
CE42-16	D	D
CE43-16	D	D
CE46-16	D	D
CE48-16	D	D
CE50-16	D	D
CE51-16	AMPC1	D
CE52-16	AS	D
CE54-16	D	D
CE55-16	AMPC2	AMPC2
CE57-16	AS	D
CE60-16 Part I	AS	AS
CE60-16 Part II	D	D
CE61-16	AMPC2	AMPC2
CE64-16	AS	D
CE66-16	D	D
CE73-16	AMPC1	D
CE79-16	AMPC1	D
CE87-16 Part I	AM	AM
CE87-16 Part II	AMPC1	D
CE91-16	D	D
CE92-16	D	D
CE93-16	D	D
CE96-16	AMPC1	D
CE99-16	AMPC1	D
CE102-16	AMPC1	AMPC1
CE105-16	AMPC3, 5	D
CE107-16	D	D
CE108-16	AMPC1	AMPC1
CE109-16	AMPC1	AMPC1
CE110-16	AS	D
CE111-16	AMPC1	D
CE114-16 Part I	AS	AS
CE114-16 Part II	AS	D
CE115-16 Part I	D	D
CE115-16 Part II	D	D
CE120-16	AMPC1	D
CE121-16	D	D
CE125-16	AMPC2	D
CE129-16	AMPC1	D
CE134-16 Part I	D	D
CE134-16 Part II	D	D
CE135-16 Part I	D	D
CE135-16 Part II	D	D
CE137-16 Part II	AS	D
CE138-16	AMPC1	AMPC1
CE140-16	D	D
CE142-16	AMPC1, 2	D
CE144-16	D	D
CE145-16	AMPC1	D
CE147-16 Part I	AMPC1	D
CE147-16 Part II	AMPC1	D
CE155-16	AS	AS
CE171-16	AMPC1	AMPC1
CE175-16 Part I	AS	AS (Note 2)
CE175-16 Part II	AS	D (Note 2)
CE176-16 Part I	AS	D
CE176-16 Part II	AS	AS
CE183-16	AM	AM
CE185-16	AM	AM
CE189-16	D	D
CE192-16	AM	AM
CE194-16	D	D
CE196-16	AMPC2	AMPC2
CE200-16	AMPC1	D
CE209-16	AMPC1	AMPC1
CE213-16	AS	AS
CE215-16	AS	AS
CE217-16	D	D
CE218-16	D	D
CE219-16	D	D
CE222-16	D	D
CE224-16	AMPC1	AMPC1
CE225-16	D	D
CE228-16	D	D
CE229-16	D	D
CE231-16	D	D
CE232-16	D	D
CE233-16	D	D
CE236-16	D	D
CE238-16	D	D
CE239-16	D	D
CE240-16	D	D
CE241-16	D	D
CE244-16	D	D
CE247-16	D	D (Note 2)
CE249-16	D	D
CE251-16	AM	AM
CE253-16	D	D
CE256-16	AS	AS
CE258-16	D	D
CE259-16 Part II	AS	D
CE262-16	D	D
CE263-16	D	D
CE272-16 Part I	D	D
CE273-16	D	D
CE275-16 Part I	AMPC1	D
CE275-16 Part II	AMPC1	D
CE277-16	D	D
CE287-16	AMPC1	D
CE289-16	AMPC1	D
CE290-16	D	D
CE291-16	AMPC1	D
CE292-16	D	D
CE293-16	D	D
CE294-16	AS	AS
CE296-16	D	D

Code Change Number	PCH Action	OGCV Result

INTERNATIONAL ENERGY CONSERVATION CODE – RESIDENTIAL & INTERNATIONAL RESIDENTIAL CODE - ENERGY

RE3-16	AM	AM
RE10-16	D	D
RE12-16	D	D
RE15-16	D	D
RE17-16	AS	AS
RE18-16	D	D
RE19-16	AS	D
RE22-16	AMPC1	AMPC1
RE23-16	D	D
RE25-16	AS	D
RE26-16	D	D
RE27-16	D	D
RE28-16	AMPC1	D
RE30-16	D	D
RE31-16	AS	AS
RE36-16	D	D
RE37-16	D	D
RE40-16	AMPC1	AMPC1
RE47-16	D	D
RE50-16	D	D
RE51-16	AMPC2	D
RE52-16	D	D
RE56-16	D	D
RE58-16	D	D
RE60-16	D	D
RE63-16	D	D
RE69-16	D	D
RE70-16	D	D
RE72-16	AS	D
RE73-16	D	D
RE74-16	D	D
RE76-16	D	D
RE77-16	D	D
RE78-16	D	D
RE79-16	D	D
RE81-16	D	D
RE82-16	D	D
RE85-16	D	D
RE86-16	D	D
RE87-16	D	D
RE89-16	D	D
RE92-16	D	D
RE98-16	D	D
RE100-16	AM	AM
RE101-16	D	D
RE103-16	D	D
RE104-16	AMPC1	D
RE106-16	D	D
RE107-16	D	D
RE108-16	D	D
RE109-16	AS	D
RE113-16	D	D
RE114-16	D	D (Note 2)
RE116-16	D	D
RE120-16	D	D
RE121-16	AS	AS
RE123-16	D	D
RE130-16	D	D
RE131-16	D	D
RE134-16	D	D
RE135-16	D	D
RE136-16	D	D
RE137-16	D	D
RE138-16	D	D
RE139-16	D	D
RE142-16	AS	AS
RE145-16	D	D
RE146-16	D	D
RE153-16	AMPC1	D
RE154-16	AS	D
RE156-16	D	D
RE159-16	D	D
RE161-16	D	D
RE162-16	D	D
RE166-16	AMPC1	AMPC1
RE170-16	D	D
RE173-16	AMPC1	AMPC1
RE177-16	D	D
RE178-16	D	D
RE179-16	D	D
RE181-16	D	D
RE183-16	AS	AS
RE187-16	D	AS
RE189-16 Part II	D	D
RE191-16	D	D

INTERNATIONAL FIRE CODE

F5-16	D	D
F6-16	AS	AS
F7-16	AS	D
F10-16	AMPC1	D
F12-16	AMPC1	AMPC1
F18-16	AMPC1	AMPC1
F19-16	AMPC1	AMPC1
F20-16	AMPC2	AMPC2
F29-16	AMPC1	AMPC1
F37-16	D	D
F42-16	D	D
F44-16	AMPC1	AMPC1
F47-16	AMPC1	AMPC1
F50-16	AMPC1, 2	AMPC1, 2
F66-16	AMPC1	AMPC1
F69-16	AMPC1	D
F72-16	AMPC1	AMPC1
F73-16	AMPC1	AMPC1
F74-16	D	D
F75-16	AMPC1	AMPC1
F79-16	AMPC2	AMPC2
F80-16	AMPC1	AMPC1
F86-16 Part I	D	D
F89-16 Part I	AS	AS
F89-16 Part II	D	D
F93-16	AM	AM
F94-16	D	D
F95-16	AMPC2	AMPC2
F103-16	D	D
F104-16	D	D
F107-16	AS	AS
F111-16	AMPC1	AMPC1
F112-16	AMPC1	AMPC1
F113-16	AMPC1, 2, 3, 4	AMPC1, 2, 3, 4

Code Change Number	PCH Action	OGCV Result
F114-16	D	D
F118-16	AMPC1	AMPC1
F128-16	D	D
F131-16	D	D
F134-16	AMPC1	AMPC1
F139-16	D	D
F149-16	AS	AS
F154-16	AS	AS
F157-16	AMPC1	AMPC1
F159-16	D	D
F166-16	D	D
F170-16	AMPC1	AMPC1
F172-16	AM	AM
F179-16	AS	AS
F185-16	AMPC1	AMPC1
F194-16	AS	AS
F196-16	AMPC1	AMPC1
F197-16	AMPC1	AMPC1
F198-16	D	D
F201-16	D	D
F205-16	D	D
F213-16	AMPC2	AMPC2
F215-16	AS	AS
F219-16	D	D
F220-16	AMPC1	AMPC1
F221-16	AMPC1	AMPC1
F222-16	D	D
F223-16	AMPC1	D
F226-16	AMPC1	AMPC1
F227-16	D	D
F228-16	AMPC1	AMPC1
F238-16	AS	AS
F247-16	AMPC1, 2	AMPC1, 2
F250-16	AMPC1	AMPC1
F251-16	AMPC1	AMPC1
F252-16	D	D
F258-16	AMPC1	AMPC1
F269-16	AMPC1	D
F273-16	AMPC1	AMPC1
F275-16	AMPC1	AMPC1
F277-16	D	D
F279-16	D	D
F280-16	D	D
F287-16	D	D
F310-16	AMPC2	AMPC2
F326-16	AS	AS
F332-16	AM	AM
F333-16	D	D
F336-16	D	D
F338-16	AMPC1	AMPC1
F340-16	AMPC1, 2, 3, 4, 6, 7, 8, 9	AMPC1, 2, 3, 4, 6, 7, 8, 9
F359-16	D	D
F365-16	AS	AS
F366-16	AMPC1	AMPC1
F369-16	AMPC1, 2	AMPC1, 2
F372-16	AMPC1	AMPC1
F380-16	D	D
F386-16	AMPC1	AMPC1
F390-16	D	D
F399-16	AMPC1	D
F401-16	AS	D

Code Change Number	PCH Action	OGCV Result
INTERNATIONAL PROPERTY MAINTENANCE CODE		
PM7-16	AMPC1	D
INTERNATIONAL RESIDENTIAL CODE - BUILDING		
RB1-16	D	D
RB7-16	D	D
RB17-16	AS	AS
RB18-16	D	D
RB20-16	D	D
RB22-16	D	D
RB25-16	D	D
RB27-16	AMPC1	D
RB29-16	AM	AM
RB36-16	D	D
RB51-16	D	D
RB52-16	D	D
RB68-16	AMPC1	AMPC1
RB69-16	D	D
RB70-16	D	D
RB72-16	D	D
RB79-16	AMPC1	AMPC1
RB81-16	AS	AS
RB89-16	AS	AS
RB95-16	D	D
RB96-16	AMPC1	AMPC1
RB113-16	D	D
RB114-16	D	D
RB119-16	D	D
RB121-16	D	D
RB129-16	D	D
RB140-16	D	D
RB147-16	D	D
RB152-16	D	D
RB157-16	D	D
RB158-16	D	D
RB159-16	AS	D
RB160-16	AMPC2	AMPC2
RB161-16	AMPC1	AMPC1
RB168-16	AMPC1	AMPC1
RB169-16	D	D
RB170-16	D	D
RB175-16	D	D
RB190-16	D	D
RB197-16	D	D
RB200-16	AMPC1	AMPC1
RB201-16	AMPC1, 2	D
RB202-16	AM	AM
RB209-16	AMPC1	AMPC1
RB211-16	AMPC3	D
RB217-16	AMPC1	AMPC1
RB223-16	D	D
RB232-16	AMPC2	D
RB235-16	AMPC2	AMPC2
RB242-16	D	D
RB251-16	D	D
RB252-16	D	D
RB253-16	D	D
RB257-16	AS	D
RB265-16	AS	AS
RB266-16	D	D

Code Change Number	PCH Action	OGCV Result
RB270-16	D	D
RB271-16 Part I	D	D
RB271-16 Part II	D	D
RB272-16	AMPC2	D
RB277-16	D	D
RB281-16	D	D
RB283-16	AS	AS
RB286-16	D	D
RB287-16	D	D
RB289-16	D	D
RB291-16	D	D
RB299-16	AMPC1	D
RB300-16	D	D
RB302-16	D	D
RB303-16	AMPC1	AMPC1
RB304-16	D	D
RB311-16	D	D
RB312-16	D	D
RB313-16	D	D
RB322-16	D	D
RB327-16	AS	AS
RB328-16	AMPC1	D
RB331-16	D	D
RB336-16	D	D
RB337-16	D	D
RB345-16	AMPC1	AMPC1
RB361-16	D	D
RB362-16	D	D
RB372-16	AMPC1	D
RB373-16	AMPC1	D
RB375-16	D	D

INTERNATIONAL WILDLAND-URBAN INTERFACE CODE

WUIC3-16	D	D
WUIC4-16	D	D
WUIC5-16	D	D
WUIC6-16	D	D
WUIC7-16	D	D

Note 1: As stated in the posted 2016 Group B Public Comment Hearing Agenda, ADM94-16 was dealt with procedurally at the Public Comment Hearings by dividing the code change proposal into a multiple part code change proposal; with each referenced standard receiving a public comment being dealt with as a separate part in conjunction with the submitted public comment. Each separate part was therefore balloted as a separate code change proposal on the OGCV. For more details, see the 2016 Discussion Guide, ADM 94.

Note 2: This code change proposal addresses the scope and application of the International Energy Code and the International Plumbing Code. The action taken at the Committee Action Hearing on this proposal coupled with the final action taken at the 2016 Public Comment Hearings and OGCV will be limited to an advisory recommendation to the ICC Board of Directors who will determine the final disposition on this proposed change in accordance with Section 1.3 of CP 28, which stipulates that the ICC Board of Directors determines the scope of the I-Codes.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP033-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 27, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 1006.3.2 Activation #3 in the list in the section

PROPONENT INFORMATION

Name: John O'Connell Representing: Kohler Ronan, LLC

Telephone: 203-778-1017 Email: joconnell@kohlerronan.com

Address: 93 Lake Avenue (Street Address) Danbury (Town) CT (State) 06810 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Delete the requirement as it conflicts with the 2012 IECC C405.2.1.1 Interior Lighting Controls

Proposed text change, addition or deletion (attach additional information as needed):

Supporting data and documents (attach additional information as needed)

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

☐ **I would like to make an in-person presentation of my proposal.**

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Proponent's Signature John O'Connell **Printed Name**

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2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP034-FC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 27, 2017

CODE INFORMATION

Proposed change to: ☐ Building Code ☑ Fire Safety Code

Code section(s): 2005 NFSC 7.9.2.2 #3 in the list in the section

PROPONENT INFORMATION

Name: John O'Connell Representing: Kohler Ronan, LLC

Telephone: 203-778-1017 Email: joconnell@kohlerronan.com

Address: 93 Lake Avenue (*Street Address*) Danbury (*Town*) CT (*State*) 06810 (*Zip Code*)

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Dlete the requirement as it conflicts with the 2012 IECC C405.2.1.1 Interior Lighting Controls

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12/29/16

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP035-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 27 March 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): (New) G2411.2 International Residential Code

(New) 310.2 International Fuel Gas Code

PROPONENT INFORMATION

Name: Robert Torbin

Representing: OmegaFlex

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Address: 213 Court Street-Suite 1001 Middletown CT 06457

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Update to reflect changes in CSST technology and pending 2018 code change (see attached)

Proposed text change, addition or deletion (attach additional information as needed):

See attached. Code proposal/text same for both codes.

Supporting data and documents (attach additional information as needed)

See attached: revision to 2018 NFPA 54 Code and PowerCET Evaluation Report

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Robert Torbin

Proponent's Signature **Printed Name**

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G2411.1.2 Arc Resistant Jacketed CSST. CSST listed with an arc resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26, Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (CSST) that is likely to become energized shall be electrically continuous and bonded to an effective ground fault current path. Arc resistant jacketed CSST shall be considered to be bonded when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supplying that appliance. Where any CSST component of a piping system does not have an arc resistant jacket or coating system, the bonding requirements of G2411.1.1 shall apply.

Substantiation

The use of a CSST product with a protective, lightning resistant jacket is a proven alternate method of protection against electrical arcing damage caused by high voltage transient events such as lightning strikes. An arc resistant jacket does not rely on direct bonding to the grounding electrode system to reduce or eliminate damage from electrical arcing. Instead, the protective jacket is designed to locally absorb and dissipate the arcing energy over a short length of the jacket. The jacket, in essence, disrupts the focus of the arc and reduces the energy level below the threshold value that can cause a perforation of the tubing wall. This dynamic action is equally effective compared to the current CSST bonding method regardless of the bonding conductor size or length. The protection against arcing is provided uniformly throughout the piping system, and is not affected by close proximity to other metallic systems that may not be similarly bonded.

The CSA Technical Advisory Group for the ANSI LC-1 Standard has developed performance criteria for lightning resistant jackets to verify that this design approach will provide the ability to resist damage from transient arcing currents under conditions associated with lightning strikes. The performance criteria define the experimental means to determine whether the protective jacket provides resistance to damage from lightning strikes without the need for additional bonding as prescribed currently in 310.1.1 and G2411.1.1 of the 2015 edition of the International Fuel Gas Code (IFGC) and the International Residential Code (IRC). The ANSI LC-1 standard was republished in 2014 with new performance requirements including performance criteria for jacket wear/tear resistance, resistance to low temperature embrittlement, and resistance to corrosion (when applicable).

The 2018 NFPA 54 Technical Committee reviewed and approved a similar proposal for adoption into the next edition of the National Fuel Gas Code. A copy of the approved revision has been attached. The ICC IFGC and IRC automatically adopt these same bonding and grounding requirements by extraction from the NFPA 54 Code. The State of Connecticut has a long and successful history of using arc-resistant CSST without the installation of the additional bonding conductor. This proposal will return the State to the same installation practices that were in effect prior to the adoption of the current State Building Code. The proposed change would inevitably be adopted during the next code cycle.

In support of the 2018 edition of the CT State Building and Fire Safety Codes, a technical report has been prepared on an engineering evaluation (performed by PowerCET) of the capability of the lightning resistant jacket to provide an equivalent level of protection against arcing damage compared to bonding. That report is included with this proposal, and demonstrates that these black

arc-resistant jackets will provide equal or better protection against lighting induced arcing as the bonding of the standard (yellow) CSST.

CSST with arc-resistant jacket has been commercially installed since 2004, and at the present time, three different (black-jacketed) products are commercially available. Field experience has been very favorable with no known cases of indirect lightning damage to CSST piping systems using these black jackets. Currently, at least 12 states permit the installation of the lightning resistant CSST without the need for additional bonding.

Documents Attached:

- 2018 draft revision to Section 7.12.3 of NFPA 54 National Fuel Gas Code
- PowerCET Evaluation Report

7.11.4* Special Requirements for Mixing Blowers. A mixing blower system shall be limited to applications with minimum practical lengths of mixture piping, limited to a maximum mixture pressure of 10 in. w.c. (2.5 kPa) and limited to gases containing no more than 10 percent hydrogen. The blower shall be equipped with a gas-control valve at its air entrance so arranged that gas is admitted to the airstream, entering the blower in proper proportions for correct combustion by the type of burners employed, the said gas-control valve being of either the zero governor or mechanical ratio valve type that controls the gas and air adjustment simultaneously. No valves or other obstructions shall be installed between the blower discharge and the burner or burners.

7.11.5 Installation of Gas-Mixing Machines.

7.11.5.1* Location. The gas-mixing machine shall be located in a well-ventilated area or in a detached building or cutoff room provided with room construction and explosion vents in accordance with sound engineering principles. Such rooms or below finished ground level installations shall have adequate positive ventilation.

7.11.5.2 Electrical Requirements. Where gas-mixing machines are installed in well-ventilated areas, the type of electrical equipment shall be in accordance with NFPA 70®, *National Electrical Code®*, for general service conditions unless other hazards in the area prevail. Where gas-mixing machines are installed in small detached buildings or cutoff rooms, the electrical equipment and wiring shall be installed in accordance with NFPA 70® for hazardous locations (Articles 500 and 501, Class I, Division 2).

7.11.5.3 Air Intakes. Air intakes for gas-mixing machines using compressors or blowers shall be taken from outdoors whenever practical.

7.11.5.4* Controls. Controls for gas-mixing machines shall include interlocks and a safety shutoff valve of the manual reset type in the gas supply connection to each machine arranged to automatically shut off the gas supply in the event of high or low gas pressure. Except for open burner installations only, the controls shall be interlocked so that the blower or compressor will stop operating following a gas supply failure. Where a system employs pressurized air, means shall be provided to shut off the gas supply in the event of air failure.

7.11.5.5 Installation in Parallel. Centrifugal gas-mixing machines in parallel shall be reviewed by the user and equipment manufacturer before installation, and means or plans for minimizing these effects of downstream pulsation and equipment overload shall be prepared and utilized as needed.

7.11.6 Use of Automatic Firechecks, Safety Blowouts, or Backfire Preventers. Automatic firechecks and safety blowouts or backfire preventers shall be provided in piping systems distributing flammable air-gas mixtures from gas-mixing machines to protect the piping and the machines in the event of flashback, in accordance with the following:

(1)* Approved automatic firechecks shall be installed upstream as close as practical to the burner inlets following the firecheck manufacturers' instructions.

(2) A separate manually operated gas valve shall be provided at each automatic firecheck for shutting off the flow of gas-air mixture through the firecheck after a flashback has occurred. The valve shall be located upstream as close as practical to the inlet of the automatic firecheck. Caution: these valves shall not be reopened after a flashback has occurred until the firecheck has cooled sufficiently to prevent reignition of the flammable mixture and has been reset properly.

(3) A safety blowout or backfiring preventer shall be provided in the mixture line near the outlet of each gas-mixing machine where the size of the piping is larger than $2^1/_2$ in. NPS, or equivalent, to protect the mixing equipment in the event of an explosion passing through an automatic firecheck. The manufacturers' instructions shall be followed when installing these devices, particularly after a disc has burst. The discharge from the safety blowout or backfire preventer shall be located or shielded so that particles from the ruptured disc cannot be directed toward personnel. Wherever there are interconnected installations of gas-mixing machines with safety blowouts or backfire preventers, provision shall be made to keep the mixture from other machines from reaching any ruptured disc opening. Check valves shall not be used for this purpose.

(4) Large-capacity premix systems provided with explosion heads (rupture disc) to relieve excessive pressure in pipelines shall be located at and vented to a safe outdoor location. Provisions shall be provided for automatically shutting off the supply of gas-air mixture in the event of rupture.

7.12 Electrical Bonding and Grounding.

7.12.1 Pipe and Tubing other than CSST. Each aboveground portion of a gas piping system other than CSST that is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path. Gas piping other than CSST shall be considered to be bonded when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supplying that appliance.

7.12.2 * CSST. CSST gas piping systems and gas 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, lightning protection grounding electrode system.

7.12.2.1 The bonding jumper shall connect to a metallic pipe, pipe fitting, or CSST fitting.

7.12.2.2 The bonding jumper shall not be smaller than 6 AWG copper wire or equivalent.

7.12.2.3 The length of the jumper between the connection to the gas piping system and the grounding electrode system shall not exceed 75 ft (22 m). Any additional grounding electrodes installed to meet this requirement shall be bonded

to the electrical service grounding electrode system or where provided, lightning protection grounding electrode system.

7.12.2.4 Bonding connections shall be in accordance with NFPA 70, *National Electrical Code*®.

7.12.2.5 Devices used for the bonding connection shall be listed for the application in accordance with UL 467, *Grounding and Bonding Equipment*.

7.12.3 Arc Resistant Jacketed CSST. CSST listed with an arc resistant jacket or coating system in accordance with ANSI LC 1/CSA 6.26, *Fuel Gas Piping Systems Using Corrugated Stainless Steel Tubing (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 7.12.2 shall apply. Arc resistant jacketed CSST shall be considered to be bonded when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supply that appliance.

7.12.4* Prohibited Use. Gas piping shall not be used as a grounding conductor or electrode.

7.12.5* Lighting Protection System. Where a lightning protection system is installed, the bonding of the gas piping shall be in accordance with NFPA 780, *Standard for the Installation of Lightning Protection Systems*, 2008.

7.13 Electrical Circuits.

Electrical circuits shall not utilize gas piping or components as conductors.

Exception: Low-voltage (50 V or less) control circuits, ignition circuits, and electronic flame detection device circuits shall be permitted to make use of piping or components as a part of an electric circuit.

7.14 Electrical Connections.

7.14.1 All electrical connections between wiring and electrically operated control devices in a piping system shall conform to the requirements of NFPA 70®, *National Electrical Code*®.

7.14.2 Any essential safety control depending upon electric current as the operating medium shall be of a type that will shut off (fail safe) the flow of gas in the event of current failure.

Chapter 8
Inspection, Testing, and Purging

8.1 Pressure Testing and Inspection.

8.1.1* General.

8.1.1.1 Prior to acceptance and initial operation, all piping installations shall be visually inspected and pressure tested to determine that the materials, design, fabrication, and installation practices comply with the requirements of this code.

8.1.1.2 Inspection shall consist of visual examination, during or after manufacture, fabrication, assembly, or pressure tests.

8.1.1.3 Where repairs or additions are made following the pressure test, the affected piping shall be tested. Minor repairs and additions are not required to be pressure tested, provided that the work is inspected and connections are tested with a noncorrosive leak-detecting fluid or other leak-detecting methods approved by the authority having jurisdiction.

8.1.1.4 Where new branches are installed to new appliance(s), only the newly installed branch(es) shall be required to be pressure tested. Connections between the new piping and the existing piping shall be tested with a noncorrosive leak-detecting fluid or approved leak-detecting methods.

8.1.1.5 A piping system shall be tested as a complete unit or in sections. Under no circumstances shall a valve in a line be used as a bulkhead between gas in one section of the piping system and test medium in an adjacent section, a double block and bleed valve system is installed. A valve shall not be subjected to the test pressure unless it can be determined that the valve, including the valve closing mechanism, is designed to safely withstand the test pressure.

8.1.1.6 Regulator and valve assemblies fabricated independently of the piping system in which they are to be installed shall be permitted to be tested with inert gas or air at the time of fabrication.

8.1.1.7* Prior to testing, the interior of the pipe shall be cleared of all foreign material.

8.1.2 Test Medium. The test medium shall be air, nitrogen, carbon dioxide or an inert gas. Oxygen shall not be used as a test medium.

8.1.3 Test Preparation.

8.1.3.1 Pipe joints, including welds, shall be left exposed for examination during the test.

Exception. Covered or concealed pipe end joints that have been previously tested in accordance with this code.

8.1.3.2 Expansion joints shall be provided with temporary restraints, if required, for the additional thrust load under test.

8.1.3.3 Appliances and equipment that are not to be included in the test shall be either disconnected from the piping or isolated by blanks, blind flanges, or caps. Flanged joints at which blinds are inserted to blank off other equipment during the test shall not be required to be tested.

8.1.3.4 Where the piping system is connected to appliances or equipment designed for operating pressures of less than the test pressure, such appliances or equipment shall be isolated from the piping system by disconnecting them and capping the outlet(s).

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP036-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3.27.17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Attachment A was prepared by Yale Law OutLaws.

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Proponent's Signature Karen Jarmoc **Printed Name**

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP037-FC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/8/2017

CODE INFORMATION

Proposed change to: ☐ Building Code ☑ Fire Safety Code

Code section(s): 13.6.1.2

PROPONENT INFORMATION

Name: Jim Tidwell

Representing: Fire Equipment Manufacture

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Address: 1300 Sumner Avenue (*Street Address*) Cleveland (*Town*) OH (*State*) 44115 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See Attached

Proposed text change, addition or deletion (attach additional information as needed):

See Attached

Supporting data and documents (attach additional information as needed)

See Attached

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NFPA - 1

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Jim Tidwell

Proponent's Signature

Jim Tidwell

Printed Name

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Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Description of Change: This proposal would align the Connecticut Fire Safety Code and the Connecticut Fire Prevention Code with NFPA – 1, which is the foundation upon which the Connecticut Fire Prevention Code is constructed. The change does not incorporate much of the language in NFPA-1 which is extracted from NFPA-10, the Standard for Portable Fire Extinguishers because that standard is already referenced by the Connecticut Codes, so including it here would be redundant. The language contained herein will provide Connecticut citizens with the minimum level of safety as set out in the NFPA Fire Code.

Reason for Change: For reasons we have been unable to ascertain, the Connecticut Codes currently have reduced requirements relating to portable extinguishers, which is counter to public safety. We have inquired as to the reasons for this, but have not been provided with any justification for reducing the level of safety provided by the model codes on which the Connecticut regulations are based. Conversely, there are many studies, statistics and other documents that support the inclusion of the requirements in NFPA – 1.

Portable extinguishers are a critical layer of fire protection, and are used throughout the United States to reduce property damage, injuries and fatalities from fire. The Consumer Product Safety Commission conducted a survey and analyzed the data from survey participants, the results of which were published in 2009. According to this report, five percent of fires were put out using a portable fire extinguisher. This means that 371,000 residential fires were suppressed using portable fire extinguishers annually at the time of the survey. it's clear that thousands of fires are extinguished annually by people using portable fire extinguishers, both in commercial and residential occupancies. While there is no corresponding data for commercial occupancies, the information from the CPSC survey can be extrapolated to give us an idea about unreported fires and fire extinguisher use in occupancies beyond residences. Using the same ratios – that is, the number of unreported fires to reported fires; the percentage of fires extinguished with fire extinguishers, etc., we come up with fire extinguishers being used on about 190,000 commercial fires in 2008. Based upon this information, it's clear that thousands of fires are extinguished annually by people using portable fire extinguishers, both in commercial and residential occupancies throughout the United States. Citizens of Connecticut should not be denied this important layer of safety. *(Ref: 2004-2005 National Sample Survey of Unreported Residential Fires, U. S. Consumer Product Safety Commission, Michael A. Greene, Division of Hazard Analysis, Directorate for Epidemiology, page 159, Table 8-4)*

According to the 2013 NFPA report "U.S. Experience With Sprinklers", citing fires from 2007-2011, there were a total of 48,460 reported structure fires annually in buildings equipped with sprinkler systems. Of these fires, a total of 40,440 never grew large enough to activate the sprinkler system (confined and unconfined fires). This means that some 83 percent of the fires reported in sprinklered buildings didn't grow large enough to operate the sprinkler system. The systems were operational and unimpaired; the fire simply didn't grow large enough to activate them. One conclusion that can be drawn from this statistic is that many fires are being suppressed by building occupants. Because people are extinguishing fires in their buildings, it's

critical that the correct tools for doing so – portable fire extinguishers - are provided; otherwise, the risk to the public is increased substantially.*(Ref: Table 3-1, page 19 of 2013 NFPA report titled "U.S. Experience With Sprinklers by John Hall)*

Occasionally, the cost of this layer of fire protection is questioned. The cost/benefit analysis of portable extinguishers proves that their value is indisputable. According to a study conducted by Richard Bukowski at RJA (formerly of NIST), the total life cycle cost per square foot for a portable extinguisher ranges from a low of one half of one cent to a high of just under four cents per year. This includes acquisition costs and all inspection, maintenance, and upkeep for the life of the extinguisher. This is likely the lowest cost fire protection available, and has shown to be very effective. (*Reference: Study on the Life Cycle Cost of Portable Fire Extinguishers, Richard W. Bukowski, P.E., FSPE, Rolf Jensen and Associates, Inc.)*

Portable extinguishers can be used safely and effectively by persons with little or no training in their use. According to a study conducted by Worcester Polytechnic Institute and the Eastern Kentucky University, of 276 subjects, 98 percent were able to successfully use an extinguisher by pulling the pin, squeezing the trigger, and discharging the extinguisher. Almost three-quarters (74%) used proper technique of aiming at the base of the fire and used a back and forth motion until the fire was extinguished. After minimal training, the subjects showed a measurable increase in effectiveness. *(Reference: "Ordinary People and Effective Operation of Fire Extinguishers", (April 27, 2012 by Brandon Poole, Undergraduate Student, WPI; Kathy Ann Notarianni, Professor and Head of Department, Fire Protection Engineering, WPI; Randy Harris, Lab Coordinator, Fire Protection Engineering Department, WPI; William D. Hicks, Assistant Professor, Fire and Safety Engineering Technology Program, EKU; Corey Hanks, Lab Coordinator, Fire and Safety Engineering Technology Program, EKU; Gregory E. Gorbett, Program coordinator, Fire and Safety Engineering Technology Program, EKU.)*

Much has been said about the benefits of people simply leaving the building when a fire occurs. The question, however, isn't whether most people will leave or not – every study available shows that, when faced with a small fire, most people will try to intervene in that fire and put it out. Why else would over 90 percent of the fires in this country go unreported (CPSC)? Why else would the majority of ***reported*** fires in sprinklered buildings never activate the sprinklers because they don't grow large enough (Dr. John Hall, NFPA).

It's clear that human nature is to attempt to extinguish a fire if it's in its incipient stage. Fire extinguishers are intended for that specific purpose. So, the question isn't whether people should leave or not; rather, the question is whether you want people to use makeshift means to try to put the fire out, or do you want them to have available a tool that is designed, engineered, and manufactured for that specific purpose? Omitting the requirement for fire extinguishers in these occupancies is placing the building occupants at risk. It's that simple.

We urge the Committee to include the minimum fire extinguisher requirements as they currently exist in the NFPA Fire Code.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP038-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3-28-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

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Telephone: 203-988-7018 Email: irwin.krieger@sbcglobal.net

Address: P.O. Box 519 (Street Address) Ashford (Town) CT (State) 06278 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

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Irwin Krieger LCSW

Proponent's Signature

Irwin Krieger, LCSW

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

ATTACHMENT B, SUPPORTING PROPOSED CODE CHANGES: 2902.1.2
2901.1.3
2902.2

Irwin Krieger, LCSW
P.O. Box 519
Ashford, CT 06278

203-988-7018
irwin.krieger@sbcglobal.net

March 27, 2017

To: The CT Department of Administrative Services

Re: Proposed change to building code

I am a clinical social worker in CT with extensive experience helping transgender teens and adults and their families. I urge you to make these proposed changes to the building code to provide more gender neutral bathrooms.

Most of us know how uncomfortable it is to be in need of a restroom and unable to find one. For transgender people, seeking a restroom can be fraught with uncertainty and danger, even where public restrooms are available. Transgender people are often in the difficult position of being unwelcome in the restroom that is correct for them, the one that corresponds to their affirmed gender. They may be at risk of harassment or physical harm in either of the gendered bathrooms if their appearance does not conform to societal expectations.

Providing an adequate number of gender neutral bathrooms in all buildings will be a great help. This step will also reduce the incidence of long lines for the women's bathroom. This proposed building code change is widely beneficial and should be implemented.

Thanks for your consideration.

Sincerely,

Irwin Krieger LCSW

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP039-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 29, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

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Address: 84 Orange Street (*Street Address*) New Haven (*Town*) CT (*State*) 06510 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

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☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)
Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

Release

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Proponent's Signature

Leigh Elijah

Printed Name

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Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

Connecticut Gender-Neutral Bathroom Access Campaign
Support from the New Haven Pride Center - Attachment B

To the Connecticut Codes and Standards Committee,

I am Leigh Elijah, a board member of the New Haven Pride Center (aka the New Haven Gay and Lesbian Health Collective) where I am an organizer of transgender programming. I am writing to you today on behalf of the New Haven Pride Center to urge you to support of the Connecticut Gender-Neutral Bathroom Access Campaign. I was born in New Haven and have been involved in the LGBT community since I was a high-schooler in Madison, Connecticut. My perspective on this issue comes from personal experience as a transgender and bisexual Connecticut native. Furthermore, for years, I have witnessed mistreatment directed at my transgender and LGB community and friends in Connecticut public bathrooms and amenities. What follows are descriptions of both my experiences and the concerns of transgender members of the New Haven Pride Center as described to me in testimony and in a poll.

OUR DIVERSE MEMBERS

I help to organize a large New Haven Pride Center support group for transgender and gender-non-conforming adults directly affected by the outcome of this campaign. This group includes senior citizens, college students, veterans, professionals, parents, artists, disabled people, and people who are intersex ("a general term used for a variety of conditions in which a person is born with a reproductive or sexual anatomy that doesn't seem to fit the typical definitions of female or male" according to the Intersex Society of North America). Members include trans women, trans men, and gender-non-conforming people of every walk of life, across the spectrum of political affiliation, financial means, and ethnicity. Many are out as transgender, but many must hide their identity. An overwhelming number of members in this varied group desperately want better access to gender neutral bathrooms because of fears of harassment and assault based in experience.

OUR CONCERNS

When I polled group members about their thoughts on the Connecticut Gender-Neutral Bathroom Access Campaign, two thirds of respondents felt unsafe in public without gender neutral bathrooms because of past harassment directed both at the respondent and family or friends of the respondent. Over 80% have either experienced personal harassment or were afraid because of a friend or family member's experience with harassment. The harassment we as a group experienced has often been sexual. I personally have been harassed in both men's and women's restrooms verbally, and in one case, intimidated physically in a men's restroom. In gender bathrooms, people like me who have an androgynous appearance often have to choose between physical fear and the fear of entanglement with the law or security.

Connecticut Gender-Neutral Bathroom Access Campaign
Support from the New Haven Pride Center - Attachment B

OUR PUBLIC BURDEN

Many members of the New Haven Pride Center's transgender community restrict our public outings for fear of having to use a sex-segregated restroom. Others feel pressured to study self defense, carry weapons, or travel only in groups. Some who work in physically demanding jobs avoid drinking water, even in hot environments, due to a lack of comfort with available bathroom options. In other words, many of us suppress our normal body functions to the detriment of our health and productivity due to a lack of access to bathrooms. Popular articles and commentaries shared in local trans social media include how-to guides on how to hide from others in a bathroom along with recommendations for specialized bathroom use equipment and clothing, all in order to bother others as little as possible and to hide one's body from potential aggressors. This problem is so serious in our community that there is a popular online map which tells transgender people how far to travel to find the nearest gender neutral bathroom. This unjust absurdity echoes the climate of racial segregation in the United States which produced the Green Book. This detailed text helped African-American travelers carefully plan trips where there were bathrooms, restrooms, and gas stations which they were legally allowed to use under Jim Crow, since not every populated area had basic amenities available to non-whites. Similar lack of access to public facilities has been and still is experienced all over the world by disabled people, particularly those in wheelchairs. This type of public bathroom burden is always a serious problem to be eliminated, and it rightfully belongs in the past for all minority groups, including transgender people.

SUPPLEMENTAL CONCERNS

Within our group, those who have not experienced harassment generally support gender neutral bathrooms for reasons unrelated to transgender experience, which are numerous. Here are some examples:

1. Recent legislation being pushed across the country to restrict transgender use of public bathrooms, notably HB 2 in North Carolina, legitimizes anti-trans discrimination both in and out of bathrooms throughout the country. Failure to legislate in protection of transgender persons' use of public bathrooms sends a dangerous message that attitudes about transgender people in other states are acceptable here in Connecticut.
2. People with androgynous appearances, especially women who have short hair or medical hair loss, female athletes, and medically intersex people who do not identify as transgender, have been experiencing harassment in bathrooms across the country based on the incorrect assumption that they may be transgender. Aimee Toms of Connecticut experienced this in May of 2016 in a case you may

have heard about in the news. I encourage you to Google "Cisgender woman harassed in women's bathroom." This is not uncommon, and paranoia about the bathroom activities of transgender people can directly lead to misplaced violence.

3. Gender neutral bathrooms serve as vital family bathrooms for fathers of young daughters and mothers of young sons who are concerned about the risks and inconvenience of being separated in sex-segregated bathrooms. This especially affects veteran spouses, single parents and guardians, and same-sex couples.
4. Gender neutral bathrooms allow people with disabilities and seniors to use bathrooms with assistance from differently gendered caregivers, family, and friends.
5. Connecticut is sprinkled with single user public bathrooms which are labeled as single gender, even with a nearby sex-segregated multi-user bathroom. Women generally need to use bathrooms more frequently than men, especially during pregnancy. Women are also more susceptible than men to infection from waiting to urinate. Why should women have to stand in a long line when a nearby single user men's bathroom is empty?

The New Haven Pride Center supports a diverse vulnerable population of active, talented, and passionate citizens. We feel that this is one of the most important opportunities that the Connecticut Codes and Standards Committee has to join us in that mission. We all have a gender neutral bathroom at home. They are private, sensible, accessible and completely normalized. Let's make them the standard in Connecticut.

Sincerely,

Leigh Elijah
Board Member & Transgender Community Organizer
New Haven Pride Center
nhglcc@gmail.com
www.newhavenpridecenter.org
84 Orange Street, New Haven, Connecticut 06510

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP040-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/29/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2015 IECC R406

PROPONENT INFORMATION

Name: Gayathri Vijayakumar

Representing: Steven Winter Associates

Telephone: 203-857-0200 x 223

Email: gayathri@swinter.com

Address: 61 Washington Street (*Street Address*) Norwalk (*Town*) CT (*State*) 06854 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

Adding a standard to calculate the Energy Rating Index (ERI) in R406

Proposed text change, addition or deletion (attach additional information as needed):

See attached for current 2015 IECC text and tracked changes/deletions for the proposal

Supporting data and documents (attach additional information as needed)

Copy of the original IECC proposal (RE166) & the Committee Action hearing results/modificat

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

This proposal was approved 'as modified by public comment 1' for inclusion in 2018 IECC

Release

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Proponent's Signature

Gayathri Vijayakumar

Printed Name

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A new standard, ANSI/RESNET/ICC 301-2014, was first published in March 2014 and republished in January 2016. It provides the methodology to calculate an Energy Rating Index (ERI). It is fairly similar to the process well known by HERS Raters to produce a HERS index, which has long been used by ENERGIZECT to provide incentives to residential buildings/units based on their energy efficiency. The HERS Index will explicitly use this process on all units permitted after July 1, 2017, so there will be no difference in the protocols used for HERS and for ERI (code-compliance).

The reason to add this standard is that 2015 IECC has no referenced standard for calculating this index, which will lead to inconsistent results.

The 2018 IECC will include ANSI 301 as the referenced standard for calculating an ERI. The IECC proposal, RE166, was approved as submitted at the Committee Action Hearing, with one modification requested. That modification was presented as Public Comment 1 and was approved at the Public Comment Hearing and the Online Governmental Consensus Vote, which could lead to its inclusion in the 2018 IECC. However it is not being included here as it is not possible in practice for software users to modify the reference home.

Current text in 2015 IECC-R (Energy Rating Index Compliance Alternative), with tracked changes to reflect proposal

2015 International Energy Conservation Code

Revise as follows:
R406.3 Energy Rating Index. The Energy Rating Index (ERI) shall be ~~a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1-percent change~~ determined in accordance with ANSI/RESNET/ICC 301. ~~in the total energy use of the rated design relative to the total energy use of the *ERI reference design*. The ERI shall consider all energy used in the *residential building*.~~

Delete without substitution:
~~**R406.3.1 ERI reference design.** The *ERI reference design* shall be configured such that it meets the minimum requirements of the 2006 *International Energy Conservation Code* prescriptive requirements.~~

~~The proposed *residential building* shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the *ERI reference design*.~~

Revise as follows:
R406.6.1 Compliance software tools. ~~Documentation verifying that~~ Software tools used for determining the ~~methods and accuracy of the compliance software tools conform to the provisions of this section~~ ERI shall be ~~provided to the code official~~Approved Software Rating Tools in accordance with ANSI/RESNET/ICC 301.

~~**R406.7.2**~~ **R406.6.4 Specific approval.** Performance analysis tools meeting the applicable sections of Section R406 shall be *approved*. ~~Tools are permitted~~ Documentation demonstrating the approval of performance analysis tools in accordance with Section 406.6.1 shall be provided to ~~be *approved* based on meeting a specified threshold for a jurisdiction~~the *code official*. ~~The *code official* shall approve tools for a specified application or limited scope.~~
~~**R406.7.3**~~ **R406.6.5 Input values.** When calculations require input values not specified by Sections R402, R403, R404 and R405, those input values shall be taken from ~~an approved source~~ANSI/RESNET/ICC 301.

Comment [g1]: Re-numbering required due to the deletion of Section 406.7 below

Delete without substitution:
~~**R406.7 Calculation software tools.** Calculation software, where used, shall be in accordance with Sections R406.7.1 through R406.7.3.~~
~~**R406.7.1 Minimum capabilities.** Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3, and shall include the following capabilities:~~

~~1. Computer generation of the *ERI reference design* using only the input for the *rated design*.The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*.~~
~~2. Calculation of whole building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section R403.7.~~
~~3. Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.~~
~~4. Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.~~

Reference standards type: This reference standard is new to the ICC Code Books

Add new standard(s) as follows:
ANSI/RESNET/ICC 301-2014 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index First Published March 7, 2014 Republished January 2016

RE166-16

R406.3 (IRC N1106.3), R406.3.1 (IRC N1106.3.1), R406.6.1 (IRC N1106.6.1), R406.7 (IRC N1106.7), R406.7.1 (IRC N1106.7.1), R406.7.2 (IRC N1106.7.2), R406.7.3 (IRC N1106.7.3)

Proposed Change as Submitted

Proponent : Eric Makela, Cadmus Group, representing RESNET

2015 International Energy Conservation Code

Revise as follows:

R406.3 (N1106.3) Energy Rating Index. The Energy Rating Index (ERI) shall be ~~a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1-percent change~~ determined in ~~the total energy use of the rated design relative to the total energy use of the *ERI reference design*~~accordance with ANSI/RESNET/ICC 301. ~~The ERI shall consider all energy used in the *residential building*.~~

Delete without substitution:

~~**R406.3.1 (N1106.3.1) ERI reference design.** The *ERI reference design* shall be configured such that it meets the minimum requirements of the 2006 *International Energy Conservation Code* prescriptive requirements.~~

~~The proposed *residential building* shall be shown to have an annual total normalized modified load less than or equal to the annual total loads of the *ERI reference design*.~~

Revise as follows:

R406.6.1 (N1106.6.1) Compliance software tools. ~~Documentation verifying that~~ Software tools used for determining the ~~methods and accuracy of the compliance software tools conform to the provisions of this section~~ ERI shall be ~~provided to the *code official*~~Approved Software Rating Tools in accordance with ANSI/RESNET/ICC 301.

~~**R406.7.2**~~ **R406.6.4 (N1106.6.4) Specific approval.** Performance analysis tools meeting the applicable sections of Section R406 shall be *approved*. ~~Tools are permitted~~ Documentation demonstrating the approval of performance analysis tools in accordance with Section R406.6.1 shall be provided to ~~be *approved* based on meeting a specified threshold for a jurisdiction~~ the code official. ~~The *code official* shall approve tools for a specified application or limited scope.~~

~~**R406.7.3**~~ **R406.6.5 (N1106.6.5) Input values.** When calculations require input values not specified by Sections R402, R403, R404 and R405, those input values shall be taken from ~~an approved source~~ ANSI/RESNET/ICC 301.

Delete without substitution:

~~**R406.7 (N1106.7) Calculation software tools.** Calculation software, where used, shall be in accordance with Sections R406.7.1 through R406.7.3.~~

~~**R406.7.1 (N1106.7.1) Minimum capabilities.** Calculation procedures used to comply with this section shall be software tools capable of calculating the ERI as described in Section R406.3, and shall include the following capabilities:~~

1. ~~Computer generation of the *ERI reference design* using only the input for the *rated design*.The calculation procedure shall not allow the user to directly modify the building component characteristics of the *ERI reference design*.~~
2. ~~Calculation of whole building, as a single *zone*, sizing for the heating and cooling equipment in the *ERI reference design* residence in accordance with Section R403.7.~~
3. ~~Calculations that account for the effects of indoor and outdoor temperatures and part-load ratios on the performance of heating, ventilating and air-conditioning equipment based on climate and equipment sizing.~~
4. ~~Printed *code official* inspection checklist listing each of the *rated design* component characteristics determined by the analysis to provide compliance, along with their respective performance ratings.~~

Reference standards type: This reference standard is new to the ICC Code Books
Add new standard(s) as follows:

ANSI/RESNET/ICC 301-2014 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index First Published March 7, 2014 Republished January 2016

Reason: During the 2015 code development cycle, a collaborative code change proposal (RE188-13) to include the ERI approach in the code was submitted by the Institute for Market Transformation, Natural Resources Defense Council and Britt/Makela Group. The ERI approach was adopted in the code as Section R406 and is currently being adopted by states and

local jurisdictions.
The collaborative team based the ERI code language on the yet to be approved standard ANSI/RESNET/ICC-301. This required the team to include language from the standard concerning the development of the Energy Rating Index (see Section R406.3), compliance software tool approval (R406.6.1) and the minimum capabilities of the software used to determine an ERI for a project (R406.7.1). Overall the language that was included in the proposal provides the basic concepts for developing a program to meet the ERI approach but referencing the RESNET/ICC-301 would ensure that the ERI approach is deployed using a standardized process from a consensus document.

This proposal references RESNET/ICC – 301 RESNET/ICC – 301 and strikes all language in C406 that is duplicated in the Standard or that is no longer needed in the code because the concept is covered in the Standard.

RESNET/ICC - 301 Standard for the Calculation and Labeling of the Energy Performance of Low-Rise Residential Buildings using an Energy Rating Index provides a consistent, uniform methodology for evaluating and labeling the energy performance of residences. The methodology compares the energy performance of an actual home with the energy performance of a reference home of the same geometry, resulting in a relative energy rating called the Energy Rating Index. Where the energy performance of the actual home and the reference home are equal, the Energy Rating Index is 100 and where the actual home requires no net purchased energy annually, the Energy Rating Index is 0 (zero). Per the provisions of R406, the Energy Rating Reference Home used for this comparative analysis has the energy attributes of the 2006 International Energy Conservation Code (IECC) Standard Reference Design. Thus, the Energy Rating Index is relative to the minimum building energy efficiency requirements of the 2006 IECC.

Cost Impact: Will not increase the cost of construction
As stated in the Reason Statement, the ERI approach submitted during the 2015 IECC code development cycle (RE188-13) was based on the yet to be approved Standard 301. The ERI values that populate Table R406.4 were calculated and based on the protocol described in Standard 301 so referencing this standard will not lead to an increase in the stringency of the ERI values and will not result in an increase in first cost for the construction of the house. This proposal DOES NOT propose to change the Section R406.2 requiremets for Mandatory Requirements or the 2009 IECC as minimum requirement which would increase first cost. The Energy Rating Index described in Section R406.3 is consistent with Standard 301. The requirements for Calculation Software Tools in Section R406.7 will not increase the cost to develop software as the requirements are consistent with the requirements in Standard 301. Standard 301 does not place additional requirements into C406 but provides a stadardized method for generating ERI scores and demonstrating compliance with the R406.

Analysis: A review of the standard proposed for inclusion in the code, BRS/RESNET/ICC 301-2016, with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 1, 2016)

RE166-16 : R406.3-MAKELA12647

Public Hearing Results

Committee Action: **Approved as Submitted**

Committee Reason: The ERI path needs to be standardized and the RESNET standard does that. The difference in ventilation rate might need to be resolved but the experts can solve that through public comments.

Assembly Action: **None**

Individual Consideration Agenda

Public Comment 1:

Proponent : Craig Conner, representing self (craig.conner@mac.com); Joseph Lstiburek, representing self (joe@buildingscience.com) requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Energy Conservation Code

R406.3 (N1106.3) Energy Rating Index. The Energy Rating Index (ERI) shall be determined in accordance with ANSI/RESNET/ICC 301~~.~~ except for buildings constructed in accordance with the International Residential Code, the ERI the reference design ventilation rate shall be in accordance with the following:

Ventilation rate in cubic feet per minute = (0.01 x total square foot area of house) + [7.5 x (number of bedrooms + 1)] **(Equation 4-1)**

Commenter's Reason: As written the ERI ventilation rate specification is in conflict with the ventilation rate specified by the IRC. The current language references ANSI/RESNET/ICC Standard 301 which references the ASHRAE 62.2-2013. The ventilation rate in the ASHRAE Standard 62.2 is significantly higher than the ventilation rate in the IRC. The IRC rate was reaffirmed in Group A changes this code cycle. Without this ventilation rate correction, the higher ventilation rate would use more energy unnecessarily and thereby increase ERI scores for no good reason. Interestingly the ASHRAE 62.2-2010 used the same rate as is in the current IRC.
Third party organizations should not set ventilation rates for the IRC and the IECC. Ventilation rates in the IRC and IECC should be set by the ICC code development process.

This proposal brings the IECC/IRC ERI calculation into compliance with the IRC ventilation rate by using the same ventilation equation as will be in Section 1507.3.3 of the 2018 IRC.

The published committee reason expected this update, stating: *"The difference in ventilation rate might need to be resolved but the experts can solve that through public comments."* This is the public comment they were reffering to.

Public Comment 2:

Proponent : Maureen Guttman, Building Codes Assistance Project, representing Building Codes Assistance Project requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Energy Conservation Code

R406.3 (N1106.3) Energy Rating Index. The Energy Rating Index shall be a numerical integer value that is based on a linear scale constructed such that the *ERI reference design* has an Index value of 100 and a *residential building* that uses no net purchased energy has an Index value of 0. Each integer value on the scale shall represent a 1 percent change in the total energy use of the *ERI reference design*. The Energy Rating Index (ERI) shall be determined in accordance with ANSI/RESNET/ICC 301 or another approved energy rating method, subject to the intent, provisions and limitations of this code.

Commenter's Reason: This public comment modification is proposed to recognize RESNET 301 as one method to determine ERI, but also permit other *approved* alternative rating methods to RESNET 301, with all such ERI rating methods subject to the intent, provisions and limitations of the IECC. The latter language will help to ensure that RESNET 301 or any other method still meets the overall intent and requirements of the code.
The IECC should not designate a single entity to control an entire compliance method. While we can appreciate RESNET's interest in standardizing a rating methodology, particularly the one that they developed, it would be more appropriate to add the necessary details directly into the IECC, rather than referencing a single outside standard. However, the proponent has not identified which portions of the current Section R406 (if any) are not already working well. Instead, RE166 simply proposes deleting most of the specific requirements of the code and replacing them with a reference to RESNET 301.

We recognize that HERS Ratings are widely used, and that the current language was modeled somewhat after the requirements of RESNET 301. Thus, this public comment would specifically recognize the use of RESNET 301 as an *approved methodology* for the ERI – but *not the only methodology*. We believe that naming a single standard would work to the disadvantage of builders and homeowners who may want another alternative. Going forward, if proponents are interested in updating or tweaking Section R406, we strongly encourage them to fix or supplement the actual code language, rather than delete it in favor of an outside standard. While we prefer RE166 to be disapproved, this modification should at least be approved so as to allow the possibility of competitive standards and systems and the ability to add additional requirements in the future.

Public Comment 3:

Proponent : Harry Misuriello, American Council for an Energy-Efficient Economy, representing Energy Efficient Codes Coalition requests Approve as Modified by this Public Comment.

Modify as Follows:

2015 International Energy Conservation Code

R406.3 (N1106.3) Energy Rating Index. The Energy Rating Index (ERI) shall be determined in accordance with ANSI/RESNET/ICC 301, except the ERI calculation shall not include on-site power production or provide any credit for such production.

Commenter's Reason: This public comment proposes a modification to close a potentially massive loophole that could be created by the approval of RE166, specifically by clarifying that adoption of RESNET 301 does not permit energy efficiency to be traded off for on-site power production under the ERI. Our views in opposition to on-site power production as a means to reduce energy efficiency requirements are also set forth in some detail in RE164 and the related public comment. While we would prefer to see RE166 disapproved, if it moves forward, we would like to at least see it modified to eliminate the risk of any credit for on-site power production in calculating the ERI.

Some stakeholders at the Committee Action Hearings argued that RESNET 301 establishes a pathway to include on-site power production in its calculation of the ERI. By contrast, the current ERI does not include on-site power production. As a result, the impact of RE166 could be overwhelmingly negative to energy efficiency, if on-site generation is permitted to replace energy efficiency measures. According to a study by RESNET, permitting trade-offs between energy efficiency and on-site power production (specifically a 4 kW solar system in this case) could easily cost 20 to 40 ERI points worth of energy efficiency, **which amounts to 36% to 73% increased energy use** (using a 55 ERI target score). (See Dillon, B., *The Impact of Photovoltaic Arrays on the HERS Index* (2015)). This level of trade-off credit for electric generation will, by itself, eliminate the energy efficiency savings achieved over many code cycles.

When ERI was first introduced into the IECC, there was no proposal to include any on-site power production (such as solar PV) in the ERI calculation; had there been such a proposal, we doubt the ERI would have been approved. Although HERS had included an option for on-site power production to be included in a final HERS rating, the scope of HERS (which had mostly been used for voluntary, above-code, tax credit or "green" program certification) is not the same as the IECC's mandatory code-compliance format. The residential IECC has never established requirements for solar or other on-site generation or recognized on-site power production as a trade-off of any type, and the new ERI path in Section R406 does not reference any sort of on-site power in Section R406. Likewise, EPA's Energy Star program, which also uses the HERS rating system, generally does not award credit for on-site power production against energy conservation measures.

Some have exploited a lack of direct reference to or limit on on-site power production as a sort of "green light" to contend that they can count up to 100% of all on-site generation of all types as a reduction in energy use – a practice that clearly conflicts with the history of, and the intent of the IECC to "regulate the design and construction of buildings for the effective use and conservation of energy over the useful life of each building." This problem will be significantly exacerbated by adoption of RE166 and RESNET 301.

On-site power, and particularly solar PV, has benefitted from a number of very generous federal and state tax credits, utility incentives and favorable net electric metering rates, and other incentives that have driven new technologies and reduced installation costs. Proponents of on-site power trade-offs are now arguing that all of these incentives could now be used as a means of weakening building efficiency. We simply do not believe that ratepayer funds, tax dollars, and other incentives aimed at reducing fossil fuel use should now be used to allow builders to increase energy use in buildings served by on-site generation. And, conversely, if these trade-offs are allowed, it is highly likely that some or all of these renewable energy incentives for new homes could be eliminated by federal or state jurisdictions, and by utilities and their regulators, since these systems would no longer be producing a net reduction in conventional electricity or fuel use, creating environmental benefits or providing a net savings to the homeowner.

Power generation has been the regulatory responsibility of public service and utility regulatory commissions for over a hundred years and has not been the responsibility of the energy conservation code. There should remain a clear line between energy conservation measures that are part of creating resilient, efficient buildings, and electricity generation technologies.

Potentially allowing direct trade-offs between electric generation – whether renewable or not – and energy conservation raises a number of serious unintended consequences. This public comment maintains a clear distinction between the regulation of residential energy conservation (the historic mission of the IECC and Model Energy Code), and energy generation of any type. To blend these two missions together in the code would bring unnecessary complications and would not improve energy efficiency in any way. We recommend that RE166 be modified as proposed in this public comment.

Proponent : David Collins, The Preview Group, Inc., representing The American Institute of Architects (dcollins@preview-group.com) requests Disapprove.

Commenter's Reason: This code change adopts RESNET 380: Outsourcing of residential compliance path, and was approved by the committee.

The AIA believes that this proposal essentially outsources the ERI compliance path to RESNET by adopting RESNET 301 as the exclusive source for ERI compliance. This is also problematic in that it allows the unlimited use of on-site power production in lieu of energy efficiency improvements.

Using a single source for compliance is not beneficial and raises questions of ICC denying competition by others. The code should set the criteira, and those that have systems or means to accomplish those should be allowed to submit them for consideration and approval. Integrating a system that undermines the principles in the code for higher energy efficiency in buildings by providing more energy production is not a positive approach for the IECC.

Proponent : William Fay, Energy Efficient Codes Coalition, representing Energy Efficient Codes Coalition requests Disapprove.

Commenter's Reason: RE166 should be disapproved because it outsources control over an entire IECC compliance option (ERI) to an outside organization (RESNET, which develops standard 301) and it further confuses the issue of whether on-site power production (renewable or not) counts as a substitute for energy efficiency measures toward compliance with ERI, putting at risk an enormous loss of energy efficiency.

ERI is an important new compliance method. We recognize that ERI emulates some aspects of RESNET's Home Energy Rating System (HERS) as set forth in RESNET 301, and that the RESNET process is currently expected to be the primary compliance pathway utilized to comply with ERI. However, ERI currently is a stand-alone compliance path in the IECC. This proposal would replace the requirements for calculating ERI in the code with only a reference to a very lengthy standard, which is controlled by RESNET and potentially subject to constant revision.

We expect ERI to become a widely-used IECC compliance path and believe that the IECC, not RESNET, should establish and control the basic components of this compliance path. Further, we believe RE166 would complicate code development and enforcement and would lead to a number of unintended consequences. The ERI compliance path was just established last cycle. This is not the time to fundamentally alter the ERI, just as it is just being adopted and/or implemented in many states.

It should be noted that, even though we recommend disapproval of this proposal, we do not oppose the use of RESNET 301 (without on-site power production credit) to calculate ERI scores, so long as the standard is applied consistently with the IECC requirements. We simply do not think it is healthy for the IECC (or RESNET for that matter) for RESNET 301 to wholly control the ERI calculation.

In terms of differences between the requirements of the current IECC Section R406 and RESNET 301, there is one difference that has enormous significance. Although it can be argued that RESNET 301 establishes a pathway to include on-site power production in its calculation, the current ERI does not. As shown by a recent RESNET study, 4 kW solar PV system could be used under RESNET 301, if permitted by the IECC, to offset 20 to 40 ERI points. This would lose an enormous amount of energy efficiency – 20 to 40 points amounts to 36% to 73% increased energy use (using a 55 ERI target score). (See the RESNET study: Dillon, B., *The Impact of Photovoltaic Arrays on the HERS Index* (2015)).

To further elaborate on some of our concerns:

- **IECC code development should remain at ICC and ERI requirements should be clearly spelled out in the code itself.** A very troubling aspect of RE166 is the specific reference to an outside standard to completely control virtually the entire compliance option. While reference national standards for product performance or standardized regulation of specific building components are more common, it is almost unprecedented to reference another organization's standard for an entire compliance path.

The only example that comes close is the reference to ASHRAE Standard 90.1 in the Commercial IECC. However, ASHRAE Standard 90.1 is unique – it is the standard for energy efficiency in commercial buildings referenced in federal law, and it has been part of the IECC for many years. RESNET 301 is not ASHRAE Standard 90.1.

To replace the specific requirements of Section R406 with a reference to RESNET 301 takes code development for this important compliance path out of the hands of the ICC – and out of the hands of the building code officials who must enforce the code – and hands this responsibility and authority over to another organization without the same membership or governmental representative decision-making structure.

- **The purpose and scope of RESNET 301 is different from the IECC's scope.** RESNET originally developed home energy ratings (HERS) to provide a yardstick to measure comparative home energy use for voluntary energy ratings for builders and homeowners, "above code" or "green" energy programs, tax credits, and other voluntary contexts that are not focused on building code compliance. Building code compliance is a recent afterthought for this rating system. While aspects of the rating methodology outlined in RESNET 301 might be an appropriate part of the Energy Rating Index, it should not be used as a means to change the scope of the IECC, which is focused on the "effective use and conservation of energy over the useful life of each building." The scope of the IECC and all of its compliance options should be established by the ICC Governmental Member Voting Representatives, not by RESNET.

- **RESNET 301 includes provisions that have not been part of the IECC (related to on-site power production) and will have huge negative impacts on the IECC and energy efficiency.** Many stakeholders pointed out at the Committee Action Hearings their view that RESNET 301 includes on-site power production (renewable and non-renewable) as an input option in the calculation of a HERS score. On-site power production has never been permitted as a trade-off in the residential IECC, and including the use of electricity production as an offset to energy efficiency would be a significant expansion of the IECC's scope and a large rollback in energy efficiency. EECC's views in opposition to including on-site power production in the residential IECC are set forth in much more detail in EECC's public comment on RE164 and other proposals. It is not appropriate to add provisions into the IECC simply because they are available in a piece of software or a rating system. Yet, replacing code requirements with a single reference to RESNET 301 will lead some to argue that the scope of the IECC has been expanded and that on-site power production is permitted in the ERI to offset required energy efficiency.
- **RESNET 301 is subject to constant change, outside of the ICC Code Development Process.** RESNET 301 can, and does, change frequently to reflect different calculation methods and other changes deemed appropriate by the RESNET Board. Specifically, it is subject to "continuous maintenance." Because software providers and HERS Raters use the HERS rating methodology for a variety of purposes, our understanding is that software and references are updated with each new change. We are concerned that even if a specific edition of RESNET 301 is referenced in the IECC, raters and software companies will update their practices with changes to 301 irrespective of whether these changes have been appropriately reviewed and vetted through the code development process and referenced in the IECC.

RE166 introduces an unprecedented variable into code development – one that is outside the direct control of ICC's Governmental Member Voting Representatives – as well as potentially introducing significant and unwanted changes to the ERI path and the scope of the residential IECC related to on-site power production. We urge voters to disapprove this proposal.

Proponent : Charles Foster (cfoster20187@yahoo.com) requests Disapprove.

Commenter's Reason: This code proposal substitutes HERS for the existing ERI approach. HERS is too restrictive.

Proponent : Darren Meyers, representing Illinois Office of Energy & Recycling (dmeyers@ieccode.com) requests Disapprove.

Commenter's Reason: U.S. code enforcement should DISAPPROVE RE166-16.

Despite DISAPPROVAL, by no means should this comment be considered an indictment of HERS Raters professionally, individually or collectively. Rather, the comment is offered based on historical record, testimonials from HERS Raters, and direct experience/observation of the Mortgage Industry's still evolving "National Home Energy Rating System" (HERS) Standard as a tool of code enforcement.

Summary. The Reason why U.S. code enforcement should DISAPPROVE RE166 is, regrettably, the Energy Rating Index 'ERI', formerly known as the RESNET's Home Energy Rating System 'HERS' (via RESNET Standard 301):

- Was retroactively renamed to suit previously developed IECC code language;
- The RESNET 300 Standards Council has issued interpretations that usurp the ICC governmental consensus process code officials use to establish IECC compliance paths;
- Has not reached consensus among its own members (HERS Raters) to address inadequacies in HERS Quality Assurance and Quality Control – Meaning, HERS raters evaluate and score the construction practices of the builders who hire them;
- Is rooted in "above-code" methodology, thereby requiring the use of proprietary software for compliance assessment that isn't always available or up to date; and
- Relies on a methodology that can vary 15 to 18 ERI/HERS points around a median set of IECC Baseline, code compliant building characteristics;

1. Larger houses (s.f.) receive more favorable (lower) ERI/HERS Indices compared to smaller houses. No solution to such relationship is included in the proposal.
2.
3. ERI/HERS points are granted for ceiling fans, refrigerators, dish washing equipment, microwave ovens and washer/dryer combinations that are considered "portable" and outside a code official's purview.
4.
5. If compliance is based on exceeding a single number, is the volatility of up to 18 ERI/HERS points acceptable to code enforcement in determining compliance vs. non-compliance?

Detail. Whether it was the intent or otherwise to create a nebulous "placeholder" during the 2015 IECC code development cycle (RE188-13), ultimately, the approval of RE188-13 is turning out to be a mistake. Simply stated, RESNET Standard 301 is not ready for use as an extension of the code compliance process at this time.

There are a number of supporting explanations:

- While RESNET 301 was first published on 3/7/2014 as an ANSI consensus developed standard, no less than a year later, it was retroactively "renamed" to match an IECC code section developed during the October 2013 ICC Code Development Cycle for the 2015 editions, prior to its existence.

- If RESNET 301 is adopted into the 2018 IECC, U.S. code enforcement (and ICC) relinquish their "authority" to determine, by governmental consensus vote, what "IS" and "IS NOT" IECC code compliant or suitable for an IECC "TRADE-OFF."

1. **Example:** On 1/15/2016, the RESNET 300 Standards Council adopted Addendum 'B' outside of the ICC Code Development Process to rename the Standard "RESNET**/ICC** 301-2014" to be promulgated and sold by both organizations to U.S. code enforcement.[ii] (https://cdpaccess.com/public-comment/edit/16283#_edn2)
2.
3. **Example:** On 1/15/2016, the RESNET 300 Standards Council adopted Addendum 'B' outside of the ICC Code Development Process to rename the ~~HERS Index~~ **Energy Rating Index (ERI)** retroactively, to match a code section developed during the October 2013 ICC Code Development Cycle for the 2015 editions, prior to its existence.
4.
5. **Example:** The action to rename its standard, retroactively, has been interpreted by many as giving RESNET a commanding and/or unique position over competing groups in States, unrelated to code compliance.
6.
7. **Example:** On 6/16/2016, the RESNET 300 Standards Council announced its intent to investigate an energy cost-based savings comparison on which to base the ERI/HERS Index. A provision already in Section 405 of the IECC.
8.
9. **Example:** On 7/1/2016, the RESNET 300 Standards Council announced its intent to adopt Addendum 'C' outside of the ICC Code Development Process, to permit trade-offs between the levels of ventilation for human health afforded by ASHRAE 62.2-2010 with those found in 62.2-2013. ASHRAE Standard 62.2 is not adopted by the I-Codes. However, if approved, Addendum 'C' would allow the builder/rater relationship to lessen indoor air quality in favor of "builder-selected" options.[iii] (https://cdpaccess.com/public-comment/edit/16283#_edn3) Unlike the 62.2 committee, the RESNET 300 Standards Council was not constituted to be balanced explicitly with knowledge and expertise on ventilation for acceptable indoor air quality.
10.
11. **Example:** In an interpretation issued 7/7/2016, outside of the ICC Code Development Process, the RESNET 300 Standards Council needed to clarify that a rated home without a water heater must use the Energy Factor formula prescribed by Federal law (CFR 430.32(d)). A provision already in Section 405 of the IECC.[iv] (https://cdpaccess.com/public-comment/edit/16283#_edn4)

- There are clear and present inadequacies in the RESNET HERS Quality Assurance process. So much so that a new RESNET Standard Development Committee (SDC) 900[v] (https://cdpaccess.com/public-comment/edit/16283#_edn5)was conceived out of a RESNET *Quality Improvement Working Group*[vi] (https://cdpaccess.com/public-comment/edit/16283#_edn6) investigation (10/3/2014) to address the financial interests that Raters and their Quality Assurance (QA) Providers have in the outcome of ERI/HERS scores issued to the builders who hire them. RESNET 900 is

under development and will not be available for inclusion in the code until the 2021 IECC.

1. Raters evaluate and score the construction practices of the builders who hire them. Code officials inspect the construction practices of builders for the welfare, health-, life- structural-, and fire-safety interests of the public. Even the hint of a "less than arm's length" cash transactional relationship between the HERS RATER and the builder raises questions of impartiality.
2.
3. RESNET's Quality Improvement Working Group recommendations have received endorsements and rejections by HERS Raters nation-wide. The importance here is that among HERS Raters, there is no consensus:
4.
5. HERS Raters in Texas "...agree that the integrity of some Providers and Raters, who compete on price versus value of their service to the builder, play a role.[vii] (https://cdpaccess.com/public-comment/edit/16283#_edn7)
6.
7. "In many cases, ... builders encourage the mindset; they are only interested in the score and are not as interested in the accuracy or validity of the actual HERS index or verification of the rated features."[vii] (https://cdpaccess.com/public-comment/edit/16283#_edn7)
8.
9. "Yes, there are problems. Part of what's motivating RESNET is that if you hire several raters to come into a home to do a rating, you'll get a spread of results that's broader than it should be." [viii] (https://cdpaccess.com/public-comment/edit/16283#_edn8)
10.
11. "When a provider does QA on their raters, the results for the HERS Index are supposed to be within +/- 3%, but different providers and QA Designees (QADs) don't always interpret the standards the same way. So you can have variance in the results even without malfeasance." [viii] (https://cdpaccess.com/public-comment/edit/16283#_edn8)
12.
13. "There is widespread agreement that RESNET must take action to increase the consistency and quality of ratings for market confidence and consistency." However, "RESNET only has four (4) current full-time employees on staff." [ix] (https://cdpaccess.com/public-comment/edit/16283#_edn9)
14.
15. "The current HERS QA infrastructure allows rating companies who serve as their own QA Provider to perform internal QA review, as well as third-party Providers to perform QA on independent Raters who pay them for this QA. To many, the financial relationships between Raters and QA Providers pose too significant of a potential financial conflict of interest."[ix] (https://cdpaccess.com/public-comment/edit/16283#_edn9)
16.
17. Considering these QA improvements are "in process" as recommendations without consensus among the HERS Rating membership, the adoption of an ERI/HERS path in the 2018 IECC could be viewed as "changing the tires on a moving car."

- Not one home has received a codified Energy Rating Index since the 2015 IECC was published 6/30/2014. That's more than two years during which the ERI provisions of the 2015 IECC have not been used. This is a result of the three lone ERI/HERS software developers either delaying or not yet developing 2015 IECC ERI-compliant versions.

1. NORESCO released a 2015 IECC ERI-compliant version 7/1/2016. The Florida Solar Energy Center released a 2015 IECC ERI-compliant version 3/31/2016. Ekotrope plans to release a 2015 IECC ERI/HERS-compliant module in the fall of 2016.
2.
3. There remain "customizable" libraries for construction types, weather and utility data content that cannot be policed easily by code enforcement at plan review.
4.
5. There is not yet an open source interpretation layer for calculating an ERI/HERS Index that all HERS software programs must use for objective analysis by code enforcement.

- There is questionable validity of a volatile, single-solution-based ERI/HERS scoring system. In other words, the use of a single number to demonstrate IECC code compliance.[x] (https://cdpaccess.com/public-comment/edit/16283#_edn10)

1. In every Climate Zone, Conditioned Floor Area (CFA) is the most important and [most] volatile characteristic of ERI/HERS

Index. For Zones 4 and 5 [Corresponding ERI/HERS Indices] can vary 15 to 18 points around a median set of IECC Baseline, code compliant building characteristics.

2.
3. "It seems clear any HERS-based code compliance path in any location would need to account for house size using a logarithmic relationship," which is not the case in the language proposed for 2018 IECC.[x] (https://cdpaccess.com/public-comment/edit/16283#_edn10)This means, larger houses (s.f.) receive more favorable (lower) ERI/HERS Indices compared to smaller houses.
4.
5. "The Corresponding HERS Index is also quite volatile with respect to CFA and HVAC efficiency,"[x] (https://cdpaccess.com/public-comment/edit/16283#_edn10)allowing lower ERI/HERS Indices for homes with poorly performing building envelopes.
6.
7. "Understanding this volatility across multiple home characteristics reveals 'real-world differences' among homes complying with the IECC Section 406 ERI path and its Section 405 Performance path."[x] (https://cdpaccess.com/public-comment/edit/16283#_edn10)
8.
9. "The [proposed] ERI/HERS Index path ... keys on no [specific] building characteristics, making it easy to express—in a single number for each zone—at the expense of not being responsive to variations in [home] characteristics."[x] (https://cdpaccess.com/public-comment/edit/16283#_edn10)
10.
11. HERS/ERI calculations are more complicated than Prescriptive submittals or REScheck, and take more time to review, placing burdens on code enforcement. There is concern that these types of sophisticated reviews would simply not take place, thereby leading unverified structures to be built.

End Notes.

[i] (https://cdpaccess.com/public-comment/edit/16283#_ednref1) The History of RESNET (http://www.resnet.us/about/our-history (http://www.resnet.us/about/our-history%20accessed%207/20/2016%C2%A0accessed%207/20/2016))

[ii] (https://cdpaccess.com/public-comment/edit/16283#_ednref2) RESNET/ICC 301-2014 Addendum B-2015 (http://www.resnet.us/blog/resnet-consensus-standards/ (http://www.resnet.us/blog/resnet-consensus-standards/))

[iii] (https://cdpaccess.com/public-comment/edit/16283#_ednref3) RESNET/ICC 301-2014 Addendum C-201X, Whole-House Mechanical Ventilation (http://www.resnet.us/blog/resnet-consensus-standards/ (http://www.resnet.us/blog/resnet-consensus-standards/))

[iv] (https://cdpaccess.com/public-comment/edit/16283#_ednref4) Interpretation No. 301-2014-07, RESNET/ICC 301-2014 Water Heater EF (http://www.resnet.us/blog/resnet-consensus-standards/ (http://www.resnet.us/blog/resnet-consensus-standards/))

[v] (https://cdpaccess.com/public-comment/edit/16283#_ednref5) RESNET Forms Standard Development Committee 900 – Quality Assurance, September 23rd, 2014, (https://www.resnet.us/about/standard_development_committee_900)

[vi] (https://cdpaccess.com/public-comment/edit/16283#_ednref6) Quality Improvement Working Group on Quality Assurance RESNET Quality Assurance Options – Final Report 10/3/2014, (http://www.resnet.us/professional/about/QI_Working_Group_RESNET_QA_Options_10-03-14_to_QI_Taskforce.pdf)

[vii] (https://cdpaccess.com/public-comment/edit/16283#_ednref7) Texas HERO Member Response to Energy Vanguard Blog, Allison Bailes, Posted 8/29/2014. http://www.energyvanguard.com/blog-building-science-HERS-BPI/bid/76604/Why-Is-RESNET-Limiting-Its-Options-for-Improvement (http://www.energyvanguard.com/blog-building-science-HERS-BPI/bid/76604/Why-Is-RESNET-Limiting-Its-Options-for-Improvement)

[viii] (https://cdpaccess.com/public-comment/edit/16283#_ednref8) *Is RESNET Limiting Its Options for Improvement?* Energy Vanguard Blog, Allison Bailes, Posted 8/29/2014. http://www.energyvanguard.com/blog-building-science-HERS-BPI/bid/76604/Why-Is-RESNET-Limiting-Its-Options-for-Improvement (http://www.energyvanguard.com/blog-building-science-HERS-BPI/bid/76604/Why-Is-RESNET-Limiting-Its-Options-for-Improvement)

[ix] (https://cdpaccess.com/public-comment/edit/16283#_ednref9) *White Paper Report on Enhancing HERS QA Oversight*, by Building Energy Resources, 8/15/2014 (http://www.theber.com/EnhancedQAO.php)

[x] (https://cdpaccess.com/public-comment/edit/16283#_ednref10) PNNL Technical Report - *RESNET HERS Index Values Corresponding to Minimal Compliance with the IECC Performance Path*, PNNL-22560, Taylor T., Mendon. V, May 2014. https://www.energycodes.gov/sites/default/files/documents/HERSandIECCPerformancePath_TechnicalReport.pdf (https://www.energycodes.gov/sites/default/files/documents/HERSandIECCPerformancePath_TechnicalReport.pdf)

Proponent : Steven Rosenstock, representing Edison Electric Institute (srosenstock@eei.org) requests Disapprove.

Commenter's Reason: There are many problems with this proposal. Under the current version of the ERI, multiple programs or standards could be used. Now, only one standard can be used. In addition, there are several problems with the HERS Index that have been documented by several parties (e.g., get a better score just by building a larger house). Also, there are issues with the process for making updates to the RESNET Standard.

RE166-16

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP041-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 03/22/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Jacki Alessio

Representing: GLSEN Connecticut

Telephone: 203-232-4064

Email: connecticut@chapters.glsen.org

Address: 84 Orange Street (*Street Address*) New Haven (*Town*) CT (*State*) 06510 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A: Proposed Code Changes

Supporting data and documents (attach additional information as needed)

Please see Attachment B: GLSEN Connecticut's Statement of Support

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

Release

I hereby grant the State of Connecticut full rights to the use of this material without benefit to me, including, but not limited to, publication and reproduction rights.

Jaclyn E. Alessio

Proponent's Signature

Jaclyn "Jacki" E. Alessio

Printed Name

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

Department of Administrative Services
Office of the State Building Inspector
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Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

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[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

March 30, 2017

Dear Connecticut Codes and Standards Committee:

I am writing to you today on behalf of GLSEN Connecticut to express our full support of the Connecticut Gender-Neutral Bathroom Access Campaign. GLSEN is the leading national education organization working to ensure safe schools for all, regardless of sexual orientation or gender identity/expression. Learn more about our organization at www.glsen.org/connecticut.

Danni/y Rosen is Chair of GLSEN Oregon and a close colleague and friend to us. They have written an incredible article titled "Gender-neutral Bathrooms Are Radical, but Not How You Think" (See Attachment C). Here is an excerpt that illustrates the importance of having accessible gender-neutral restrooms, particularly in schools:

> *"These [sex-segregated] bathrooms in schools also pose difficulty to transgender and gender nonconforming students. GLSEN research shows that nearly two thirds of transgender students avoid school bathrooms because of feeling unsafe or uncomfortable. They risk verbal and physical harassment, no matter which of the two, sex-segregated bathrooms they enter.*
>
> *Also, over half of transgender students report that they were required to use the bathroom of their legal sex rather than the one that they feel most comfortable using. The U.S. Department of Justice has deemed this requirement illegal under Title IX.*
>
> *Feeling unsafe, uncomfortable, and at risk of illegal disciplinary action, these students might "hold it" or restrict intake of fluids, risking pain and dehydration. Some of these students even leave school altogether. These outcomes are not positive in any way, for any one.*
>
> *The solution here is not a new or radical concept: all schools should have private, gender-neutral bathrooms for any students to use, in the same, normal way that homes have bathrooms for guests to use and many restaurants have bathrooms that are not labeled for the sexes. This is not to suggest, however, that there be a separate bathroom for transgender students, like presidential candidate Ben Carson recently proposed, because separate is never equal."*

This past year, state legislators across the country are pushing forward a wave of proposals that specifically prohibit transgender students from using bathrooms that align with their gender identity (a.k.a. "bathroom bills"). Despite the ongoing controversy around North Carolina's HB 2, a signed bathroom bill that's still on the books, conservative legislators have filed discriminatory bathroom bills in 13 states, and more states will likely see these types of bills as their legislative sessions gain momentum.

Here in Connecticut, we see four big problems with these bills:

1. These bills put an already vulnerable group in more danger.

According to GLSEN research, 60 percent of transgender students report having been prohibited from using the bathroom or locker room that aligns with their gender identity. Over three quarters (76 percent) of

transgender students felt unsafe at school because of their gender, and transgender people (specifically trans girls and women) are at very high risk of experiencing violence throughout their lives, starting even before adolescence. Moreover, even with anti-discrimination legislation that is inclusive of gender identity/expression, 62% of students were unable to use the school restroom that aligned with their gender in Connecticut (CT 2015 State Snapshot). While these "bathroom bills" are designed to ensure "student safety," they stigmatize transgender students, putting them more in harm's way.

2. These bills hurt students' academic achievement – and the educators held accountable for students' success.

State and school districts are now held accountable for high levels of academic attainment and high graduation rates. But the consequences of discrimination, like the discrimination these bills mandate, are real: LGBTQ students who experience discrimination report lower GPAs, higher likelihood of skipping or dropping out of school, higher rates of school discipline, and lower educational aspirations.

3. These bills could lead to a public-health crisis.

Discriminatory policies affect more than just grades. LGBTQ students who experience discrimination, like being prohibited from using the restroom, report higher levels of depression and lower self-esteem. Research shows that, as a result of hostile school climate, transgender students are more likely to abuse drugs than the general population. This places an oversized burden on school-health and public-health officials.

4. These bills would be nearly impossible to implement and enforce as they are written.

Enforcing these bills would be prohibitively expensive and time-consuming for schools and extraordinarily invasive toward transgender students.

We at GLSEN Connecticut agree with GLSEN advocates across the country and Connecticut partners across the state that Gender-Neutral Bathrooms benefit people of ***all*** genders, including caregivers, seniors, persons with disabilities, parents, and children. They are also more cost-effective and efficient to use.

Please do not hesitate to reach out to us with your questions or concerns. Thank you for your consideration.

Sincerely,

Jacki Alessio, LMSW
Co-chair
GLSEN Connecticut

Gender-neutral Bathrooms Are Radical, but Not How You Think [1]

For decades, laws have mandated that public bathrooms be accessible; they must contain specific features, like larger stalls or lower sinks, to accommodate those whose needs aren't met by standard bathrooms, like people who use wheel chairs. Sometimes, public places also have a bathroom that is larger than a standard stall, usually with a changing station for very young children, in order to accommodate families.

In our K-12 schools, bathrooms typically are sex-segregated and made up of multiple stalls. Unfortunately, that means that these bathrooms fail to accommodate all students. Some students may suffer from certain psychological conditions, like paruresis [2] and parcopresis [3], which make use of these bathrooms impossible. Various other medical conditions prevent use of these types of bathrooms as well.

These bathrooms in schools also pose difficulty to transgender and gender nonconforming students. GLSEN research shows [4] that nearly two thirds of transgender students avoid school bathrooms because of feeling unsafe or uncomfortable. They risk verbal and physical harassment, no matter which of the two, sex-segregated bathrooms they enter.

Also, over half of transgender students report [4] that they were required to use the bathroom of their legal sex rather than the one that they feel most comfortable using. The U.S. Department of Justice has deemed this requirement illegal [5] under Title IX.

Feeling unsafe, uncomfortable, and at risk of illegal disciplinary action, these students might "hold it" or restrict intake of fluids, risking pain and dehydration. Some of these students even leave school altogether. These outcomes are not positive in any way, for any one.

The solution here is not a new or radical concept: all schools should have private, gender-neutral bathrooms for any students to use, in the same, normal way that homes have bathrooms for guests to use and many restaurants have bathrooms that are not labeled for the sexes. This is not to suggest, however, that there be a separate bathroom for transgender students, like presidential candidate Ben Carson recently proposed [6], because separate is never equal [7].

While this solution is not new, what is in fact new is the notion that the needs of *all* students deserve to be met. And while this solution is not radical, what is in fact radical is the positive impact that this solution has on transgender, gender nonconforming, and all students for whom privacy in bathrooms benefits their wellbeing.

GLSEN Oregon stands as a strong advocate for gender-neutral bathrooms in schools. In a rural part of the state, we recently helped a high school GSA create change. Although our advocacy was a tough fight, we used GLSEN's resources in our efforts, ultimately changing all single-stall bathrooms in the school to gender-neutral bathrooms accessible to all students during class time.

We all want success for all students. Whether you are a student, educator, or ally, you can use GLSEN's model policy [8] to advocate for gender-neutral bathrooms in schools. This advocacy can help create learning environments that are safe and affirming, which all students need to reach success.

Danni/y Rosen is Chair of GLSEN Oregon [9].

Source URL: https://www.glsen.org/blog/gender-neutral-bathrooms-are-radical-not-how-you-think

Links
[1] https://www.glsen.org/blog/gender-neutral-bathrooms-are-radical-not-how-you-think
[2] http://www.urologyhealth.org/urologic-conditions/paruresis-(urinating-in-public)
[3] https://www.patientslikeme.com/conditions/629-parcopresis
[4] http://www.glsen.org/article/2013-national-school-climate-survey
[5] http://www.advocate.com/politics/transgender/2015/06/30/department-justice-affirms-title-ix-protection-trans-students
[6] http://fusion.net/story/227849/ben-carson-transgender-bathrooms-jorge-ramos/
[7] http://www.advocate.com/commentary/2015/11/12/heres-what-i-think-about-ben-carsons-trans-only-bathroom-idea
[8] http://glsen.us/1HVU7Yg
[9] http://www.glsen.org/chapters/oregon

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP042-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/29/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Miriam Hasbun

Representing: Lambda Law Society at UCONN School of Law

Telephone: n/a

Email: lambda@uconn.edu

Address: 55 Elizabeth Street (*Street Address*) Hartford (*Town*) CT (*State*) 06105 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Proponent's Signature

Miriam Hasbún

Printed Name

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Office of the State Building Inspector
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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

12/29/16

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

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[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP043-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/30/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Linda Estabrook

Representing: Hartford Gay and Lesbian Health Collective

Telephone: 860 278 4163

Email: lindae@hglhc.org

Address: 1841 Broad St Hartford CT 06114

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Proponent's Signature

Linda Estabrook

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

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B

HGLHC
Hartford Gay & Lesbian Health Collective
Be Well. Be Yourself

Proudly serving the LGBT community since 1983

P.O. Box 2094
Hartford, CT 06145-2094
www.hglhc.org
P: 860-278-4163
F: 860-278-5995

March 30, 2017

Regarding Connecticut State Building Code and Fire Safety Code Proposed Change

To Whom It May Concern:

On behalf of the Hartford Gay and Lesbian Health Collective, I am submitting a proposed change form that supports gender neutral bathrooms and, at the same time, supports the needs of building owners to meet this same need without an undue burden placed on them. Finding win-win ways to approach community needs helps individuals in our community along with building owners.

The Hartford Gay and Lesbian Health Collective advocates for the needs of transgender individuals, and people of all gender expressions and identities. Proposed code changes will benefit these individuals through the provision of safe and accessible bathroom facilities; facilities that individuals can use without fear of verbal or physical assault and/or accusations of being in the "wrong" bathroom. Having access to gender neutral bathrooms is an important need in general for everyone in our communities.

Many thanks for your consideration of these proposed changes.

Sincerely,

Linda Estabrook, MPH
Executive Director

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP044-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 30, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Sarah Brafman Representing: A Better Balance

Telephone: 212-430-5982 Email: sbrafman@abetterbalance.org

Address: 80 Maiden Lane, Suite 606 NY NY 10038

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Proponent's Signature Sarah Brafman **Printed Name**

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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

12/29/16

ATTACHMENT A

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

ATTACHMENT B

a better balance
the work and family legal center

80 Maiden Lane, Suite 606, New York, NY 10038 | t: 212.430.5982 | info@abetterbalance.org | abetterbalance.org

Proposed Changes to the Connecticut State Building Code and Fire Safety Code Are Crucial for Caregivers of the Elderly, Caregivers of People with Disabilities, Parents, and Transgender and Gender Non-Conforming Individuals

A Better Balance is a national legal advocacy organization dedicated to promoting fairness in the workplace and helping workers across the economic spectrum care for their families without facing discrimination or risking their economic security. A Better Balance also runs a free hotline to assist low-income workers with caregiver discrimination, pregnancy discrimination, pay discrimination, and other related issues. We receive calls from people across the tri-state area as well as from individuals all over the nation in response to our advocacy efforts.

Our organization is also working to combat LGBTQ discrimination—including bathroom access rights for transgender and gender non-conforming people—through our national LGBTQ Work-Family project. We urge the Connecticut Codes and Standards Committee to implement the proposed changes to the Connecticut Building Code and Fire Safety Code, detailed in Attachment A, as they stand to benefit many communities in Connecticut.

Greater Availability of Gender Neutral Bathrooms Will Assist Caregivers of the Elderly & Caregivers of Adults with Disabilities

The proposed changes would ensure that those providing care to the elderly are able to adequately care for loved ones of a different sex. According to a recent report on family caregiving published by the National Academies of Sciences, Engineering, and Medicine, nearly 18 million people in the United States care for someone over the age of 65 with a significant impairment.[1] This can often mean that caregivers need to support their elder loved one with daily tasks such as using the restroom.[2] Without the availability of gender-neutral bathrooms, caregivers may be forced to risk the health and safety of an elderly person within their care.

The need for greater access to gender-neutral bathrooms to care for the elderly will only grow. According to the report referenced above, by 2030, 72.7 million Americans, or more than 1 in 5 U.S. residents, will be 65 or older.[3] Both unpaid family and paid caregivers will play a crucial role in ensuring this population ages with support and dignity. Adequate access to gender-neutral bathrooms should be part of that paradigm shift.

---

[1] Richard Schulz & Jill Eden et al., National Academies of Sciences, Engineering, and Medicine, *Report in Brief: Families Caring for an Aging America* 1 (2016), http://www.nationalacademies.org/hmd/~/media/Files/Report%20Files/2016/Caregiving-RiB.pdf.
[2] *Id.*
[3] Richard Schulz & Jill Eden et al., National Academies of Sciences, Engineering, and Medicine, *Report Briefing Slides: Families Caring for an Aging America* 6 (2016), http://www.nationalacademies.org/hmd/~/media/Files/Activity%20Files/Aging/Family%20Caregiving/caregiving-report-briefing-slides.pdf.

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Furthermore, according to the U.S. Centers for Disease Control and Prevention, 53 million adults in the U.S. live with a disability, with the most common disability being serious difficulty walking or climbing stairs.[4] Consequently, caregivers may need to help people with disabilities use the restroom. When access to restrooms is limited to single-sex only restrooms, those with disabilities who may be of a different sex than their caregiver, could face serious difficulties fulfilling a basic human need. Changing the Connecticut Building Code and Fire Safety Code to allow for greater access to gender-neutral bathrooms would help ameliorate this problem.

More Gender Neutral Bathrooms in Connecticut Will Help Parents of Young Children or Children with Disabilities

The availability of gender-neutral bathrooms will also benefit the parents of young children or children with disabilities who may need assistance using the restroom. Moreover, if a parent has young children of different sexes, access to a gender-neutral bathroom ensures that a parent can stay with both young children at once, without having to worry that one young child must use a restroom unattended.

Transgender and Gender Non-Conforming Individuals Will Benefit from Greater Availability of Gender Neutral Bathrooms

Transgender and gender non-conforming individuals too often face violence or stigma for using a single-sex restroom that does not meet other bathroom users' experiences. As reported in the 2015 U.S. Transgender Survey—the largest survey examining the experience of transgender adults in the United States—59% of respondents said they avoided using a public restroom in the past year out of fear of confrontations or other problems they might face, including verbal harassment, physical attacks, or sexual assault.[5] Moreover, 32% of respondents said that in the past year they had limited their food or beverage intake to avoid having to use a public restroom.[6]

A Better Balance supports policies that permit transgender and gender non-conforming individuals to use bathrooms that comport with their gender identity and gender expression. Greater access to gender-neutral bathrooms would help to provide more safe spaces for transgender and gender non-conforming individuals, leading to positive health and safety outcomes.

---

[4] *CDC: 53 million adults in the US live with a disability*, CDC.gov, https://www.cdc.gov/media/releases/2015/p0730-us-disability.html (last visited Mar. 29, 2017).
[5] Sandy James, Jody L. Herman, Susan Rankin, Mara Keisling, Lisa Mottet, & Ma'ayan Anafi, National Center for Transgender Equality, *The Report of the 2015 U.S. Transgender Survey* 16–17 (2016), http://www.transequality.org/sites/default/files/docs/USTS-Full-Report-FINAL.PDF.
[6] *Id.* at 17.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP045-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 30, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Alexis Smith

Representing: New Haven Legal Assistance

Telephone: 203 946 4811

Email: asmith@nhlegal.org

Address: 426 State St. (Street Address) New Haven (Town) CT (State) 06511 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Proponent's Signature Alexis Smith **Printed Name**

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NEW HAVEN LEGAL ASSISTANCE ASSOCIATION, INC.
426 STATE STREET
NEW HAVEN, CONNECTICUT 06510-2018
TELEPHONE: (203) 946-4811
FAX: (203) 498-9271

March 30, 2017

To the Codes and Standards Committee:

Please accept the foregoing proposal for changes to the Connecticut Plumbing Code, submitted by New Haven Legal Assistance Association (NHLAA). NHLAA was one of the first legal services programs in the country, established in 1964. We provide high-quality legal representation to individuals and groups unable to obtain legal services because of limited income, age, disability, discrimination and other barriers.

The proposed changes to the Connecticut Plumbing Code would make good law and, when implemented by building owners, would increase restroom accessibility for many different groups. Gender-neutral bathrooms are, by definition, open to everyone. Among the groups who would benefit from increased access to gender-neutral bathrooms are:

- Disabled persons, who would have more restrooms available to them if more handicap-accessible restrooms could be labeled gender-neutral
- Caretakers, who would be better able to assist those for whom they provide care in public restrooms
- Parents with children who require assistance or supervision in the restroom, who would be able to enter the restroom without worrying about confusing or upsetting the occupants on the basis of the parent's or the child's gender
- Women, who generally wait longer to use the restroom, and would have more restrooms available to them if more restrooms were labeled gender-neutral
- LGBTQ persons, who are often uncomfortable—and even at risk of violence—in sex-segregated restrooms because they may not meet society's expectations regarding gender presentation

Unfortunately, the language in the current code creates a disincentive for building owners to label restrooms as gender-neutral—under the current code, each gender-neutral fixture could be seen as a lost opportunity, since it does not serve to fulfill the building's fixture requirements.

All persons are entitled to have adequate restroom facilities available to them. The Connecticut Building Code should reflect that by allowing building owners to count gender-neutral fixtures toward the total fixture requirement. NHLAA therefore urges the Committee to adopt the changes outlined in our Attachment A.

Respectfully submitted,

Alexis Smith, Esq.
Executive Director, New Haven Legal Assistance Association

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

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2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP046-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

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Representing: CT Voices for Children

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Email: lruth@ctvoices.org

Address: 33 Whitney Ave. New Haven CT 06510

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

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Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

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Proponent's Signature

Lauren Ruth

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

CONNECTICUT VOICES FOR CHILDREN

20 YEARS OF ADVANCING OPPORTUNITIES FOR CHILDREN AND FAMILIES

Connecticut Voices for Children is a research-based child advocacy organization working to ensure that all Connecticut children have an equitable opportunity to achieve their full potential. **We are writing to support proposed language by Yale University Law School OutLaws to increase business owners' ability to provide gender-neutral bathrooms.**

Gender-neutral bathrooms support lesbian, gay, bisexual, transgender, and queer (LGBTQ) youth and families with children who require assistance using the bathroom.

1. **Gender-neutral bathrooms can be safer for LGBTQ youth.**

In 2015, more than half of Connecticut LGBTQ secondary students reported experiencing verbal harassment, 16 percent reported being physically harassed, and 5 percent reported being physically assaulted – all because of their gender expression.[1] More than eight in ten reported hearing negative remarks about gender expression at school. LGBTQ youth are already at heightened risk for negative mental health outcomes compared to heterosexual youth, [2] making bullying especially damaging.

Bathrooms are a particular problem for many LGBTQ youth. Nationally, almost four in ten youth surveyed reported avoiding bathrooms and locker rooms in the last month due to feeling unsafe or uncomfortable. Rates were much higher among youth who identified as transgender.[3] Over 60 percent of transgender youth were actively prevented from using the bathroom that aligned with their gender identity at school.[4] Gender-neutral bathrooms can help ensure that LGBTQ youth can use restrooms without "outing" themselves, feeling uncomfortable, or risking becoming the targets of active discrimination. LGBTQ youth in focus groups report that gender-neutral bathrooms make them feel safer and more included.[5]

2. **Gender-neutral bathrooms providing flexible, safe, and less stigmatizing options to parents of young children or children with access needs.**

---

[1] GLSEN. "School Climate in Connecticut (State Snapshot)." (2017). Web. 30 Mar 2017. Available at: https://www.glsen.org/sites/default/files/Connecticut%20State%20Snapshot%20-%20NSCS.pdf

[2] Russell, Stephen T., and Jessica N. Fish. "Mental Health in Lesbian, Gay, Bisexual, and Transgender (LGBT) Youth." Annual review of clinical psychology 12 (2016): 465–487. PMC. Web. 6 Mar. 2017

[3] GLSEN. "The 2015 National School Climate Survey: The Experiences of Lesbian, Gay, Bisexual, Transgender, and Queer Youth in Our Nation's Schools." (2016). Web. 30 Mar. 2017.

[4] GLSEN. "School Climate in Connecticut (State Snapshot)." (2017). Web. 30 Mar 2017. Available at: https://www.glsen.org/sites/default/files/Connecticut%20State%20Snapshot%20-%20NSCS.pdf

[5] Porta, Carolyn M., Gower, Amy L., Mehus, Christopher J., Yu, Xiaohui, Saewyc, Elizabeth M., and Marla E. Eisenberg. "'Kicked Out': LGBTQ youths' bathroom experiences and preferences." Journal of Adolescence 56 (2017): 107-112. Web. 30 March 2017.

When only gender-segregated bathrooms are available, parents taking their young, opposite-sex children to public bathrooms face difficult choices. Without a gender-neutral option, a father bringing his four-year-old daughter to a public bathroom has three options:

A. Bring his daughter into the men's room,
B. Accompany his daughter into the women's room, or
C. Send his daughter into the women's room unsupervised.

Options A and B may bring stigma to the parent and/or child. Option C may bring greater risks: the abuse of an unaccompanied young child, health and safety risks for children who need help using the restroom, and allegations of neglect for leaving a young child alone. Similar, more complex issues exist for parents or caretakers who need to assist older opposite-sex children with access needs in using the bathroom.

The availability of gender-neutral bathroom options, whether single-user or multi-user, provide parents a better option in accompanying their children to the bathroom: facilities available to all genders, without the added risk of using gender-segregated spaces.

We believe that gender-neutral bathrooms are safer for families, children, and youth, and we support the effort to increase business owners' ability to provide gender-neutral bathrooms.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP047-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Arli Christian

Representing: Nat'l Center for Trans Equality

Telephone: 202-745-2314

Email: achristian@transequality.org

Address: 1400 16th St NW, Suite 510, Washington DC 20001

Street Address / Town / State / Zip Code

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Arli Christian

Proponent's Signature

Arli Christian

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
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Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

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[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

National Center for TRANSGENDER EQUALITY

April 3, 2017

Connecticut Codes and Standards Committee
Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

Dear Connecticut Codes and Standards Committee:

In support of the proposed changes to Building Code Section 2902.1.2, 2902.1.3, and 2902.2, we urge you to allow gender-neutral single-user bathrooms to count toward a building's required number of fixtures and to allow building owners to designate multi-user bathrooms as gender-neutral by counting them towards the total number of fixtures required by the Plumbing Code. During this time of intense and harmful public scrutiny in the media and legislatures, it is important that you help stop harassment and eliminate barriers to using restrooms.

The National Center for Transgender Equality (NCTE) is a national social justice organization devoted to ending discrimination and violence against transgender people through public education and public policy advocacy. In 2016, NCTE completed the U.S. Trans Survey (USTS), which is the largest survey ever devoted to the lives and experiences of trans people. In this survey, twelve percent of respondents reported being verbally harassed when accessing a restroom. Because of such harmful and offensive treatment, more than half (59%) of respondents avoided using a public restroom because they were afraid of confrontations or other problems they might experience. To avoid using the restroom, nearly one-third (32%) of respondents limited the amount that they ate and drank. Eight percent reported having a urinary tract infection, kidney infection, or another kidney-related problem. Transgender and gender-nonconforming individuals experience these issues because their gender expression may not match the sign on the bathroom door, or other bathroom users' expectations. These should not be anyone's everyday experience when using the restroom.

Access to gender-neutral bathrooms benefits many people in our communities. Gender-neutral or unisex bathrooms, which are open to anyone regardless of sex, gender identity, or gender expression, enhance individual safety and dignity. Having gender neutral bathrooms addresses the problems that trans and gender-nonconforming people experience. In addition, gender-neutral bathrooms also make it easier for caregivers of all genders to help seniors and people with disabilities access facilities. Gender-neutral bathrooms contribute to gender equity by reducing disproportionate wait times for women, and allowing parents of all genders to comfortably accompany their children into bathrooms.

The proposed changes would help building owners comply with the building code and with anti-discrimination law. Currently, the plumbing code does not count gender-neutral bathrooms toward the total number of fixtures required, and if building owners could count gender-neutral restrooms toward the total fixture requirement, facilities could have more gender-neutral restrooms while still complying with

the code. Gender neutral bathrooms also create privacy for everyone. Trans and gender-nonconforming people would be able to use the restroom without fearing discrimination or harassment. Longer doors and locks are some modifications that can secure more privacy. Buildings can be built according to the needs of the people who work and use facilities there.

Please stand with the transgender community by making the proposed changes to protect trans and gender nonconforming people. It is more important than ever to promote values such as equality for all, a nurturing community, and safety that protects all people from transgender discrimination and harassment. We hope that you will work with the Yale Law School OutLaws and other advocates to create change on this issue.

Sincerely,

Arli Christian
State Policy Counsel
National Center for Transgender Equality

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP048-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2902.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: STEPHANIE SPANGLER

Representing: YALE UNIVERSITY, TITLE IX OFFIC

Telephone: 203-432-4446

Email: stephanie.spangler@yale.edu

Address: 2 WHITNEY AVENUE, SUITE 400 (Street Address) NEW HAVEN (Town) CT (State) 06520-8333 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Proponent's Signature

STEPHANIE SPANGLER

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

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2. **Add** the following new section:

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Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

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[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

Yale OFFICE OF THE PROVOST

PO Box 208333
New Haven CT 06520-8333
T 203 432-4444
F 203 432-0161
provost.yale.edu

courier
2 Whitney Avenue, Suite 400
New Haven CT 06510

March 31, 2017

Connecticut Codes and Standards Committee
Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

RE: Attachment B – Proposed Code Changes

Dear Connecticut Codes and Standards Committee:

I am writing in strong support of the proposed changes to Building Code 2902.1.2, 2902.1.3, and 2909.2, which would allow gender-neutral fixtures to count towards a building's required number of fixtures under the Plumbing Code.

In my role as Yale University's Title IX Coordinator, I am committed to eliminating all forms of sexual violence, sexual harassment and gender discrimination on Yale's campus, including discrimination based upon gender identity. I am aware based from both local reports and national surveys that transgender individuals are particularly vulnerable to harassing behaviors when accessing restrooms, because their gender expression may not match the sign on the bathroom door or other users' expectations. These experiences can lead to enduring, adverse effects on transgender individuals' emotional and physical health.

Access to gender neutral bathrooms, on the other hand, discourages harassing and discriminatory behaviors and thereby affords critical security and comfort to transgender and gender-nonconforming individuals. Additionally, expansion of access to gender-neutral facilities would provide benefits to a populations of users beyond the transgender community, such as individuals with personal attendants and parents with children, and could contribute to gender equity by reducing disproportionate wait times for women.

I hope that you will support transgender and gender-nonconforming individuals and promote our shared commitment to creating respectful, inclusive, and productive communities by making the proposed changes in the Building Code.

Sincerely,

Stephanie S. Spangler, M.D.
Deputy Provost for Health Affairs and Academic Integrity
Clinical Professor of Obstetrics and Gynecology
University Title IX Coordinator

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP049-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 31, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): Residential Building Codes, New Section Proposed in Chapter 3

PROPONENT INFORMATION

Name: Emily Lewis O'Brien

Representing: Acadia Center et al.

Telephone: 860-246-7121 x207

Email: elewis@acadiacenter.org

Address: 21 Oak Street, Suite 202 (Street Address) Hartford (Town) CT (State) 06106 (Zip Code)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See attached

Proposed text change, addition or deletion (attach additional information as needed):

See attached for addition

Supporting data and documents (attach additional information as needed)

See attached

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The basis of this amendment was adopted by Boulder, CO

☐ **I would like to make an in-person presentation of my proposal.**

Release

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Emily Lewis O'Brien

Proponent's Signature

Emily Lewis O'Brien

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

EV-Ready Building Code Amendment

Supporting Information
March 31, 2017

Description of Change:

Pursuant to Conn. Gen. Stat. Sec. 29-252(a), this proposed change would require electric circuits capable of supporting electric vehicle charging in any newly constructed residential garage.

Proposed Text Change:

The proposed change is an addition to the 2015 International Residential Code at the end of Chapter 3 – Building Planning:

SECTION R327
ELECTRIC VEHICLE CHARGING

R327.1 Electric vehicle charging. In addition to the one 125-volt receptacle outlet required for each car space by NEC Section 210.52(G)(1.), every new garage or carport that is accessory to a one- or two-family dwelling or townhouse shall include at least one of the following for each dwelling unit, installed in accordance with the requirements of Article 625 of the Electrical Code:

1. A Level 2 (240-volt, 40 ampere) electric vehicle charging receptacle outlet, or
2. Upgraded wiring to accommodate the future installation of a Level 2 (240-volt, 40 ampere) electric vehicle charging receptacle outlet, or

The basis of this proposed text is an amendment to the IRC that was adopted by Boulder, CO.[1]

Supporting Documentation:

Building codes that support the adoption of electric vehicles (EVs), or EV-Ready building codes, are an important measure Connecticut can leverage to meet its climate and transportation commitments. The transportation sector contributes more to state greenhouse gas (GHG) emissions than any other sector, making up nearly 40% of total emissions.[2] Recent analysis from Acadia Center has shown that Connecticut is likely not on track to meet its

[1] *See:* Electric Vehicle Charging Requirements and Boulder County Building Codes (available at: https://drcog.org/sites/drcog/files/resources/Building%20Codes-%20Ron%20Flax.pdf).
[2] *See:* Connecticut Department of Energy and Environmental Protection, "2013 Connecticut Greenhouse Gas Emissions Inventory" (available online at: http://www.ct.gov/deep/lib/deep/climatechange/2012_ghg_inventory_2015/ct_2013_ghg_inventory.pdf).

requirement to reduce GHG emissions 10% below 1990 levels by 2020, with emissions rising significantly between 2012 and 2015. [3]

EVs, which produce 60% less GHG emissions than conventional vehicles, are a commercially available option the state can harness to combat rising GHG emissions. In recognition of this climate protection benefit, Connecticut has committed to putting 1.7 million zero emission vehicles, primarily EVs, on the road by 2025 with six other states in the New England and the Mid-Atlantic regions—a commitment that will need robust action from Connecticut to fulfill.

Studies have shown that EV drivers charge their vehicles at home about 85% of the time,[4] making the ability to install a charger at home without major electrical retrofits a common-sense boost to the EV market that could help the state reach its goals. EV-Ready building codes ensure that new homes are capable of supporting EV charging by requiring that sufficient electrical infrastructure is built into the garages at the time of construction. This infrastructure includes additional amperage in service calculations, additional available space in the home's electrical panel, and wiring routed to the garage; it does not include the EV charger, which would be purchased by the homeowner. The additional cost to install this infrastructure at the time of construction is minimal to the cost of the home, around $300.[5] The cost to install this infrastructure as a retrofit is about $1300.[6] As the vehicle market shifts to more electric models, it is becoming more important that new homeowners do not bear unnecessary costs related to home charging.

The Connecticut General Assembly recognized the importance of EV-Ready building codes in 2013 when it passed Public Act 13-298. This Act specified that any updates to the Connecticut building code made after July 8, 2013 would include "provisions for electric circuits capable of supporting electric vehicle charging in any newly constructed residential garage" (see full text in Appendix A). The Department of Administrative Services did not comply with this law when new codes were published in October 2016; EV-Ready provisions were not included. It is critical for the 2018 update that EV-Ready building codes are adopted to comply with P.A. 13-

---

[3] *See:* Acadia Center, "Updated Greenhouse Gas Emissions Inventory for Connecticut" (available online at: http://acadiacenter.org/wp-content/uploads/2016/06/CT-GHG-Emissions-Inventory-Report-2.pdf).
[4] *See:* Idaho National Laboratory, "Plugged In: How Americans Charge Their Electric Vehicles" (available online at: https://avt.inl.gov/sites/default/files/pdf/arra/SummaryReport.pdf).
[5] The Denver Post, "Denver's new building code requires garages to support electric vehicles" (available online at: http://www.denverpost.com/2016/03/09/denvers-new-building-code-requires-garages-to-support-electric-vehicles/).
[6] TecHome Builder, "EV Charging: What Do Homebuilders Need to Know?" (available online at: http://techomebuilder.com/emagazine-articles-1/energy-and-water/ev-charging-what-do-homebuilders-need-to-know).

298. This important step will remove a barrier to EV adoption and thus help the state to reach its climate and transportation commitments.

Proponents of the Amendment:

Emily Lewis O'Brien
Policy Analyst
Acadia Center

Claire Coleman
Climate & Energy Attorney
Connecticut Fund for the Environment

Martin Mador
Sierra Club – Connecticut Chapter

For more information:

Emily Lewis O'Brien, Policy Analyst, elewis@acadiacenter.org, 860-246-7121 x207

Appendix A

Sec. 29-252. (Formerly Sec. 19-395). State Building Code: Adoption, revision and amendments. State Building Inspector: Appointment; interpretations of code. Appeal. (a) As used in this subsection, "geotechnical" means any geological condition, such as soil and subsurface soil condition, which may affect the structural characteristics of a building or structure. The State Building Inspector and the Codes and Standards Committee shall, jointly, with the approval of the Commissioner of Administrative Services, adopt and administer a State Building Code based on a nationally recognized model building code for the purpose of regulating the design, construction and use of buildings or structures to be erected and the alteration of buildings or structures already erected and make such amendments thereto as they, from time to time, deem necessary or desirable. Such amendments shall be limited to administrative matters, geotechnical and weather-related portions of said code, amendments to said code necessitated by a provision of the general statutes and any other matter which, based on substantial evidence, necessitates an amendment to said code. The code shall be revised not later than January 1, 2005, and thereafter as deemed necessary to incorporate any subsequent revisions to the code not later than eighteen months following the date of first publication of such subsequent revisions to the code. The purpose of said Building Code shall also include, but not be limited to, promoting and ensuring that such buildings and structures are designed and constructed in such a manner as to conserve energy and, wherever practicable, facilitate the use of renewable energy resources, including provisions for electric circuits capable of supporting electric vehicle charging in any newly constructed residential garage in any code adopted after July 8, 2013. Said Building Code includes any code, rule or regulation incorporated therein by reference.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP050-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/30/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Ellen Cosgrove

Representing: Yale Law School - Office of Student Affairs

Telephone: 203-432-7646

Email: ellen.cosgrove@yale.edu

Address: 127 wall street (*Street Address*) new haven (*Town*) ct (*State*) 06511 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

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Please see Attachment B

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Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

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Ellen Cosgrove

Proponent's Signature

Ellen Cosgrove

Printed Name

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Department of Administrative Services
Office of the State Building Inspector
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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

12/29/16

Yale Law School

ELLEN M. COSGROVE · *Associate Dean*

Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

To whom it may concern:

I am writing to urge you to adopt the code changes, as appended, to support our student population by increasing the number of gender neutral bathrooms at Yale Law School.

I have been working with students on this issue for several years at two different schools and feel very strongly that the time has come. We know that other schools around the nation are circumventing the rules to accommodate student needs but we want to respect the code and the enforcement process by making the request to change the code.

I should say that, as 54 year old woman, I am aware of the code changes that took place a while ago to achieve "potty parity" and, as a woman, was grateful for them. However, the rules, which once seemed forward thinking, are now restricting our ability to support our student population.

We have students who do not identify on the gender binary and they are in a place where choosing a gender specific restroom does not feel comfortable or safe.

My goal is that all people feel welcome at the Law School. To that end, we held Town Halls for students and staff, students were invited to provide anonymous comments (through a confidential survey tool), and staff were invited to participate in a confidential survey. A vast majority of students and staff support this proposal with very few expressing opposition. It provides multiple options for all, including for the very small number of our students who have expressed preference for gender specific bathrooms.

This is clearly much bigger than our students who are directly affected. Our student population at large considers it a matter of respect. So do I.

I urge you to support our efforts to make the law school a more welcoming place.

Regards,
Ellen M. Cosgrove

P.O. BOX 208215, NEW HAVEN, CONNECTICUT 06520-8215 · TELEPHONE 203 432-7646 · FACSIMILE 203 432-5768
COURIER ADDRESS 127 WALL STREET, NEW HAVEN, CT 06511 · EMAIL ELLEN.COSGROVE@YALE.EDU

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP051-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3-31-17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Silas E. Levine, Esq. Representing:

Telephone: 908-892-3192 Email: Silas.Levine@gmail.com

Address:
Street Address Town State Zip Code

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

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Silas E. Levine — **Proponent's Signature**

Silas E. Levine — **Printed Name**

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Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

Department of Administrative Services

Office of the State Building Inspector

450 Columbus Boulevard, Suite 1303

Hartford, CT 06103

Re: Comments on proposed code changes

I am a Connecticut attorney who supports the creation of policy that encourages inclusion of sexual and gender minorities in all aspects of life and work in Connecticut. I write to you today in support of the building and code changes proposed by Yale Law School's OutLaws to remove disincentives for building owners who wish to provide gender-neutral restrooms.

If adopted, these policy changes would improve the lives of LGBTQ people in Connecticut by encouraging the installation or designation of gender-neutral bathrooms, which would allow more people to safely access public spaces. Transgender and gender non-conforming people often experience harassment, discrimination, and assault in gendered spaces. In addition, gender-neutral bathrooms benefit parents and caregivers who provide bathroom assistance to someone of a different sex. Therefore, adopting policies that encourage the establishment of gender-neutral bathrooms is in everyone's best interest.

The policy proposed by the OutLaws makes for good law, allowing building owners to customize their facilities to best suit their patrons' needs. This policy is unlikely to stir up the sorts of political controversies that have been in the news recently about transgender bathroom access, because it gives building owners volition and discretion regarding decisions about the incorporation of gender-neutral facilities. For example, gender-neutral, single-stall restrooms would address many of the concerns raised by opponents of transgender bathroom access by allowing anyone who feels uncomfortable sharing restrooms with a stranger to use alternate facilities, without restricting or segregating bathroom access for transgender individuals. Alternately, gender-neutral multi-stall facilities may be more cost-effective or convenient in some buildings, such as in spaces where most of the users and occupants of a building are of one particular gender. Encouraging these accommodations by removing barriers to their installation or designation is compassionate policy-making with minimal potential for fallout.

I strongly recommend the adoption of these code changes.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP052-BC

THREE PROSALS INCLUDED UNDER CP052-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2

PROPONENT INFORMATION

Name: Maya Menlo Representing: Yale OutLaws

Telephone: 248 760 3655 Email: maya.menlo@yale.edu

Address: 246 Park St. Apt 24 New Haven CT 06511

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to label bathrooms as gender neutral.

Proposed text change, addition or deletion (attach additional information as needed):

Please see attached.

Supporting data and documents (attach additional information as needed)

Please see attached.

☑ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

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Maya Menlo

Proponent's Signature

Maya Menlo

Printed Name

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Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

Proposed Change to the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

[1] The following is the 2015 IBC language that we seek to replace with the language above:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures. Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 31, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.3 (add new)

PROPONENT INFORMATION

Name: Maya Menlo

Representing: Yale Law School OutLaws

Telephone: 248 760 3655

Email: maya.menlo@yale.edu

Address: 246 Park St. | New Haven | CT | 06511

Street Address | *Town* | *State* | *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to label restrooms as gender-neutral.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see attachment B

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Proponent's Signature

Maya Menlo

Printed Name

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Proposed Change to the Connecticut State Building Code and Fire Safety Code

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 31, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.2

PROPONENT INFORMATION

Name: Maya Menlo Representing: Yale Law School OutLaws

Telephone: 248 760 3655 Email: maya.menlo@yale.edu

Address: 246 Park St. New Haven CT 06511

Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to label restrooms as gender-neutral.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

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Proponent's Signature Maya Menlo **Printed Name**

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Proposed Change to the Connecticut State Building Code and Fire Safety Code

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
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4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [1]
5. Separate facilities shall not be required when single-user facilities are available.

[1] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

Yale Law School OutLaws March 31, 2017

Comment in Support of Proposed Changes

At present, the Connecticut Plumbing Code creates unnecessary obstacles to making gender-neutral bathrooms more widely accessible. Our proposed changes to the Code would remove these obstacles to allow building owners more flexibility in providing gender-neutral bathrooms.

Reason for proposed changes

The Connecticut Plumbing Code requires building owners to meet separate numerical requirements for male and female bathroom fixtures. The Code currently does not count gender-neutral fixtures toward a building's fixture requirements. This disincentivizes the provision of gender-neutral bathrooms—building owners must prioritize sex-segregated bathrooms in order to comply with the Code. If building owners were permitted to count gender-neutral restrooms toward the total fixture requirement, facilities could have more restrooms that are accessible to everyone while still complying with the Code.

Accordingly, our proposed language would allow gender-neutral fixtures to count toward a building's required number of fixtures. The proposed changes balance different people's needs by ensuring that there will be bathrooms available for people who cannot comfortably use sex-segregated bathrooms, as well as for people who prefer to avoid multi-stall gender-neutral bathrooms. Our proposed changes ensure that there will always be either sex-segregated facilities or single-user facilities available.

The importance of gender-neutral bathrooms

Importantly, our proposed changes would benefit:

- Transgender and gender-nonconforming people
- People with disabilities and personal attendants
- Parents and guardians with children
- Everyone, by allowing the most efficient bathroom use

Gender-neutral bathrooms offer critical security and comfort for transgender and gender-nonconforming people. Sex-segregated bathrooms, on the other hand, are often inaccessible for these individuals. Transgender and gender-nonconforming people experience very high rates of harassment in public bathrooms: 68% have experienced verbal assault and 9% have experienced physical assault in sex-segregated bathrooms.[1] People who are not readily identifiable by others as either male or female have no good options when only sex-segregated restrooms are available. A policy analyst for the Center for American Progress, for instance, reports being harassed in both men's and women's bathrooms.[2] This experience is, unfortunately, a common one.

---

[1] Jody L. Herman, *Gendered Restrooms and Minority Stress: The Public Regulation of Gender and its Impact on Transgender People's Lives*, p. 70, https://williamsinstitute.law.ucla.edu/wp-content/uploads/Herman-Gendered-Restrooms-and-Minority-Stress-June-2013.pdf.

[2] "Bathroom Bills, Selfies, and the Erasure of Nonbinary Trans People," http://www.advocate.com/commentary/2016/4/01/bathroom-bills-selfies-and-erasure-nonbinary-trans-people.

Sex-segregated bathrooms are uncomfortable and unsafe for *any* person who might not fit society's ideas about what a man or a woman looks like, no matter how they identify their own gender. Gender-nonconforming people are regularly questioned in, and even ejected from, the bathrooms that correspond with the sex on their birth certificate.[3] Many of us have personally experienced the humiliation and fear that attend being told we are in "the wrong bathroom."

Gender-neutral bathrooms are also important for people with personal attendants, such as disabled and elderly people, and for parents and caregivers to children. It is common to have a personal attendant of a different gender, creating an awkward situation when the pair must enter sex-segregated bathrooms. Similarly, parents and guardians must make difficult choices about whether to let children in their care to enter the bathroom alone, or to accompany them, risking misunderstanding and embarrassment. These problems can be easily solved by increasing access to gender-neutral bathrooms.

Allowing more bathrooms to be designated gender-neutral benefits everyone by facilitating more efficient bathroom use and relieving congestion at a few heavily trafficked restrooms. Many people have stood on long lines at one bathroom while another goes virtually unused. Further, when there are only a few gender-neutral facilities—as is common—they can become overburdened by the assortment of people who wish to use them. We have experienced this ourselves, as the only easily accessible gender-neutral restroom is in higher demand than the rest of the bathrooms.

Successful efforts elsewhere

Recent years have seen a dramatic expansion in the number of cities, states, and schools that have recognized these burdens and enacted provisions for gender-neutral bathrooms. This year, California passed a bill requiring all public single-user bathrooms to be "identified as all-gender toilet facilities."[4] One California Assembly member described the bill as "ultimately a matter of convenience for the largest number of people."[5]

Similar changes have taken place in Washington, D.C.,[6] Philadelphia,[7] Seattle,[8] Portland,[9] and Austin.[10] The D.C. Office of Human Rights, recognizing the diverse

---

[3] For examples, see "Woman Sues Restaurant That Ejected Her From Bathroom for Looking 'Like a Man,'" http://www.advocate.com/business/2015/06/17/detroit-woman-kicked-out-restaurant-bathroom-looking-man-sues; "Lesbian Teen Kicked Out Of McDonald's For Using Women's Bathroom, Failing To 'Prove' Gender," http://www.newnownext.com/lesbian-teen-kicked-out-of-mcdonalds-for-using-wrong-bathroom-failing-to-prove-gender/04/2016/.

[4] Assembly Bill No. 1732.

[5] "Single Occupancy Bathrooms in California Must Be for 'All Genders,'" http://time.com/4514068/california-single-occupancy-all-gender/.

[6] All covered entities with single-occupancy restroom facilities shall use gender-neutral signage for those facilities. See D.C. Mun. Regs. tit. 4. § 802.2 (2006).

[7] "Council OKs bill to make single-stall restrooms gender-neutral," http://www.philly.com/philly/news/politics/20151009_Council_OKs_bill_making_Philly_restrooms_gender-neutral.html.

[8] "Seattle Becomes 3rd City With Gender Neutral Restroom Legislation," http://www.genderjusticeleague.org/seattle-becomes-3rd-city-with-gender-neutral-restroom-legislation/.

[9] "Portland Is Making Its Single-User Bathrooms Gender Neutral," http://www.opb.org/news/article/portland-gender-neutral-bathroom-rule/.

[10] "Austin City Council approves gender-neutral bathrooms," http://kxan.com/2014/08/28/austin-city-

stakeholders in its gender-neutral bathroom law, began the Safe Bathrooms DC campaign to raise awareness about the law.[11] Jersey City, Philadelphia, Austin, Seattle, and Washington, D.C. also require gender-neutral bathrooms in all municipal facilities.[12]

Many universities have smoothly transitioned some or most of their facilities to be gender-neutral. During the period of 2012-2013, 150 universities participated in a movement to install gender-neutral bathrooms on campus.[13] The proposed changes would allow communities and residents in Connecticut the freedom to make their own decisions about whether to provide gender-neutral bathrooms.

In light of the above information, we respectfully request that the committee adopt the three (3) changes proposed in the accompanying documents. Thank you for your consideration.

Sincerely,

Yale Law School OutLaws

council-approves-gender-neutral-bathrooms/.

[11] Safe Bathrooms DC, https://ohr.dc.gov/page/safe-bathrooms-dc.

[12] "Fulop orders gender-neutral restrooms in city buildings," http://www.nj.com/hudson/index.ssf/2017/03/fulop_says_restrooms_in_municipal_buildings_will_b.html.

[13] "A Very Brief Timeline of the Bathroom Wars," http://www.motherjones.com/kevin-drum/2016/05/timeline-bathroom-wars.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL

CP053-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 90.1 Section 3.2, 4.2.1, Appendix G
2015 IECC C401.2

PROPONENT INFORMATION

Name: Maria Karpman Representing:

Telephone: (860) 430-1909 Email: maria@karpmanconsulting.net

Address: 41C New London Turnpike Glastonbury CT 06447
Street Address *Town* *State* *Zip Code*

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See "Code Change Proposal Maria Karpman" attached

Proposed text change, addition or deletion (attach additional information as needed):

See "Code Change Proposal Maria Karpman" attached

Supporting data and documents (attach additional information as needed)

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Maria Karpman

Proponent's Signature

Maria Karpman

Printed Name

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CT Code Change Proposal

Maria Karpman
Karpman Consulting
41C New London Turnpike
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(860) 430-1909
Maria.karpman@karpmanconsulting.net
3/31/2017

1. Allow Compliance with 2015 IECC via 90.1 Normative Appendix G

Background

2015 IECC Section C401.2 lists ANSI/ASHRAE/IESNA 90.1 2013 as a path of compliance with the energy code for commercial buildings. Per 90.1 2013 Section 4.2.1.1, projects can document compliance using either prescriptive path, which involves meeting the requirements of Sections 5-10, or performance path that involves energy modeling as described in Section 11. 90.1 2016 has added an alternative performance option following the Normative Appendix G:

> **4.2.1 Compliance Paths**
> **4.2.1.1 New Buildings**
> New *buildings* shall comply with either the provisions of
> a. Section 5, "*Building Envelope*"; Section 6, "Heating, Ventilating, and Air Conditioning"; Section 7, "*Service Water Heating*"; Section 8, "Power"; Section 9, "Lighting"; and Section 10, "Other *Equipment*," or
> b. Section 11, "*Energy Cost Budget* Method," or
> c. Appendix G, "*Performance Rating Method*."

To encourage rapid adoption of the new performance option, ASHRAE has published "Standard 90.1 Appendix G 2013 Performance Rating Method Excerpt from ANSI/ASHRAE/IES Standard 90.1-2013 (I-P)" (ASHRAE Appendix G Excerpt), which contains the stand-alone Normative Appendix G as published in Standard 90.1-2013 (I-P edition) plus addenda k, r, z, aa, ad, bm, and dx.

Appendix G has been part of 90.1 since 2004, however, prior to 90.1 2013 Addendum BM, its application has been limited to rating the energy efficiency of building designs that exceed the requirements of the standard. In that capacity, Appendix G has been widely used in the national programs such as LEED, IRS 179 Tax Deductions for Commercial Buildings, and EPA Energy Star High Rise Multifamily Program. In Connecticut, it is used by Energize CT New Construction Program Whole Building Performance path (CT-WBP) incentive program, and Connecticut Building Standard Guidelines Compliance Manual for High Performance Buildings (HPB Guidelines). The code interpretation request C102.1.1 allowed using the simulation requirements of CT-WBP program as an alternative compliance option with 2012 International Energy Conservation Code portion of the 2016 CT State Building Code, effectively treating 90.1 2010 Appendix G as a code compliance path with the current state energy code.

In addition to making Appendix G an alternative path of compliance with 90.1, addenda included in the ASHRAE Appendix G Excerpt have several significant changes that streamline compliance and simplify enforcement. Recognizing the significant benefits of the new path, the number of jurisdictions and rating authorities have adopted the version of Appendix G included in the ASHRAE Appendix G Excerpt, or the version included in 90.1 2016. Below is the list of the adopters known to me, as of this date:

1. New York State Energy Conservation Construction Code
2. New York City Energy Code
3. LEED v4 Pilot Alternative Compliance Path (EApc111)
4. EPA Energy Star High Rise Multifamily Program (the updates are under development)
5. New Jersey Pay for Performance Program for New Multifamily and Commercial Buildings
6. NYSERDA New Construction Program for Multifamily and Commercial Buildings

Adopting Appendix G as defined in ASHRAE Appendix G Excerpt offers significant benefits to the building owners, because it allows projects to use the same documentation for both code compliance and above code programs such as LEED, Energy Star, state incentive programs, and HPB Guidelines. In addition to reducing documentation overhead for projects, it also simplifies and streamlines enforcement, because jurisdictions can take advantage of the extensive technical framework, including the detailed submittal requirements, reporting templates, and simulation guidelines, that have been developed around Appendix G by state and national programs. I propose to allow using Appendix G as defined in ASHRAE Appendix G Excerpt as an alternative path of compliance with the 2015 IECC.

Proposed New Language

Amendments to Section 3.2 (Definitions), copied from ASHRAE Appendix G Excerpt
Definitions of the terms “baseline building design”, “baseline building performance”, “building”, “historic,” “performance rating method”, “rating authority”,” regulated energy use” and “unregulated energy use” in section 3.2 of ASHRAE 90.1-2013 shall be deemed to read as follows:

baseline building design: a computer representation of a hypothetical design based on the proposed building project. This representation is used as the basis for calculating the baseline building performance for rating above-standard design or when using the performance rating method as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1.

baseline building performance: the annual energy cost for a building design intended for use as a baseline for rating above-standard design or when using the performance rating method as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1.

performance rating method: a calculation procedure that generates an index of merit for the performance of building designs that substantially exceeds the energy efficiency levels required by this standard or when using the performance rating method as an alternative path for minimum standard compliance in accordance with Section 4.2.1.1.

rating authority: the organization, building official, or agency that adopts, enforces, or sanctions use of this rating methodology

Regulated Energy Use: Energy used by building systems and components with requirements prescribed in Chapters 5 through 10. This includes energy used for HVAC, lighting, service water heating, motors,

transformers, vertical transportation, refrigeration equipment, computer room cooling equipment, and other building systems, components, and processes with requirements prescribed in Chapters 5 through 10.

unregulated energy use: Energy used by building systems and components that is not regulated energy use.

(Replace 90.1 2013 Section 4.2.1 with Section 4.2.1 from ASHRAE Appendix G Excerpt as shown below)

4.2.1 Compliance Paths (Amended)

4.2.1.1 New Buildings. New buildings shall comply with either the provisions of:

(a) Section 5, "Building Envelope"; Section 6, "Heating, Ventilating, and Air Conditioning"; Section 7, "Service Water Heating"; Section 8, "Power"; 9, "Lighting"; and Section 10, "Other Equipment" or

(b) Section 11, "Energy Cost Budget Method" or

(c) Appendix G, "Performance Rating Method".

When using Appendix G the Performance Cost Index (PCI) shall be less than or equal to the Performance Cost Target, when calculated in accordance with the following:

$$PCIt = (BBUEC + (BPF \times BBREC))/BBP$$

where:

PCI = Performance Cost Index calculated in accordance with Section G1.2.

BBUEC = Baseline Building Unregulated Energy Cost. The portion of the annual energy cost of a baseline building design that is due to *unregulated energy use*.

BBREC = Baseline Building Regulated Energy Cost. The portion of the annual energy cost of a baseline building design that is due to *regulated energy use*.

BPF= Building Performance Factor from Table 4.2.1.1. For building area types not listed in Table 4.2.1.1 use "All Others". Where a building has multiple building area types, the required BPF shall be equal to the area-weighted average of the building area types.

BBP = *Baseline Building Performance*.

Regulated energy cost shall be calculated by multiplying the total energy cost by the ratio of regulated energy use to total energy use for each fuel type. Unregulated energy cost shall be calculated by subtracting regulated energy cost from total energy cost.

TABLE 4.2.1.1 Building Performance Factor (BPF)

	Climate Zone																
Building Area Type[a]	1A	1B	2A	2B	3A	3B	3C	4A	4B	4C	5A	5B	5C	6A	6B	7	8
Multifamily	0.73	0.73	0.71	0.69	0.74	0.73	0.68	0.78	0.81	0.81	0.76	0.80	0.81	0.76	0.79	0.74	0.80
Healthcare/Hospital	0.64	0.56	0.60	0.56	0.60	0.56	0.54	0.57	0.53	0.55	0.59	0.52	0.55	0.57	0.52	0.56	0.56
Hotel/Motel	0.64	0.65	0.62	0.60	0.63	0.65	0.64	0.62	0.64	0.62	0.60	0.61	0.60	0.59	0.61	0.57	0.58
Office	0.58	0.62	0.57	0.62	0.60	0.64	0.54	0.58	0.60	0.58	0.60	0.61	0.58	0.61	0.61	0.57	0.61
Restaurant	0.62	0.62	0.58	0.61	0.60	0.60	0.61	0.58	0.55	0.60	0.62	0.58	0.60	0.63	0.60	0.65	0.68
Retail	0.52	0.58	0.53	0.58	0.54	0.62	0.60	0.55	0.60	0.60	0.55	0.59	0.61	0.55	0.58	0.53	0.53
School	0.46	0.53	0.47	0.53	0.49	0.52	0.50	0.49	0.50	0.49	0.50	0.50	0.50	0.49	0.50	0.47	0.51
Warehouse	0.51	0.52	0.56	0.58	0.57	0.59	0.63	0.58	0.60	0.63	0.60	0.61	0.65	0.66	0.66	0.67	0.67
All Others	0.62	0.61	0.55	0.57	0.56	0.61	0.59	0.58	0.57	0.61	0.60	0.57	0.61	0.56	0.56	0.53	0.52

[a] In cases where both a general building area type and a specific building area type are listed, the specific building area type shall apply

Amendment to 90.1 Appendix G
Appendix G in ASHRAE 90.1-2013 shall be deemed to be deleted and replaced by the revised version of Appendix G set forth in the publication entitled "Standard 90.1 Appendix G 2013 Performance Rating Method Excerpt from ANSI/ASHRAE/IES Standard 90.1-2013 (I-P)" published by American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., publication date 2015 (the "ASHRAE Appendix G Excerpt").

2. Eliminate Compliance Options via 90.1 2013 Section 11 and 2015 IECC Section C407

Background

Through its adoption by Energize CT New Construction Program Whole Building Performance path (CT-WBP) incentive program, and Connecticut Building Standard Guidelines Compliance Manual for High Performance Buildings (HPB Guidelines), and national programs such as LEED, Energy Star for High Rise Multifamily, and IRS Federal Tax Deductions for Commercial Buildings, Appendix G sees overwhelmingly greater use in Connecticut than the other two modeling-based performance options allowed by 2015 IECC, including 90.1 Section 11 and IECC C407. The state has an established pool of energy modelers familiar with Appendix G; there is a detailed reporting template that is accepted by both the incentive programs and LEED and that facilitates submittal reviews and quality control; documents such as Energize CT New Construction Program Whole Building Performance Simulation Guidelines outline peer-reviewed rules for modeling systems and components that are left by Appendix G to the purview of the rating authority. This adoption infrastructure does not exist for either 90.1 Section 11 or IECC 407 modeling protocols.

The DOE-funded study "Roadmap for the Future of Commercial Energy Codes" (January 2015, PNNL) recommended phasing out Section 11 and IECC performance path once Appendix G becomes a compliance path (see section 4.2 of the document). The NYSERDA funded study "Performance-based Code Compliance: Enforcement Practices and Software Policy Recommendations" that incorporated input from state and national stakeholders such as two members of ASHRAE 90.1 ECB committee, chair of ASHRAE TC 4.7 – Energy Calculations, and CPMP Director of Energy Code Compliance at NYC Department of Buildings (DOB), also recommended reducing the number of compliance options siting the following key reasons:

> "Existence of the three significantly different performance-based compliance options – IECC Section 407, 90.1 Section 11, and 90.1 Appendix G, complicates enforcement, because reviewers must be proficient with the three different rulesets, jurisdictions must develop and maintain the reporting templates and review process for the alternative protocols, and projects can "shop around" for a protocol that is more lenient for the project at hand."

The regional jurisdictions that reduced the number of compliance options include the state of New Jersey and New York Cite, which do not allow compliance via IECC Section 407. I propose making Appendix G the only allowed modeling (performance-based) path of compliance with the CT Energy Code.

Proposed new language

C401.2 Application (Amended)

Commercial buildings shall comply with one of the following:

1. The requirements of ANSI/ASHRAE/IESNA 90.1
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 Sections C402.5, C403.2, C404, C405.2, C405.3, C405.4, C405.6, and C407. The building energy cost shall be equal to or less than 85 percent of the standard reference design building.~~

90.1 2013 4.2.1.1 New Buildings (Amended).

New buildings shall comply with either the provisions of:

(a) Section 5, “Building Envelope”; Section 6, “Heating, Ventilating, and Air Conditioning”; Section 7, “Service Water Heating”; Section 8, “Power”; 9, “Lighting”; and Section 10, “Other Equipment” or

(b) ~~Section 11, “Energy Cost Budget Method” or~~

~~(c)~~ Appendix G, “Performance Rating Method”.

369 Highland Street
West Haven, CT 06516

Voice: 203-934-7077
Fax: 203-934-7078

www.CDR-CT.org

36 Killingworth Turnpike
Clinton, CT 06413

Voice: 860-664-5057
Fax: 860-664-5157

www.Wheel-A-Thon.org

March 31, 2017

TO: CT Department of Administrative Services : Codes & Standards

RE: 2902.1.2; 2901.1.3 (add new); 2902.2 - Proposal to Allow Gender Neutral Restrooms.

Dear Codes & Standards: Center for Disability Rights supports the effort to allow for or facilitate the provision of gender neutral bathrooms; however we have concerns about the unintended impact on the supply and availability of accessible bathrooms for people with disabilities.

Specifically, we don't want to see musical rest rooms where folks with disabilities would get bumped around and have to find a bathroom that is too far or not accessible. This is potentially the problem in larger buildings. People with mobility disabilities often are limited in their ability to trek across large properties to get to an accessible bathroom.

We believe a good solution would be to adopt language that ensures that all gender neutral bathrooms also be accessible to Code. There may be other ways to deal with this to come to a win/win situation where we end up with gender neutral bathrooms while also preserving the existing accessible bathrooms or even increasing the supple of them.

We thank you for your consideration.

Sincerely:

Marc Anthony Gallucci, Esq.
Executive Director

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP055-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 31, 2017

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: Deborah Stanley-McAulay Representing: Yale Univerity Office of Dive

Telephone: 203-436-4072 Email: deborah.stanley-mcaulay@yale.ed

Address: 221 Whitney Avenue (*Street Address*) New Haven (*Town*) CT (*State*) 06520 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

Release

I hereby grant the State of Connecticut full rights to the use of this material without benefit to me, including, but not limited to, publication and reproduction rights.

Deborah L. Stanley-McAulay

Proponent's Signature

Deborah L. Stanley-McAulay

Printed Name

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

Department of Administrative Services
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103
Tel: 860-713-5900 Fax: 860-713-7410
Affirmative Action/Equal Opportunity Employer

From: Stanley-McAulay, Deborah <deborah.stanley-mcaulay@yale.edu>
Sent: Friday, March 31, 2017 5:24 PM
To: CodesStandards, DAS
Subject: Campaign for Gender Neutral Restroom in CT
Attachments: Code Change Proposal Form_partner orgs-signed.pdf; Attachment A - Proposed Code Changes.pdf; Connecticut Gender Neutral Bathroom Access Campaign.pdf

To Whom It May Concern,

I am writing to advocate for Gender Neutral Restroom in CT. In my experience, I can see how the expansion of our Restroom codes will create a inclusion for persons who are transitioning their gender, or have transitioned gender. The option to include an additional restroom option has created a sense of welcome and belonging in my workplace. I am an ally and champion for transgender persons and rights for transgender persons. Having had the opportunity to be one of three individuals at Yale University to identify and create 32 gender neutral restrooms on our campus, has been a welcomed action. I hope to have the ability to have all buildings offer a gender neutral options.

Attached are a few documents that further explain the importance of this diversity and inclusion action.

Best,

Debbie

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

---

[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.

[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

CONNECTICUT GENDER-NEUTRAL BATHROOM ACCESS CAMPAIGN

We have an opportunity to improve access to gender-neutral bathrooms in Connecticut! The Connecticut Codes and Standards Committee is currently requesting public comments as part of the Building Code and Plumbing Code revision process. **We have to act fast – comments are due MARCH 31, 2017.**

WHY GENDER NEUTRAL BATHROOMS?

- Access to gender-neutral bathrooms benefits many people in our communities. Gender-neutral or unisex bathrooms, which are open to anybody regardless of sex, gender identity, or gender expression, enhance individual safety and dignity.
- **Transgender and gender-nonconforming** individuals often face stigma, violence, and anxiety around something as simple and necessary as using a bathroom because their gender expression may not match the sign on the bathroom door, or other bathroom users' expectations. Gender-neutral bathrooms address this problem.
- Gender-neutral bathrooms also make it easier for **caregivers** of all genders to help **seniors** and **people with disabilities** access facilities.
- Providing gender-neutral bathrooms also contributes to gender equity by reducing disproportionate wait times for **women**, and allowing **parents** of all genders to comfortably accompany their children into bathrooms.

WHAT'S WRONG WITH THE CURRENT CODE?

- The Connecticut Plumbing Code currently requires building owners to meet separate numerical requirements for male and female bathroom fixtures (toilets and urinals). The Plumbing Code **does not currently count gender-neutral bathrooms toward the total number of fixtures required** in a public building. This makes it unnecessarily difficult for building owners to provide gender-neutral bathrooms while meeting the code's fixtures requirements. This effectively curtails the provision of gender-neutral bathrooms.
- If building owners could count gender-neutral restrooms toward the total fixture requirement, **facilities could have more gender-neutral restrooms** while still complying with the code.

WHAT IS THE PROPOSED CHANGE?

- Our proposed language would allow gender-neutral single-user bathrooms to count toward a building's required number of fixtures.
- Our proposed language would also create greater flexibility for building owners by allowing them to designate multi-user bathrooms as gender-neutral by counting them towards the total number of fixtures required by the Plumbing Code.

HOW CAN WE HELP?

- Submit a comment on behalf of your organization in three easy steps!
- **Step 1: Form.** Complete the Proposed Change of the Connecticut State Building Code and Fire Safety Code form by filling in the date, your organization's information, and a signature.
- **Step 2: Attachments.** Append Attachment A, the code changes that we have drafted. Also append any **supporting materials** as Attachment B. Your Attachment B might include testimonials from you and your members, relevant research, articles, and/or a letter from your organization about the importance of gender-neutral bathrooms.
- **Step 3: Submit.** Send your comment via email to DAS.CodesStandards@ct.gov by March 31, 2017.

Yale Law School OutLaws, Gender Neutral Bathroom Advocacy Committee
Contact: Maya Menlo (maya.menlo@yale.edu), Kate Redburn (kate.redburn@yale.edu)

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP056-BC

March 31, 2017

To: CT Department of Administrative Services: Codes & Standards

RE: 2902.1.2;2901.1.3 (add new); 2902.2 – Proposal to Allow Gender Neutral Restrooms

Dear Codes & Standards: MSDesigns LLC supports your effort to allow single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. However I have a concern that the way it is currently written would allow a facility to identify any single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms in the building, when it really should be a bathroom located near the public men's & women's restrooms needing the gender-neutral access and be accessible by the public.

Also I think all gender-neutral bathroom also should meet accessible code, so when a single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms isn't located close to the public restroom and a new gender-neutral bathroom needs to be constructed it creates a new accessible bathroom it's a win/win.

I thank you for your consideration.

Sincerely,

Manuel Silva

Manuel Silva
Owner/Designer
MSDesigns LLC

P. O. BOX 3278 • MILFORD, CT • 06460 • (203) 878-3251 • FAX (203) 647-0325
STATE OF CONNECTICUT SMALL/MINORITY BUSINESS ENTERPRISE CERTIFIED

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP057-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: March 31, 2017

CODE INFORMATION

Proposed change to: ☐ Building Code ☐ Fire Safety Code

Code section(s): Residential and Commercial Building Codes, New Sections

PROPONENT INFORMATION

Name: Kevin George Miller

Representing: ChargePoint, Inc.

Telephone: 669-237-3358

Email: kevin.miller@chargepoint.com

Address: 254 E. Hacienda Avenue (*Street Address*) Campbell (*Town*) CA (*State*) 95008 (*Zip Code*)

PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

See attached

Proposed text change, addition or deletion (attach additional information as needed):

See attached for addition

Supporting data and documents (attach additional information as needed)

See attached

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☐ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)

The basis of this amendment was implemented by California and is under consideration in I

☐ **I would like to make an in-person presentation of my proposal.**

Release

I hereby grant the State of Connecticut full rights to the use of this material without benefit to me, including, but not limited to, publication and reproduction rights.

Proponent's Signature

Kevin George Miller

Printed Name

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

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March 31, 2017

Joseph Cassidy, Commissioner
Office of the State Building Inspector
450 Columbus Boulevard, Suite 1303
Hartford, CT 06103

RE: EV Ready Building Code

Dear Mr. Cassidy,

Thank you for the opportunity to provide suggestions for Connecticut's Building Codes. ChargePoint is the world's largest and most open electric vehicle (EV) charging network with more than 33,000 level 2 and DC fast charging spots. Every 3.5 seconds, a driver connects to a ChargePoint station and by initiating over 22 million charging sessions, ChargePoint drivers have driven over 523 million gas free miles.

In 2014, Governor Dannell Molloy joined seven other governors in in signing a Zero Emissions Vehicle Memorandum of Understanding (ZEV MOU) committing to deploying a total of 3.3 million EVs on the road by 2025, 155,000 of which will be in Connecticut. Because more than 60% of all charging takes place at home,[1] ChargePoint is proposing that the residential and commercial Building Codes be amended to require that new construction be "EV Ready". EV Ready construction ensures that buildings are equipped to support clean transportation When charging stations are needed for building tenants or customers, the building will already be "ready" to support installation

ChargePoint is recommending that Connecticut consider both the Residential and Base (commercial) "EV Ready" code language based on what is currently under consideration by he Massachusetts Board of Building Regulations and Standards. We also strongly support the California "EV Ready" building code that is already in place, which is attached as Appendix I.

Proposed Language

Residential Code

ELECTRIC VEHICLE SERVICE EQUIPMENT (EVSE) Level -2 (220 - 240V). Equipment expressly designed for the safe charging of battery electric and plug-in hybrid electric vehicles.
Section X.X Electric Vehicle Service Equipment (EVSE) Ready (Mandatory).
In accordance with 527 CMR and this section, at least one minimum 60-ampere branch circuit shall be provided to garages and/or the exterior of the building to accommodate a future dedicated Society of Automotive Engineers (SAE) standard J1772-approved Level 2 EVSE. The circuits shall have no other outlets. The service panel shall provide sufficient capacity and space to accommodate the circuit and over-

[1] *Lessons Learned about Workplace Charging in The EV Project*. Idaho National Labs. 2015.

current protective device. A permanent and visible label stating “EV READY” shall be posted in a conspicuous place at both the service panel and the circuit termination point.

The location and number of “EV READY” parking spaces shall be identified on construction documents as follows:

Type of Building	Number of spaces
Single-family dwelling	1
Two-family dwelling	1
3 or more unit building	1 per two units

Commercial Code

ELECTRIC VEHICLE SERVICE EQUIPMENT (EVSE) Level -2 (220 - 240V). Equipment expressly designed for the safe charging of battery electric and plug-in hybrid electric vehicles.
Section Y.1 Electric Vehicle Service Equipment Capable (Mandatory). In accordance with 527 CMR and this section, Group A-1, B, E, I, M and R buildings with more than 3 dedicated parking spaces shall provide sufficient electrical capacity and physical capacity at the service panel to accommodate future simultaneous vehicle charging at a minimum of 6% of parking spaces and in no case less than one space. Calculated spaces shall be rounded up to the nearest whole number. A minimum 40-ampere branch circuit shall be installed to terminate in close proximity to each proposed locations of future installation of Society of Automotive Engineers (SAE) standard J1772-approved Level 2 electric vehicle service equipment. The circuits shall have no other outlets. A permanent and visible label stating “EV READY” shall be posted in a conspicuous place at both the service panel and the circuit termination point. The location and number of “EV READY” parking spaces shall be identified on construction documents.

Argument for EV Ready Building Codes

ChargePoint does not install or operate charging stations. The people and businesses that purchase our stations operate the equipment themselves and have the ability to choose their own local installer. Therefore, we do not directly profit from the labor costs associated with installing a station, or the conduit or paneling or trenching discussed in this proposal. That said, we have identified that the cost of retrofit installation remains the largest barrier for property owners and tenants that want EV charging stations.

There are currently more than 4,300 EVs ion the road in Connecticut. Conservative industry projections by Navigant Research, which do not take the ZEV MOU commitments into account, still project over 60,000 new EVs to hit the road in Connecticut by 2025. By requiring EV infrastructure in new construction, rather than requiring a certain number of charging stations installed, this code change enables sites to respond to EV need and grow their number of stations over time, as more employees, tenants or customers adopt EVs. Even though ChargePoint sells charging stations – not the installation infrastructure for charging stations – we agree that this is the best approach to plan for growth and ensure full utilization of the charging stations once they have been installed.

ChargePoint has found that in almost every case, the cost per port to install a charging station in an existing parking lot is equal to or more than the cost of the hardware itself. In a sample of 180 site quotes received by our commercial customers seeking to install in retrofitted facilities, we

found that the average cost per port for installation totaled $3,769, compared to our cost of about $3,500 for hardware per port.

In 2014, Rocky Mountain Institute did a detailed analysis of the breakdown of cost of Level 2 charging stations for home, parking garages, curb-side and also for DC Fast Charging.[2] For Level 2 parking garage installation, the electrician labor alone ranged from $1,240-$2,840 per port. Factoring in electrician materials (including $1.50-$2.50/ft for conduit and wire) as well as trenching ($25-$100/ft) and other costs (mounting, signage, etc.) the non-hardware costs for installation were estimated to range from $1,800-$5,000 per port or if a new breaker is required, more than $6,000 per port. These installation costs are unlikely to experience significant reductions over time as compared to equipment costs which may experience reductions over time do to economies of scale, improved manufacturing efficiencies, and competition in the market. The RMI numbers are very similar to those in a report by the US Department of Energy in November 2015.[3]

ChargePoint cautions against relying solely on direct comparisons of installation costs in new construction verses retrofits. This is not an “apples to apples” comparison, and may actually undervalue the savings of EV-readiness in new construction because the "scope of work" in a retrofit vs. new construction are very different. It is difficult in a new construction to define the scope (and cost) in the same manner as a retrofit. In new construction, the benefit is that you have a large capital budget in place and all the scoping activities including design, engineering, permitting, product specification/acquisition, and construction are part of a larger project, so “leveraging” these elements requires fractionally less effort and the overall cost is buried within many other pieces.

Thank you for considering our comments. If you have any questions, please contact me at kevin.miller@chargepoint.com or (669) 237-3358.

Sincerely,

Kevin George Miller
Director, Public Policy
ChargePoint

[2] Source: http://blog.rmi.org/blog_2014_04_29_pulling_back_the_veil_on_ev_charging_station_costs

[3] US Department of Energy, Costs Associated with Non-Residential Electric Vehicle Supply Equipment, November 2015. http://www.afdc.energy.gov/uploads/publication/evse_cost_report_2015.pdf

Appendix I: EV Ready Requirements in California's Green Building Standards Codes

California Green Building Standards Code – Chapter 4

4.106.4 Electric vehicle (EV) charging for new construction. New construction shall comply with Sections 4.106.4.1 and 4.106.4.2 to facilitate future installation and use of EV chargers. Electric vehicle supply equipment (EVSE) shall be installed in accordance with the California Electrical Code, Article 625.

> **Exceptions**: on a case-by-case basis, where the local enforcing agency has determined EV charging and infrastructure are not feasible based upon one or more of the following conditions:
>
> 1. Where there is no commercial power supply.
> 2. Where there is evidence substantiating that meeting the requirements will alter the local utility infrastructure design requirements on the utility side of the meter so as to increase the utility side cost to the homeowner or the developer by more than $400.00 per dwelling unit.

4.106.4.1 New one- and two-family dwellings and town-houses with attached private garages. For each dwelling unit, install a listed raceway to accommodate a dedicated 208/240-volt branch circuit. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or subpanel and shall terminate into a listed cabinet, box or other enclosure in close proximity to the proposed location of an EV charger. Raceways are required to be continuous at enclosed, inaccessible or concealed areas and spaces. The service panel and/or subpanel shall provide capacity to install a 40=ampere minimum dedicated branch circuit and space(s) reserved to permit installation of a branch circuit overcurrent protective device.

4.106.4.1.1 Identification. The service panel or sub-panel circuit directory shall identify the overcurrent protective device space(s) reserved for future EV charging as "EV CAPABLE". The raceway termination location shall be permanently and visibly marked as "EV CAPABLE".

Chapter 5 – Non-residential

5.106.5.3 Electric vehicle (EV) charging. Construction shall comply with Section 5.106.5.3.1 or Section 5.106.5.3.2 to facilitate future installation of electric vehicle supply equipment (EVSE). When EVSE(s) is/are installed, it shall be in accordance with the California Building Code, the California Electrical Code and as follows:

5.106.5.3.1 Single charging space requirements. When only a single charging space is required per Table 5.106.5.3.3, a raceway is required to be installed at the time of construction and shall be installed in accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:

> 1. The type and location of the EVSE.
> 2. A listed raceway capable of accommodating a 208/240-volt dedicated branch circuit.
> 3. The raceway shall not be less than trade size 1."
> 4. The raceway shall originate at a service panel or a subpanel serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into a listed suitable cabinet, box, enclosure or equivalent.
> 5. The service panel or subpanel shall have sufficient capacity to accommodate a minimum 40-ampere dedicated branch circuit for the future installation of the EVSE.

5.106.5.3.2 Multiple charging space requirements. When multiple charging spaces are required per Table 5.106.5.3.3 raceway(s) is/are required to be installed at the time of construction and shall be installed in

accordance with the California Electrical Code. Construction plans and specifications shall include, but are not limited to, the following:

1. The type and location of the EVSE.
2. The raceway(s) shall originate at a service panel or a subpanel(s) serving the area, and shall terminate in close proximity to the proposed location of the charging equipment and into listed suitable cabinet(s), box(es), enclosure(s) or equivalent.
3. Plan design shall be based upon 40-ampere minimum branch circuits.
4. Electrical calculations shall substantiate the design of the electrical system, to include the rating of equipment and any on-site distribution transformers and have sufficient capacity to simultaneously charge all required EVs at its full rated amperage.
5. The service panel or subpanel(s) shall have sufficient capacity to accommodate the required number of dedicated branch circuit(s) for the future installation of the EVSE.

5.106.5.3.3 EV charging space calculation. Table 5.106.5.3.3 shall be used to determine if single or multiple charging space requirements apply for the future installation of EVSE.

Exceptions: On a case-by-case basis where the local enforcing agency has determined EV charging and infrastructure is not feasible based upon one or more of the following conditions:

1. Where there is insufficient electrical supply.
2. Where there is evidence suitable to the local enforcing agency substantiating that additional local utility infrastructure design requirements, directly related to the implementation of Section 5.106.5.3, may adversely impact the construction cost of the project.

Table 5.106.5.3.3

Total Number of Parking Spaces	Number of Required EV Parking Spaces
0-9	0
10-25	1
26-50	2
51-75	4
76-100	5
101-150	7
151-200	10
201 and over	6 percent of total

5.106.5.3.4 Identification. The service panel or subpanel(s) circuit directory shall identify the reserved overcurrent protective device space(s) for future EV charging as “EV CAPABLE”. The raceway termination location shall be permanently and visibly marked as “EV CAPABLE.” 5.106.5.3.5 [N] Future charging spaces qualify as designated parking as described in Section 5.106.5.2 Designated parking for clean air vehicles.

2018 CT SBC / SFSC
CODE CHANGE PROPOSAL
CP058-BC

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROPOSED CHANGE OF THE CONNECTICUT STATE BUILDING CODE AND FIRE SAFETY CODE

DATE SUBMITTED: 3/31/17

CODE INFORMATION

Proposed change to: ☑ Building Code ☐ Fire Safety Code

Code section(s): 2902.1.2; 2901.1.3 (add new); 2902.2

PROPONENT INFORMATION

Name: MARIA TRUMPLER Representing: Office of LGBTQ Resources, Yale

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PROPOSAL INFORMATION

Description of change and reason for change (attach additional information as needed):

To make it easier for building owners to provide gender-neutral bathrooms.

Proposed text change, addition or deletion (attach additional information as needed):

Please see Attachment A

Supporting data and documents (attach additional information as needed)

Please see Attachment B

☐ **This Proposal is original material.** (Note: Original material is considered to be the submitter's own idea based on or as a result of his/her own experience, thought or research and, to the best of his/her knowledge, is not copied from another source.)

☑ **This Comment is not original material, its source (if known) is as follows:** (such as material / code development proposal from a prior development cycle or proposal submitted to model code committee etc.)
Attachment A was prepared by Yale Law OutLaws; Attachment B is original material.

☐ **I would like to make an in-person presentation of my proposal.**

Release

I hereby grant the State of Connecticut full rights to the use of this material without benefit to me, including, but not limited to, publication and reproduction rights.

Proponent's Signature **Printed Name** MARIA TRUMPLER

PLEASE EMAIL (PREFERRED) TO DAS.CodesStandards@CT.GOV OR MAIL OR FAX (SEE BELOW)

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12/29/16
224226
04/24/17

Proposed Changes of the Connecticut State Building Code and Fire Safety Code

1. **Replace** 2015 International Building Code Section 2902.1.2 Family or assisted-use toilet and bath fixtures[1] with:

[P] 2902.1.2 Single-user toilet facility and bathing room fixtures.
Single-user toilet facilities and bathing rooms, and family or assisted-use toilet and bathing rooms may be identified as gender-neutral. The plumbing fixtures located in gender-neutral toilet facilities and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1109.2.1, are permitted to contribute towards the total number of required plumbing fixtures for any building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

2. **Add** the following new section:

[P] 2902.1.3 Multi-user toilet facilities identified as gender-neutral.
Plumbing fixtures located in multi-user toilet facilities may be identified as gender-neutral provided that there are single-user facilities, or separate sex facilities available in the building. Such facilities are permitted to contribute towards the total number of required plumbing fixtures for a building or tenant space. Such facilities may be counted toward the number of required fixtures for either sex.

3. **Add** the following underlined text:

[P] 2902.2 Separate facilities.
Where plumbing fixtures are required, separate facilities shall be provided for each sex.
Exceptions:
1. Separate facilities shall not be required for dwelling units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employee and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Toilet rooms in Educational Group E Kindergarten and day care occupancies, and in Institutional Group I-4 child day care may be designated as unisex which are primarily for children's use. [2]
5. Separate facilities shall not be required when single-user facilities are available.

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[1] The following is the 2015 IBC language that we seek to replace:
[P] 2902.1.2 Family or assisted-use toilet and bath fixtures.
Fixtures located within family or assisted-use toilet and bathing rooms required by Section 1109.2.1 are permitted to be included in the number of required fixtures for either the male or female occupants in assembly and mercantile occupancies.
[2] Section 2902.2-4 appears in the current Connecticut's Building Code, but does not appear in the 2015 IBC.

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March 31, 2017

I am writing in enthusiastic support for the amendments to the CT State building code around gender neutral bathrooms. I have been working for the past five years to ensure that every building at Yale University provides a gender neutral restroom. This effort has the strong support of students, staff and faculty at Yale. Often I get calls about how to change the signage on a bathroom to be more welcoming to all, and to provide much needed facilities. The restriction that a gender neutral bathroom does not count towards either the male or female fixture count of a building has been a huge impediment to these desired changes, and also makes no sense. Multi-stall all gender restrooms are standard at conferences I attend and at many bars and restaurants and would be well accepted at Yale.

I know that many of these rules were initially intended to make sure women had fair access to bathroom facilities, but we need to change with the times to make sure we include all genders in access to bathrooms.

Maria Trumpler

Director, Office of LGBTQ Resources