2012-2014 ICC CODE DEVELOPMENT CYCLE

UPDATES TO THE 2013 PROPOSED CHANGES TO THE INTERNATIONAL CODES

GROUP B

3/22/2013

The following is a compilation of errata discovered since the posting of the monograph on March 11th, 2013.

Updated 4/02/2013

The first errata was posted on 3/22/2013 and updated on 4/02/2013. All errata added since 3/22/2013 are indicated with “Updated 4/02/2013”

Updated 4/05/2013

The first errata was posted on 3/22/2013 and updated on 4/02/2013 and 4/05/2013. All errata added since 4/02/2013 are indicated with “Updated 4/05/2013”

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Change Part II to Part I on ADM2-13
Change Part XII to Part I on ADM5-13

TENTATIVE ORDER OF DISCUSSION

2013 PROPOSED CHANGES TO THE ADMINISTRATIVE PROVISIONS

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

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2013 PROPOSED CHANGES TO THE ADMINISTRATIVE PROVISIONS

Updated 4/02/2013

ADMIN62-13: Replace entries for standards as follows:

AISI	**American Iron and Steel Institute**								
Standard Reference Number	**Title**	**Referenced in Code(s):**							
AISI S100-~~07/S2-10~~ 12	North American Specification for the Design of Cold Formed Steel Structural Members, ~~with Supplement 2, dated 2010~~ 2012	IBC	IRC						
AISI S110-07/S1-09 (2012)	Standard for Seismic Design of Cold-Formed Steel Structural Systems-Special Moment Frames, 2007 , with Supplement 1, dated 2009, (2012)	IBC							
AISI S200-~~07~~ 12	North American Standard for Cold-Formed Steel Framing - General Provisions, 2012	IBC							
AISI S210-07 (2012)	North American Standard for Cold-formed Steel Framing-Floor and Roof System Design, 2007, (2012)	IBC							
AISI S211-07/S1-12 (2012)	North American Standard for Cold-Formed Steel Framing-Wall Stud Design, 2007, including Supplement 1, dated 2012, (2012)	IBC							
AISI S212-07 (2012)	North American Standard for Cold-Formed Steel Framing-Header Design, 2007, (2012)	IBC							
AISI S213-07/S1-09 (2012)	North American Standard for Cold-Formed Steel Framing-Lateral Design, 2007, with Supplement 1, dated 2009, (2012)	IBC							
AISI S214-~~07~~ 12	North American Standard for Cold-Formed Steel Framing - Truss Design ~~with Supplement 2, dated 2008~~, 2012	IBC							
AISI S230-07-~~07/S2-08~~ /S3-12 (2012)	Standard for Cold-formed Steel Framing-Prescriptive Method for One- and Two-family Dwellings, 2007, with Supplement ~~2~~ 3, dated ~~2008~~ 2012, (2012)	IRC	IBC						

ADM62-13: Revise original code change proposal as follows:

FM	**FM Global**								
Standard Reference Number	**Title**	**Referenced in Code(s):**							
FM 4470 ~~2009~~ 2013	Approval Standard for Single-Ply Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for use in Class 1 and Noncombustible Roof Deck Construction ~~Covers~~.	IBC							
4474-~~04~~ 11	American National Standard for Evaluating the Simulated Wind Uplift Resistance of Roof Assemblies using Static Positive and/or Negative Differential Pressures	IBC							
4880 ~~(2005)~~ 2010	American National Standard for Evaluating Insulated Wall or Wall and Roof/Ceiling Assemblies, Plastic Interior Finish Materials, Plastic Exterior Building Panels, Wall/Ceiling Coating Systems, Interior and Exterior Finish Systems	IBC	IRC						

ADM62-13: Revise original code change proposal as follows:

UL	**Underwriters Laboratories**							
Standard Reference Number	**Title**	**Referenced in Code(s):**						
471-~~2006~~ 2010	Commercial Refrigerators and Freezers - with Revisions through ~~**October 2008**~~ **March 2012**	IMC						
710-~~1995~~ 2012	Exhaust Hoods for Commercial Cooking Equipment ~~- with Revisions through **December 2009**~~	IMC						
1040-1996	Fire Test of Insulated Wall Construction - with Revisions through ~~September 2007~~ October 2012	IBC						

Updated 3/22/2013

IECC – COMMERCIAL

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add Part I to CE277-13
Add CE362-13, Part I to the IECC-Commercial Hearing order following CE209-13
Add CE363-13 to the IECC-Commercial Hearing order following CE267-13
Add CE364-13, Part I and II to the IECC-Commercial Hearing order following CE280-13

TENTATIVE ORDER OF DISCUSSION

2013 PROPOSED CHANGES TO THE INTERNATIONAL ENERGY CONSERVATION CODE

COMMERCIAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

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2013 PROPOSED CHANGES TO THE INTERNATIONAL ENERGY CONSERVATION CODE – COMMERCIAL

Updated 3/22/2013

CE183-13: Replace code change proposal with the following:

CE183 – 13
C402.4.4

Proponent: Jeremiah Williams, U.S. Department of Energy (jeremiah.williams@ee.doe.gov)

Revise as follows:

C402.4.4 Doors and access openings to shafts, chutes, stairways, and elevator lobbies. Doors and access openings from conditioned space to shafts, chutes, stairways and elevator lobbies not within the scope of the fenestration assemblies covered in Section C402.4.3 shall ~~either meet the requirements of Section C402.4.3 or shall~~ be gasketed, weatherstripped or sealed.

> **Exception:** Door openings required to comply with Section 716 ~~or 716.4~~ of the *International Building Code*; or doors and door openings required to comply with UL 1784 by the International Building Code ~~to comply with UL 1784 shall not be required to comply with Section C402.4.4~~.

Reason: This proposal clarifies the components covered in the section on doors and access openings to shafts, chutes, stairways, and elevator lobbies are subject to air leakage provisions as components of the building thermal envelope, and provides a distinction between these doors and other doors that are already covered within the scope of fenestration assemblies. The objective of this proposal is to clarify the code to foster implementation and compliance verification.

Some doors are covered by Section C402.4.3 and the intent of the code should be that doors within the scope of fenestration that can be tested and listed *should* be tested and listed in accordance with and meet the provisions of Section C402.4.3. This leaves those doors that cannot be so tested and listed subject to the caulking and sealing criterion. This clarification is needed because the current code allows some doors that could (and should) be assessed as meeting the provisions of Section C402.4.3 through testing and listing only required to be "caulked or sealed." The exception is revised to provide clarification and to eliminate the ending statement—an exception by definition means something is not required to comply.

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

Anaysis: Section C402.4.4 of the IECC contains errata with respect to the sections of the IBC referenced in the exception. The proper references: 716 and 716.4 are shown in this code change proposal.

CE183-13

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

C402.4.4-EC-WILLIAMS.doc

CE195-13: Track changes have been removed. Please replace previous code change submittal with the following:

CE195 – 13

C403.1, C403.2, C403.2.3, Table C403.2.3(7), Table C403.2.3(8), Table C403.2.3(9), C403.2.3.1, C403.2.3.2, C403.2.4, C403.2.5.1, C403.2.10, C403.2.10.1, C403.2.10.2, Table C403.2.10.1(1), Table C403.2.10.1(2), C403.3, C403.3.2, C403.4 thru C403.4.6, C403.4.1.3, C403.4.7, C406.2, Table C406.2(6), Table C406.2(7), Chapter 5

Proponent: Jeremiah Williams, U.S. Department of Energy (jeremiah.williams@ee.doe.gov)

Revise as follows:

C403.1 General. Mechanical systems and equipment serving all or a portion of the building heating, cooling or ventilating needs that are unitary or packaged in nature and serving a single *zone* and controlled by a single thermostat in the *zone* served, or are two-pipe heating only systems serving one or more *zones*, shall comply with Sections 403.2 (~~referred to as the~~ mandatory provisions) and ~~either:~~

1. ~~Section~~ C403.3 (~~Simple systems~~ prescriptive provisions)~~.; or~~
2. ~~Section C403.4 (Complex systems~~ All other mechanical systems or equipment shall meet the provisions of Section 6 of *ANSI/ASHRAE/IES Standard 90.1*.

C403.2 Mechanical systems and equipment ~~Provisions applicable to all mechanical systems~~ (Mandatory). Mechanical systems and equipment serving the building heating, cooling or ventilating needs shall comply with Sections C403.2.1 through C403.2.11.

C403.2.3 HVAC equipment performance requirements. Equipment shall meet the minimum efficiency requirements of Tables C403.2.3(1), C403.2.3(2), C403.2.3(3), C403.2.3(4), C403.2.3(5)~~,~~ and C403.2.3(6)~~, C403.2.3(7) and C403.2.3(8)~~ when tested and rated in accordance with the applicable test procedure. ~~Plate-type liquid-to-liquid heat exchangers shall meet the minimum requirements of Table C403.2.3(9).~~ The efficiency shall be verified through certification under an *approved* certification program or, if no certification program exists, the equipment efficiency ratings shall be supported by data furnished by the manufacturer. Where multiple rating conditions or performance requirements are provided, the equipment shall satisfy all stated requirements. Where components, such as indoor or outdoor coils from different manufacturers are used, calculations and supporting data shall be furnished by the designer that demonstrates that the combined efficiency of the specified components meets the requirements herein.

~~**TABLE C403.2.3(7)**~~
~~**MINIMUM EFFICIENCY REQUIREMENTS:**~~
~~**WATER CHILLING PACKAGES**[a]~~

~~**TABLE C403.2.3(8)**~~
~~**MINIMUM EFFICIENCY REQUIREMENTS:**~~
~~**HEAT REJECTION EQUIPMENT**~~

~~**TABLE C403.2.3(9)**~~
~~**HEAT TRANSFER EQUIPMENT**~~

~~**C403.2.3.1 Water-cooled centrifugal chilling packages.** Equipment not designed for operation at AHRI Standard 550/590 test conditions of 44°F (7°C) leaving chilled-water temperature and 85°F (29°C) entering condenser water temperature with 3 gpm/ton (0.054 l/s · kW) condenser water flow shall have maximum full-load kW/ton and *NPLV* ratings adjusted using Equations 4-3 and 4-4.~~

~~Adjusted minimum full-load COP ratings =~~
~~(Full-load COP from Table 6.8.1C of AHRI Standard 550/590) × K_{adj}~~
~~**(Equation 4-3)**~~

~~Adjusted minimum NPLV rating =~~
~~(IPLV from Table 6.8.1C of AHRI Standard 550/590) × K_{adj}~~
~~**(Equation 4-4)**~~

~~where:~~
~~K_{adj} = A × B~~
~~A = 0.0000015318 × (LIFT)^4 − 0.000202076 × (LIFT)^3 + 0.0101800 × (LIFT)^2 − 0.264958 × LIFT + 3.930196~~
~~B = 0.0027 × L_{vg}^{Evap} (°C) + 0.982~~
~~LIFT = L_{vg}^{Cond} − L_{vg}^{Evap}~~
~~L_{vg}^{Cond} = Full-load condenser leaving water temp erature (°C)~~
~~L_{vg}^{Evap} = Full-load leaving evaporator temperature (°C)~~

~~SI units shall be used in the K_{adj} equation.~~
~~The adjusted full-load and *NPLV* values shall only be applicable for centrifugal chillers meeting all of the following full-load design ranges:~~

~~1. The leaving evaporator fluid temperature is not less than 36°F (2.2°C).~~
~~2. The leaving condenser fluid temperature is not greater than 115°F (46.1°C).~~
~~3. LIFT is not less than 20°F (11.1 °C) and not greater than 80°F (44.4°C).~~

~~**Exception:** Centrifugal chillers designed to operate outside of these ranges need not comply with this code.~~

~~**C403.2.3.2 Positive displacement (air- and water-cooled) chilling packages.** Equipment with a leaving fluid temperature higher than 32°F (0°C), shall meet the requirements of Table C403.2.3(7) when tested or certified with water at standard rating conditions, in accordance with the referenced test procedure.~~

C403.2.4 HVAC system controls. Each heating and cooling system shall be provided with thermostatic controls as specified in Section C403.2.4.1, C403.2.4.2, C403.2.4.3~~,~~ and C403.2.4.4~~, C403.4.1, C403.4.2, C403.4.3 or C403.4.4~~.

C403.2.5.1 Demand controlled ventilation. Demand control ventilation (DCV) shall be provided for spaces larger than 500 square feet (50 m^2) and with an average occupant load of 25 people per 1000 square feet (93 m^2) of floor area (as established in Table 403.3 of the *International Mechanical Code*) and served by systems with one or more of the following:

1. An air-side economizer;
2. Automatic modulating control of the outdoor air damper; or
3. A design outdoor airflow greater than 3,000 cfm (1400 L/s).

Exception: Demand control ventilation is not required for systems and spaces as follows:

1. Systems with energy recovery complying with Section C403.2.6.
2. ~~Multiple-*zone* systems without direct digital control of individual *zones* communicating with a central control panel.~~
3. System with a design outdoor airflow less than 1,200 cfm (600 L/s).
4. Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1,200 cfm (600 L/s).
5. Ventilation provided for process loads only.

C403.2.10 Air system design ~~and control~~. Each HVAC system having a total fan system motor nameplate horsepower (hp) exceeding 5 horsepower (hp) (3.7 kW) ~~shall meet the provisions of Sections C403.2.10.1 through C403.2.10.2~~

~~**C403.2.10.1 Allowable fan floor horsepower.** Each HVAC system~~ at fan system design conditions shall ~~not exceed the allowable~~ have a maximum *fan system motor nameplate hp* of 0.0011 X CFMs, where CFMs is the maximum design supply airflow rate to conditioned spaces served by the system in cubic feet per minute. ~~(Option 1) or *fan system bhp* (Option 2) as shown in Table C403.2.10.1(1).~~ This includes supply fans~~,~~ and return/relief fans~~, and fan-powered terminal units~~ associated with systems providing heating or cooling capability. ~~Single *zone* variable-air-volume systems shall comply with the constant volume fan power limitation.~~

Exception: ~~The following fan systems are exempt from allowable fan floor horsepower requirement:~~

1. ~~Hospital, vivarium and laboratory systems that utilize flow control devices on exhaust and/or return to maintain space pressure relationships necessary for occupant health and safety or environmental control shall be permitted to use variable volume fan power limitation.~~
2. Individual exhaust fans with motor nameplate horsepower of 1 hp or less.

~~**C403.2.10.2 Motor nameplate horsepower.** For each fan, the selected fan motor shall be no larger than the first available motor size greater than the brake horsepower (bhp). The fan brake horsepower (bhp) shall be indicated on the design documents to allow for compliance verification by the *code official*.~~

~~**Exceptions:**~~

1. ~~For fans less than 6 bhp (4413 W), where the first available motor larger than the brake horsepower has a nameplate rating within 50 percent of the bhp, selection of the next larger nameplate motor size is allowed.~~
2. ~~For fans 6 bhp (4413 W) and larger, where the first available motor larger than the bhp has a nameplate rating within 30 percent of the bhp, selection of the next larger nameplate motor size is allowed.~~

~~**TABLE C403.2.10.1(1)**~~
~~**FAN POWER LIMITATION**~~

~~**TABLE C403.2.10.1(2)**~~
~~**FAN POWER LIMITATION PRESSURE DROP ADJUSTMENT**~~

~~**C403.3 Simple HVAC systems and equipment (Prescriptive).** This section applies to buildings served by unitary or packaged HVAC equipment listed in Tables C403.2.3(1) through C403.2.3(8), each serving one *zone* and controlled by a single thermostat in the *zone* served. It also applies to two-pipe heating systems serving one or more *zones*, where no cooling system is installed.~~

C403.3 Mechanical systems and equipment (Prescriptive). Mechanical systems and equipment serving the building heating, cooling and ventilation needs shall comply with Sections C403.3.1 and C403.3.2.

C403.3.2 Hydronic system~~s~~ ~~controls~~. Hydronic heating systems comprised of multiple-packaged boilers and designed to deliver conditioned water or steam into a common distribution system shall include automatic controls capable of sequencing operation of the boilers and to automatically reduce flow through the boiler plant when another boiler is shut down. Hydronic heating systems comprised of a single boiler having an input design capacity over 500,000 Btu/h (146,550W) shall include either a multi-staging or modulating burner.

Hydronic systems of at least 300,000 Btu/h (87,930 W) design output capacity supplying heated ~~and chilled~~ water to comfort conditioning systems shall be designed for variable fluid flow with control valves designed to modulate or step down, and close, as a function of load and include controls that ~~meet the requirements of Sections~~ C403.4.3:

1. Automatically reset the supply water temperatures using zone-return water temperature, building-return water temperature, zone loads, or outside air temperature as an indicator of building heating demand. The temperature shall be capable of being reset by at least 25 percent of the design supply-to-return water temperature difference; and
2. Reduce system pump flow by at least 50 percent of design flow rate utilizing adjustable speed drive(s) on pump(s), or multiple-stated pumps where at least one-half of the total pump horsepower is capable of being automatically turned off.

~~**C403.4 Complex HVAC systems and equipment. (Prescriptive).** This section applies to buildings served by HVAC equipment and systems not covered in Section C403.3.~~

~~**C403.4.1 Economizers.** Economizers shall comply with Sections C403.4.1.1 through C403.4.1.4.~~

~~**C403.4.1.1 Design capacity.** Water economizer systems shall be capable of cooling supply air by indirect evaporation and providing up to 100 percent of the expected system cooling load at *outdoor air* temperatures of 50°F dry bulb (10°C dry bulb)/45°F wet bulb (7.2°C wet bulb) and below.~~
~~**Exception:** Systems in which a water economizer is used and where dehumidification requirements cannot be met using outdoor air temperatures of 50°F dry bulb (10°C dry bulb)/45°F wet bulb (7.2°C wet bulb) shall satisfy 100 percent of the expected system cooling load at 45°F dry bulb (7.2°C dry bulb)/40°F wet bulb (4.5°C wet bulb).~~

~~**C403.4.1.2 Maximum pressure drop.** Precooling coils and water-to-water heat exchangers used as part of a water economizer system shall either have a water-side pressure drop of less than 15 feet (4572 mm) of water or a secondary loop shall be created so that the coil or heat exchanger pressure drop is not seen by the circulating pumps when the system is in the normal cooling (noneconomizer) mode.~~

~~**C403.4.1.3**~~ **C403.3.1.1.5 Integrated economizer control.** Economizer systems shall be integrated with the mechanical cooling system and be capable of providing partial cooling even where additional mechanical cooling is required to meet the remainder of the cooling load.

Exceptions:

1. Direct expansion systems that include controls that reduce the quantity of *outdoor air* required to prevent coil frosting at the lowest step of compressor unloading, provided this lowest step is no greater than 25 percent of the total system capacity.
2. Individual direct expansion units that have a rated cooling capacity less than 54,000 Btu/h (15 827 W) and use nonintegrated economizer controls that preclude simultaneous operation of the economizer and mechanical cooling.

~~**C403.4.1.4 Economizer heating system impact.** HVAC system design and economizer controls shall be such that economizer operation does not increase the building heating energy use during normal operation.~~

~~**Exception:** Economizers on VAV systems that cause *zone* level heating to increase due to a reduction in supply air temperature.~~

~~**C403.4.2 Variable air volume (VAV) fan control.** Individual VAV fans with motors of 7.5 horsepower (5.6 kW) or greater shall be:~~

~~1. Driven by a mechanical or electrical variable speed drive;~~
~~2. Driven by a vane-axial fan with variable-pitch blades; or~~

3. The fan shall have controls or devices that will result in fan motor demand of no more than 30 percent of their design wattage at 50 percent of design airflow when static pressure set point equals one-third of the total design static pressure, based on manufacturer's certified fan data.

C403.4.2.1 Static pressure sensor location. Static pressure sensors used to control VAV fans shall be placed in a position such that the controller setpoint is no greater than one-third the total design fan static pressure, except for systems with *zone* reset control complying with Section C403.4.2.2. For sensors installed down-stream of major duct splits, at least one sensor shall be located on each major branch to ensure that static pressure can be maintained in each branch.

C403.4.2.2 Set points for direct digital control. For systems with direct digital control of individual *zone* boxes reporting to the central control panel, the static pressure set point shall be reset based on the *zone* requiring the most pressure, i.e., the set point is reset lower until one *zone* damper is nearly wide open.

C403.4.3 Hydronic systems controls. The heating of fluids that have been previously mechanically cooled and the cooling of fluids that have been previously mechanically heated shall be limited in accordance with Sections C403.4.3.1 through C403.4.3.3. Hydronic heating systems comprised of multiple-packaged boilers and designed to deliver conditioned water or steam into a common distribution system shall include automatic controls capable of sequencing operation of the boilers. Hydronic heating systems comprised of a single boiler and greater than 500,000 Btu/h (146 550 W) input design capacity shall include either a multistaged or modulating burner.

C403.4.3.1 Three-pipe system. Hydronic systems that use a common return system for both hot water and chilled water are prohibited.

C403.4.3.2 Two-pipe changeover system. Systems that use a common distribution system to supply both heated and chilled water shall be designed to allow a dead band between changeover from one mode to the other of at least 15°F (8.3°C) outside air temperatures; be designed to and provided with controls that will allow operation in one mode for at least 4 hours before changing over to the other mode; and be provided with controls that allow heating and cooling supply temperatures at the changeover point to be no more than 30°F (16.7°C) apart.

C403.4.3.3 Hydronic (water loop) heat pump systems. Hydronic heat pump systems shall comply with Sections C403.4.3.3.1 through C403.4.3.3.3.

C403.4.3.3.1 Temperature dead band. Hydronic heat pumps connected to a common heat pump water loop with central devices for heat rejection and heat addition shall have controls that are capable of providing a heat pump water supply temperature dead band of at least 20°F (11.1°C) between initiation of heat rejection and heat addition by the central devices.

Exception: Where a system loop temperature optimization controller is installed and can determine the most efficient operating temperature based on realtime conditions of demand and capacity, dead bands of less than 20°F (11°C) shall be permitted.

C403.4.3.3.2 Heat rejection. Heat rejection equipment shall comply with Sections C403.4.3.3.2.1 and C403.4.3.3.2.2.

Exception: Where it can be demonstrated that a heat pump system will be required to reject heat throughout the year.

C403.4.3.3.2.1 Climate Zones 3 and 4. For Climate Zones 3 and 4:

1. If a closed-circuit cooling tower is used directly in the heat pump loop, either an automatic valve shall be installed to bypass all but a minimal flow of water around the tower, or lower leakage positive closure dampers shall be provided.

2. If an open-circuit tower is used directly in the heat pump loop, an automatic valve shall be installed to bypass all heat pump water flow around the tower.
3. If an open- or closed-circuit cooling tower is used in conjunction with a separate heat exchanger to isolate the cooling tower from the heat pump loop, then heat loss shall be controlled by shutting down the circulation pump on the cooling tower loop.

C403.4.3.3.2.2 Climate Zones 5 through 8. For Climate Zones 5 through 8, if an open- or closed-circuit cooling tower is used, then a separate heat exchanger shall be provided to isolate the cooling tower from the heat pump loop, and heat loss shall be controlled by shutting down the circulation pump on the cooling tower loop and providing an automatic valve to stop the flow of fluid.

C403.4.3.3.3 Two position valve. Each hydronic heat pump on the hydronic system having a total pump system power exceeding 10 horsepower (hp) (7.5 kW) shall have a two-position valve.

C403.4.3.4 Part load controls. Hydronic systems greater than or equal to 300,000 Btu/h (87 930 W) in design output capacity supplying heated or chilled water to comfort conditioning systems shall include controls that have the capability to:

1. Automatically reset the supply-water temperatures using zone-return water temperature, building-return water temperature, or outside air temperature as an indicator of building heating or cooling demand. The temperature shall be capable of being reset by at least 25 percent of the design supply-to-return water temperature difference; or
2. Reduce system pump flow by at least 50 percent of design flow rate utilizing adjustable speed drive(s) on pump(s), or multiple-staged pumps where at least one-half of the total pump horsepower is capable of being automatically turned off or control valves designed to modulate or step down, and close, as a function of load, or other *approved* means.

C403.4.3.5 Pump isolation. Chilled water plants including more than one chiller shall have the capability to reduce flow automatically through the chiller plant when a chiller is shut down. Chillers piped in series for the purpose of increased temperature differential shall be considered as one chiller.
Boiler plants including more than one boiler shall have the capability to reduce flow automatically through the boiler plant when a boiler is shut down.

C403.4.4 Heat rejection equipment fan speed control. Each fan powered by a motor of 7.5 hp (5.6 kW) or larger shall have the capability to operate that fan at two-thirds of full speed or less, and shall have controls that automatically change the fan speed to control the leaving fluid temperature or condensing temperature/pressure of the heat rejection device.

Exception: Factory-installed heat rejection devices within HVAC equipment tested and rated in accordance with Tables C403.2.3(6) and C403.2.3(7).

C403.4.5 Requirements for complex mechanical systems serving multiple zones. Sections C403.4.5.1 through C403.4.5.4 shall apply to complex mechanical systems serving multiple zones. Supply air systems serving multiple zones shall be VAV systems which, during periods of occupancy, are designed and capable of being controlled to reduce primary air supply to each *zone* to one of the following before reheating, recooling or mixing takes place:

1. Thirty percent of the maximum supply air to each *zone*.
2. Three hundred cfm (142 L/s) or less where the maximum flow rate is less than 10 percent of the total fan system supply airflow rate.
3. The minimum ventilation requirements of Chapter 4 of the *International Mechanical Code*.

Exception: The following define where individual *zones* or where entire air distribution systems are exempted from the requirement for VAV control:

1. *Zones* where special pressurization relationships or cross-contamination requirements are such that VAV systems are impractical.
2. *Zones* or supply air systems where at least 75 percent of the energy for reheating or for providing warm air in mixing systems is provided from a site-recovered or site-solar energy source.
3. *Zones* where special humidity levels are required to satisfy process needs.
4. *Zones* with a peak supply air quantity of 300 cfm (142 L/s) or less and where the flow rate is less than 10 percent of the total fan system supply airflow rate.
5. *Zones* where the volume of air to be reheated, recooled or mixed is no greater than the volume of outside air required to meet the minimum ventilation requirements of Chapter 4 of the *International Mechanical Code*.
6. *Zones* or supply air systems with thermostatic and humidistatic controls capable of operating in sequence the supply of heating and cooling energy to the *zones* and which are capable of preventing reheating, recooling, mixing or simultaneous supply of air that has been previously cooled, either mechanically or through the use of economizer systems, and air that has been previously mechanically heated.

C403.4.5.1 Single duct variable air volume (VAV) systems, terminal devices. Single duct VAV systems shall use terminal devices capable of reducing the supply of primary supply air before reheating or recooling takes place.

C403.4.5.2 Dual duct and mixing VAV systems, terminal devices. Systems that have one warm air duct and one cool air duct shall use terminal devices which are capable of reducing the flow from one duct to a minimum before mixing of air from the other duct takes place.

C403.4.5.3 Single fan dual duct and mixing VAV systems, economizers. Individual dual duct or mixing heating and cooling systems with a single fan and with total capacities greater than 90,000 Btu/h [(26 375 W) 7.5 tons] shall not be equipped with air economizers.

C403.4.5.4 Supply-air temperature reset controls. Multiple *zone* HVAC systems shall include controls that automatically reset the supply-air temperature in response to representative building loads, or to outdoor air temperature. The controls shall be capable of resetting the supply air temperature at least 25 percent of the difference between the design supply-air temperature and the design room air temperature.

Exceptions:

1. Systems that prevent reheating, recooling or mixing of heated and cooled supply air.
2. Seventy five percent of the energy for reheating is from site-recovered or site solar energy sources.
3. Zones with peak supply air quantities of 300 cfm (142 L/s) or less.

C403.4.6 Heat recovery for service water heating. Condenser heat recovery shall be installed for heating or reheating of service hot water provided the facility operates 24 hours a day, the total installed heat capacity of water-cooled systems exceeds 6,000,000 Btu/hr (1 758 600 W) of heat rejection, and the design service water heating load exceeds 1,000,000 Btu/h (293 100 W).

The required heat recovery system shall have the capacity to provide the smaller of:

1. Sixty percent of the peak heat rejection load at design conditions; or
2. The preheating required to raise the peak service hot water draw to 85°F (29°C).

Exceptions:

1. Facilities that employ condenser heat recovery for space heating or reheat purposes with a heat recovery design exceeding 30 percent of the peak water-cooled condenser load at design conditions.

~~2. Facilities that provide 60 percent of their service water heating from site solar or site recovered energy or from other sources.~~

~~C403.4.7~~ C403.3.2 Hot gas bypass limitation. Cooling systems shall not use hot gas bypass or other evaporator pressure control systems unless the system is designed with multiple steps of unloading or continuous capacity modulation. The capacity of the hot gas bypass shall be limited as indicated in Table C403.4.7

Exception: Unitary packaged systems with cooling capacities not greater than 90,000 Btu/h (26 379 W).

TABLE ~~C403.4.7~~ C403.3.2
MAXIMUM HOT GAS BYPASS CAPACITY

RATED CAPACITY	MAXIMUM HOT GAS BYPASS CAPACITY (% of total capacity)
≤ 240,000 Btu/h	50
> 240,000 Btu/h	25

For SI: 1 British thermal unit per hour = 0.2931 W.

C406.2 Efficient HVAC performance. For systems required by Sections 403.1 to meet provisions of Sections C403.2 (mandatory provisions) and C403.3 (prescriptive provisions), equipment shall meet the minimum efficiency requirements of Tables C406.2.(1) through C406.2(~~7~~ 5) in addition to the requirements in Section C403. This section shall only be used where the equipment efficiencies in Tables C406.2(1) through C406.2(~~7~~ 5) are greater than the equipment efficiencies listed in Table C403.2.3(1) through 403.2.3(~~7~~ 6) for the equipment type.

For systems required by Sections 403.1 to meet provisions of Section 6 of *ANSI/ASHRAE/IES Standard 90.1* heating and cooling equipment shall have a rated efficiency 10 percent greater than required by Section 6 of *ANSI/ASHRAE/IES Standard 90.1*.

~~**TABLE C406.2(6)**~~
~~**CHILLERS—EFFICIENCY REQUIREMENTS**~~

~~**TABLE C406.2(7)**~~
~~**ABSORPTION CHILLERS—EFFICIENCY REQUIREMENTS**~~

Delete standard from Chapter 5 as follows:

AHRI

~~400—01 Liquid to Liquid Heat Exchangers with Addendum 2~~
~~550/590—03 Water Chilling Packages Using the Vapor Compression Cycle—with Addenda~~
~~560—00 Absorption Water Chilling and Water-heating Packages~~

~~**CTI** Cooling Technology Institute~~
~~2611 FM 1960 West, Suite A-101~~
~~Houston, TX 77068~~

~~ATC 105 (00)—Acceptance Test Code for Water Cooling Tower~~
~~STD 201—09—Standard for Certification of Water Cooling Towers Thermal Performances~~

Reason: The code change retains all the provisions of Section C403 of the 2012 IECC as applicable to simple HVAC systems and equipment as currently defined in the IECC, with some minor modifications for hydronic systems. Note that a significant majority of the commercial buildings constructed in the United States are on the order of 20,000 square feet or less in floor area and would likely be covered by these resultant provisions for simple systems and equipment.

The provisions for complex (e.g. non-simple) HVAC systems are updated and maintained by ASHRAE on a regular and ongoing basis. It seems duplicative and time consuming to try and keep the provisions of the IECC for such equipment and systems consistent with Standard 90.1, when so much effort is spent in SSPC 90.1 updating and maintaining these provisions. A review of the past few code development cycles finds very few changes were submitted to the provisions for complex systems other than to keep the IECC consistent with the provisions in Standard 90.1.

While there may be an advantage in having the provisions for complex systems provided directly in the IECC to foster their availability, such complex systems will have a registered design professional or engineer involved in the design and construction who should be providing sealed plans and specifications. Given the recent emphasis on the availability of resources for state and local code compliance verification efforts it seems reasonable to rely on Standard 90.1 for the criteria for such systems and equipment and the engineers and design professionals that would be involved in their implementation and compliance verification via their professional credentials.

An important note is that this is not a return to the prior "mix and match" approach of allowing developers to meet one section (e.g., envelope) in the IECC and another (say lighting) in ASHRAE 90.1. This is a clear referral and not an optional choice. Simple HVAC system provisions are in the IECC and the complex system requirements in ASHRAE 90.1 are included by reference. There is always the option of using ASHRAE 90.1 for the entire compliance path under section 401.2 or 401.2.1, but in either case, complex HVAC systems would be subject to requirements in ASHRAE 90.1.

This change will greatly simplify the code and as noted above continue to provide criteria for more complex systems through a singular process. Details to foster an understanding of this code change are provided below and correspond to each of the ten specific actions needed to implement this change and further simplify the provisions in the ICC for HVAC systems and equipment.

1. The proposed changes to C403.1 are intended to bring forward the scope of C403.3 for simple systems to the beginning of C403 to provide the necessary outline and structure for the resultant C403. Section C403.1 now clearly indicates what is covered by the building mechanical system provisions, what constitutes a simple HVAC system and equipment, and that such systems and equipment would need to comply with the provisions of the IECC and those that are not would now be required to comply with ANSI/ASHRAE/IES Standard 90.1 as currently referenced in the IECC. This eliminates the need to maintain separate and parallel provisions for other than simple systems in the IECC that are maintained in Standard 90.1.
2. The title of C403.2 requires revision to ensure the correct organization of the provisions of C403. Section C403.1 now establishes the scope of the provisions for simple HVAC systems and equipment. The sections after C403.1 apply to mechanical systems and equipment and are either mandatory (C403.2) or prescriptive (C403.3). If HVAC systems and equipment are not simple, as defined in C403.1, then the provisions of Standard 90.1 apply.
3. The scope of C403 as simple HVAC systems and equipment covering only unitary or packaged cooling equipment eliminates the relevance of Tables C403.2.3(7), and C403.2.3(8) which apply to equipment associated with complex systems as defined in the IECC now (e.g. non-simple). These same provisions are provided in Standard 90.1 and need not be provided here. By referencing Standard 90.1, it is unnecessary for IECC to undergo several code changes in order to keep the code consistent with Standard 90.1.
4. Sections C403.2.3.1 and C403.2.3.2 apply to water chilling packages that are associated with systems other than those covered by Section C403 pursuant to this change (e.g. non-simple systems that are now covered by Standard 90.1).
5. Sections C403.4.1 through C403.4.4 are deleted through this code change as discussed above and no longer need to be referenced. The provisions of C403.2.4.1 through C403.2.4.4 apply to simple HVAC systems and equipment and should be retained as currently presented.
6. Exception 2 to C403.2.5.1 would not be applicable to the scope of C403 as proposed herein (simple systems) because simple HVAC systems and equipment are limited to serving a singular zone and this exception applies to multiple zone systems.
7. In now applying to simple systems the provisions in C403.2.10.1 for fan system brake horsepower are no longer applicable and would be addressed in Standard 90.1. Table C403.2.10.1(1) can be deleted as the one remaining set of provisions is better presented in a textual rather than tabular form. Table C403.2.10.1(2) is deleted as it is only applicable to the brake horsepower path which is no longer present for the simplified path. What remains is a set of provisions for air system fan horsepower that can be stated in a singular section through modification to C403.2.10. The title of C403.2.10 is revised so it does not contain now nor would it contain any provisions on air system control.
8. With the movement of the current provisions of C403.3 to C403.1 to address the scope of C403 at the beginning of the section, the current performance provisions in C403.3 for simple systems need an appropriate introductory section.
9. The current hydronic system control provisions in Section C403.3.2 are modified for consistency with the scope of the proposed Section C403 and do not apply to chilled water systems. In addition, Section C403.4 would be deleted in deference to Standard 90.1 for complex (e.g. non-simple) HVAC systems and equipment as discussed above. The controls provisions now in Section C403.4 are brought forward as applicable to simple HVAC systems and equipment. The provisions applicable to hydronic systems covered by the new Section C403.3 (heating only systems) are Sections C403.4.3.4 and the second paragraph of Section C403.4.3.5, both of which are included in the code change above as new text to Section C403.3.2 on hydronic systems. There are minor modifications to improve pumping efficiency by requiring variable flow on smaller systems without variable speed drives being required.
10. The economizer integration requirements are currently located in C403.4.1.3 for complex systems and are applicable to simple systems as defined pursuant to this code change. As a consequence they need to be retained in the IECC and are proposed to be moved so they are retained for simple systems.
11. Unneeded complex system sections and tables are deleted. ASHRAE 90.1 becomes the reference for these systems.
12. Hot gas bypass restrictions are retained, as they apply to some larger simple systems.
13. The HVAC option in C406.2 needs to be adjusted to accommodate the reference to Standard 90.1 for complex systems. As proposed, Section C403 provides specific criteria within the IECC for simple mechanical systems and then defers to Standard 90.1 for complex systems in lieu of providing specific criteria within the IECC for complex systems. The provisions of C406.2 as written would and should continue to be applied over and above the specific criteria within the IECC. In now referencing Standard 90.1 for complex systems, a parallel option must also exist for those buildings that would comply using the specific criteria within the IECC but in the case of mechanical systems would defer to Standard 90.1.
14. High efficiency chiller tables are no longer required, as the high efficiency chiller option is indexed to ASHRAE 90.1.
15. Several reference standards are no longer required.

Any cost impact would be attributable to the loss of the provisions in Section C403.4 for complex HVAC systems and the impact of requiring compliance with ANSI/ASHRAE/IES Standard 90.1 alone on any particular system design. A comparison of the provisions in Section C403.4 and Standard 90.1 would have to be conducted and applied to each design to determine if there are any specific increases or decreases in first cost and life cycle costs. There should be little cost difference between the current complex provisions and the 90.1 complex provisions if the trend for ASHRAE 90.1 proposals to be incorporated into IECC continues. ASHRAE 90.1 proposals typically go through a cost effectiveness vetting as they are released for public comment and incorporation into standard 90.1, so any differences with increased cost would be cost effective.

Cost Impact: There is no significant impact on construction cost.

CE195-13

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

Updated 3/22/2013

CE277-13: Added Part II:

CE277-13

C404.5.1 (New), R403.3 (New) (N1103.3 (New))

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

Proponent: Howard Ahern representing Airex Mfg. (howard.ahern@airexmfg.com)

PART I IECC-COMMERCIAL PROVISIONS

Add new text as follows:

C404.5.1 Water heater piping insulation protection. Exposed water piping that is insulated and that is connected to a water heater shall have the insulation protected from damage by a removable and reusable covering. The covering shall extend for not less than 5 feet (1524 mm) from the water heater. The covering shall not be adhesive tape.

PART II IECC-RESIDENTIAL PROVISIONS

Add new text as follows:

R403.4.3 (N1103.3) Water heater piping insulation protection. Exposed water piping that is insulated and that is connected to a water heater shall have the insulation protected from damage by a removable and reusable covering. The covering shall extend for not less than 5 feet (1524 mm) from the water heater. The covering shall not be adhesive tape.

Reason. This code change is needed to insure integrity of the water heater piping insulation. Pipe insulation is often silt open to install over water heating piping, the slits often stay open or adhesive used to glue slit close degrade and slits open wasting energy and money. Removable and reusable covering will insure pipe insulation slits are closed to save energy. This change will ensures steady, long-term thermal performance and maintain system integrity, sustainability, of the insulation saving energy.

Water Heating equipment require periodic maintenance. The frequency varies with how hard the unit operates, exterior temperature, preventive maintenance program, and many others. In every occasion, maintenance provides an excuse for the piping insulation to be touched and or removed. Pipe insulation removal often results in damage to the insulation itself requiring replacement.

Protection for piping insulation therefore needs to be removable and reusable. This will help insure system integrity and sustainability of the pipe insulation, reducing replacement.

Cost Impact: The code change proposal will increase the cost of construction.

CE277-13
PART I IECC-COMMERCIAL PROVISIONS

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

PART II IECC- RESIDENTIAL PROVISIONS

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

C404.5.1 (NEW)-EC-AHERN.DOC

Updated 3/22/2013

CE362-13: Add code change as follows:

CE362 –13

C403.2.5 (New), R403.2 (New) (IRC N1103.2 (New))

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

Proponent: Julius Ballanco, P.E, JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

PART I IECC-COMMERCIAL PROVISIONS

Add new text as follows:

C403.2.5 Hot water boiler outdoor temperature setback control. Hot water boilers that supply heat to the building through one- or two-pipe heating systems shall have an outdoor setback control that lowers the boiler water temperature based on the outdoor temperature.

PART II IECC-RESIDENTIAL PROVISIONS

Add new text as follows:

R403.2 (N1103.2) Hot water boiler outdoor temperature setback. Hot water boilers that supply heat to the building through one- or two- pipe heating systems shall have an outdoor setback control that lowers the boiler water temperature based on the outdoor temperature.

Reason: This is one of the single most energy efficient controls for a hot water boiler. By modulating the hot water temperature in the heating system, the boiler fires less, using less energy. This is a simple control that every hot water boiler should be required to have for saving energy.

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

CE362-13
PART I IECC-COMMERCIAL PROVISIONS

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

PART II IECC- RESIDENTIAL PROVISIONS

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

C403.2.5 (NEW)-EC-BALLANCO.DOC

Updated 3/22/2013

CE363-13: Add code change as follows:

CE363 –13
C404.3

Proponent: Julius Ballanco, PE. JB Engineering and Code Consulting, PC, representing self (JBEngineer@aol.com)

Delete without substitution as follows:

~~**C404.3 Temperature controls.** Service water-heating equipment shall be provided with controls to allow a setpoint of 110°F (43°C) for equipment serving dwelling units and 90°F (32°C) for equipment serving other occupancies. The outlet temperature of lavatories in public facility rest rooms shall be limited to 110°F (43°C).~~

Reason: This is a requirement that threatens the public health of the occupants of a building. In Chapter 1, the intent of the code states, in part, "This code is not intended to abridge safety, health or environmental requirements contained in other applicable codes or ordinances." By requiring temperature of service hot water to be controlled to 90°F or 110°F, the system is set up perfectly for the accelerated growth of legionella pneumophilia bacteria. These bacteria can lead to the building occupants contracting legionnaires disease.

The plumbing engineering community is extremely concerned with the prevention of legionella pneumophilia bacteria breeding grounds. The bacteria breeds on biofilm and grows rapidly in water temperatures identified in this section. The minimal energy savings associated with this section is not worth the possible death of the building occupants.

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

CE363-13

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

C404.3-EC-BALLANCO.DOC

Updated 3/22/2013

CE364-13: Add code change as follows:

CE364 –13
C404.6, IPC [E] 607.2.1

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

THIS IS A 2 PART CODE CHANGE PROPOSAL. PARTS I AND II WILL BE HEARD BY THE COMMERCIAL ENERGY CONSERVATION CODE DEVELOPMENT COMMITTEE.

Delete without substitution as follows:

PART I – IECC-COMMERCIAL PROVISIONS

~~**C404.6 Hot water system controls.** Circulating hot water system pumps or heat trace shall be arranged to be turned off either automatically or manually when there is limited hot water demand. Ready access shall be provided to the operating controls.~~

(Renumber subsequent section)

PART II – IPC

Delete without substitution as follows:

~~**[E] 607.2.1 Hot water system controls.** Automatic circulating hot water system pumps or heat trace shall be arranged to be conveniently turned off, automatically or manually, when the hot water system is not in operation.~~

(Renumber subsequent section)

Reason: If a hot water recirculating system is turned off, there is an increased likelihood of a biofilm growth on the piping wall. One of the means used by plumbing engineers to reduce biofilm growth in the piping is continuous flow of a hot water recirculating system. Furthermore, the temperatures of a recirculating system is ideal for accelerated growth of legionella pneumophilia bacteria.

This requirement jeopardizes public health and safety. The Energy Code should never be establishing requirements that can place the public at risk of death from a health issue. The minimal energy savings cannot be justified when there is a well established number of deaths each year due to legionnaires disease.

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

CE364-13
Part I – IECC-COMMERCIAL PROVISIONS

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

Part II - IPC

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

C404.6-EC-BALLANCO.DOC

Updated 3/22/2013

IECC – RESIDENTIAL

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add RE194-13 to the IECC-Residential Hearing Order following RE120-13
Add RE195-13 to the IECC-Residential Hearing Order following RE42-13
RE230-13 corrected to read CE230, Part II-13
Remove CE47-13, Part II from the IECC-Residential Hearing Order following ADM22-13, Part II
Remove CE48-13. Part II from the IECC-Residential Hearing Order following ADM22-13, Part II
Add CE362-13, Part II to the IECC-Residential Hearing Order following CE230, Part II-13
Add CE277-13, Part II to the IECC-Residential Hearing Order following RE192-13
Add RB96-13, Part II to the IECC-Residential Hearing Order following RE86-13

TENTATIVE ORDER OF DISCUSSION

2013 PROPOSED CHANGES TO THE INTERNATIONAL ENERGY CONSERVATION CODE

RESIDENTIAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some Residential Energy Changes may not be included on this list as they are being heard by another committee. Please consult the Cross Index of Proposed Changes. Note also that RE1-RE9 are moved to later in the hearing order to all grouping consideration of proposed changes to Chapters 1 and 3 near the beginning of the the consideration of Chapters 1 and 3 of the IECC-Commercial Provisions.

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2013 PROPOSED CHANGES TO THE INTERNATIONAL ENERGY CONSERVATION CODE – RESIDENTIAL

Updated 3/22/2013

RE24-13: Replace the Reason statement as follows:

RE24 – 13

Table R402.1.1 (IRC Table N1102.1.1)

Proponent: Don Surrena, CBO, National Association of Home Builders (NAHB) (dsurrena@nahb.org)

Revise as follows:

TABLE R402.1.1 (N1102.1.1)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

CLIMATE ZONE	FENES-TRATION *U*-FACTOR[b]	SKYLIGHT[b] *U*-FACTOR	GLAZED FENES-TRATION SHGC[b,e]	CEILING *R*-VALUE	WOOD FRAME WALL *R*-VALUE	MASS WALL *R*-VALUE[i]	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	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13+5[h]	8/13	19	5/13[f]	0	5/13
4 except Marine	0.35	0.55	~~0.40~~ NR	49	20 or 13+5[h]	8/13	19	10/13	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13+5[h]	13/17	30[g]	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20+5 or 13+10[h]	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]	19/21	38[g]	15/19	10, 4 ft	15/19

(Portions of Table not shown remain unchanged)

Reason: A prescriptive solar heat gain coefficient (SHGC) restriction was added to Table R402.1.1 in the 2012 IECC where previously there was no SHGC requirement. The 2012 IECC was changed to require an average SHGC of 0.40 or less. Energy modeling shows that this requirement does not save energy.

In Climate Zone 4, heating degree days outnumber cooling degree days by about 2 to 3 times. Therefore, for most of the year, the "sun is your friend" and solar heat gain is beneficial in reducing heating loads. There are some exceptions to this, but the majority of homes will not benefit from this restriction.

Energy modeling below shows some examples of the additional energy required when this artificial restriction is placed on windows in Climate Zone 4.

Basic house being modeled using REM/Rate: 1,600 Square foot house in Washington, DC with 50 ft^2 of window area in each cardinal direction.

The model compares the energy use of two different types of glass- one with 0.40 SHGC windows, the maximum average SHGC allowed under the 2012 IECC in Climate Zone 4, second, a 0.50 SHGC window, which would be typical of a double pane window without a low-e coating and third, an example of a simple passive solar design that has higher SHGC in the South orientation in order to take advantage of the winter sun which is lower in the sky.

Annual energy cost:

With all 0.40 SHGC windows: $2,353
With all 0.50 SHGC windows: $2,352
With 0.50 SHGC on South windows and 0.40 on all other windows: $2,351

While these savings are not dramatic, they illustrate that setting a maximum SHGC in Climate Zone 4 is an artificial requirement that, at best, does not save energy and at worst increases the annual energy bill to the consumer.

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

RE24-13

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

R402.1.1T#2-EC-SURRENA

Updated 3/22/2013

RE39-13: Replace code change proposal with the following:

RE39 – 13

R402.2.8, IRC N1102.2.8

Proponent: Craig Conner, Building Quality, representing self

Add new text as follows:

R402.2.8 (N1102.2.8) Continuous insulation alternative. The continuous wood frame wall insulation *R-value* required by Table R402.1.1 (N1102.1.1) shall be reduced by R-5 provided that all of the following apply:

1. Windows have a *U-factor* less than or equal to 0.27.
2. Sliding glass doors have a *U-factor* less than or equal to 0.30.
3. Opaque doors have a *U-factor* less than or equal to 0.17.
4. The wall framing is 24 inches on center with 2-stud corners, or the wall framing factor is 19% or less.

Reason: Continuous insulation on walls is on the short list of energy-code headaches for some builders. (Other builders consider it a non-issue.) This provides a prescriptive alternative to the R-5 continuous insulation in Table R404.1.1 (IRC N1102.1.1). This alternative is meant to maintain the wall UA, and therefore be energy neutral. This alternative is prescriptive, so it does not require a UA calculation. This prescriptive alternative is based on using Energy Star windows and doors, with a limitation on the framing fraction.

In 2015 Energy Star will be using the new Version 6 windows and doors. In the northern climate zones (roughly climate zones 5 to 8) Energy Star will require a 0.27 U-factor for windows and a 0.30 U-factor for sliding glass doors. (These can still be double pane windows.) It will require a 0.17 U-factor for opaque doors. Presuming the price of Energy Star windows and doors falls significantly, as in the past, the windows and doors for this option are likely to become more available and less expensive.

This prescriptive tradeoff maintains the residence gross wall (window, sliding glass door, opaque door) UA based on the following assumptions: A 1500 ft^2 gross wall area. The gross wall area includes 225 ft^2 (15%) window area, split between 60 ft^2 a sliding glass door and 165 ft^2 of window. A 40 ft^2 opaque door. The net wall is 1500 - 225 - 40 = 1235 ft^2.

The increased wall UA that results from eliminating the R-5 continuous insulation in a wood frame wall can be computed using U-factors from REScheck multiplied times the net wall area =
For an R-20 cavity with R-5 continuous insulation (R20+5) REScheck gives a U-factor of 0.044. The UA is 0.044 x 1235 = 54.3
For an R-20 cavity with no continuous insulation (R20+0) REScheck gives a U-factor of 0.059. The UA is 0.059 x 1235 = 72.9
The difference in UAs is the impact of removing the R-5 continuous insulation. It is 72.9 - 54.3 = 18.6 UA

For this prescriptive tradeoff to be neutral, the decreased UA must at least make up for the increased UA from removing the continuous R-5 wall insulation.
Computing the change between the IECC U-factor requirement and the Energy Star improvement based on the assumed areas:
If 165 ft^2 of window goes from the IECC's U-factor of 0.32 to the Energy Star U-factor of 0.27. The UA improvement is 165 x (0.32 – 0.27) = 8.2 UA.
If 60 ft^2 of sliding glass door goes from the IECC's U-factor of 0.32 to the Energy Star U-factor of 0.30. The UA improvement is 60 x (0.32 – 0.30) = 1.2 UA.
If 40 ft^2 of opaque door goes from the IECC's U-factor of 0.32 to the Energy Star U-factor of 0.17. The UA improvement is 40 x (0.32 - 0.17) = 6 UA.

Summing the windows and doors gives the Energy Star UA improvement. Energy Star improves the UA by 8.2 + 1.2 + 6 = 15.4 UA, not quite the 18.6 UA change needed to balance the removal of R-5 continuous insulation.

The balance of the needed UA change can be made up with a lower framing factor. An opaque wall framing factor change of 1% yields about a 0.8 change in UA. Common framing factors are 23 to 25% of the opaque wall. This presume a 24% framing factor as the base. Requiring a 19% framing factor gives a UA change of 0.8 x 5 = 4 UA. To put the 19% framing in perspective-think 24 inch on center with 2 stud corners, which are only two of the framing improvements that are often called "advanced framing" or "optimum value engineering" (OVE).

The UA change from Energy Star and the lower framing factor is the sum of the window, sliding glass door, opaque door, and framing fraction change or 8.2 + 1.2 + 6 + 4 = 19.4 UA. Those who did a calculation for their specific building areas would usually get a more favorable result, so this prescriptive option is a little conservative.

References: The Version 6 Energy Star requirements can be seen at: http://www.energystar.gov/ia/partners/prod_development/revisions/downloads/windows_doors/ES_Draft2V6_Residential_WDS_%20Spec.pdf?b7c8-7463

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

RE39-13

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

R402 1 1-EC-CONNER.doc

Updated 4/02/2013

RE79-13: Replace code change proposal with the following:

RE79 – 13

Table R402.1.1 (IRC Table N1102.4.1.1)

Proponent: Brian Dean, Energy Efficient Codes Coalition; Garrett Stone, Brickfield Burchette Ritts & Stone, PC; Jeff Harris, Alliance to Save Energy; Harry Misuriello, American Council for an Energy-Efficient Economy; and Bill Prindle, Energy Efficient Codes Coalition

Revise as follows:

R402.1.1 (TABLE N1102.1.1)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT[a]

(Portions of Table not shown remain unchanged)

h. First value is cavity insulation, second is continuous insulation or insulated siding, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation or insulated siding. ~~If structural sheathing covers 40 percent or less of the exterior, continuous insulation *R*-value shall be permitted to be reduced by no more than R-3 in the locations where structural sheathing is used to maintain a consistent total sheathing thickness.~~

Reason: The purpose of this code change is to improve the efficiency of buildings by removing an exception to the prescriptive wall R-value requirements. This footnote "h" to the 2012 IECC prescriptive table carves out an exception to the wall R-value requirements for cases in which structural sheathing covers 40% or less of the exterior. Although this exception reduces the efficiency of walls, there is no corresponding increase of efficiency elsewhere in the building.

The proposal eliminates the exception because it is unnecessary. Where the installation of structural sheathing interferes with wall insulation, the builder or design professional using the prescriptive approach should use the Total UA analysis (or may opt for the Simulated Performance Alternative) to make up for the efficiency loss elsewhere in the thermal envelope or overall performance of the building.

Table R402.1.1, the envelope "R-value table," is a component-based, simplified prescriptive option designed to represent the most common assembly types and building methods used by builders. It is not intended to be exactly equivalent to the Total UA option or the Simulated Performance Alternative (both of which are based on the equivalent U-factors table, Table R402.1.3). However, some opponents of energy efficiency have misinterpreted the exception in footnote has an intent to weaken wall insulation requirements in all compliance paths, arguing that the least efficient possibility should be the baseline assumption for all compliance paths. That interpretation is incorrect, and could lead to significant losses in energy efficiency. The proposal above ensures that footnote h would not be used as a means of weakening the entire code.

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

RE79-13

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

Updated 3/22/2013

RE117-13: RE118 was duplicated in RE117, see correct code change below:

RE117-13
R403.2.2 (IRC N1103.2.2)

Proponent: Donald J. Vigneau, AIA, Northeast Energy Efficiency Partnerships, Inc. (NEEP) **(**dvigneau@neep.org)

Revise as follows:

R403.2.2 Sealing (Mandatory). Ducts, air handlers, and filter boxes shall be sealed. Joints and seams shall comply with either the International Mechanical Code or International Residential Code, as applicable.

Exceptions:

1. Air-impermeable spray foam products shall be permitted to be applied without additional joint seals.
2. ~~Where a duct connection is made that is partially inaccessible, three screws or rivets shall be equally spaced on the exposed portion of the joint so as to prevent a hinge effect.~~
2~~3~~. Continuously welded and locking-type longitudinal seams in ducts operating at a static pressure less than 2 inches of water column (500 Pa) pressure classification shall not require additional closure systems.

   Duct tightness shall be verified by either of the following;

   1. Post-construction test: Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m^2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handling enclosure, All register boots shall be taped or otherwise sealed during the test.
   2. Rough-in test: Total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 square feet (9.29 m2) of conditioned floor area when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handling enclosure, All register boots shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 3 cfm per 100 square feet (9.29 m^2) of conditioned floor area.

      Exception: The total leakage test is not required for ducts and air handlers located entirely within the building thermal envelope.

Reason: Exception #2 relates strictly to duct construction and not to energy efficiency. It is also redundant, in that the requirement is contained in both the *International Residential Code*, Mechanical requirements and the *International Mechanical Code* and is unnecessary to repeat here. It also can create conflicting requirements should those sections be amended without correlating with the IECC.

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

RE117-13

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

R403.2.2 #1-EC-VIGNEAU.DOC

Updated 3/22/2013

RE150-13: Replace proposal with the following:

RE150-13

R202 (NEW) (IRC N1101.9 (NEW)), R404.1 (IRC N1104.1)

Proponent: Don Surrena, CBO, National Association of Home Builders (NAHB) (dsurrena@nahb.org)

Revise as follows:

R404.1 Lighting equipment (Mandatory). ~~A minimum of seventy-five percent of the~~ All lamps in permanently installed lighting fixtures shall be high efficacy lamps ~~or a minimum of seventy-five percent of the permanently installed lighting fixtures shall contain only high efficacy lamps~~.

Exceptions:

1. Low-voltage lighting.
2. Lamps controlled by a dimmer or automatic control device.
3. Lamps of 10 watts or less.
4. Lamps contained in appliances

Add new definition as follows:

AUTOMATIC CONTROL DEVICE. A device or system capable of automatically turning lighting loads off without manual intervention. The device or system may include a feature for turning lights on manually or automatically, but isn't required.

Reason: Builder installed lighting represents roughly 7% of residential electricity use. This proposal has the potential to reduce household energy use by over 1%.

By requiring lamps (rather than fixtures) to be high efficacy, leaves open the ability for innovative new lighting technologies which can be used in a standard lighting base.

Durability of fixture ballasts is also a concern. Ballast repairs are not generally done by a consumer and will typically require an electrician replace the fixture at a significant cost increase to the consumer.

The new language is simpler, more enforceable and more stringent. It makes the code require 100% high efficacy lighting with an allowance for standard efficacy when special lighting controls are used.

Exceptions still maintain the stringency, but provide reasonable allowances for small lighting loads.

Cost Impact: The code change proposal will increase the cost of construction. An analysis using a building energy savings methodology developed by the NAHB Research Center shows annual energy savings of $40 per year in Miami and $45 in Chicago against an estimated additional construction cost of $25.

RE150-13

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

R404.1-EC-SURRENA.DOC

RE193-13: Replace code change proposal with the following::

RE193 – 13
R202 (IRC N1101.9), 403.10 (New) (IRC N1103.10 (New))

Proponent: Darren Meyers, P.E., International Energy Conservation Consultants, LLC, consultant to Illinois Energy Office – Department of Commerce & Economic Opportunity (dmeyers@ieccode.com)

Revise as follows:

SECTION R202 (N1101.9)
GENERAL DEFINITIONS

COMBUSTION APPLIANCE ZONE (CAZ). A contiguous air volume within a building that contains a containing a Category I or II atmospherically-vented appliance or a Category III or IV direct vent or integral vent appliance drawing combustion air from inside of the building or dwelling unit. The CAZ includes but is not limited to, a mechanical closet, mechanical room, or the main body of a house or dwelling unit.

DRAFT. The pressure difference existing between the *appliance* or any component part and the atmosphere, that causes a continuous flow of air and products of *combustion* through the gas passages of the *appliance* to the atmosphere.

Mechanical or induced draft. The pressure difference created by the action of a fan, blower or ejector that is located between the *appliance* and the *chimney* or vent termination.

Natural draft. The pressure difference created by a vent or *chimney* because of its height, and the temperature difference between the *flue gases* and the atmosphere.

SPILLAGE. Combustion gases emerging from an appliance or venting system into the combustion appliance zone during burner operation.

Add new text as follows:

R403.10 (N1103.10) Worst-case testing of atmospheric venting systems. Buildings or dwelling units containing a Category I or II atmospherically-vented appliance; or a Category III or IV direct vent or integral vent appliance drawing combustion air from inside of the building or dwelling unit, shall have the Combustion Appliance Zone (CAZ) tested for spillage, acceptable draft and carbon monoxide (CO) in accordance with this Section. 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* and prior to final inspection.

Exception: Buildings or dwelling units containing only Category III or IV direct vent or integral vent appliances that do not draw combustion air from inside of the building or dwelling unit.

The enumerated test procedure below shall be followed during test

1. Set all combustion appliances to the pilot setting or turn off the service disconnects for all combustion appliances. Close all exterior doors and windows and the fireplace damper. With the building or dwelling unit in this configuration, measure and record the baseline ambient pressure inside the building or dwelling unit CAZ. Compare the baseline ambient pressure of the CAZ to that of the outside ambient pressure, and record the difference (Pa).

2. Establish worst case by turning on the *clothes dryer* and all exhaust fans. Close all interior doors that make the CAZ pressure more negative. Turn on the air handler, where present, and leave on if as a result, the pressure in the CAZ becomes more negative. Check interior door positions again, closing only the interior doors that make the CAZ pressure more negative. Measure net change in pressure from the CAZ to outdoor ambient pressure, correcting for the base ambient pressure inside the home. Record "worst case depressurization" pressure and compare to Table R403.10(1).

   Where CAZ depressurization limits are exceeded under worst-case conditions according to Table R403.10(1), additional combustion air must be provided or other modifications to building air-leakage performance or exhaust appliances such that depressurization is brought within the limits prescribed in Table R403.10(1).

3. Measure worst case spillage, acceptable draft, and carbon monoxide (CO) by firing the fuel-fired appliance with the smallest Btu capacity first.

   a. Test for spillage at the draft diverter with a mirror or smoke puffer. An appliance that continues to spill flue gases for more than 60 seconds fails the spillage test.
   b. Test for CO measuring undiluted flue gases, in the throat or flue of the appliance using a digital gauge in parts per million (ppm) at the 10 minute mark. Record CO ppm readings to be compared with Table R403.10(3) upon completion of Step 4. Where the spillage test fails under worst case, go to Step 4.
   c. Where spillage ends within 60 seconds, test for acceptable draft in the connector no less than one foot, but no more than two feet downstream of the draft diverter. Record draft pressure and compare to Table R403.10(2).
   d. Fire all other connected appliances simultaneously and test again at the draft diverter of each appliance for spillage, CO and acceptable draft using procedures 3a through 3c.

4. Measure spillage, acceptable draft, and carbon monoxide (CO) under natural conditions—without *clothes dryer* and exhaust fans on—according to the procedure outlined in Step 3, measuring the net change in pressure from worst case condition in Step 3 to natural in the CAZ to confirm the worst case depressurization taken in Step 2. Repeat the process for each appliance, allowing each vent system to cool between tests.
5. Monitor indoor ambient CO in the breathing zone continuously during testing, and abort the test where indoor ambient CO exceeds 35 ppm by turning off the appliance, ventilating the space, and evacuating the building. The CO problem must be corrected prior to completing combustion safety diagnostics.
6. Make recommendations based on test results and the retrofit action prescribed in Table R40310.3).

TABLE R403.10(1) (N1103.10(1))
CAZ DEPRESSURIZATION LIMITS

VENTING CONDITION	LIMIT (Pa)
Category I, atmospherically-vented water heater	-2.0
Category I or II atmospherically-vented boiler or furnace common-vented with a Category I atmospherically-vented water heater	-3.0
Category I or II atmospherically-vented boiler or furnace, equipped with a flue damper, and common-vented with a Category I atmospherically-vented water heater	-5.0
Category I or II atmospherically-vented boiler or furnace alone	
Category I or II atmospherically-vented, fan-assisted boiler or furnace common-	

VENTING CONDITION	LIMIT (Pa)
vented with a Category I atmospherically-vented water heater	
Decorative vented, gas appliance	
Power vented or induced-draft boiler or furnace alone, or fan assisted water heater alone	-15.0
Category IV direct vented appliances and sealed combustion appliances	-50.0

For SI: 6894.76 Pa = 1.0 psi.

TABLE R403.10(2) (N1103.10(2))
ACCEPTABLE DRAFT TEST CORRECTION

OUTSIDE TEMPERATURE (°F)	MINIMUM DRAFT PRESSURE REQUIRED (Pa)
< 10	-2.5
10 – 90	(Outside Temperature ÷ 40) – 2.75
> 90	-0.5

For SI: 6894.76 Pa = 1.0 psi.

TABLE R403.10(3) (N1103.10(3))
ACCEPTABLE DRAFT TEST CORRECTION

CARBON DIOXIDE LEVEL (ppm)	AND OR	SPILLAGE AND ACCEPTABLE DRAFT TEST RESULTS	RETROFIT ACTION
0 – 25	and	Passes	Proceed with work
25 < x ≤ 100	and	Passes	Recommend that CO problem be resolved
25 < x ≤ 100	and	Fails in worst case only	Recommend an appliance service call and repairs to resolve the problem
100 < x ≤ 400	or	Fails under natural conditions	**Stop!** Work shall not proceed until appliance is serviced and problem resolved
> 400	and	Passes	**Stop!** Work shall not proceed until appliance is serviced and problem resolved
> 400	and	Fails under any condition	**Emergency!** Shut off fuel to appliance and call for service immediately

Reason: Energy efficiency improvements often have a direct impact on the building pressure boundary affecting the safe operation of combustion equipment. Routinely sealing up buildings without looking at the combustion equipment risk sooner or later will result in harming someone with back-drafted flue gas conditions.

This proposal is intended to provide clear guidance to builders, code officials and home performance contractors for worst-case testing of atmospheric venting systems where air-sealing techniques and air-leakage performance testing requirements of the 2015 IECC are employed. Worst case testing is used by home performance contractors to identify problems that weaken draft and restrict combustion air. Worst case vent testing uses the home's exhaust fans, air handling appliances and chimneys to create worst case depressurization in the combustion appliance zone (CAZ).

Language that is proposed for R403.10 is basically a distilled version of predominant combustion safety test procedures for atmospherically vented appliances found in readily available home performance programs across the country, such as EPA's Healthy Indoor Environments Protocols, EPA's Home Performance with Energy Star, DOE's Workforce Guidelines for Home Energy Upgrades, HUD's Community Development Block Grants and Weatherization Assistance Programs, BPI's Technical Standards for the Building Analyst Professional, and RESNET's Interim Guidelines for Combustion Appliance Testing and Writing Work Scopes. The proposed language is intended to take the combustion safety test procedures that are used most commonly by these home performance, weatherization, and beyond code programs, and reduce them to their simplest and most straightforward form for the purpose of combustion safety in IECC compliance and field assessment through the use of building diagnostic tools.

For Illinois, our required 9-month review process of the 2012 IECC resulted in the Illinois Energy Code Advisory Council (ECAC) concluding that reductions in building envelope air-leakage from 7 ACH50 (2009 IECC) to 5 ACH50 was a more conservative approach to take for the construction industry in our state than the more "aggressive" 7 ACH50 (2009 IECC) to 3 ACH50, as is the case with the 2012 IECC for Climate Zones 4 and 5.

While part of ECAC's consideration was the decision to insert the 2012 IRC's whole-house ventilation provisions based on ASHRAE 62.2 directly into the Illinois Energy Conservation Code, this proposal recognizes that under certain conditions, perhaps even those of forthcoming 2015 IECC, reduced natural air-leakage coupled with the installation of atmospheric combustion appliances will reduce air exchange to the outside with the potential to contribute to poor indoor air quality and possible health problems due to spillage, inadequate draft, or carbon monoxide concerns.

We suspect other states and municipalities considering 2015 IECC adoptions will seek similar building diagnostic-based solutions to combustion safety.

Cost Impact: The code change proposal will increase the cost of construction.

RE193-13

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

R403.10 (NEW)-EC-MEYERS

Updated 3/22/2013

RE194-13: Add code change as follows:

RE194 –13

R403.2.3 (IRC N1103.2.3)

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

R403.2.3 (N1103.2.3) Building cavities (Mandatory). Uninsulated building cavities located within the building thermal envelope shall not be used as ducts or plenums.

Reason: There have been two reasons provided for not allowing framing cavities to be used as ducts or plenums: the first is that the framing cavities cannot be tested for tightness; the second is that the framing cavity may be located on an exterior wall that is uninsulated. From an energy perspective, the tightness of a return duct in a HVAC system does not increase the energy use of the building. Extremely tight residential buildings have been constructed for many years with framing cavities serving as return ducts. There have been no demonstrated increases in energy use because there is no increase in energy use.

The International Residential Code and International Mechanical Code have long permitted framing cavities to serve as the supply or return duct or plenum. I have personally designed homes using framing cavities for both supply and return ducts. Many of these residential structures have been subject to blower door tests, with the results being an air exchange of 0.07 air changes per hour. As such, a mechanical ventilation system was provided having a continuous supply and exhaust of 60 to 80 cfm.

The only time an energy concern can be identified is when the framing cavity is an exterior wall or joist space that is uninsulated. However, this design concept hasn't been used for years and should be prohibited. Hence, the change in this text is to prohibit exterior, uninsulated framing cavities from being used as ducts or plenums. This is the only area when an increase in energy use can be demonstrated for the residence.

It should be noted that return ducts are not required in residential buildings. If inexpensive framing cavity return ducts are not permitted, builders will resort to central returns with door undercuts. This will increase the energy use of the building since there cannot be a consistent temperature easily established for the residences. Hence, the prohibition of the use of framing cavities for ducts or plenums is actually increasing the energy use of a residence, not reducing its use.

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

RE194-13

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

R403.2.3-EC-BALLANCO.DOC

RE195-13: Add code change as follows:

RE195 – 13
Table R402.1.2 (IRC N1102.1.2)

Proponent: Matt Dobson, Representing Vinyl Siding Institute

Revise as follows:

R402.1.2 (N1102.1.2) R-value computation. Insulation material used in layers, such as framing cavity insulation, insulating sheathing and insulated siding shall be summed to compute the component R-value. The manufacturer's settled R-value shall be used for blown insulation. Computed R-values shall not include an R-value for other building materials or air films. For the purpose of complying with Table R402.1.1, the manufacturer's labeled R-value shall be reduced by R-0.6 for insulated siding.

Reason: This simple addition to the paragraph allows insulated siding to be used as part of the calculation. This is important, as prior to the advent of insulated siding, the prescriptive approach prohibits including the siding's R-value. This change will help to create more innovative ways to meet the energy code requirements and improve energy efficiency.

Because the R-value for siding is already credited as part of the prescriptive compliance method used with Table R402.1.1, that amount, R-0.6, must be deducted from the manufacturer labeled R-value of the insulated siding. This would mean that if the insulated siding's tested R-value (based on an ASTM C1363 test) were R-3.6, that only R-3.0 could be used to help comply through the prescriptive method of Table R402.1.1. Additionally, it should be understood that air films (both on the front and back of the insulated siding) are not taken into account during the R-value testing for insulated siding, so credits for those air films in the prescriptive section should remain in place.

For more information about insulated siding, go to www.insulatedsiding.info.

Cost Impact: The code change proposal will not increase the cost of construction and could potentially reduce costs by offering an additional option for compliance with the prescriptive path.

RE195-13

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

R402.1.2-EC-DOBSON

Updated 3/22/2013

IFC

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add Part I to F162-13
Add F162-13, Part II to the IFC Hearing Order following F162-13, Part I
Add F351-13 to the IFC Hearing Order following F51-13
Add F352-13 to the IFC Hearing Order following F60-13
Add F353-13 to the IFC Hearing Order following F73-13
Add F354-13 to the IFC Hearing Order following F243-13
Add F355-13 to the IFC Hearing Order following F292-13
Add F356-13 to the IFC Hearing Order following F297-13
Add F357-13 to the IFC Hearing Order following F304-13
Add F358-13 to the IFC Hearing Order following F310-13
Add F359-13 to the IFC Hearing Order following F161-113
Add F360-13 to the IFC Hearing Order following F183-13, Part I

TENTATIVE ORDER OF DISCUSSION

2013 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IFC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes. Note also that in this cycle, the hearing order places the code changes affecting hazardous materials first to give them proper attention.

F249: Withdrawn by proponent

WILDLAND-URBAN
WUIC1-13
WUIC2-13
WUIC3-13
WUIC4-13
WUIC5-13
WUIC6-13
WUIC7-13

ICC PERFORMANCE
PC1-13
PC4-13

FIRE CODE
F284-13
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G11-13
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ADM 32
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ADM 35
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2012 PROPOSED CHANGES TO THE INTERNATIONAL FIRE CODE

Updated 4/02/2013

F127-13: See highlighted changes to Section 903.2.5.2.2:

F127 – 13

903.2.5.2 (New) [IBC [F] 903.2.5.2] (New) 903.2.5.2.1 (New) [IBC [F] 903.2.5.2.1 (New)] 903.2.5.2.2 (New) [IBC [F] 903.2.5.2.2 (New)]

Proponent: Brad Emerick, Denver Fire Department representing the Fire Marshal's Association of Colorado (FMAC) and the Colorado Chapter of the ICC (CCICC) (brad.emerick@denvergov.org)

Add new text as follows:

903.2.5.2 (IBC [F] 903.2.5.2) Group H-3 Bulk storage of distilled spirits. Automatic Sprinkler system requirements for bulk storage of distilled spirits in wooden barrels and casks shall be in accordance with Sections 903.2.5.2.1 and 903.2.5.2.2.

903.2.5.2.1 (IBC [F] 903.2.5.2.1) Ceiling sprinklers. Distilled spirits stored in wooden barrels and casks in H-3 fire areas shall be protected with ceiling sprinklers in accordance with the requirements for relieving-style metal containers in-NFPA 30 for the following storage configurations

1. Double-row racks with a load depth of no more than 3 barrels per row on each rack and 10 feet or less in height, or
2. Single-row racks with no more than 4 barrels per row, and 10 feet or less in height

903.2.5.2.2 (IBC [F] 903.2.5.2.2) Engineered systems. An approved engineered automatic sprinkler system design or an automatic sprinkler system in accordance with other nationally-recognized standards or recommended practices acceptable to the *fire code official* is required for bulk storage of distilled spirits stored in wooden barrels and casks in Group H-3 fire areas for any of the following storage configurations.

1. Storage in multi-row racks with three or more rows of racks
2. The number of barrels or casks per row exceeds that specified in Section 903.2.5.2.1.
3. Storage height Greater than 10 feet.

(Renumber subsequent sections)

Reason: There is confusion about the applicability of flammable liquid (Chapter 57) and hazardous materials (Chapter 50) provisions to distilled spirits because of the exceptions for distilled spirits and wines stored in wooden barrels and casks in IFC Chapters 50 and 57 (and NFPA 30). The issue arises because of the growing popularity of "boutique" or "craft" distillers locating their operations in urban areas. The proposed language clarifies bulk storage provisions for distilled spirits but does not alter the intent. The proposed language does not affect provisions applicable to use, nor those applicable to liquor storage in retail or wholesale establishments.

First, note distilled spirits are Class 1C and Class 1B flammable liquids. They are primarily comprised of ethyl alcohol (ethanol) and water with concentrations ranging from approximately 19% to 99%. The boiling point of pure ethanol is approximately 178ºF so an ethanol mixture with water will boil between 178ºF and 212ºF. The closed cup flash point for a 19% concentration of ethanol in water is 100ºF and for a 58% concentration is 73ºF making the mixtures in this range Class 1C flammable liquids (these values are not adjusted for altitude). Ethanol concentrations in water between 58% and 99% are Class 1B flammable liquids.

Second, the Building Code establishes occupancy. If a quantity of a Class 1B or Class 1C flammable liquid exceeding the maximum allowable quantity (MAQ), the room in which it is located is an H3 Occupancy. Please remember this applies to bulk storage (casks, barrels, metal containers, etc. exceeding 1.3 gallon capacities) and not liquor stores and wholesale distributors for which there are several exceptions.

Third, H occupancies have to be sprinklered. The sprinklering requirements for flammable and combustible liquids are outside the scope of NFPA 13. NFPA 13 points to NFPA 30 (Flammable and Combustible Liquids Code) for detailed requirements. Ethanol stored in any container larger than those excepted for retail – other than wood – is addressed there.

This is not because wood is inherently safer than metal, plastic or glass – it is not. It was probably inserted in the legacy code(s) back when casks were stored in liquid storage warehouses separated by hundreds of feet from one another and urban distilleries weren't contemplated. It was probably held over today because there is not yet an established sprinkler criteria for the storage of Class 1C flammable liquids in wooden barrels and casks. THIS HOWEVER DOES NOT MEAN THESE ROOMS SHOULD BE EXEMPT FROM SPRINKLERING REQUIREMENTS!

Fourth, there is no established sprinkler criteria for flammable and combustible liquids stored in wood casks. The modification proposed to Section 903.2.5.2 provides a baseline sprinkler criteria for distilled spirit storage quantities over the Class 1C flammable liquid MAQ, up to 10 feet in height, 2 racks (flu space) with 3 barrels per row in each rack, or single rack with 4 barrels per row. An engineered sprinkler design is required for quantities over the MAQ stored in a manner that exceeds any of these parameters. The language allows the fire code official the latitude to accept published recommended industry practices in lieu of an engineered design or test.

Relieving-style containers are identified because the wooden barrels and casks will release their contents when exposed to fire as the metal bands expand and the staves separate. Metal is identified because plastic and glass are much more vulnerable than wood. Ten foot height is identified as this envelopes the maximum storage heights of wooden barrels and casks typically seen in craft distilleries and is well below the 25 foot storage height permitted in NFPA 30 for relieving-style metal containers.

Last, please note that except for establishing a baseline sprinkler design criteria, the applicable code requirements have not been changed.

Cost Impact: This change will not affect the cost of construction.

F127-13

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

903.2.5.2-F-EMERICK

Updated 3/22/2013

F162-13: Replace code change with the following:

F162 – 13

IFC 907.2.11 (IBC [F] 907.2.11), 907.10 (New) (IBC [F] 907.10 (New)); IPMC [F] 704.5

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

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

PART I – INTERNATIONAL FIRE CODE

Revise as follows:

907.2.11 Single- and multiple-station smoke alarms. *Listed* single- and multiple-station smoke alarms complying with UL 217 shall be installed in accordance with Sections 907.2.11.1 through 907.2.11.4 and NFPA 72. Single- and multiple-station smoke alarms shall be maintained in accordance with Section 907.10.

907.10 Single- and multiple-station smoke alarms. Single- and multiple-station smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced. Smoke alarms installed in one- and two-family dwellings shall be replaced not more than 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.

PART II – INTERNATIONAL PROPERTY MAINTENANCE CODE

Add new text as follows:

IPMC [F] 704.5 Maintenance. Smoke alarms shall be tested and maintained in accordance with the manufacturer's instructions. Smoke alarms that no longer function shall be replaced. Smoke alarms installed in Group R or I-1 occupancies shall be replaced not more than 10 years from the date of manufacture marked on the unit, or if the date of manufacture cannot be determined.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal supplements the requirements in Section 901.4 for testing and maintaining smoke alarms, and specifies when the devices need to be replaced. The proposed requirements are consistent with NFPA 72 provisions. In particular NFPA 72 requires smoke alarms installed in one- and two-family dwellings to not remain in service longer than 10 years from the date of manufacture, and UL 217 requires the date of manufacture to be marked on the smoke alarms.

It is recognized that it may not always be practical for the code official to enforce the requirements for testing, maintenance and replacement of smoke alarms in residential dwelling units. However realtors and landlords often have checklists that verify that these dwellings comply with codes and other requirements, and they may be in a position to verify compliance with the proposed provisions when the units are sold or leased.

UL 217 has required the month and date of manufacture be marked on smoke alarms for more than 10 years.

Cost Impact: This code change will not increase the cost of construction

F162-13

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

907.2.11-F-ZUBIA-FCAC~REVISED

Updated 3/22/2013

F302-13: See highlighted addition to the code change proposal.

F302-13
5301.1, Chapter 80

Proponent: Robert Boyd, Boyd Hydrogen, LLC, representing self (Bob@BoydH2.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the *International Fuel Gas Code*.
3. Compressed hydrogen (CH2) for use as a vehicular fuel shall comply with Chapter 23, NFPA 2 and the *International Fuel Gas Code*.

(Portions of section not shown remain unchanged.)

Add new standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code 5301.1

Reason: The fueling, use, and operation of hydrogen powered fuel cell vehicles is functionally equivalent to the fueling, use, and operation of CNG powered vehicles.

The California Fuel Cell Partnership's 2012 update on FCV deployment plans provides details on the expectation and goal of government agencies including the Department of Energy, California EPA, California Energy Commission and South Coast Air Quality Management District to have an established fleet of at least 50,000 hydrogen powered fuel cell hybrid electric vehicles deployed from 7 automakers* and operating in California sometime between 2015 and 2018.

A link to "A California Road Map: The Commercialization of Hydrogen Fuel Cell Vehicles"
Is shown below:

http://cafcp.org/sites/files/A%20California%20Road%20Map%20June%202012%20(CaFCP%20technical%20version)_1.pdf

Without this proposed change and additional exception to 5301.1, local AHJ's might be confused and believe that hydrogen powered vehicles should comply with chapter 53

*7 automakers with stated plans to deploy hydrogen powered fuel cell electric vehicles: GM, Honda, Toyota, Nissan, Kai, Hyundai, VW/Audi/Porsche.

Cost Impact: None **Analysis:** A review of the standard proposed for inclusion in the code, NFPA 2-11, 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, 2013.

F302-13

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

5301.1-F-BOYD

Updated 3/22/2013

F303-13: See highlighted addition to the code change proposal.

F303 – 13

5301.1, 5305.7, Chapter 80

Proponent: Robert J Davidson, Davidson Code Concepts, LLC, representing the National Renewable Energy Laboratory (NREL) (rjd@davidsoncodeconcepts.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of compressed gases in compressed gas containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full compressed gas containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the International Fuel Gas Code.
3. Compressed hydrogen (CH_2) for use as a vehicular fuel shall comply with Chapters 23 and 58 of this code, the *International Fuel Gas Code* and NFPA 2.

(Portions of section not shown remain unchanged.)

5305.7 Transfer. Transfer of gases between containers, cylinders and tanks shall be performed by qualified personnel using equipment and operating procedures in accordance with CGA P-1.

Exception: The f ~~F~~ueling of vehicles with compressed natural gas (CNG) or compressed hydrogen gas, that is being conducted in accordance with Chapter 23.

Add new referenced standard to Chapter 80 as follows:

NFPA

2-11 Hydrogen Technologies Code

Reason: These two items are a proposed as a correlation cleanup. In retrospect this cleanup should have been added back in 2003 editions when hydrogen motor fueling was added to Chapter 23.

The added Section 5301.1, Exception 3 mirrors the language for CNG found at Exception 2 with a point to Chapter 23, Chapter 58 and an additional pointer to NFPA 2 to coordinate this proposal with previous proposals in this grouping submitted on behalf of NREL.

With the modification of the exception at Section 5305.7, in addition to adding fueling of vehicles with compressed hydrogen gas, the proposal makes it clear that the exception is due to compliance with Chapter 23 provisions, it is not a unrestricted exception.

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

Analysis: A review of the standard proposed for inclusion in the code, NFPA 2-11, 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, 2013.

F303-13

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

5301.1-F-DAVIDSON

Updated 3/22/2013

F351-13: Add code change as follows:

F351 – 13

511 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Add new text as follows:

SECTION 511
CONTROLLED ACCESS GATES

511.1 General. The installation of controlled access gates across a fire apparatus access road shall be approved by the Fire Code Official and meet the requirements of Sections 511.1.1 through 511.5.3.

511.1.1 Permits. Permits shall be required to install or modify controlled access gates.

511.1.3 Egress. Fire apparatus access gates shall be designed and installed such that they do not obstruct the egress or departure of emergency vehicles.

511.1.3.1 Pedestrian gates. Installed as part of the means of egress shall comply with the *International Building code* and Chapter 10 of this code.

511.1.4 Maintenance. All fire apparatus access gates shall be maintained operable at all times and shall be inspected at least annually. Copies of the annual inspection report shall be maintained and be accessible for fire department review.

511.1.5 Inoperable gates. Controlled access gates that are inoperable and impede the entrance of fire apparatus shall be chained open or removed at the owner's expense.

511.1.6 Illegal gates. Controlled access gates that cross fire apparatus access roads that have been installed without a permit shall be chained open or removed at the owner's or installing contractor's expense until a permit and final approval has been obtained from the fire department.

511.2 Fire apparatus access gates.

511.2.1 General. Access openings are required to be automatic where no turnaround is provided for fire apparatus .

511.2.2 Main entrance identification. Access openings shall have signs that identify the location of the property's primary entrance, and signs shall be bolted on the street side of the fire apparatus access gate.

511.2.3 Marking and signage. Manual and automatic access openings are required to be marked in accordance with Section 511.3.5. Signage shall be provided in accordance with Section 511.5.2.

511.3 Controlled access gate specifications. When controlled access gates are installed across a fire apparatus access road the specifications in Section 511.2 shall apply.
511.3.1 Opening width. When the gate is fully opened, a minimum 20-foot (6096 mm) clear width shall be provided for both the entrance and exit gates. The Fire Code Official shall require additional width opening.

511.3.2 Electrically operated gates. Electrically operated gates shall be installed in accordance with this section.

511.3.2.1 Standby power systems. Electrically operated gates shall be provided with a standby power system. Standby power is permitted to be, but not limited to, battery back-up or connection to an emergency generator. The activation of the system shall open gates and maintain them in the open position until primary power is restored to the system. Standby power systems are required to comply with the *National Electrical Code* Article 701.

> **Exception:** Controlled access gates installed at occupancies other than multifamily residential properties may remain closed until the emergency gate switch is activated, and shall then remain open while the standby power system is operating the gate.

511.3.3 Opening time. Electrically operated controlled access gates shall open at a minimum rate of 1 foot per second (0.305 m/s).

511.3.4 Key switch. Each electrically operated controlled access gate shall be equipped with an approved key switch on both sides of the gate. When separate entry and exit gates are provided, the emergency key switch shall open the entrance and exit gates.

511.3.5 Key switch identification. An approved sign reading "F.D. ACCESS" shall be installed within 12 inches (305 mm) of the emergency key switch. The key switch shall be illuminated so as to be visible from fire apparatus.

511.3.6 Height. The key switch shall be mounted between 51/2 feet and 6 feet (1676 mm to 1829 mm) above grade.

511.3.7 Obstruction and impairment. Posts, fences, vehicles, growth, trash, storage and other materials shall not be kept near key switches in a manner that would prevent the key switches from being visible.

511.3.8 Bypass of systems. When activated, the emergency key switch shall bypass all occupant and loop switch systems.

511.4 Preemption devices. Preemption devices are required on all new automatic fire access gates installed at residential properties. Gates installed without permits or proof of installation date, require preemption devices. Voluntary installations of preemption devices shall comply with the requirements of Section 511.4.2.

511.4.1 Locations. The devices shall be installed such that the gate will open for both ingress and egress of emergency vehicles.

511.4.2 Minimum installation standards. The installation of preemption devices shall comply with the following:

1. Detectors shall be mounted 8 feet to 10 feet (2439mm to 3048 mm) above grade.
2. Detectors shall be located a minimum of 18 inches (457 mm) behind the gate on the property side.
3. Detectors shall be mounted on a separate 4 inch by 4 inch (102 mm to 102 mm) metal post and not on the guidepost. The metal post shall be cemented a minimum of 18 inches (457 mm) below grade.
4. Detectors shall activate at a minimum of 150 feet (45 720 mm) from the gate.
5. Detectors shall point toward both the approach and the exit path of the emergency vehicle.
6. The sight path of the detector shall be free of visual obstructions such as signs, covered parking, canopies and vegetation.
7. Individual detectors shall be mounted together with the power module in the dual detector-mounting box. Detectors shall be approved by the fire department. A list of approved devices will be maintained by the fire department and available to the public.

511.5 Manual controlled access gates. Manual controlled access gates that cross fire apparatus access roads or other roads that, when determined by the Fire Code Official, provide access to areas where immediate access is necessary for life-saving or fire-fighting purposes shall comply with Section 511.3

511.5.1 Locking mechanism. All manual controlled access gates that cross a fire apparatus access road shall use an approved dual padlock mechanism.

511.5.2 Signs. Approved signs shall be provided on the manual gates. The signs shall have a reflective background and shall be bolted back-to-back onto each side of the gate.

511.5.3 Marking. Minimum 6-inch wide red, crosshatched striping shall be painted on the ground surface on both sides of the manual access gate, including recessed areas as determined by the fire department. A minimum of two applications of paint is required.

Reason: This new section provide code requirement for controlled access gate that go across fire lanes

Cost Impact: The code change proposal will increase the cost of construction.

F351-13

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

511.1 (NEW)-F-MCELVANEY

Updated 3/22/2013

F352-13: Add code change as follows:

F352 – 13
605.11

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

605.11 Solar photovoltaic power systems. Solar photovoltaic power systems shall be installed in accordance with Sections 605.11.1 through 605.11.4, the *International Building Code* *or International Residential code,* and NFPA 70.

Reason: the 2012 IRC section M2302 refers to solar panel and have requirements that relate to this section.

Cost Impact: The code change proposal will increase the cost of construction.

F352-13

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

605.11-F-MCELVANEY

Updated 3/22/2013

F353-13: Add code change as follows:

F353 – 13
605.11.3.2, 605.11.3.2.5 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

605.11.3.2 Residential systems for one- and two family dwellings. Access to residential systems for one- and two-family dwellings shall be provided in accordance with Sections 605.11.3.2.1 through 605.11.3.2.~~4~~. 5

605.11.3.2.5 Residential buildings with flat roof. Panels/modules installed on residential buildings with a flat roof shall be located in a manner that provides, 3-foot-wide (914 mm) access pathways around the perimeter where panels/modules are located.

Reason: This new section provides Fire Department access on flat roof with solar panel.

Cost Impact: The code change proposal will increase the cost of construction.

F353-13

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

605.11.3.2.5 (NEW)-F-MCELVANEY

F354-13: Add code change as follows:

F354 – 13
1701 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Add new text as follows:

CHAPTER 17
SPECIAL EVENTS

SECTION 1701
GENERAL

1701.1 Scope. Special events including trade shows and exhibitions, outdoor assembly events, outdoors mazes, special amusement buildings, and special scaffolding structures shall comply with this chapter and Section 1028. Temporary indoor vehicle displays and vehicle competition or demonstrations shall comply with this chapter and Section 314.

1701.2 Permits. Permits shall be required as set forth in Sections 105.6 and 105.7.

1701.3 Site plans. A detailed site plan shall be submitted to the fire code official with each permit application for approval.

1. **Outdoor events:** The permit application and site plan shall be submitted a minimum of 30

    1. Business days prior to the event. Site plans shall include, but not be limited to:
    2. Means of egress,
    3. Location and width of exits and aisles,
    4. Location of exit signs,
    5. Location of fencing or means used to confine attendees,
    6. Total square footage of enclosed space,
    7. Location and arrangement of all tents, booths or cooking equipment,
    8. Locations of fire apparatus access roads,
    9. Location of fire protection equipment,
    10. Type and location of heating and electrical equipment where applicable,
    11. Location of temporary staffed water stations and permanent water fountains.

2. **Trade shows and exhibitions:** The permit application and site plan shall be submitted a minimum of 30 business days prior to the event. Site plans shall include, but not be limited to:

    1. The means of egress,
    2. Location and width of exits and aisles,
    3. Location of exit signs,
    4. Total square footage of space,
    5. Location and arrangement of all booths and cooking equipment,
    6. Location of all fire protection equipment,
    7. Type and location of heating and electrical equipment where applicable, and
    8. Location of covered or multi-level exhibits or booths.

3. **Mazes.** The permit application and site plan shall be submitted a minimum of 30 business days prior to the event. Site plans shall include, but not be limited to:

1. Means of egress,
2. Location and width of exits and aisles,
3. Location of exit signs,
4. Total square footage of space,
5. Location and arrangement of all booths and cooking equipment,
6. Location of all fire protection equipment,
7. Location of means to confine attendees,
8. Locations of fire apparatus access roads,
9. Type and location of heating and electrical equipment where applicable, and
10. Location of structures.

At the time of permit application, the event coordinator shall submit to the fire code official, a letter from the property owner authorizing the use of the site, the address of the site, dates and hours of operation and names and 24-hour phone numbers of at least two principals.

4. **Temporary indoor vehicle displays:** The permit application and site plan shall be submitted a minimum of 10 business days prior to the display of electric, liquid- or gas-fueled vehicles, boats or other motor craft. Floor plans shall include, but not be limited to:

   1. The means of egress,
   2. Location and width of exits and aisles,
   3. Location of exit signs,
   4. Total square footage of space,
   5. Location and arrangement of all booths and cooking equipment,
   6. Location of all fire protection equipment,
   7. Type and location of heating and electrical equipment where applicable and
   8. Location and size of exhibits and booths, and
   9. Location of structures.

   Exception: Auto dealerships.

5. **Vehicle competition or demonstration.** The permit application and site plan shall be submitted a minimum of 10 business days prior to the competition or demonstration of electric, liquid- or gas-fueled vehicles, boats or other motor craft. A floor plan shall include, but not be limited to:

   1. The means of egress,
   2. Location and width of exits and aisles,
   3. Location of exit signs,
   4. Total square footage of space,
   5. Location and arrangement of all booths and cooking equipment,
   6. Location of all fire protection equipment,
   7. Type and location of heating and electrical equipment where applicable and
   8. Location and size of exhibits and booths, and
   9. Location of structures, and
   10. Fire apparatus access roads where applicable.

SECTION 1702
DEFINITIONS

1702.1 Definitions. The following words and terms are defined in Chapter 2.

ALLOWABLE USE AREA.
CROSS AISLES.
EXHIBITS.
FIXTURES.
FLAME EFFECT.

MAIN AISLE.
MAZE.
OUTDOOR ASSEMBLY EVENT.
SPECIAL EVENT.
TEMPORARY STRUCTURES.
TRADE SHOWS OR EXHIBITIONS.

1703
GENERAL REQUIREMENTS

1703.1 Access for firefighting and medical services. Approved vehicle access for fire fighting and medical services shall be provided in accordance with Chapter 5.

1703.2 Combustible storage. Combustible materials stored at special events shall be stored in approved locations and containers.

1703.3 Crowd managers. Crowd managers shall be provided where the fire code official determines that an indoor or outdoor gathering warrants crowd control. Crowd managers shall be in accordance with Section 403.3.

1703.4 Decorative materials and furnishings. Curtains, drapes and decorations including, but is not limited to drapes, signs, banners, acoustical materials, cotton, hay, fabric, paper, straw, moss, split bamboo, and wood chips shall be flame resistant as demonstrated by testing in accordance with NFPA 701, or provide documentation of flame retardancy. Field flame test shall be in accordance with Section 317. Materials that cannot be treated for flame retardancy shall not be used unless approved by the fire code official. This includes but is not limited to oilcloth, tarpaper, nylon, plastic cloth, and other plastic materials.

1703.5 Fire protection equipment clearance. Clearance around all fire protection equipment shall be in accordance with Section 901.10.

1703.6 Fire extinguishers. Fire extinguishers shall be in accordance with Section 906 and NFPA 10

1703.7 Fire watch. Fire watch shall be in accordance with Sections 115 and 403.1.

1703.8 Fireworks, pyrotechnics. Fireworks and pyrotechnics shall comply with Chapter 56.

1703.9 Lasers. Lasers shall comply with State of Arizona regulations.

1703.10 Housekeeping. The special event area and related areas shall be kept free from combustible debris at all times

1703.11 LP-gas heaters. Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with Chapter 61 and the International Fuel Gas Code.

1703.12 Open flame devices. Open flame devices shall comply with Section 308.

1703.13 Waste disposal. Combustible debris shall not be accumulated at special events. Combustible debris, rubbish and waste material shall be removed from special events at the end of each shift of work. Combustible debris, rubbish and waste material shall not be disposed of by burning on the site unless approved.

SECTION 1704
TRADE SHOWS AND EXHIBITIONS

1704.1 General. Trade shows and exhibitions conducted within any occupancy shall comply with Chapter 17 and Section 314.

1704.2 Vehicles. Liquid- and gas-fueled and electric vehicles, boats or other motor-craft **and equipment** used for display, competition or demonstration within a building shall be in accordance with Section 314.

1704.3 Means of egress. Means of egress shall comply with this section and the requirements of Chapter 10.

1704.3.1 Travel distance. The maximum travel distance from any point in an exhibit to an exit access shall not exceed 50 feet (15240mm).

1704.3.2 Aisles. Aisles shall comply with Sections 1704.3.2.1 and 1704.3.2.2.

1704.3.2.1 Aisle width. Minimum aisle width in a trade show or exhibition shall comply with the following:

Square Footage of Trade Show or Exhibition	**Minimum Aisle Width**
Greater than 15,000 square feet (1393m^2)	10 feet (4572mm)
5,000 square feet (465 square meters) to 15,000 square feet (1393m^2)	8 feet (2438mm)
Less than 5,000 square feet (465 m^2)	6 feet (1829mm)

1704.3.2.2 Obstructions. Aisles shall be kept clear of all obstructions, including but not limited to, fixtures and displays of goods for sale, chairs, tables, product, displays, vehicles, and trailer tongues.

1704.3.4 Exit signs. Exit signs shall be visible from all locations in the occupancy.

1704.4 Exhibit construction and materials. The materials used for an exhibit shall comply with Section 1704.6 and Chapter 8

1704.4.1 Materials. Exhibit materials shall be one of the following:

1. Noncombustible or limited-combustible materials.
2. Wood that is greater than ¼-inch (6mm) nominal thickness
3. Wood ¼-inch (6mm) nominal thickness or less that is pressure-treated fire-retardant wood meeting the requirements of NFPA 703, Standard for Fire Retardant Impregnated Wood and Fire Retardant Coatings for Building Materials. The product shall be marked or labeled by the manufacturer. The product shall not be painted or similarly modified until the material has been inspected and the marking or labeling verified, or provide documentation acceptable to the fire code official.

1704.4.1.1 Flame retardant materials. Materials shall comply with Chapter 8.

1704.4.1.2 Wall and ceiling coverings. Textile wall coverings, such as carpeting and similar products used as wall or ceiling finishes shall comply with Chapter 8 and NFPA 101 Chapter 10.

1704.4.1.3 Plastics. Plastics shall be limited to those that comply with Chapter 8. Plastics used in trade shows and exhibitions with an occupant load of 300 or more shall be Class A or Class B. Plastics used in trade shows and exhibitions with an occupant load of less than 300, shall be Class A, Class B or Class C.

1704.5 Combustible materials storage. Combustible materials storage shall comply with Sections 1704.5.1 and 1704.5.2.

1704.5.1 Quantity. Combustible materials shall be limited to a one-day supply

1704.5.2 Location. Storage of combustible materials behind exhibits, booths, or tents is prohibited. Combustible materials, including but not limited to wood crates, paper and cardboard boxes, shall be

stored outside the building in an approved area or in a storeroom having a fire-resistance rating of at least one hour and protected by an approved automatic fire-extinguishing system

1704.6 Covered exhibit and booth fire protection. Fire protection for covered exhibits and booths shall comply with Sections 1704.6.1 and 1704.6.2.

1704.6.1 Automatic sprinkler systems. An approved automatic sprinkler system shall be provided in covered exhibits and booths exceeding 300 square feet. Each level of multi-level exhibit booths shall be protected throughout, including the uppermost level where the uppermost level is covered with a ceiling.

1704.6.2 Smoke detectors. Single-station smoke detectors shall be provided in all enclosed, covered exhibits and vehicles exceeding 120 square feet (111,484 cm^2).

1704.7 Multi-level booths. Construction documents for all multi-level exhibits shall be approved and stamped by a licensed structural engineer or architect and shall be submitted with the permit application. This includes any exhibit where a live load is proposed above the exhibit area floor level, regardless of the accessibility of the area to the public. Upper levels of multi-level booths with an occupant load greater than 10 persons shall have at least 2 remote exits.

1704.8 Hazardous Materials. Hazardous materials shall comply with Section 1704.10 and Chapters 51 through 67.

1704.8.1 Specific prohibitions. The following hazardous materials shall not be stored, handled or used in trade shows and exhibitions:

1. Division 1.1, 1.2, 1.3, and 1.5 explosives as classified by the U.S. Department of Transportation.
2. Detonable, Class I and Class II organic peroxides.
3. Class I-A flammable liquids.
4. Class 4 and Class 3 oxidizers.
5. Class 4 and Class 3 (unstable) reactive materials.
6. Class 3 water-reactive materials.
7. Pyrophoric materials.
8. Highly toxic materials
9. Toxic gases.
10. Fueling or defueling of flammable or combustible that are stored or used as liquids, cryogenics or compressed gases.

1704.9 Demonstration cooking and warming equipment or devices. Cooking and warming devices for demonstration purposes only shall be in accordance with Sections 1704.9.1 through 1704.9.4.1.

1704.9.1 Public Isolation. Equipment and devices shall be isolated from the public by not less than 4 feet (1219mm) or by a noncombustible 3-sided barrier between the equipment and devices and the public.

1704.9.2 Protection. Single-well cooking equipment using combustible oils or solids shall meet the following:

1. A noncombustible lid shall be immediately available. The lid shall be of sufficient size to cover the cooking well completely.
2. The cooking surface shall not exceed 288 square inches (18,580mm).
3. The equipment shall be placed on a noncombustible surface.
4. The equipment shall be separated from each other by a horizontal distance of not less than 2 feet (609mm).

1704.9.3 Cooking equipment shall be separated from combustible materials by a horizontal distance of at least 2 feet (609mm).

1704.9.4 Butane. Butane for cooking equipment shall be limited to one 10 oz cylinder and one spare in storage, of the same size, per appliance. Storage location shall be approved by the fire code official.

1704.9.4.1 Portable butane-fueled appliances. Portable butane-fueled appliances are allowed in restaurants and in attended commercial food catering operations where fueled by not more than two 10 oz (0.3 L) LP-Gas capacity, nonrefillable butane containers that have a water capacity not exceeding 1.08 lb (0.5 kg) per container. The containers shall be directly connected to the appliance, and manifolding of containers is not permitted. Storage of cylinders is limited to 24 containers, with an additional 24 permitted where protected by a 2-hour fire resistance–rated barrier.

SECTION 1705
OUTDOOR ASSEMBLY EVENTS

1705.1 General. Outdoor assembly events shall be in accordance with Section 1705.2 through 1705.4.6 and Chapter 10.

1705.2 Occupant load. The fire code official shall establish an occupant load for the event site.

1705.3 Exits. Exits shall comply with Chapter 10 and be as remote from each other as practical shall and be provided as follows:

Occupant Load	Minimum Number of Exits
1 to 500	2
501 to 1,000	3
1,001 or 1,500	4
each additional 500 persons	36 additional inches of exit width

1705.3.1 Width. The aggregate clear width of exits shall be a minimum of 36 inches wide (914mm) for each 500 persons to be accommodated.

1705.3.2 Signs. Exits shall be identified with signs that read “EXIT”. The signs shall be weather-resistant with lettering on a contrasting background. The lettering shall be of sufficient height and brush stroke to be immediately visible from 75 feet (22,860mm). Placement of the exit signs shall be approved by the fire code official.

1705.4 Concession stands, food booths, and retail booths. Concession stands/food booths and retail booths shall be in accordance with Sections 1705.4.1 through.

1705.4.1 Distances. A minimum of 20 feet (6096mm) shall be provided between every 150 linear feet (45,720mm) of booth space. A minimum of 30 feet (9144mm) shall be provided between booths used for cooking and the vehicles, generators, or any other internal combustion engine. A minimum of 10 feet (3048 mm) shall be provided between booths used for cooking and amusement rides or devices.

Exception: Hotdog carts that are licensed by the City for use in right-of-ways.

1705.4.2 Cooking appliances or devices isolation. Cooking appliances or devices shall be isolated from the public by not less than 4 feet (1219 mm) or by a non-combustible 3-sided barrier between the equipment and devices and the public.

1705.4.3 Cooking equipment protection. Single-well cooking equipment using combustible oils or solids shall comply with the following:

1. A noncombustible lid shall be immediately available. The lid shall be of sufficient size to cover the cooking well completely.
2. The cooking surface shall not exceed 288 square inches (18,580mm).

3. The equipment shall be placed on a noncombustible surface.
4. The equipment shall be separated from each other by a horizontal distance of not less than 2 feet (609mm).

1705.4.4 Liquefied petroleum gas (LP-gas). LP-gas shall be in accordance with Chapter 38 and NFPA 58.

1705.4.4.1 Maximum number and quantity. A maximum of a total aggregate water capacity of 50 gallons (95L) of LP-gas is permitted at one concession stand or booth used for cooking.

1705.4.4.2 LP-gas high-pressure cylinder hoses. Hoses shall be designed for a working pressure of 350 PSIG with a safety factor of 5 to 1 and shall be continuously marked with LP-GAS, PROPANE, 350 PSI WORKING PRESSURE, and the manufacturer's name or trademark. Hose assemblies, after the application of couplings, shall have a design capability of 700 PSIG. Hose shall not exceed 12 feet (3638 mm) unless approved by the fire code official.

1705.4.4.3 LP-gas low-pressure cylinder hoses. Hoses with a working pressure of 5 psig shall be allowed when a fix regulator is set a 5 psi and is connected directly to the LP GAS cylinder. The hose shall not exceed 12 feet (3638 mm) unless approved by the fire code official.

1705.4.4.4 Storage of containers. Containers shall be stored in accordance with Chapter 38.

1705.4.5 Generators / electrical. A permit from the Planning and Development Department shall be obtained where required. The generators shall be installed at least 10 feet (3048mm) from combustible materials, and shall be isolated from the public by physical guard, fence, or enclosure installed at least 3 feet (914mm) away from the internal combustion power source, and be provided with compliant portable fire extinguisher per Section 906 and NFPA 10.

1705.4.6 Temporary water stations. Where outdoor temperatures are expected to exceed 90°F (35°C), the event sponsor shall provide and maintain a minimum of one staffed water station for each 1,000-projected attendance. The water station shall include adequate water supply, cups, and a means for rapid replenishing of exhausted water. Each water station shall be located as far apart as practicable to allow ease of access for event attendees.

SECTION 1706
SPECIAL AMUSEMENT BUILDINGS

1706.1 General. [B] Special amusement buildings shall be in accordance with Sections 1706.2 through 1706.4.1 and Section 411 of the International Building Code.

Exception: Amusement buildings or portions thereof, which are without walls or a roof and are constructed to prevent the accumulation of smoke.

1706.2 Use of combustible decorative materials. Use of combustible decorative materials shall be in accordance with Chapter 8.

1706.3 Assistance. Adult monitors with flashlights shall be available to provide assistance in the event someone becomes lost or disoriented. One adult monitor shall be provided for every 60 person.

1706.4 Automatic sprinkler system. Special amusement buildings shall be equipped throughout with an automatic sprinkler system in accordance with Chapter 9.

1706.4.1 Temporary special amusement buildings. Where the special amusement building is temporary, the sprinkler water supply shall be of an approved temporary means. The sprinkler piping shall be connected to a temporary water supply having sufficient capacity (flow and pressure) to supply residential or standard quick spray response sprinkler heads at a minimum design density of 0.15 gpm

per square foot of protected floor area. The design shall be based on flowing the six most hydraulically remote sprinkler heads. Should the temporary amusement building contain less than six heads, the design shall assume that all heads are flowing simultaneously.

The temporary water supply may be connected to a domestic water line, a fire line, or temporary on-site storage tank as long as the minimum design densities are met. An indicating type control valve shall be installed in an accessible location between the sprinkler system and the connection to the water supply.

When the temporary sprinkler system is installed from a domestic water line, back flow prevention shall be provided in accordance with the requirements of the Arizona State Plumbing Code.

SECTION 1707
MAZES

1707.1 General. Mazes including, but not limited to corn stalk or hedge mazes, shall be in accordance with Section 1707.

1707.1.2 Safe refuge areas. Safe refuge areas shall be established outside of the maze or building and structure, and not closer than 50 feet (15240mm).

1707.1.3 Paths. Paths throughout the maze shall be a minimum of 36 inches (914mm) clear and unobstructed width.

1707.1.4 Separation. A minimum of 20 feet (6096mm) shall be provided between mazes and buildings and structures. The 20-foot (6096mm) clearance shall be free from vegetation and obstructions.

1707.1.5 Means of egress. Each exit shall be a minimum of 6 feet (1828mm) wide.
1707.1.5.1 Travel distance. The maximum travel distance to reach an exit access shall not exceed 75 feet (22,860mm). The travel distance shall be determined by using the maze path.

1707.1.5.2 Number. The travel distance required to reach an exit access shall determine the number of exits required. Locking devices shall not be allowed on exits when the maze is occupied.

1707.1.5.3 Exit signs. Exit signs shall be provided next to or above each exit. The lettering shall be a minimum of 12 inches (305mm) high with 2-inch (51mm) brushstroke. The signs shall read EXIT with lettering in a color contrasting to the sign's background.

1707.2 Event plans. The following plans shall be submitted to the fire code official.

1707.2.1 General fire safety plan. The plan shall include, but not be limited to procedures that shall be used to prevent over-drying of vegetation throughout the site, documentation of decorative materials flame-retardancy, the maximum number of attendees.

1707.2.2 Security plan. The plan shall document who shall provide security (e.g., off-duty Police Officers, Sheriff's posse, employees). Each security personnel shall be provided with a 2-way radio and flashlight.

1707.2.3 Evacuation plans. The plan shall document the responsibilities of all on-site employees. The plan shall also document how attendees will be evacuated, and where they will be evacuated.

1707.2.4 Maze rules. Maze rules shall be posted at maze entrance.

1707.3 Employee responsibilities. Each employee shall be familiar with the evacuation plan and with fire extinguisher locations. Documentation of training shall be provided to the fire code official.

1707.3.1 Guides. An employee shall be responsible for guiding a group of not more than 14 attendees through the maze. Each employee shall be provided with a minimum of one flashlight and two-way radio. The employees shall be responsible for detecting and reporting fire or smoke to a competent person posted at the maze main entrance and begin evacuation procedures.

1707.3.2 Main entrance employee. Each maze shall be manned by an employee at the entrance. The employee shall be capable of communicating with the employees and shall be provided with a cellular telephone. When the main entrance employee receives a report of smoke, fire or injury, the employee shall immediately call 9-1-1.

1707.4 Watering. Corn stalk and hedge mazes shall be provided with sufficient water and at a frequency that prevents the vegetation from becoming dry or brittle. Failure to comply with this provision is an imminent hazard and the fire code official shall issue a stop order.

1707.5 Buildings and structures. When buildings and structures are intended to be occupied by attendees, the building and structure shall comply with Section 1706.

SECTION 1708
COVERED MALL BUILDINGS

1708.1 General. Temporary use of the common pedestrian area within a covered mall building for promotional, Group E, Group A, Group M or similar activities shall be in accordance with Section 1708.

1708.2 Main aisle width. Main aisles shall be a minimum of 10 feet (3048mm) in width or the minimum required means of egress width, whichever is greater, and shall be maintained in accordance with Chapter 10. Main aisles shall not be obstructed.

1708.2.1 Cross aisle width. Cross aisles shall be a minimum of 15 feet (4572mm) in width or the required means of egress width, whichever is greater, and shall be maintained in accordance with Chapter 10.

1708.2.2 Fueled equipment. Liquid- or gas-fueled, or electric appliances, tools, apparatus, craft or vehicles shall be displayed in a mall in accordance with Section 314. LP-gas powered floor maintenance machines may be used when in accordance with Chapter 38.

1708.3 Combustible decorative materials. Combustible decorative materials shall be in accordance with Chapter 8.

1708.4 Fixtures. Fixtures shall not be located in main aisles or cross aisles.

Reason: This new chapter provide rules and regulation for special event that occur indoor and outdoors in location that may not be designed to hold this type of event.

Cost Impact: The code change proposal will increase the cost of construction.

Analysis: The 11 proposed defined terms for Chapter 2 listed in in Section 1702.1 were not provided.

F354-13

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

1701 (NEW)-F-MCELVANEY

F355-13: Add code change as follows:

F355 – 13

5001.2.2.2, Table 5003.1.1(2) [IBC [F] Table 307.1(2)], 202 (IBC [F]202)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

5001.2.2.2 Health hazards. The material categories listed in this section are classified as *health hazards*. A material with a primary classification as a *health hazard* can also pose a *physical hazard*.

1. Highly toxic and toxic materials.
2. *Corrosive* materials.
3. Simple asphyxiants.

TABLE 5003.1.1(2) [IBC [F] TABLE 307.1(2)]
MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIAL POSING A HEALTH HAZARD

MATERIAL	STORAGE[d]			USE-CLOSED SYSTEMS[d]			USE-OPEN SYSTEMS[d]	
	Solid pounds[e, f]	Liquid gallons (pounds)[e, f]	Gas cubic feet at NTP (pounds)[e]	Solid pounds[e]	Liquid gallons (pounds)[e]	Gas cubic feet at NTP (pounds)[e]	Solid pounds[e]	Liquid gallons (pounds)[e]
Corrosives	5,000	500	Gaseous 810[f] Liquefied (150)	5,000	500	Gaseous 810[f] Liquefied (150)	1,000	100
Highly Toxics	10	(10)	Gaseous 20[g] Liquefied (4)[g]	10	(10)	Gaseous 20[g] Liquified (4)[g]	3	(3)
Simple asphyxiants	Not Applicable	(500)	Gaseous 810	Not Applicable	(500)	Gaseous 810	Not Applicable	(125)
Simple asphyxiants	Not Applicable	(500)	Liquefied 810	Not Applicable	(500)	Liquefied 810	Not Applicable	(125)
Toxics	500	(500)	Gaseous 810[f] Liquefied (150)[f]	500	(500)	Gaseous 810[f] Liquefied (150)[f]	125	(125)

(Portions of table not shown remain unchanged.)

SECTION 202 (IBC [F]202)
GENERAL DEFINITIONS

HEALTH HAZARD. A classification of a chemical for which there is statistically significant evidence that acute or chronic health effects are capable of occurring in exposed persons. The term "health hazard" includes chemicals that are toxic, highly toxic, a simple asphyxiant and *corrosive*.

Reason: These are several gas that are classified as a simple asphyxiate and hence chapter 50 would not apply, but this gas can have injury or killed, Only the compress gas chapter would apply.
The number are based on the old other heath hazard.

Cost Impact: The code change proposal will increase the cost of construction.

F355-13

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

5003.1.1(2)T-F-MCELVANEY

Updated 3/22/2013

F356-13: Add code change as follows:

F356 – 13
5003.11.3.11 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Add new text as follows:

5003.11.3.11 Storage Plan. A storage plan illustrating the intended storage arrangement, including the location and dimensions of aisles, and storage racks protected with in-rack sprinklers shall be provided.

Reason: This new section requires a storage plan for group M storage and display and group s storage occupancy. This plan is necessary for a complete plan review and inspection.

Cost Impact: The code change proposal will increase the cost of construction

F356-13

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

5003.11.3.11 (NEW)-F-MCELVANEY

Updated 3/22/2013

F357-13: Add code change as follows:

F357 – 13
5301.1

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Revise as follows:

5301.1 Scope. Storage, use and handling of *compressed gases* in *compressed gas* containers, cylinders, tanks and systems shall comply with this chapter, including those gases regulated elsewhere in this code. Partially full *compressed gas* containers, cylinders or tanks containing residual gases shall be considered as full for the purposes of the controls required.

Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.

Compressed gases classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).

LP-gas shall also comply with Chapter 61 and the *International Fuel Gas Code*

Exceptions:

1. Gases used as refrigerants in refrigeration systems (see Section 606).
2. Compressed natural gas (CNG) for use as a vehicular fuel shall comply with Chapter 23, NFPA 52 and the *International Fuel Gas Code*. Cutting and welding gases shall also comply with Chapter 35.
3. *Cryogenic fluids* shall comply with Chapter 55. ~~Liquefied natural gas for use as a vehicular fuel shall also comply with NFPA 52 and NFPA 59A.~~

~~*Compressed gases* classified as hazardous materials shall also comply with Chapter 50 for general requirements and chapters addressing specific hazards, including Chapters 58 (Flammable Gases), 60 (Highly Toxic and Toxic Materials), 63 (Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids) and 64 (Pyrophoric Materials).~~

~~LP-gas shall also comply with Chapter 61 and the *International Fuel Gas Code*~~.

Reason: Cryogenic fluids are not compress gases so they should not comply with this chapter then it should be an exception.
Move the three sections up to the top of the section show that you need to comply with this chapter plus others. This is a clearer format.

Cost Impact: The code change proposal will increase the cost of construction.

F357-13

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

5301.1-F-MCELVANEY

Updated 3/22/2013

F358-13: Add code change as follows:

F358 – 13
5308 (New)

Proponent: Joe McElvaney, representing self (joe.mcelvaney@gmail.com)

Add new text as follows:

SECTION 5308
LIQUEFIED CARBON DIOXIDE SYSTEMS

5308.1 Liquefied Carbon Dioxide systems with a liquid volume of 100 gallons or more shall comply with this section.

5308.1.1 Liquefied Carbon dioxide containers, cylinders and tanks shall not be located below grade or on roofs

5308.2 Design and construction. *Compressed gas* containers, cylinders and tanks shall be designed, fabricated, tested, marked with the specifications of manufacture and maintained in accordance with the regulations of DOTn 49 CFR Parts 100-185 or the ASME *Boiler and Pressure Vessel Code*, Section VIII.

5308.3 Pressure relief devices. Pressure relief devices shall be in accordance with Sections 5303.3.1 through 5303.3.5.

5303.3.1 Where required. Pressure relief devices shall be provided to protect containers, cylinders and tanks containing *compressed gases* from rupture in the event of overpressure.

Exception: Cylinders, containers and tanks when exempt from the requirements for pressure relief

devices specified by the standards of design *listed* in Section 5303.3.2.

5308.3.2 Design. Pressure relief devices to protect containers shall be designed and provided in accordance with CGA S-1.1, CGA S-1.2, CGA S-1.3 or the ASME *Boiler and Pressure Vessel Code*, Section VIII, as applicable.

5308.3.3 Sizing. Pressure relief devices shall be sized in accordance with the specifications to which the container was fabricated and to material-specific requirements as applicable.

5308.3.4 Arrangement. Pressure relief devices shall be arranged to discharge and unobstructed to the open air in such a manner as to prevent any impingement of escaping gas upon the container, adjacent structures or personnel.

Exception: DOTn specification containers having an internal volume of 30 cubic feet (0.855 m3) or less.

5308.3.4.1 Pressure relief devices vent piping systems shall be designed to prevent backflow restrictions exceeding 10 percent backpressure on the device under full flow conditions.

5308.3.5 Freeze protection. Pressure relief devices or vent piping shall be designed or located so that moisture cannot collect and freeze in a manner that would interfere with the operation of the device.

5308.4 Marking. Stationary and portable *compressed gas* containers, cylinders, tanks and systems shall be marked in accordance with Sections 5308.4.1 through 5308.4.3.

5308.4.1 Stationary compressed gas containers, cylinders and tanks. Stationary *compressed gas* containers, cylinders and tanks shall be marked with the name of the gas and in accordance with Sections 5003.5 and 5003.6. Markings shall be visible from any direction of approach.
5308.4.2 Portable containers, cylinders and tanks. Portable *compressed gas* containers, cylinders and tanks shall be marked in accordance with CGA C-7.

5003.2.2 Piping, tubing, valves and fittings.Piping, tubing, valves, and fittings conveying CO2 shall be designed and installed in accordance with ASME B31 or other approved standards, and shall be in accordance with Sections 5003.2.2.1 and 5003.2.2.2.

5003.2.2.1 Design and construction. Piping, tubing, valves, fittings and related components used for compresses gas shall be in accordance with the following:

1. Piping, tubing, valves, fittings and related components shall be designed and fabricated from materials that are compatible with the material to be contained and shall be of adequate strength and durability to withstand the pressure, potential exposure to a temperature of −109.3°F (−78.5°C). structural and seismic stress and exposure to which they are subject.
2. Piping and tubing shall be identified in accordance with ASME A13.1 to indicate the material conveyed. Markings used for pip include a direction-of-flow arrow. Markings shall be provided at each valve; at wall, floor or ceiling penetrations; at each change of direction; and at a minimum of every 20 feet (6096 mm) or fraction thereof throughout the piping run.
3. Readily accessible manual shutoff valves shall be installed on supply piping and tubing at the following locations:
   3.1. The point of use.
   3.2. The tank, cylinder or bulk source.
4. Manual emergency shutoff valves shall be identified and the location shall be clearly visible, accessible and indicated by means of a sign.
5. Where gases or liquids having a hazard ranking of Health Class 3 or 4 in accordance with NFPA 704 are carried in pressurized piping above 15 pounds per square inch gauge (psig) (103 kPa), an *approved* means of excess flow control shall be provided. Where the piping originates from within a compresses gas storage room or area, the excess flow control shall be located within the

storage room or area. Where the piping originates from a bulk source, the excess flow control shall be located as close to the bulk source as practical.

Exceptions:

1. Piping for inlet connections designed to prevent backflow.
2. Piping for pressure relief devices.

5308.5 Security. *Compressed gas* containers, cylinders, tanks and systems shall be secured against accidental dislodgement and against access by unauthorized personnel in accordance with Sections 5308.5.1 through 5308.5.3.

5308.5.1 Security of areas. Areas used for the storage, use and handling of *compressed gas* containers, cylinders, tanks and systems shall be secured against unauthorized entry and safeguarded in an *approved* manner.

5308.5.2 Physical protection. *Compressed gas* containers, cylinders, tanks and systems which could be exposed to physical damage shall be protected. Guard posts or other *approved* means shall be provided to protect *compressed gas* containers, cylinders, tanks and systems indoors and outdoors from vehicular damage and shall comply with Section 312.

5308.5.3 Securing compressed gas containers, cylinders and tanks. *Compressed gas* containers, cylinders and tanks shall be secured to prevent falling caused by contact, vibration or seismic activity. Securing of *compressed gas* containers, cylinders and tanks shall be by one of the following methods:

1. Securing containers, cylinders and tanks to a fixed object with one or more restraints.
2. Securing of *compressed gas* containers, cylinders and tanks to or within a rack, framework, cabinet or similar assembly designed for such use.

5308.6 Separation from hazardous conditions. *Compressed gas* containers, cylinders and tanks and systems in storage or use shall be separated from materials and conditions which pose exposure hazards to or from each other. *Compressed gas* containers, cylinders, tanks and systems in storage or use shall be separated in accordance with Sections

5308.6.1 Incompatible materials. *Compressed gas* containers, cylinders and tanks shall be separated from each other based on the hazard class of their contents. *Compressed gas* containers, cylinders and tanks shall be separated from *incompatible materials* in accordance with Section 5003.9.8.

5308.6.2 Ledges, platforms and elevators. *Compressed gas* containers, cylinders and tanks shall not be placed near elevators, unprotected platform ledges or other areas where falling would result in *compressed gas* containers, cylinders or tanks being allowed to drop distances exceeding one-half the height of the container, cylinder or tank.

5308.6.3 Temperature extremes. *Compressed gas* containers, cylinders and tanks, whether full or partially full, shall not be exposed to artificially created high temperatures exceeding 125°F (52°C) or subambient (low) temperatures unless designed for use under the exposed conditions.

5308.6.4 Falling objects. *Compressed gas* containers, cylinders, tanks and systems shall not be placed in areas where they are capable of being damaged by falling objects.

5308.6.5 Heating. *Compressed gas* containers, cylinders and tanks, whether full or partially full, shall not be heated by devices which could raise the surface temperature of Heating devices shall comply with the *International Mechanical Code* and NFPA 70. *Approved* heating methods involving temperatures of less than 125°F (52°C) are allowed to be used by trained personnel. Devices designed to maintain individual *compressed gas* containers, cylinders or tanks at constant temperature shall be *approved* and shall be designed to be fail-safe.

5308.6.6 Sources of ignition. Open flames and high-temperature devices shall not be used in a manner which creates a hazardous condition.

5308.6.7 Exposure to chemicals. *Compressed gas* containers, cylinders, tanks and systems shall not be exposed to *corrosive* chemicals or fumes which could damage containers, cylinders, tanks, valves or valve-protective caps.

5308.7 Wiring and equipment. Electrical wiring and equipment shall comply with NFPA 70. *Compressed gas* containers, cylinders, tanks and systems shall not be located where they could become part of an electrical circuit. *Compressed gas* containers, cylinders, tanks and systems shall not be used for electrical grounding.

5308.8 Service and repair. Service, repair, modification or removal of valves, pressure-relief devices or other *compressed gas* container, cylinder or tank appurtenances shall be performed by trained personnel.

5308.9 Unauthorized use. *Compressed gas* containers, cylinders, tanks and systems shall not be used for any purpose other than to serve as a vessel for containing the product which it is designed to contain.

5308.10 Exposure to fire. *Compressed gas* containers, cylinders and tanks which have been exposed to fire shall be removed from service. Containers, cylinders and tanks so removed shall be handled by *approved*, qualified *persons*.

5308.11 Leaks, damage or corrosion. Leaking, damaged or corroded *compressed gas* containers, cylinders and tanks shall be removed from service. Leaking, damaged or corroded *compressed gas* systems shall be replaced or repaired in accordance with the following:

1. *Compressed gas* containers, cylinders and tanks which have been removed from service shall be handled in an *approved* manner.
2. *Compressed gas* systems which are determined to be leaking, damaged or corroded shall be repaired to a serviceable condition or removed from service.

5308.12 Surface of unprotected storage or use areas. Unless otherwise specified in Section 5308.14, *compressed gas* containers, cylinders and tanks are allowed to be stored or used without being placed under overhead cover. To prevent bottom corrosion, containers, cylinders and tanks shall be protected from direct contact with soil or unimproved surfaces. The surface of the area on which the containers are placed shall be graded to prevent accumulation of water.

5308.13 Overhead cover. *Compressed gas* containers, cylinders and tanks are allowed to be stored or used in the sun except in locations where extreme temperatures prevail. When extreme temperatures prevail, overhead covers shall be provided.

5308.14 Lighting. *Approved* lighting by natural or artificial means shall be provided.

5308.15 Release of Carbon dioxide. Carbon dioxide in any quantity shall not be released into a sewer, storm drain, ditch, drainage canal, creek, stream, river, lake or tidal waterway or on the ground, sidewalk, street, highway or into the atmosphere.

Exceptions:

1. The release or emission of carbon dioxide is allowed when in compliance with federal, state or
2. Local governmental agencies, regulations or permits.

5308.15.1 Unauthorized discharges. When carbon dioxide is released in quantities reportable under state, federal or local regulations, the *fire code official* shall be notified and the following procedures required in accordance with Sections 5003.3.1.1 through 5003.3.1.4.

5308.15.2 Records. Accurate records shall be kept of the unauthorized discharge of carbon dioxide by the permittee.

5308.15.3 Preparation. Provisions shall be made for controlling and mitigating unauthorized discharges.

5308.15.4 Control. When an unauthorized discharge caused by primary container failure is discovered, the involved primary container shall be repaired or removed from service.

5308.15.5 Responsibility for cleanup. The person, firm or corporation responsible for an unauthorized discharge shall institute and complete all actions necessary to remedy the effects of such unauthorized discharge, whether sudden or gradual, at no cost to the jurisdiction. When deemed necessary by the *fire code official*, cleanup may be initiated by the fire department or by an authorized individual or firm. Costs associated with such cleanup shall be borne by the *owner*, operator or other person responsible for the unauthorized discharge.

5308.16 Material Safety Data Sheets. Material Safety Data Sheets (MSDS) shall be readily available on the premises for hazardous materials regulated by this chapter. When a hazardous substance is developed in a laboratory, available information shall be documented.

Exception: Designated hazardous waste.

5308.17 Hazard identification signs. Unless otherwise exempted by the *fire code official*, visible hazard identification signs as specified in NFPA 704 for the specific material contained shall be placed on stationary containers and aboveground tanks and at entrances to locations where hazardous materials are stored, dispensed, used or handled in quantities requiring a permit and at specific entrances and locations designated by the *fire code official*.

5308.18 Markings. Individual containers, cartons or packages shall be conspicuously marked or labeled in an approved manner. Rooms or cabinets containing *compressed gases* shall be conspicuously labeled: COMPRESSED GAS.

5308.19 A warning sign shall be provide outside of the room in a position adjacent to the access doors to the rooms where the containers, cylinders and tanks are stored or used.

5308.20 The warning sing shall be at least 6 inches wide and 6 inches in high and state the following:

1. Carbon Dioxide Gas
2. Caution
3. Ventilate area before entering

5308.21 Emergency shutoff valves shall be identified and the location shall be clearly visible and indicated by means of a sign.

5308.22 Indoor installation

5308.22.1 Ventilation system shall be provided for the rooms where containers, cylinders and tanks are stored and/or used in accordance with section 5004.3 or 5005.1.9. When mechanical ventilation is provided, the system shall operate when a gas/liquid release that creates an environment that would excess 3% of C.O2 or 30,000 ppm.

5308.22.1.1 A manual shutoff control for the ventilation system shall not be required

5308.22.1.2 Standby or backup power supply is not required for mechanical ventilation and gas detection system.

5308.22.1.3 A manual start control for the ventilation system shall be provided outside of the room in a position adjacent to the access doors to the room or in an approved location. The switch shall be of an approved type and be labeled VENTILATION SYSTEM EMERGENCY START.

5308.22.4 Gas detection shall be provided in the rooms and confined spaces where containers, cylinders and tanks are used or stored.

5308.22.4.1 Gas detectors shall be listed for it use.

5308.22.4.2 Activation of the gas detection system shall activation notification devices rated at 75 dba and 110 cd inside the rooms where the containers, cylinders and tanks are stored or used and outside of the room adjacent to all access doors to the room. If the building has a monitoring system per section 903.4, then the gas detection system shall be connected to that system.

5308.22.4.3 Standby or backup power supply is not required for the mechanical ventilation and gas detection system.

5308.23 Outdoor installations

5308.23.1 Containers, cylinders and tanks systems located in confined spaces shall be in accordance with Section 5308.22 for indoor installation

.

5308.23.2 Outdoor installation shall not be required to be provided gas detection, notification devices and mechanical ventilation in accordance with 13.2.2 where the Containers, cylinders and tanks are located in a non-confined space.

5308.23.3 Containers, cylinders and tanks are located in a non-confined shall be constructed in accordance with the following:

1. The space may be constructed a roof.
2. The spaces shall have a perimeter of 25 percent of the area open to air based on three sides.

5803.23.4 Containers, cylinders and tanks located outdoors in a confined space that do not meet the requirements of 5803.23.3 shall be provided with mechanical ventilation in accordance with section 5308.22.1, gas detection/notification devices in accordance with section 5308.22.4.

Reason: I the pass two years that have been several events where Liquefied Carbon Dioxide systems have had a fail that resulted in the injury and death of the public and employee in fast food business. Plus there was the near miss of two fire fighters at one of these events. These code requirements of this new section come mainly from the hazard material chapter. Carbon Dioxide by definition is not a hazard material which then would not allow the use of the hazard material chapter.

Within the past two year the CGA has issued a safety alert on this subject and the some of the issues related to carbon dioxide. See web site http://www.cganet.com/customer/publication_detail.aspx?id=SA-22

Also carbon dioxide is being used not only for soda, put to operate drive up windows, sod cup machines, ketchup machines, to control the PH of swimming pools and now to help in the growth of medical marijuana

Cost Impact: The code change proposal will increase the cost of construction

F358-13

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

5308 (NEW)-F-MCELVANEY

F359-13: Add code change as follows:

F359 – 13

IFC 907.2.11.3 (IBC [F] 907.2.11.3) (New), 907.2.11.4 (IBC [F] 907.2.11.4) (New);

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Add new text as follows:

907.2.11.3 (IBC [F] 907.2.11.3) Installation near cooking appliances. Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Sections 907.2.11.1 or 907.2.11.2.

1. Ionization smoke alarms shall not be installed less than 20 feet (6.1 m) horizontally from a permanently installed cooking appliance.
2. Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3 m) horizontally from a permanently installed cooking appliance.
3. Photoelectric smoke alarms shall not be installed less than 6 feet (1.8 m) horizontally from a permanently installed cooking appliance.

907.2.11.4 (IBC [F] 907.2.11.4) Installation near bathrooms. Smoke alarms shall be installed not less than 3 feet (0.91 m) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Sections 907.2.11.1 or 907.2.11.2.

(Renumber subsequent sections)

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal is intended to reduce nuisance alarms attributed to locating smoke alarms in close proximity to cooking appliances and bathrooms in which steam is produced. The proposed provisions are based on the findings in the Task Group Report - Minimum Performance Requirements for Smoke Alarm Detection Technology - February 22, 2008, and are consistent with similar requirements included in Section 29.8.3.4 of the 2010 and 2013 editions of NFPA 72.

Cost Impact: This code change will not increase the cost of construction

F359-13

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

907.2.11.3 (NEW)-F-ZUBIA-FCAC

F360-13: Add code change as follows:

F360 – 13

908.7 (IBC [F]908.7) through 908.7.7 (IBC [F]908.7.7) (New); 1103.9; 202

Proponent: Adolf Zubia. Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (azubiamia@yahoo.com)

Delete and substitute as follows:

~~**908.7 (IBC [F]908.7) Carbon monoxide alarms.** Group I or R occupancies located in a building containing a fuel-burning appliance or in a building which has an attached garage shall be equipped with single-station carbon monoxide alarms. The carbon monoxide alarms shall be listed as complying with UL 2034 and be installed and maintained in accordance with NFPA 720 and the manufacturer's instructions. An open parking garage, as defined in Chapter 2 of the *International Building Code*, or an enclosed parking garage ventilated in accordance with Section 404 of the *International Mechanical Code* shall not be considered an attached garage.~~

> ~~**Exception:** *Sleeping units* or *dwelling units* which do not themselves contain a fuel-burning appliance or have an attached garage, but which are located in a building with a fuel-burning appliance or an attached garage, need not be equipped with single-station carbon monoxide alarms provided that:~~
>
> ~~1. The *sleeping unit* or *dwelling unit* is located more than one story above or below any story which contains a fuel-burning appliance or an attached garage;~~
> ~~2. The *sleeping unit* or *dwelling unit* is not connected by duct work or ventilation shafts to any room containing a fuel-burning appliance or to an attached garage; and~~
> ~~3. The building is equipped with a common area carbon monoxide alarm system.~~

~~**908.7.1 (IBC [F]908.7.1) Carbon monoxide detection systems.** Carbon monoxide detection systems, which include carbon monoxide detectors and audible notification appliances, installed and maintained in accordance with this section for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be *listed* as complying with UL 2075.~~

908.7 (IBC [F]908.7) Carbon monoxide alarms. Carbon monoxide alarms shall be installed in new buildings in accordance with Sections 908.7.1 through 908.7.7. Carbon monoxide alarms shall be installed in existing buildings in accordance with Section 1103.9.

908.7.1 (IBC [F]908.7.1) Where required. Carbon monoxide alarms shall be provided in Group I-1, I-4, and R occupancies in the locations specified in 908.7.2 where any of the conditions in Sections 908.7.1.1 through 908.7.1.4 exist.

908.7.1.1 (IBC [F]908.7.1.1) Fuel-burning appliances and fuel burning fireplaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units that contain a fuel-burning appliance or a fuel burning fireplace.

908.7.1.2 (IBC [F]908.7.1.2) Forced air furnaces. Carbon monoxide alarms shall be provided in dwelling units and sleeping units served by a fuel-burning, forced air furnace.

908.7.1.3 (IBC [F]908.7.1.3) Fuel burning appliances outside of dwelling units and sleeping units. Carbon monoxide alarms shall be provided in dwelling units and sleeping units located in buildings that contain fuel-burning appliances or fuel burning fireplaces.

> **Exception:**

1. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if there are no communicating openings between the fuel-burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units if a carbon monoxide alarm is provided:
   2.1 In an approved location between the fuel burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit, or
   2.2 On the ceiling of the room containing the fuel burning appliance or fuel burning fireplace.

908.7.1.4 (IBC [F]908.7.1.4) Private garages. Carbon monoxide alarms shall be provided in dwelling units and sleeping units in buildings with attached private garages.

Exceptions:

1. Carbon monoxide alarms shall not be required if there are no communicating openings between the private garage and the dwelling unit or sleeping unit.
2. Carbon monoxide alarms shall not be required in dwelling units and sleeping units located more than one story above or below a private garage.
3. Carbon monoxide alarm shall not be required if the private garage connects to the building through an open-ended corridor.

908.7.1.4.1 (IBC [F]908.7.1.4.1) Exempt garages. For determining compliance with Section 908.7.1.4, an *open parking garage*, complying with Section 406.5 of the *International Building Code*, or an *enclosed parking garage* complying with Section 406.6 of the *International Building Code* shall not be considered a private garage.

908.7.2 (IBC [F]908.7.2) Locations. Where required by Section 908.7.1, carbon monoxide alarms shall be installed in the locations specified in Sections 908.7.2.1 through 908.7.2.2.

908.7.2.1 (IBC [F]908.7.2.1) Dwelling units. Carbon monoxide alarms shall be installed in dwelling units outside of each separate sleeping area in the immediate vicinity of the bedrooms. Where a fuel-burning appliance is located within a bedroom or its attached bathroom, a carbon monoxide alarm shall be installed within the bedroom.

908.7.2.2 (IBC [F]908.7.2.2) Sleeping units. Carbon monoxide alarms shall be installed in sleeping units.

Exception: Carbon monoxide alarms shall be allowed to be installed outside of each separate sleeping area in the immediate vicinity of the sleeping unit where the sleeping unit or its attached bathroom do not contain a fuel burning appliance and are not served by a forced air furnace.

908.7.3 (IBC [F]908.7.3) Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exception: Where installed in buildings without commercial power, battery powered carbon monoxide alarms shall be an acceptable alternative.

908.7.4 (IBC [F]908.7.4) Listings. Carbon monoxide alarms shall be listed in accordance with UL 2034.

908.7.5 (IBC [F]908.7.5) Combination alarms. Combination carbon monoxide/smoke alarms shall be an acceptable alternative to carbon monoxide alarms. Combination carbon monoxide/smoke alarms shall be listed in accordance with UL 2034 and UL 217.

908.7.6 (IBC [F]908.7.6) Carbon monoxide detection systems. Carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide alarms and shall comply with Sections 908.7.6.1 through 908.7.6.3.

908.7.6.1 (IBC [F]908.7.6.1) General. Carbon monoxide detection systems shall comply with NFPA 720. Carbon monoxide detectors shall be listed in accordance with UL 2075.

908.7.6.2 (IBC [F]908.7.6.2) Locations. Carbon monoxide detectors shall be installed in the locations specified in Section 908.7.2. These locations supersede the locations specified in NFPA 720.

908.7.6.3 (IBC [F]908.7.6.3) Combination detectors. Combination carbon monoxide/smoke detectors installed in carbon monoxide detection systems shall be an acceptable alternative to carbon monoxide detectors, provided they are listed in accordance with UL 2075 and UL 268.

908.7.7 Maintenance. Carbon monoxide alarms and carbon monoxide detection systems shall be maintained in accordance with NFPA 720. Carbon monoxide alarms and carbon monoxide detectors that become inoperable or begin producing end-of-life signals shall be replaced.

Add new text as follows:

SECTION 202
GENERAL DEFINITIONS

[B] PRIVATE GARAGE. A building or portion of a building in which motor vehicles used by the tenants of the building or buildings on the premises are stored or kept, without provisions for repairing or servicing such vehicles for profit

Revise as follows:

1103.9 Carbon monoxide alarms. Existing Group ~~I~~ I-1, I-4 and ~~or~~ R occupancies ~~located in a building containing a fuel-burning appliance or a building which has an attached garage~~ shall be provided with ~~be equipped with single-station~~ carbon monoxide alarms in accordance with Section 908.7, except that the carbon monoxide alarms shall be allowed to be solely battery powered.

Reason: This proposal is submitted by the ICC Fire Code Action Committee (FCAC). This ICC committee was established by the ICC Board of Directors to pursue opportunities to improve and enhance assigned International Codes or portions thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the Fire-CAC has held 6 open meetings and numerous Regional Work Group and Task Group meetings and conference calls which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the FAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx.

This proposal clarifies the requirements for carbon monoxide alarm installations. The intent is to provide protection for occupants of dwelling units and sleeping units within Group I-1, I-4, and R occupancies, which are locations where occupants are likely to be sleeping. Protection is provided from carbon monoxide that may be generated from faulty fuel burning appliance both inside and outside of the dwelling unit or sleeping unit, or from motor vehicle exhaust emanating from vehicles in attached private garages. It is assumed that a fuel burning appliance also includes a fuel burning fireplace. Specific details on the proposal are as follows.

1. The definition of PRIVATE GARAGE is identical to the IBC definition that was approved as part of proposal G59-12.
2. The entire section was reformatted to provide requirements in a more logical order.
3. Section 908.7 clarifies that the section only applies to new constructions, and that Section 1103.9 applies to existing occupancies.
4. Section 908.7.1 now only requires CO alarms are to be provided in Group I-1, I-4 and R occupancies, not all Group I occupancies as required in the existing code. It was felt that CO alarms were not warranted in Group I-2 and I-3 occupancies.
5. The code currently requires CO alarms to be provided in buildings that contain fuel burning appliances, with no additional details. Sections 908.7.1.1 through 908.7.1.3 describe the specific conditions when CO alarms are and are not required with regard to fuel-burning appliances.
6. Section 908.7.1.3 covers situations where dwelling units and sleeping units do not contain a fuel burning appliance, but such an appliance is included in a common area of the building. A good example of this is a multistory hotel that has all electric HVAC in the sleeping units, but perhaps a fireplace in the lobby, forced air heating in the common area, and a boiler in an equipment room. In these situations it is not reasonable to provide CO alarms in every sleeping room on every

floor of the hotel, where there are no sources of carbon monoxide. Having a few strategically located Co alarms in common areas will provide a reasonable level of protection for the sleeping units and dwelling units.

Exception 1 to this section covers situations where CO emanating from the fuel burning appliance has no direct path to a dwelling unit or sleeping unit, such as a water heater in an equipment room that only has access from the exterior of the building, and no openings through which the CO can get to dwelling units or sleeping units. An interior door, between this equipment room and a dwelling unit, even if it is self-closing, would not allow this exception to be used.

Exception 2 to this section requires the installation of a one or more CO alarms in approved locations between fuel burning appliances and the nearest dwelling unit or sleeping unit, or on the ceiling of the room in which a fuel burning appliance is located. CO alarms are only required where there are communicating openings including ducts, concealed spaces, interior hallways, stairs and spaces between the fuel-burning appliance or fuel burning fireplace and the dwelling unit or sleeping unit where air can flow from the appliance to the dwelling unit or sleeping unit.

7. The code currently requires CO alarms to be provided when the building has an attached garage, other than an open parking garages or enclosed parking garages that contain mechanical ventilation systems. The proposal keeps these basic concepts, but clarifies that CO alarms are required when the building has an attached private garage (which is defined in section 406.3 of the IBC). The proposal also does not require CO alarms to be provided when the private garage is attached to the building by an open ended corridor (a term used in the IBC and IFC, which is commonly called a breeze way).
8. The code currently deferred to NFPA 720 for identifying where CO alarms are to be located. In order to make the code more user friendly, Section 908.7.2 now describes the locations where CO alarms are to be provided. In some cases this differs from NFPA 720 required locations, but again is intended to provide protection for CO emanating from motor vehicles in attached private garages or from faulty fuel-burning appliances located either inside or outside of the dwelling unit or sleeping unit. .
9. Section 908.7.3 clarifies that CO alarms are required to be hard wired into building power, similar to smoke alarms, with one exception.
10. Section 908.7.5 addresses combination CO/smoke alarms, which are listed and readily available.
11. Section 908.7.6 includes more comprehensive requirements for CO detection systems as compared to the current code requirements. It requires these systems to comply with NFPA 720, but clarifies that detectors must be installed in the locations specified in Section 908.7.2 (not as specified in NFPA 720). It also allows combination CO/smoke detectors to be used.
12. Section 908.7.7 covers maintenance of devices and requires inoperative and end-of-life CO alarms to be replaced.
13. Section 1103.9 was revised to avoid duplicating section 908.7 requirements, and to allow battery powered CO alarms to be used to retrofit existing buildings, which is consistent with the retrofit provisions in the IRC.

Cost Impact: This code change will not increase the cost of construction

F360-13

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

908.7 (NEW)-F-ZUBIA-FCAC

2013 PROPOSED CHANGES TO THE INTERNATIONAL PROPERTY MAINTENANCE CODE

Updated 3/22/2013

PM15-13: See highlighted corrections:

PM15 – 13
[F] 704.2.1 (New), [F] 704.2.2 (New)

THIS CHANGE WILL BE HEARD BY THE IFC COMMITTEE. SEE THE TENTATIVE HEARING ORDER FOR THIS COMMITTEE.

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee, and Adolf Zubia, Chairman IAFC Fire and Life Safety Section, representing ICC Fire Code Action Committee (BajnaiC@chesterfield.gov)

Add text as follows:

[F] 704.2 Smoke alarms. Single- or multiple-station smoke alarms shall be installed and maintained in Groups R-2, R-3, R-4 and in dwellings not regulated in Group R occupancies, regardless of *occupant* load at all of the following locations:

1. On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of *bedrooms*.
2. In each room used for sleeping purposes.
3. In each story within a *dwelling unit*, including *basements* and cellars but not including crawl spaces and uninhabitable attics. In dwellings or *dwelling units* with split levels and without an intervening door between the adjacent levels, a smoke alarm installed on the upper level shall suffice for the adjacent lower level provided that the lower level is less than one full story below the upper level.

Single- or multiple-station smoke alarms shall be installed in other groups in accordance with the *International Fire Code*.

[F] 704.2.1 Installation near cooking appliances. Smoke alarms shall not be installed in the following locations unless this would prevent placement of a smoke alarm in a location required by Section 704.2.

1. Ionization smoke alarms shall not be installed less than 20 feet (6.1 m) horizontally from a permanently installed cooking appliance.
2. Ionization smoke alarms with an alarm-silencing switch shall not be installed less than 10 feet (3 m) horizontally from a permanently installed cooking appliance.
3. Photoelectric smoke alarms shall not be installed less than 6 feet (1.8 m) horizontally from a permanently installed cooking appliance.

[F] 704.2.2 Installation near bathrooms. Smoke alarms shall be installed not less than 3 feet (0.91 m) horizontally from the door or opening of a bathroom that contains a bathtub or shower unless this would prevent placement of a smoke alarm required by Section 704.2.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) and the ICC Fire Code Action Committee (FCAC). These ICC committees were established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Codes or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the these committees have held 6 open meetings and numerous workgroup meetings which included members of the committees as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the CAC website at: http://www.iccsafe.org/cs/CAC/Pages/default.aspx. It is the intent of the ICC committees to have these sections scoped to the Fire Code Committee if approved.

This proposal is intended to reduce nuisance alarms attributed to locating smoke alarms in close proximity to cooking appliances and bathrooms in which steam is produced. The proposed provisions are based on the findings in the Task Group Report - Minimum Performance Requirements for Smoke Alarm Detection Technology - February 22, 2008, and are consistent with similar requirements included in Section 29.8.3.4 of the 2010 and 2013 editions of NFPA 72.

Cost Impact: None

PM15-13

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

[F] 704.2.1 (NEW)-PM-BAJNAI-ZUBIA-BCAC~revised.DOC

Updated 4/02/2013

IRC – BUILDING

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add RB474-13 to the IRC Building Hearing Order following RB150-13
Add RB475-13 to the IRC Building Hearing Order following RB382-13
Add RB476-13 to the IRC Building Hearing Order following RB78-13
Add RB477-13 to the IRC Building Hearing Order following RB91-13
Add RB478-13 to the IRC Building Hearing Order following RB372-13
Add RB479-13 to the IRC Building Hearing Order following RB454-13

TENTATIVE ORDER OF DISCUSSION

2013 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE

BUILDING

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IRC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes.

RB464-13: NUMBER NOT USED

RB1-13
- ADM1-13, Part IV
- ADM2-13, Part II
- ADM5-13, Part II

RB10-13
RB11-13
- ADM6-13, Part II
- ADM7-13
- ADM8-13, Part II

RB2-13
RB3-13
- ADM18, Part II
- ADM21, Part II

RB4-13
- ADM 23-13, Part II
- ADM 24-13, Part II

RB6-13
- ADM 27-13, Part II
- ADM 40-13, Part IV
- ADM 41-13, Part IV

RB7-13
RB8-13
- ADM 47-13, Part IV

RB9-13
- ADM 49-13, Part II
- ADM 50-13, Part II
- ADM 51-13, Part IV
- ADM 52-13, Part IV
- ADM 53-13, Part IV
- ADM 54-13, Part II
- ADM 55-13, Part IV
- ADM 58, Part II
- ADM 59-13, Part II
- ADM 60-13, Part IV
- ADM61-13

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2013 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE – BUILDING

Updated 4/02/2013

RB39: Replace Table R301.2(2) with the following:
(Note: Portions of code change not shown remain unchanged)

RB39 – 13

R202, R301.2.1, R301.2.1.1, R301.2.1.2, R301.2.1.2.1 (New), R301.2.1.3, R301.2.1.4, Table R301.2(2), Table R301.2(4)A, Table R301.2(4)B, Table R301.2(4)C, Table R301.2.1.2, Table R301.2.1.3, Table R301.2.1.5.1, Table R301.2(2), Table 301.7, Figure R301.2(4)A (New), Figure R301.2(4)B, Figure R301.2(4)C, Figure R301.2(7)

Proponent: Gary J. Ehrlich, P.E., National Association of Home Builders (NAHB);

Updated 4/02/2013

RB39: Replace Table R301.2(2) with the following: Portions of code change not shown remain unchanged.

TABLE R301.2(2)
COMPONENT AND CLADDING LOADS FOR A BUILDING WITH A MEAN ROOF HEIGHT OF 30 FEET LOCATED IN EXPOSURE B (ASD)(psf)[a, b, c, d, e]

	ZONE	EFFECTIVE WIND AREA (feet2)	ULTIMATE DESIGN WIND SPEED, V_{ULT} (mph)																	
			110		115		120		130		140		150		160		170		180	
Roof 0 to 7 degrees	1	10	10.0	-13.1	10.0	-14.3	10.0	-15.5	10.0	-18.2	10.0	-21.2	9.9	-24.3	11.2	-27.7	12.6	-31.2	14.2	-35.0
	1	20	10.0	-12.7	10.0	-13.9	10.0	-15.1	10.0	-17.8	10.0	-20.6	9.2	-23.6	10.6	-26.9	11.9	-30.3	13.3	34.1
	1	50	10.0	-12.3	10.0	-13.4	10.0	-14.6	10.0	-17.2	10.0	-19.9	8.5	-22.9	10.0	-26.0	10.8	-29.4	12.2	-32.9
	1	100	10.0	-11.9	10.0	-13.1	10.0	-14.2	10.0	-16.7	10.0	-19.4	7.8	-22.2	10.0	-25.3	10.0	-28.5	11.3	-32.0
	2	10	10.0	-21.9	10.0	-23.9	10.0	-26.1	10.0	-30.6	10.0	-35.5	9.9	-40.7	11.2	-46.4	12.6	-52.4	14.2	-58.7
	2	20	10.0	-19.6	10.0	-21.4	10.0	-23.3	10.0	-27.4	10.0	-31.7	9.2	-36.4	10.6	-41.4	11.9	-46.7	13.3	-52.4
	2	50	10.0	-16.5	10.0	-18.1	10.0	-19.6	10.0	-23.0	10.0	-26.7	8.5	-30.7	10.0	-34.9	10.8	-39.4	12.2	-44.1
	2	100	10.0	-14.2	10.0	-15.5	10.0	-16.9	10.0	-19.8	10.0	-22.9	7.8	-26.3	10.0	-30.0	10.0	-33.8	11.3	-37.9

	ZONE	EFFECTIVE WIND AREA (feet2)	ULTIMATE DESIGN WIND SPEED, V_{ULT} (mph)																	
			110		115		120		130		140		150		160		170		180	
	3	10	10.0	-33.0	10.0	-36.1	10.0	-39.2	10.0	-46.1	10.0	-53.4	9.9	-61.3	11.2	-69.8	12.6	-78.8	14.2	-88.3
	3	20	10.0	-27.3	10.0	-29.9	10.0	-32.5	10.0	-38.2	10.0	-44.3	9.2	-50.8	10.6	-57.8	11.9	-65.3	13.3	-73.1
	3	50	10.0	-19.9	10.0	-21.7	10.0	-23.6	10.0	-27.7	10.0	-32.1	8.5	-36.9	10.0	-41.9	10.8	-47.3	12.2	-53.1
	3	100	10.0	-14.2	10.0	-15.5	10.0	-16.9	10.0	-19.8	10.0	-22.9	7.8	-26.3	10.0	-30.0	10.0	-33.8	11.3	-37.9
Roof > 7 to 27 degrees	1	10	10.0	-11.9	10.0	-13.1	10.0	-14.2	10.5	-16.7	12.2	-19.4	14.0	-22.2	15.9	-25.3	17.9	-28.5	20.2	-32.0
	1	20	10.0	-11.6	10.0	-12.7	10.0	-13.8	10.0	-16.2	11.1	-18.8	12.8	-21.6	14.5	-24.6	16.4	-27.7	18.4	-31.1
	1	50	10.0	-11.2	10.0	-12.2	10.0	-13.3	10.0	-15.6	10.0	-18.1	11.1	-20.8	12.7	-23.6	14.3	-26.7	16.0	-29.9
	1	100	10.0	-10.9	10.0	-11.9	10.0	-12.9	10.0	-15.1	10.0	-17.6	9.9	-20.2	11.2	-22.9	12.6	-25.9	14.2	-29.0
	2	10	10.0	-20.8	10.0	-22.7	10.0	-24.8	10.5	-29.3	12.2	-33.7	14.0	-38.7	15.9	-44.1	17.9	-49.7	20.2	-55.8
	2	20	10.0	-19.1	10.0	-20.9	10.0	-22.8	10.0	-26.8	11.1	-31.0	12.8	-35.6	14.5	-40.5	16.4	-45.8	18.4	-51.2
	2	50	10.0	-16.9	10.0	-18.5	10.0	-20.2	10.0	-23.6	10.0	-27.4	11.1	-31.5	12.7	-35.8	14.3	-40.5	16.0	-45.4
	2	100	10.0	-15.3	10.0	-16.7	10.0	-18.2	10.0	-21.4	10.0	-24.7	9.9	-28.4	11.2	-32.3	12.6	-36.5	14.2	-40.9
	3	10	10.0	-30.8	10.0	-33.6	10.0	-36.6	10.5	-43.0	12.2	-49.9	14.0	-57.2	15.9	-65.1	17.9	-73.5	20.2	-82.4
	3	20	10.0	-28.7	10.0	-31.4	10.0	-34.3	10.0	-40.2	11.1	-46.6	12.8	-53.5	14.5	-60.8	16.4	-68.8	18.4	-77.0
	3	50	10.0	-26.1	10.0	-28.6	10.0	-31.1	10.0	-36.5	10.0	-42.3	11.1	-48.6	12.7	-55.3	14.3	-62.4	16.0	-69.9
	3	100	10.0	-24.1	10.0	-26.4	10.0	-28.7	10.0	-33.7	10.0	-39.1	9.9	-44.9	11.2	-51.1	12.6	-57.7	14.2	-64.6
Roof > 27 to 45 degrees	1	10	11.9	-13.1	13.1	-14.3	14.2	-15.5	16.7	-18.2	19.4	-21.2	22.2	-24.3	25.3	-27.7	28.5	-31.2	32.0	-35.0
	1	20	11.6	-12.4	12.7	-13.6	13.8	-14.8	16.2	-17.3	18.8	-20.1	21.6	-23.0	24.6	-26.2	27.7	-29.6	31.1	-33.2
	1	50	11.2	-11.5	12.2	-12.6	13.3	-13.7	15.6	-16.1	18.1	-18.7	20.8	-21.4	23.6	-24.4	26.7	-27.5	29.9	-30.8
	1	100	10.9	-10.9	11.9	-11.9	12.9	-12.9	15.1	-15.1	17.6	-17.6	20.2	-20.2	22.9	-22.9	25.9	-25.9	29.0	-29.0
	2	10	11.9	-15.3	13.1	-16.7	14.2	-18.2	16.7	-21.4	19.4	-24.7	22.2	-28.4	25.3	-32.3	28.5	-36.5	32.0	-40.9
	2	20	11.6	-14.6	12.7	-16.0	13.8	-17.4	16.2	-20.4	18.8	-23.6	21.6	-27.2	24.6	-30.9	27.7	-34.9	31.1	-39.1
	2	50	11.2	-13.7	12.2	-15.0	13.3	-16.3	15.6	-19.2	18.1	-22.3	20.8	-25.5	23.6	-29.0	26.7	-32.8	29.9	-36.8
	2	100	10.9	-13.1	11.9	-14.3	12.9	-15.5	15.1	-18.2	17.6	-21.2	20.2	-24.3	22.9	-27.7	25.9	-31.2	29.0	-35.0
	3	10	11.9	-15.3	13.1	-16.7	14.2	-18.2	16.7	-21.4	19.4	-24.7	22.2	-28.4	25.3	-32.3	28.5	-36.5	32.0	-40.9
	3	20	11.6	-14.6	12.7	-16.0	13.8	-17.4	16.2	-20.4	18.8	-23.6	21.6	-27.2	24.6	-30.9	27.7	-34.9	31.1	-39.1
	3	50	11.2	-13.7	12.2	-15.0	13.3	-16.3	15.6	-19.2	18.1	-22.3	20.8	-25.5	23.6	-29.0	26.7	-32.8	29.9	-36.8
	3	100	10.9	-13.1	11.9	-14.3	12.9	-15.5	15.1	-18.2	17.6	-21.2	20.2	-24.3	22.9	-27.7	25.9	-31.2	29.0	-35.0
Wall	4	10	13.1	-14.2	14.3	-15.5	15.5	-16.9	18.2	-19.8	21.2	-22.9	24.3	-26.3	27.7	-30.0	31.2	-33.8	35.0	-37.9
	4	20	12.5	-13.6	13.6	-14.8	14.8	-16.1	17.4	-19.0	20.2	-22.0	23.2	-25.3	26.4	-28.7	29.7	-32.4	33.4	-36.4
	4	50	11.7	-12.8	12.8	-14.0	13.9	-15.2	16.3	-17.9	19.0	-20.8	21.7	-23.8	24.7	-27.1	27.9	-30.6	31.3	-34.3
	4	100	11.1	-12.2	12.1	-13.3	13.2	-14.5	15.5	-17.0	18.0	-19.8	20.6	-22.7	23.5	-25.9	26.5	-29.1	29.8	-32.7
	4	500	10.0	-10.9	10.6	-11.9	11.6	-12.9	13.6	-15.1	15.8	-17.6	18.1	-20.2	20.6	-22.9	23.2	-25.9	26.1	-29.0
	5	10	13.1	-17.5	14.3	-19.1	15.5	-20.8	18.2	-24.4	21.2	-28.3	24.3	-32.5	27.7	-37.0	31.2	-41.8	35.0	-46.8
	5	20	12.5	-16.3	13.6	-17.8	14.8	-19.4	17.4	-22.8	20.2	-26.4	23.2	-30.3	26.4	-34.5	29.7	-39.0	33.4	-43.7

	ZONE	EFFECTIVE WIND AREA (feet2)	ULTIMATE DESIGN WIND SPEED, V_{ULT} (mph)																	
			110		115		120		130		140		150		160		170		180	
	5	50	11.7	-14.8	12.8	-16.1	13.9	-17.6	16.3	-20.6	19.0	-23.9	21.7	-27.4	24.7	-31.2	27.9	-35.3	31.3	-39.5
	5	100	11.1	-13.6	12.1	-14.8	13.2	-16.1	15.5	-19.0	18.0	-22.0	20.6	-25.3	23.5	-28.7	26.5	-32.4	29.8	-36.4
	5	500	10.0	-10.9	10.6	-11.9	11.6	-12.9	13.6	-15.1	15.8	-17.6	18.1	-20.2	20.6	-22.9	23.2	-25.9	26.1	-29.0

For SI: 1 foot = 304.8 mm, 1 square foot = 0.0929 m^2, 1 mile per hour = 0.447 m/s, 1 pound per square foot = 0.0479 kPa.

Notes:

a. The effective wind area shall be equal to the span length multiplied by an effective width. This width shall be permitted to be not be less than one-third the span length. For cladding fasteners, the effective wind area shall not be greater than the area that is tributary to an individual fastener.
b. For effective areas between those given above, the load may be interpolated; otherwise, use the load associated with the lower effective area.
c. Table values shall be adjusted for height and exposure by multiplying by the adjustment coefficient in Table R301.2(3).
d. See Figure R301.2(7) for location of zones.
e. Plus and minus signs signify pressures acting toward and away from the building surfaces.

(Portions of table not shown remain unchanged)

Updated 3/22/2013

RB111-13: Correction made to code change number. Highlighted text has been shifted down in order to see portions of the Reason statement correctly.

RB111 – 13
R308.4.2

Proponent: Charles S. Bajnai, Chesterfield County, VA, ICC Building Code Action Committee and Virginia Building and Code Officials Association (bajnaic@chesterfield.gov)

Revise as follows:

R308.4.2 Glazing adjacent doors. Glazing in an individual fixed or operable panel adjacent to a door shall be considered a hazardous location ~~where the nearest vertical edge of the glazing is within a 24-inch (610 mm) arc of either vertical edge of the door in a closed position and where~~ if the bottom exposed edge of the glazing is less than 60 inches (1524 mm) above the floor or walking surface ~~shall be considered a hazardous location~~ and it meets either of the following conditions:

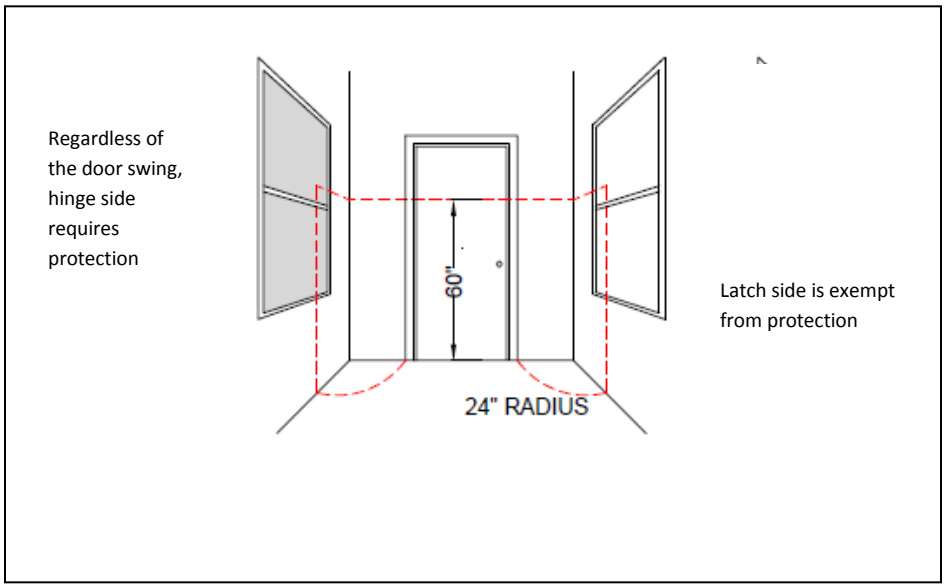
1. Where the glazing is within 24” of either side of the door in the plane of the door in a closed position,
2. Where the glazing is on a wall perpendicular to the plane of the door in a closed position and within 24” of the hinge side of an in-swinging door.

Exceptions:

1. Decorative glazing.
2. When there is an intervening wall or other permanent barrier between the door and the glazing.
3. ~~Glazing in walls on the latch side of and perpendicular to the plane of the door in a closed position~~
4. Where access through the door is to a closet or storage area 3 feet (914 mm) or less in depth. Glazing in this application shall comply with section R308.4.3.
5. Glazing that is adjacent to the fixed panel of patio doors.

Reason: This proposal is submitted by the ICC Building Code Action Committee (BCAC) The BCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the BCAC has held 6 open meetings and numerous workgroup calls which included members of the BCAC as well as any interested party to discuss and debate the proposed changes. Related documentation and reports are posted on the BCAC website at: http://www.iccsafe.org/cs/BCAC/Pages/default.aspx.

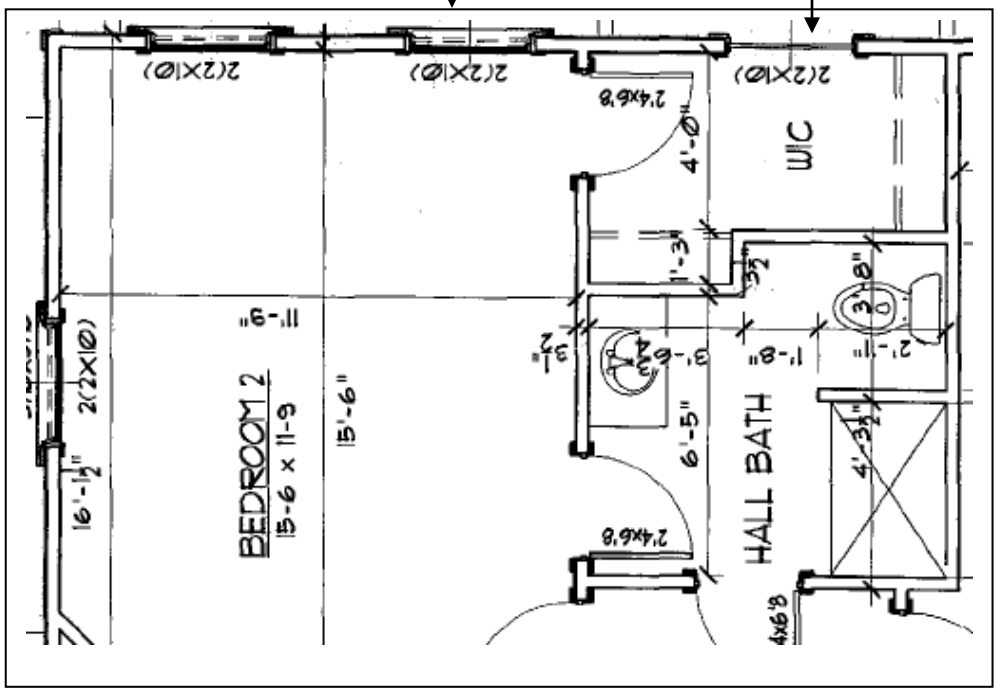
Exception 3: Currently the code requires safety glazing for windows on the hinge side of walls perpendicular to the door plane – regardless of the door swing. See sketch below.

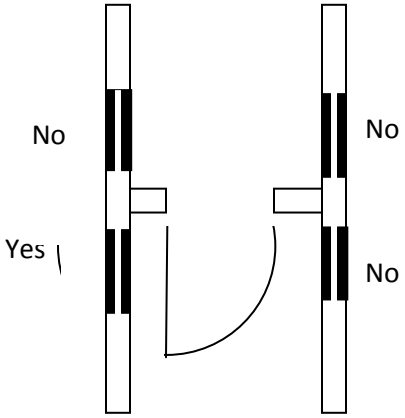


This code change was rewritten to say that the safety glazing is only required on the hinge side of an in-swinging door where someone could get knocked out of the window if someone opens the door from the other side. There is no similar threat for the person on the outside of the door swing.

Currently this window is NOT exempt by rule # 3 (or #4) and would have to be safety glazed. If this proposal is accepted, this window would NOT have to be safety glazed.

This window is currently exempt because the arc is more the 24" from the door hinge.





These are the four possible configurations of windows adjacent/perpendicular to a door. Only the one with an in-swinging door on the hinge side would be required to be safety glazed.

Cost Impact: This proposal may decrease the cost of construction.

RB111-13

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

R308.4.2 #1-RB-BAJNAI-BCAC

RB387-13: Replace Table R703.4 as follows:
(Note: Portions of code change not shown remains unchanged)

RB387 – 13

R202 (NEW), Table R703.4, R703.13 (NEW), R703.13.1 (NEW), R703.13.1.1 (NEW), R703.13.1.2 (NEW), R703.13.2 (NEW), R703.13.2.1 (NEW), Chapter 44

Proponent: Matt Dobson, Vinyl Siding Institute (mdobson@vinylsiding.org)

Revise as follows:

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

SIDING MATERIAL	NOMINAL THICKNESS[a] (inches)	JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b, c, d]					
				Wood or wood structural panel sheathing into stud	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Polypropylene Siding[aa]	Not applicable.	Lap	Yes	Section 703.13.1	Section 703.13.1	Section 703.13.1	Section 703.13.1	Not Allowed	As specified by the manufacturer instructions, test report or other sections of this code.

(Portions of Table not shown remain unchanged)

For SI: 1 inch = 25.4 mm.

a. Based on stud spacing of 16 inches on center where studs are spaced 24 inches, siding shall be applied to sheathing approved for that spacing.
b. Nail is a general description and shall be T-head, modified round head, or round head with smooth or deformed shanks.
c. Staples shall have a minimum crown width of $^{7}/_{16}$-inch outside diameter and be manufactured of minimum 16-gage wire.
d. Nails or staples shall be aluminum, galvanized, or rust-preventative coated and shall be driven into the studs where fiberboard, gypsum, or foam plastic sheathing backing is used. Where wood or wood structural panel sheathing is used, fasteners shall be driven into studs unless otherwise permitted to be driven into sheathing in accordance with the siding manufacturer's installation instructions.
e. Aluminum nails shall be used to attach aluminum siding.
f. Aluminum (0.019 inch) shall be unbacked only when the maximum panel width is 10 inches and the maximum flat area is 8 inches. The tolerance for aluminum siding shall be +0.002 inch of the nominal dimension.
g. All attachments shall be coated with a corrosion-resistant coating.
h. Shall be of approved type.
i. Three-eighths-inch plywood shall not be applied directly to studs spaced more than 16 inches on center when long dimension is parallel to studs. Plywood $^{1}/_{2}$-inch or thinner shall not be applied directly to studs spaced more than 24 inches on center. The stud spacing shall not exceed the panel span rating provided by the manufacturer unless the panels are installed with the face grain perpendicular to the studs or over sheathing approved for that stud spacing.
j. Wood board sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches on center. Nails shall penetrate $1^{1}/_{2}$ inches into studs, studs and wood sheathing combined or blocking.
k. Hardboard siding shall comply with CPA/ANSI A135.6.
l. Vinyl siding shall comply with ASTM D 3679.
m. Minimum shank diameter of 0.092 inch, minimum head diameter of 0.225 inch, and nail length must accommodate sheathing and penetrate framing $1^{1}/_{2}$ inches.
n. When used to resist shear forces, the spacing must be 4 inches at panel edges and 8 inches on interior supports.
o. Minimum shank diameter of 0.099 inch, minimum head diameter of 0.240 inch, and nail length must accommodate sheathing and penetrate framing $1^{1}/_{2}$ inches.
p. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.
q. See Section R703.10.1.

r. Fasteners shall comply with the nominal dimensions in ASTM F 1667.
s. See Section R703.10.2.
t. Face nailing: one 6d common nail through the over lap ping planks at each stud. Concealed nailing: one 11 gage $1^1/_2$ inch long galv. roofing nail through the top edge of each plank at each stud.
u. See Section R703.2 exceptions.
v. Minimum nail length must accommodate sheathing and penetrate framing $1^1/_2$ inches.
w. Adhered masonry veneer shall comply with the requirements of Section R703.6.3 and shall comply with the requirements in Sections 6.1 and 6.3 of TMS-402 ACI 530/ASCE 5.
x. Vertical joints, if staggered shall be permitted to be away from studs if applied over wood structural panel sheathing.
y. Minimum fastener length must accommodate sheathing and penetrate framing 0.75 inches or in accordance with the manufacturer's installation instructions.
z. Where approved by the manufacturer's instructions or test report siding shall be permitted to be installed with fasteners penetrating not less than 0.75 inches through wood or wood structural sheathing with or without penetration into the framing.
aa. Polypropylene siding shall comply with ASTM D7254.

Updated 4/05/2013

RB388-13: Replace Table R703.4 as follows:
(Note: Portions of code change not shown remains unchanged)

RB388 – 13

R202 (NEW), Table R703.4, R703.13 (NEW), R703.13.1 (NEW), R703.13.2 (NEW), R703.13.2.1 (NEW), R703.13.2.2 (NEW), R703.13.3 (NEW), R703.13.4 (NEW), Chapter 44

Proponent: Marcelo M. Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

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

SIDING MATERIAL	NOMINAL THICKNESS[a] (inches)	JOINT TREATMENT	WATER-RESISTIVE BARRIER REQUIRED	TYPE OF SUPPORTS FOR THE SIDING MATERIAL AND FASTENERS[b, c, d]					
				Wood or wood structural panel sheathing into stud	Fiberboard sheathing into stud	Gypsum sheathing into stud	Foam plastic sheathing into stud	Direct to studs	Number or spacing of fasteners
Polypropylene siding [aa]	Not applicable	Lap	Yes	See Section 703.13.3 and Section 703.13.4	See Section 703.13.3 and Section 703.13.4	See Section 703.13.3 and Section 703.13.4	See Section 703.13.3 and Section 703.13.4	Not allowed	As specified by the manufacturer instructions or test report

(Portions of Table not shown remain unchanged)

For SI: 1 inch = 25.4 mm.
a. Based on stud spacing of 16 inches on center where studs are spaced 24 inches, siding shall be applied to sheathing approved for that spacing.
b. Nail is a general description and shall be T-head, modified round head, or round head with smooth or deformed shanks.
c. Staples shall have a minimum crown width of $^7/_{16}$-inch outside diameter and be manufactured of minimum 16-gage wire.
d. Nails or staples shall be aluminum, galvanized, or rust-preventative coated and shall be driven into the studs where fiberboard, gypsum, or foam plastic sheathing backing is used. Where wood or wood structural panel sheathing is used, fasteners shall be driven into studs unless otherwise permitted to be driven into sheathing in accordance with the siding manufacturer's installation instructions.
e. Aluminum nails shall be used to attach aluminum siding.
f. Aluminum (0.019 inch) shall be unbacked only when the maximum panel width is 10 inches and the maximum flat area is 8 inches. The tolerance for aluminum siding shall be +0.002 inch of the nominal dimension.
g. All attachments shall be coated with a corrosion-resistant coating.
h. Shall be of approved type.

i. Three-eighths-inch plywood shall not be applied directly to studs spaced more than 16 inches on center when long dimension is parallel to studs. Plywood $^1/_2$-inch or thinner shall not be applied directly to studs spaced more than 24 inches on center. The stud spacing shall not exceed the panel span rating provided by the manufacturer unless the panels are installed with the face grain perpendicular to the studs or over sheathing approved for that stud spacing.

j. Wood board sidings applied vertically shall be nailed to horizontal nailing strips or blocking set 24 inches on center. Nails shall penetrate $1^1/_2$ inches into studs, studs and wood sheathing combined or blocking.

k. Hardboard siding shall comply with CPA/ANSI A135.6.

l. Vinyl siding shall comply with ASTM D 3679.

m. Minimum shank diameter of 0.092 inch, minimum head diameter of 0.225 inch, and nail length must accommodate sheathing and penetrate framing $1^1/_2$ inches.

n. When used to resist shear forces, the spacing must be 4 inches at panel edges and 8 inches on interior supports.

o. Minimum shank diameter of 0.099 inch, minimum head diameter of 0.240 inch, and nail length must accommodate sheathing and penetrate framing $1^1/_2$ inches.

p. Vertical end joints shall occur at studs and shall be covered with a joint cover or shall be caulked.

q. See Section R703.10.1.

r. Fasteners shall comply with the nominal dimensions in ASTM F 1667.

s. See Section R703.10.2.

t. Face nailing: one 6d common nail through the over lap ping planks at each stud. Concealed nailing: one 11 gage $1^1/_2$ inch long galv. roofing nail through the top edge of each plank at each stud.

u. See Section R703.2 exceptions.

v. Minimum nail length must accommodate sheathing and penetrate framing $1^1/_2$ inches.

w. Adhered masonry veneer shall comply with the requirements of Section R703.6.3 and shall comply with the requirements in Sections 6.1 and 6.3 of TMS-402 ACI 530/ASCE 5.

x. Vertical joints, if staggered shall be permitted to be away from studs if applied over wood structural panel sheathing.

y. Minimum fastener length must accommodate sheathing and penetrate framing 0.75 inches or in accordance with the manufacturer's installation instructions.

z. Where approved by the manufacturer's instructions or test report siding shall be permitted to be installed with fasteners penetrating not less than 0.75 inches through wood or wood structural sheathing with or without penetration into the framing.

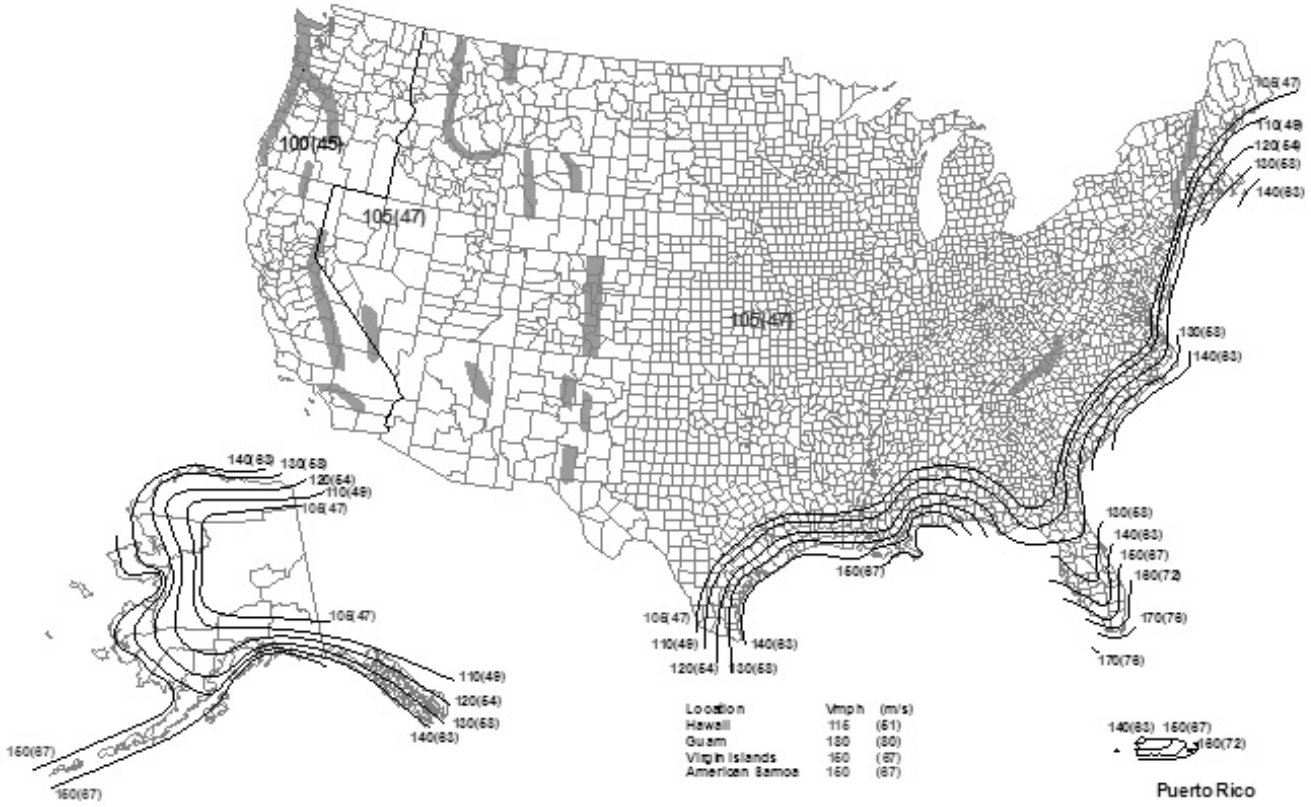
aa. Polypropylene siding shall comply with ASTM D7254 and Section R703.13.

RB466-13: Figure AH106 did not show in previously published code change. No changes to remaining code change.

RB466 – 13

AH106.4.1, AH106.4.3, Table AH106.4(1), Table AH106.4(2), Figure AH106 (New)

Proponent: Gary J. Ehrlich, P.E., National Association of Home Builders (NAHB) (gehrlich@nahb.org); Daniel J. Walker, P.E., Thomas Associates, Inc. representing National Sunroom Association.



Notes:
1. Values are nominal design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 15% probability of exceedance in 50 years.

Revise as follows:

Figure AH106
Ultimate Design Wind Speeds for Patio Covers and Screen Enclosures

Reason: The purpose of this code change is to bring the wind provisions of the IRC in line with the 2012 IBC and ASCE 7-10. As a result of the schedule changes implemented during the 2009-2010 ICC code development cycle, there was not sufficient time to revise the IRC to fully implement the new ultimate wind speed basis of ASCE 7-10 and the 2012 IBC, due to the extent of prescriptive IRC provisions and tables which are directly related to basic wind speed.. New maps based on the ASCE 7-10 ultimate wind speed data but converted back down to nominal (ASD) basis were provided in the IRC. This has led to a fair amount of confusion among those stakeholders who work with both codes.

A working group of stakeholders including NAHB, the major material associations, ASCE, and the Insurance Institute for Business and Home Safety developed a series of IRC proposals to implement the new ultimate wind speed basis. This proposal updates Table AH106.4(1) and AH106.4(2) for patio covers. Since ASCE 7-10 implemented a new 300-year mean return interval

map for Risk Category I structures (which includes patio covers) to replace the use of the 0.87 (non-hurricane) and 0.77 (hurricane) importance factors, Section AH106.4.3 is deleted and a new Figure AH106 copies the Risk Category I wind map from IBC Figure 1609C.

The coefficients used to produce the updated table are the same as that from the previous tables in IRC Appendix "H", which were based on wind tunnel testing commissioned by the Aluminum Association of Florida and conducted at the Clemson and Virginia Tech wind tunnels by Dr. Timothy Reinhold, P.E., Ph.D and Mr. Charley Everly, P.E. The original test report can be downloaded for review from the following link: http://aaof.org/documents/WindLoadsOnScreenEnclosures%28Reinhold%29.pdf. Additional clarification has also been added to the table footnotes based on additional details found in the referenced report.

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

RB466-13

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

AH106.4.1-RB-EHRLICH-WALKER

Updated 3/22/2013

RB474: Add code change as follows:

RB474 – 13
R313.1.1

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

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.

Reason: NFPA 13D was added to Section R313.2.1 but not R313.1.1. This was simply an oversight. While P2904 references NFPA 13D, it was considered appropriate to also have the reference in Section R313 since this is the enabling requirement for residential sprinklers.

Cost Impact: This change does not increase the cost of construction.

RB474-13

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

R313.1.1-RB-BALLANCO.DOC

Updated 3/22/2013

RB475: Add code change as follows:

RB475 – 13
R703.10.2, Chapter 44

Proponent: John Mulder, Intertek Testing Services NA, Inc., representing International Standards Organization Technical Committee 77, *Products in Fibre-reinforced Cement* and Self

Revise as follows:

R703.10.2 Lap siding. Fiber-cement lap siding having a maximum width of 12 inches shall comply with the requirements of ASTM C 1186, Type A, minimum Grade II or ISO 8336, Category A, minimum Class 2. Lap siding shall be lapped a minimum of 1¼ inches (32 mm) and lap siding not having tongue-and-

groove end joints shall have the ends sealed with caulking, installed with an H-section joint cover, located over a strip of flashing or shall be designed to comply with Section R703.1. Lap siding courses may be installed with the fastener heads exposed or concealed, according to Table R703.4 or *approved* manufacturer's installation instructions.

Add new standard to Chapter 44 as follows:

ISO

8336 – Fibre-Cement Flat Sheets – Product Specification and Test Methods

Reason: Performance requirements of ISO 8336, *Fibre-cement flat sheets – Product specification and test methods*, have been harmonized with the performance requirements of ASTM C1186, *Standard Specification for Flat Non-Asbestos Fiber-Cement Sheets*. Fiber-cement siding producers in Mexico, Central and South America, Europe, Asia, Australia and New Zealand currently manufacture and test their fiber-cement siding products for compliance with ISO 8336. The inclusion of this Standard reference in the IBC will permit manufacturers worldwide to demonstrate product compliance to IBC requirements. The addition of a reference to ISO 8336 in the Code removes a barrier to trade. Additional editorial changes are proposed to clarify the nature of the required vertical and/or horizontal joint protection to include reference to *approved* caulking and the recognition of both vertical or horizontal shiplap joints as a means of protecting the joints as is also common with wood panel siding.

IBC Section 1405.16.2 has, as a result of the IBC Group A Code Hearings, been revised to adopt this additional Standard reference (see attached Committee Action). This proposed revision brings the two building codes (IBC & IRC) and the applicable code sections and standards references into general alignment.

Cost Impact: The code change proposal will not increase the cost of construction because the product is already recognized for use in the Code. Reference to compliance with this alternative standard, an International Standard requiring the same performance as the ASTM Standard, will reduce barriers to trade by allowing foreign products complying with ISO 8336, Category A, minimum Class 2, market access to the United States without the need for additional product compliance documentation.

Staff analysis: A review of the standard proposed for inclusion in the code, ISO 8336, 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, 2013.

RB475-13

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

R703.10.2-RB-MULDER.doc

Updated 3/22/2013

RB476: Add code change as follows:

RB476 – 13

R302.10.1, R302.10.2, R302.10.3

Proponent: Marcelo M. Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

R302.10 Flame spread index and smoke-developed index for insulation. Flame spread and smoke-developed index for insulation shall be in accordance with Sections R302.10.1 through R302.10.5.

R302.10.1 Insulation. Insulation materials, including facings, such as vapor retarders and vapor-permeable membranes installed within floor/ceiling assemblies, roof/ceiling assemblies, wall assemblies, crawl spaces and *attics* shall have a flame spread index not to exceed 25 with an accompanying smoke-developed index not to exceed 450 when tested in accordance with ASTM E 84 or UL 723.

Exceptions:

1. When such materials are installed in concealed spaces, the flame spread index and smoke-developed index limitations do not apply to the facings, provided that the facing is installed in substantial contact with the unexposed surface of the ceiling, floor or wall finish.
2. ~~Cellulose~~ Cellulosic fiber loose-fill insulation, which is not spray applied, complying with the requirements of Section R302.10.3, ~~shall only be required to meet the smoke-developed index of not more than 450.~~ shall not be required to meet a flame spread index requirement but shall be required to meet a smoke-developed index of not more than 450 when tested in accordance with CAN/ULC S102.2.
3. Foam plastic insulation shall comply with Section R316.

R302.10.2 Loose-fill insulation. Loose-fill insulation materials that cannot be mounted in the ASTM E 84 or UL 723 apparatus without a screen or artificial supports shall comply with the flame spread and smoke-developed limits of Section R302.10.1 when tested in accordance with CAN/ULC S102.2.

Exception: ~~Cellulose~~ Cellulosic fiber loose-fill insulation shall not be required to be tested in accordance with CAN/ULC S102.2, provided such insulation complies with the requirements of Section R302.10.1 and Section R302.10.3.

R302.10.3 Cellulose loose-fill insulation. ~~Cellulose~~ Cellulosic fiber loose-fill insulation shall comply with CPSC 16 CFR, Parts 1209 and 1404. Each package of such insulating material shall be clearly *labeled* in accordance with CPSC 16 CFR, Parts 1209 and 1404.

R302.10.4 Exposed attic insulation. All exposed insulation materials installed on *attic* floors shall have a critical radiant flux not less than 0.12 watt per square centimeter.

R302.10.5 Testing. Tests for critical radiant flux shall be made in accordance with ASTM E 970.

Reason: Recent discussions have shown that cellulose loose fill insulation is actually tested in the ASTM E84 test by using an artificial steel screen with tiny grid openings such that the flame spread index determined is meaningless because of the massive effect of the metal included with the loose fill insulation. Unless that screen is used the cellulose loose fill insulation falls through the grid onto the tunnel floor. The IBC (and the IRC) have long ceased to require that cellulose loose fill insulation meets a flame spread index criterion (if it complies with the CPSC requirements in 16 CFR 1209 and 16 CFR 1404, i.e. smoldering tests) but only that the insulation meets a smoke developed index. There is consensus in the fire test community that if the flame spread index cannot be determined adequately with the ASTM E84 test using that steel screen, neither can the smoke developed index be determined. Therefore, the recommendation is that the tests be conducted in accordance with CAN/ULC S102.2 and not ASTM E84, where no metal screen is needed since the loose fill insulation material is tested on the floor and not on the ceiling. The proposal clarifies this by referencing only CAN/ULC S102.2 for cellulose loose fill insulation.

Usually cellulose loose fill insulation will meet the appropriate smoke developed index values but the appropriate fire test needs to be used.

The change from “cellulose loose-fill” to “cellulosic fiber loose-fill” substitutes the industry used terms. The new wording is consistent with the changes made in the IBC (see FS120 and FS121).

Language in 2015 IBC:

720.2 Concealed installation. *Insulating materials, where concealed as installed in buildings of any type of construction, shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450.*
Exception: *Cellulosic fiber loose-fill insulation complying with the requirements of Section 720.6, shall not be required to meet a flame spread index requirement but shall be required to meet a smoke-developed index of not more than 450 when tested in accordance with CAN/ULC S102.2.*

720.3 Exposed installation. *Insulating materials, where exposed as installed in buildings of any type of construction, shall have a flame spread index of not more than 25 and a smoke-developed index of not more than 450.*
Exception: *Cellulosic fiber loose-fill insulation shall not be required to meet a flame spread index requirement but shall be required to meet a smoke-developed index of not more than 450 when tested in accordance with CAN/ULC S102.2.*

720.4 Loose-fill insulation. *Loose-fill insulation materials that cannot be mounted in the ASTM E 84 or UL 723 apparatus without a screen or artificial supports shall comply with the flame spread and smoke-developed limits of Sections 720.2 and 720.3 when tested in accordance with CAN/ULC S102.2.*

Exception: *Cellulose loose-fill insulation shall not be required to meet a flame spread index requirement when tested in accordance with CAN/ULC S102.2, provided such insulation complies with the requirements of Section 720.2 or 720.3, as applicable, and Section 720.6.*

Language in ASTM E84:

X1.6.1 Loose-fill insulation shall be placed on galvanized steel screening (Note 11) with approximate 3/64-in. (1.2-mm) openings supported on a test frame 20 in. (508 mm) wide by 2 in. (51 mm) deep, made from 2 by 3 by 3/16-in. (51 by 76 by 5-mm) steel angles (see Fig. X1.2). Three frames are required to cover the full tunnel length. The insulation shall be packed to the density specified by the manufacturer.

Note 11: The use of galvanized steel screening normally lowers the flame spread index values obtained for some materials that are tested in this manner and, therefore, the results do not necessarily relate directly to values obtained for other materials mounted without galvanized steel screening.

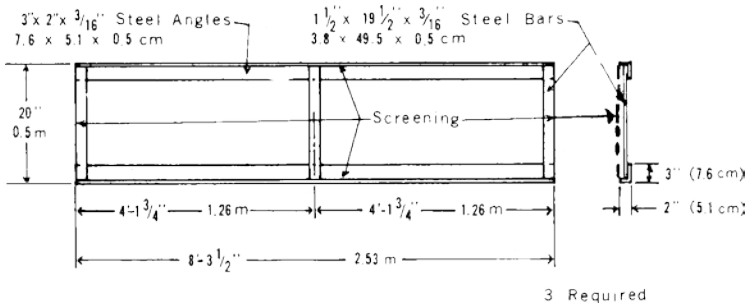


FIG. X1.2 Steel Frame for Loose Fill Materials

Cost Impact: None

RB476-13

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

R302.10.1-RB-HIRSCHLER

Updated 3/22/2013

RB477: Add code change as follows:

RB477 – 13
R302.2.2

Proponent: Marcelo M. Hirschler, GBH International (gbhint@aol.com)

Revise as follows:

R302.2.2 Parapets. Parapets constructed in accordance with Section R302.2.3 shall be constructed for *townhouses* as an extension of exterior walls or common walls in accordance with the following:

1. Where roof surfaces adjacent to the wall or walls are at the same elevation, the parapet shall extend not less than 30 inches (762 mm) above the roof surfaces.
2. Where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is not more than 30 inches (762 mm) above the lower roof, the parapet shall extend not less than 30 inches (762 mm) above the lower roof surface.

   Exception: A parapet is not required in the two cases above when the roof is covered with a roof covering that complies with a minimum Class C rating as tested in accordance with ASTM E 108 or UL 790 ~~minimum class C roof covering~~, and the roof decking or sheathing is of noncombustible materials or *approved* fire-retardant-treated wood for a distance of 4 feet (1219 mm) on each side of the wall or walls, or one layer of 5/8-inch (15.9 mm) Type X gypsum board is installed directly beneath the roof decking or sheathing, supported by a minimum of nominal 2-inch (51 mm)

ledgers attached to the sides of the roof framing members, for a minimum distance of 4 feet (1219 mm) on each side of the wall or walls and there are no openings or penetrations in the roof within 4 feet (1219 mm) of the common walls.

3. A parapet is not required where roof surfaces adjacent to the wall or walls are at different elevations and the higher roof is more than 30 inches (762 mm) above the lower roof. The common wall construction from the lower roof to the underside of the higher roof deck shall have not less than a 1-hour fire-resistance rating. The wall shall be rated for exposure from both sides.

Reason: This is basically simple clarification, to clarify the test method for the Class C rating. It adds the same ASTM and UL standards contained in the IBC (and in a later section of the IRC) for the application.
Cost Impact: None

RB477-13

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

R302.2.2-RB-HIRSCHLER

Updated 4/02/2013

RB478: Add code change as follows:

RB478 – 13
R703.7.2.1, R703.7.2.2

Proponent: J. Daniel Dolan, P.E., Ph.D., Washington State University**,** representing self (jddolan@wsu.edu)

Revise as follows:

R703.7.2.1 Support by steel angle. A minimum 6 inches by 4 inches by 5/16 inch (152 mm by 102 mm by 8 mm) steel angle, with the long leg placed vertically shall be anchored to double 2 inches by 4 inches (51 mm by 102 mm) wood studs or double 350S162 cold-formed steel studs at a maximum on-center spacing of 16 inches (406 mm). Anchorage of the steel angle at every double stud spacing shall be a minimum of two 7/16 inch (11 mm) diameter by 4 inch (102 mm) lag screws for wood construction or two 7/16-inch bolts with washers for cold-formed steel construction. The steel angle shall have a minimum clearance to underlying construction of 1/16 inch (2 mm). A minimum of two-thirds the width of the masonry veneer thickness shall bear on the steel angle. Flashing and weep holes shall be located in the masonry veneer with in accordance with Figure R703.7.2.1. The maximum height of masonry veneer above the steel angle support shall be 12 feet, 8 inches (3861 mm). The air space separating the masonry veneer from the wood backing shall be in accordance with Sections R703.7.4 and R703.7.4.2. The method of support for the masonry veneer ~~on wood construction~~ shall be constructed in accordance with Figure R703.7.2.1

The maximum slope of the roof construction without stops shall be 7:12. Roof construction with slopes greater than 7:12 but not more than 12:12 shall have stops of a minimum 3 inch by 3 inch by 1/4 inch (76 mm by 76 mm by 6 mm) steel plate welded to the angle at 24 inches (610 mm) on center along the angle or as approved by the building official.

R703.7.2.2 Support by roof construction. A steel angle shall be placed directly on top of the roof construction. The roof supporting construction for the steel angle shall consist of a minimum of three 2 inch by 6 inch (51 mm by 152 mm wood members for wood construction or three 550S162 cold-formed steel members for cold-formed steel light frame construction. ~~The~~ A wood member abutting the vertical wall stud construction shall be anchored with a minimum of three 5/8-inch (16 mm) diameter by 5-inch (127 mm) lag screws to every wood stud spacing. Each additional wood roof member~~s~~ shall be anchored by the use of two 10d nails at every wood stud spacing. A cold-formed steel member abutting the vertical wall stud shall be anchored with a minimum of nine #8 screws to every cold-formed steel stud. Each

additional cold-formed steel roof member shall be anchored to the adjoining roof member using two #8 screws at every stud spacing. A minimum of two-thirds the width of the masonry veneer thickness shall bear on the steel angle. Flashing and weep holes shall be located in the masonry veneer wythe in accordance with Figure R703.7.2.2. The maximum height of the masonry veneer above the steel angle support shall be 12 feet, 8 inches (38.61 mm). The air space separating the masonry veneer from the wood backing shall be in accordance with Sections R702.7.4 and R703.7.4.2. The support for the masonry veneer ~~on wood construction shall~~ be constructed in accordance with Figure R703.7.2.2.

The maximum slope of the roof construction without stops shall be 7:12. Roof construction with slopes greater than 7:12 but not more than 12:12 shall have stops of a minimum 3 inch by 3 inch by 1/4 inch (76 mm by 76 mm by 6 mm) steel plate welded to the angle at 24 inches (610 mm) on center along the angle or as approved by the building official.

Reason: The original provisions for anchoring masonry chimneys to residential buildings were developed with the concept of anchoring to wood framing. Cold-formed steel framing can function equivalently in this respect to wood framing, except that the connections between the members have to be adjusted for the different types of fasteners used. The framing member sizes are equivalent in this application, and the fastener determination required is was as follows:

Wood construction:

Two 7/16-inch x 4 inch lag screws:
Lateral design load = 1352 lbs.
Withdrawal design load = 1610 lbs.

Three 5/8-inch x 5-inch lag screws:
Lateral design load = 1479 lbs.
Withdrawal design load = 2680 lbs.

Two 10d box nails:
Lateral design load = 158 lbs.
Withdrawal design load = 60 lbs.

Cold-formed steel construction:

Two 7/16 –inch bolt (A307):
Lateral design load = 4512 lbs.
Tensile design load = 9020 lbs.

Nine #8 screws
Lateral design load = 1485 lbs.
Withdrawal design load = 630 lbs.

Two #8 screws:
Lateral design load = 330 lbs.
Withdrawal design load = 140 lbs.

The connections specified in this proposal for cold-formed steel construction are either equal or greater strength than the ones used for wood construction.

Cost Impact: The cost of construction for this change should not change, the cost for the bolts and screws used in the connections are about the same as the cost of fasteners used in wood construction.

RB478-13

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

R703.7.2.1-RB-DOLAN

RB479: Add code change as follows:

RB479 – 13
R1001.4.1.1 (New), R1003.4.1.1 (New)

Proponent: J. Daniel Dolan, P.E., Ph.D., Washington State University**,** representing self (jddolan@wsu.edu)

Add new text as follows:

R1001.4.1.1 Cold-formed steel framing. When cold-formed steel framing is used, the location where the ½-inch bolts are used to attach the straps to the framing shall be reinforced with a minimum of a 3"x3"x0.229" steel plate that is screwed to the framing with a minimum of 10-#8 screws for each bolt.

R1003.4.1.1 Cold-formed steel framing. When cold-formed steel framing is used, the location where the ½-inch bolts are used to attach the straps to the framing shall be reinforced with a minimum of a 3"x3"x0.229" steel plate that is screwed to the framing with a minimum of 10-#8 screws for each bolt.

Reason: The original provisions for anchoring masonry chimneys to residential buildings were developed with the concept of anchoring to wood framing. Cold-formed steel framing can function equivalently in this respect to wood framing, except that the bearing area of between the bolt and the cold-formed steel framing is small and therefore needs to be reinforced to prevent the local failure of the steel. The 0.229-inch (essentially ¼-inch) steel plate will provide this reinforcement and spread the load from the bolt to a wider area in the framing to prevent the localized failure of the framing. The minimum of 7-#6 screws (a total shear capacity transfer of 1050 pounds in 33 mil cold-formed steel) provide the transfer mechanism to spread the force in the bolt (a maximum of 933 pounds for a 1/2 –inch A307 bolt in 2-inch nominal Douglas-fir lumber with ¼-inch thick steel side member). The capacity of a ½-inch bolt in a steel strap that is fastened to the wood framing would be less than the 933 calculated.

Cost Impact:

RB479-13

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

R1001.4.1.1 (NEW)-RB-DOLAN

Updated 3/22/2013

IRC – MECHANICAL

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add RM99-13 to the IRC Mechanical Hearing Order following RM16-13
Add RM100-13 to the IRC Mechanical Hearing Order following RM29-13
Add RM101-13 to the IRC Mechanical Hearing Order following RM100-13

TENTATIVE ORDER OF DISCUSSION

2012 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE

MECHANICAL

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IRC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes.

RB16-13
RB18-13
RB21-13
RB25-13
RB459 -13
RB100-13
RB461-13
RM1-13
RM2-13
RM3-13
RM4-13
RM5-13
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RB97-13, Part II
RM44-13
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RM94-13
RM95-13
RM96-13, Part II
RM97-13, Part I
RM98-13, Part I
  RB444-13, Part II
  RB445-13, Part II
  RB448-13, Part II

2013 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE

MECHANICAL

Updated 3/22/2013

RM76: Replace the code change proposal with the following:

RM76 – 13
M2202.1

Proponent: Pennie L. Feehan, Pennie L. Feehan Consulting representing Copper Development Association (penniefeehan@me.com)

Revise as follows:

M2202.1 Materials. Piping shall consist of steel pipe, copper and copper alloys pipe and tubing or steel tubing conforming to ASTM A539. Aluminum tubing shall not be used between the fuel-oil tank and the burner units.

Reason: Brass and bronze are copper alloys and adding the appropriate terminology provides the correct information to the end user.

Cost Impact: None

RM76-13

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

M2202.1-RM-FEEHAN.DOC

Updated 3/22/2013

RM81-13: Replace Reason statement with the following:

RM81 – 13
R202 & M2301.2.2

Proponent: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA)

Add new definitions as follows:

SOLAR THERMAL COLLECTOR. A device that absorbs incident solar radiation, converts it to thermal energy, and transfers thermal energy to a heat transfer medium.

SOLAR THERMAL PANEL. A solar thermal collector mounted within a frame, and designed to provide a field installable unit.

SOLAR THERMAL PANEL SYSTEM. A system that incorporates one or more solar thermal panels that convert incident solar radiation into thermal energy, including structural support systems such as frames or racks.

Revise as follows:

M2301.2.2 Roof-mounted collectors. Rooftop-mounted solar thermal panel systems shall be designed in accordance with the *International Building Code* to support the system and withstand applicable loads. The roof shall be constructed to support the loads imposed by roof-mounted solar collectors and rooftop-mounted solar thermal panel systems in accordance with Chapter 8 of this code or the *International Building Code.* ~~Roof-mounted solar collectors that serve as a roof covering shall conform to the requirements for roof coverings in Chapter 9 of this code. Where mounted on or above the roof coverings, the collectors and supporting structure shall be constructed of noncombustible materials or fire-retardant-treated wood equivalent to that required for the roof construction.~~

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

A new first sentence is added to M2301.2.2 to clarify the system of hardware that becomes the mounting system for rooftop-mounted solar thermal panel systems must be qualified by methods found in the International Building Code. There are no applicable provisions found in the International Residential Code for these systems of mounting hardware. These systems must be qualified by calculations or physical testing, as prescribed in the IBC. New definitions of Solar Thermal Panel System and Solar Thermal Panel are needed to provide this clarity.

The revised second sentence of M2301.2.2 clarifies the roof system must be checked or designed to support the resultant loads imposed on it by the mounting system of the solar thermal panel system. This check can be accomplished by using appropriate span tables in IRC Chapter 8, or by structural analysis according to IBC provisions.

The sentence that references "roof mounted solar collectors that serve as a roof covering" is deleted. While this provision is appropriate for Building Integrated Photovoltaic (BIPV) systems, it is not appropriate for solar thermal systems, as there are no solar thermal products in the marketplace that replace the roof covering and serve as the roof covering for weatherproofing purposes.

The sentence that references "noncombustible materials or fire-retardant treated wood" is deleted, as it is not necessary in most cases, and overly restrictive in some cases. Most solar thermal panel systems for domestic hot water are constructed primarily of noncombustible components. However, some of these solar collectors incorporate plastic glazing, which might be unnecessarily prohibited from the marketplace. Some solar thermal collectors used in pool heating systems are made entirely of flexible piping systems – often in the form of piping coils -- attached to the roof. These solar thermal collectors for pool heating should not be prohibited.

Cost Impact: This proposal will reduce construction costs.

RM81-13

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

M2301.2.2-RM-CAIN-SMIRNOW.DOC

Updated 3/22/2013

RM97-13: Replace Reason statement with the following:

RM97 – 13
R202 & M2302

Proponents: John Smirnow and Joseph H. Cain P.E. representing Solar Energy Industries Association (SEIA) (jsmirnow@seia.org)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY IRC-PLUMBING/MECHANICAL COMMITTEE; PART II WILL BE HEARD BY IRC-RESIDENTIAL/BUILDING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

(Portions of code change not shown remain unchanged)

Reason: This code change proposal is the result of a consensus process established by the Solar Energy Industries Association's (SEIA) Codes and Standards Working Group. Established in 1974, SEIA is the national trade association of the U.S. solar energy industry. As the voice of the industry, SEIA works with its member companies to make solar a mainstream and significant energy source by expanding markets, removing market barriers, strengthening the industry, and educating the public on the benefits of solar energy.

New definitions are added to provide clarity in requirements for photovoltaic systems. Sections are re-numbered for better flow.

The sentence that references "roof mounted solar collectors that serve as a roof covering" is relocated into its own section and revised to clarify the requirements for Building Integrated Photovoltaic (BIPV) systems.

The sentence that references "noncombustible materials or fire-retardant treated wood" is deleted, as it is obsolete. Photovoltaic panel systems are constructed entirely of noncombustible components, other than seals between the glass panels and frames.

The first sentence of M2302.3.1 clarifies the system of hardware that becomes the mounting system for rooftop-mounted photovoltaic panel systems must be qualified by methods found in the International Building Code. There are no applicable provisions found in the International Residential Code for these systems of mounting hardware. These mounting systems must be qualified by calculations or physical testing, as prescribed in the IBC. New definitions are needed to provide this clarity.

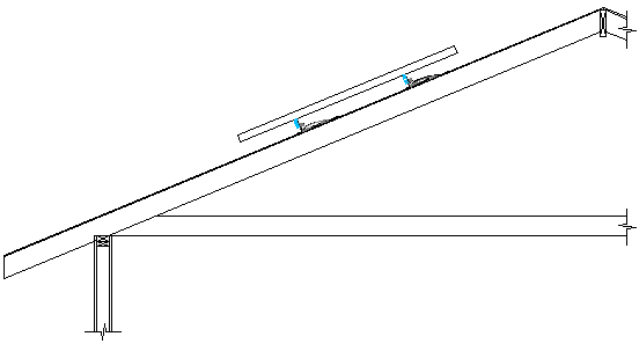
The second sentence of M2302.3.1 clarifies the roof system must be checked or designed to support the resultant loads imposed on it by the mounting system of the photovoltaic panel system. This check can be accomplished by using appropriate span tables in IRC Chapter 8, or by structural analysis according to IBC provisions.

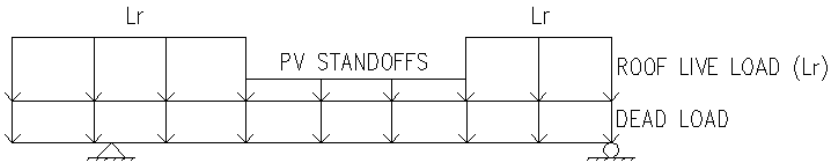
A new section on wind load is added for guidance to appropriate codes and standards where wind design provisions are found. Effective Wind Area is defined in ASCE 7-10 Section 26.2. Effective Wind Area is also referenced in Footnote a of Table R301.2(2) of this code. Effective Wind Area used in design of photovoltaic systems must be consistent with the definition found in ASCE 7 in order to be compatible with the wind design calculation methods found in ASCE 7.

A new section on roof live load is added to clarify provisions already formalized in Final Action for the 2015 IBC, with some modifications as appropriate for one- and two-family dwellings. In one load case, roof live load need not be modeled in the area(s) of the roof covered by PV panels, as nobody will be walking on top of the panels or on the roof area covered by the panels. In another load case for new construction, the code-prescribed roof live load must be modeled as if the photovoltaic panels are not present.

The second sentence of M2302.3.1.2 clarifies that when checking the capacity of the roof structure for the added dead load of photovoltaic panel systems, it is not necessary to consider roof live load to be additive to PV system dead load. Roof live load need not be modeled in the areas covered by PV systems, as there will be no workers, equipment or materials on top of the PV panels nor beneath the PV panels. In these areas, roof live load is completely displaced by the presence of PV panels.

The third sentence of M2302.3.1.2 clarifies that displacement/removal of roof live load does not apply for those portions of the roof structure or structural members that are not covered by PV panels. The resultant structural model will include PV system dead load where the system exists, and partial roof load only where the PV system does not exist. Roof live load will always apply to that portion of the roof not covered by PV panels. The following graphic shows a typical load diagram with PV system dead load and partial roof live load.





The fourth sentence of M2302.3.1.2 clarifies that although the roof live load may be displaced and set equal to zero for that portion of roof covered by the PV system (that is, PV system dead load and roof live load are not additive), the intent to install solar PV systems on new construction does not eliminate the requirement to design new buildings for code-prescribed roof live load.

The section on ground-mounted systems is revised to clarify that design provisions applicable to ground mount installations are found in the IBC and not found within the IRC.

Cost Impact: This proposal will reduce construction costs.

RM97-13

PART I – IRC-PLUMBING/MECHANICAL COMMITTEE

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

PART II – IRC-RESIDENTIAL/BUILDING COMMITTEE

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

Updated 3/22/2013

RM98-13: See additional highlighted new text:

RM98– 13

202, M2302, R902, R905, R908 (New)

Proponent: Lorraine Ross, Intech Consulting Inc., representing The Dow Chemical Company

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC-PLUMBING/MECHANICAL COMMITTEE; PART II WILL BE HEARD BY THE IRC-RESIDENTIAL/BUILDING COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I - IRC- MECHANICAL

(No changes to Part I of the code change)

PART II – IRC- BUILDING

SECTION R902
~~ROOF~~ FIRE CLASSIFICATION

Revise as follows:

R902.1 Roofing covering materials. Roofs shall be covered with materials as set forth in Sections R904 and R905. Class A, B or C roofing shall be installed in ~~areas~~ jurisdictions designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a lot line. Classes A, B and C roofing required by this section to be listed shall be tested in accordance with UL 790 or ASTM E 108.

Exceptions:

1. Class A roof assemblies include those with coverings of brick, masonry and exposed concrete roof deck.
2. Class A roof assemblies also include ferrous or copper shingles or sheets, metal sheets and shingles, clay or concrete roof tile, or slate installed on noncombustible decks.
3. Class A roof assemblies include minimum 16 oz/ft^2 copper sheets installed over combustible decks.

R902.3 Building integrated photovoltaic product. Building integrated photovoltaic products installed as the roof covering shall be tested, listed and labeled for fire classification in accordance with Section R902.1.

R902.4 Rooftop mounted photovoltaic panels and modules. Rooftop mounted photovoltaic panels and modules installed on or above the roof covering shall be tested, listed and identified with a fire classification in accordance with UL 1703. Class A, B or C photovoltaic panels and modules shall be installed in jurisdictions designated by law as requiring their use or where the edge of the roof is less than 3 feet (914 mm) from a lot line.

SECTION R905
REQUIREMENTS FOR ROOF COVERINGS

R905.16 Photovoltaic ~~modules/~~shingles. The installation of photovoltaic ~~modules/~~shingles shall comply with the provisions of this section.
R905.16.1 Material standards. Photovoltaic ~~modules/~~shingles shall be listed and labeled in accordance with UL 1703.

R905.16.2 Attachment. Photovoltaic ~~modules/~~shingles shall be attached in accordance with the manufacturer's installation instructions.

R905.16.3 Wind resistance. Photovoltaic ~~modules/~~shingles shall be tested in accordance with procedures and acceptance criteria in ASTM D 3161. Photovoltaic ~~modules/~~shingles shall comply with the classification requirements of Table R905.2.4.1(2) for the appropriate maximum basic wind speed. Photovoltaic ~~modules/~~shingle packaging shall bear a label to indicate compliance with the procedures in ASTM D 3161 and the required classification from Table R905.2.4.1(2).

SECTION R908
ROOFTOP MOUNTED PHOTOVOLTAIC PANEL SYSTEMS

R908.1 General. The installation of photovoltaic panel systems that are mounted on or above the roof covering shall comply with the provisions of this code, the *International Fire Code* and *NFPA 70*.

R908.1.1 Material standards. Photovoltaic panels and modules shall be listed and labeled in accordance with UL 1703.

R908.1.2 Structural requirements. Rooftop mounted photovoltaic panel systems shall be designed to structurally support the system and withstand applicable loads in accordance with Chapter 3. The roof upon which these systems are installed shall be constructed to support the loads imposed by such systems in accordance with Chapter 8.

R908.1.3 Installation. Rooftop mounted photovoltaic systems shall be installed in accordance with the manufacturer's instructions. Roof penetrations shall be flashed and sealed in accordance with this chapter.

Add new text as follows:

SECTION 324
SOLAR ENERGY SYSTEMS

R324.1 General. Solar energy systems shall comply with the provisions of this section.

R324.2 Solar thermal systems. Solar thermal systems shall be designed and installed in accordance with Chapter 23 and the International Fire Code.

R324.3 Photovoltaic solar energy systems. Photovoltaic energy systems shall be designed and installed in accordance with this section, the International Fire Code and NFPA 70. Inverters shall be listed and labeled in accordance with UL 1741. Systems connected to the utility grid shall use inverters listed for utility interaction.

R324.3.1 Rooftop mounted photovoltaic systems. Rooftop mounted photovoltaic panel systems installed on or above the roof covering shall be designed and installed in accordance with Section 908.

R324.3.2 Building integrated photovoltaic systems. Building integrated photovoltaic systems that serve as roof coverings shall be designed and installed in accordance with Section 905.

R324.3.2.1 Photovoltaic shingles. Photovoltaic shingles shall comply with Section R905.16.

R324.4 Ground mounted photovoltaic systems. Ground mounted photovoltaic systems shall be designed and installed in accordance with Section R301.

R324.4.1 Fire Separation distances. Ground mounted photovoltaic systems shall be subject to the fire separation distance requirements determined by the local jurisdiction.

Reason: Currently, provisions for solar energy systems are sprinkled throughout the International Residential Code. Furthermore, there are also significant gaps, many of which were debated and approved in the 2015 *International Building Code* development process. This proposed change consolidates and organizes these provisions, with necessary section revisions, and section additions, in an easily used format that also sets the stage for easy integration of code requirements for new solar energy technology and applications as they emerge in the market. The following is an explanation of each new and revised section pertinent to the newly proposed Section R324 Solar Energy Systems:

1. **Chapter 2 New Definitions Section R202:**
   Four definitions are added for BUILDING INTEGRATED PHOTOVOLTAIC (BIPV) PRODUCT, PHOTOVOLTAIC MODULE, PHOTOVOLTAIC PANEL and PHOTOVOLTAIC PANEL SYSTEM. All of these definitions are necessary and were approved for inclusion in the 2015 *International Building Code*.
2. **Chapter 2 Revised Definition Section R202:**
   A revised definition for PHOTOVOLTAIC SHINGLES is proposed, which was also approved for inclusion in the 2015 *International Building Code*.
3. **Add new SECTION R324 SOLAR ENERGY SYSTEMS:**
   Chapter 3 is entitled Building Planning and therefore is an appropriate place to list the general provisions for installation of solar energy systems on buildings within the scope of the *International Residential Code.* Newly proposed Section 324 contains general provisions for solar energy systems and then, with subsections, serves as pointers to specific code requirements for solar energy systems based on type and location. This section is based upon requirements generally found in Chapter 23 which this proposal also revises. See below for details.
   Setting up this section will also allow easy inclusion for new solar energy system types and locations. For example, if there are building integrated photovoltaic wall systems, a new subsection can be created, with an appropriate reference to Chapter 7.
4. **Revise Section R902 Roof Classification:**
   This section has been renamed Fire Classification in order to clarify the subject of the section. Two new sections have been added to clearly identify the fire classification requirements for both building integrated photovoltaic products that serve as the roof covering and rooftop mounted photovoltaic panel systems. There is also a change to clarify Section 902.1, where the word “area” was changed to “jurisdiction” because there has been interpretation that the word “area” referred to is a place on the roof itself rather than a geographic area, such as the Urban Wildfire Interface Zone or other jurisdictional requirements for fire classified roofs. Section 902 is in place to prevent fire from spreading from rooftop to rooftop.
5. **Revise Section R902.16 Photovoltaic Shingles:**
   This section, along with the revised definition for photovoltaic shingles, has been editorially revised to match comparable changes approved in the 2015 *International Building Code*.
6. **Add new section R908 ROOFTOP MOUNTED PHOTOVOLTAIC PANEL SYSTEMS:**
   This new section outlines specific requirements for rooftop photovoltaic panel systems installed on or above roof coverings. As shown, material standards, structural requirements and installation details for these systems is detailed.
7. **Revise CHAPTER 23 and delete Section M2302 PHOTOVOLTAIC SOLAR ENERGY SYSTEMS:**
   Chapter 23 is renamed as SOLAR THERMAL ENERGY SYSTEMS which limits the chapter to solar thermal energy systems only as identified in newly proposed R324.

8. **Delete Section M2302 PHOTOVOLTAIC SOLAR ENERGY SYSTEMS:**
   As shown in Item 7, Chapter 23 is limited to solar thermal energy systems only. Therefore, Section M2302 PHOTOVOLTAIC SOLAR ENERGY SYSTEMS is deleted. Photovoltaic energy systems are electrical in nature. Placing requirements for these systems in the Mechanical part of the code is illogical and was only added in the 2012 International Residential Code because there was no other available place. This proposal sets up a new section R324 in Chapter 3 Building Planning for all solar energy systems with pointers to the type of system that will be used on the building. Provisions for photovoltaic energy systems currently in Section M2302 have been moved as appropriate to the newly proposed R324 SOLAR ENERGY SYSTEMS.

Cost Impact: This code change does not increase the cost of construction.

RM98-13

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

M2302-RM-ROSS.DOC

Updated 3/22/2013

RM99: Add code change as follows:

RM99–13

M1411.3 (New), Chapter 44

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing Mueller Industries (JBEngineer@aol.com)

Add new text as follows:

M1411.3 Refrigeration line sets. Line sets connecting to cooling coils shall comply with ASTM BXXX-13. Fittings for line sets shall comply with ASME B16.22, ASME B16.26, or UL 207 and shall be rated for refrigeration tubing. The joints and connections for line sets shall be brazed, flared, or a type that is listed and labeled for refrigeration tubing. Brazing material shall have a melting point exceeding 1,000°F (538°C).

(Renumber subsequent sections)

Add new standards to Chapter 44 as follows:

ASTM

BXXX-13 Specification for Seamless Copper Tube for Linesets

UL

207-2009 Refrigerant-containing Components and Accessories, Nonelectrical

Reason: The IRC currently has no requirements for line sets. ASTM will develop a new standard regulating line sets. By the code change deadline, the number of the standard was not issued by ASTM. The standard is currently being balloted. Once the ballot is approved, the number will be announced.

The ASTM standard contains specific test requirements that will verify the performance of tubing material used for line sets. This is important to regulate since modern air conditioning systems operate at higher pressures than older systems. The tubing must be capable of withstanding long term use at high pressures. If an inferior material is installed, leaks can occur in the piping system. This will allow the escape of refrigerant into the atmosphere. Refrigerants are currently regulated to reduce any unwanted escape into the environment. This change is consistent with maintaining a level of protection against the unwanted escape of refrigerants.

The fittings for line sets must comply with either ASME B16.22, ASME B16.26, or UL 207. These standards provide the necessary requirements for listing refrigeration tube fittings.

The joining methods for line sets follow the standard protocol for refrigerant tubing. The most common joining method is brazing. Many coils have a flared connection which is also acceptable. Other mechanical type connections are tested and listed by third party agencies as being acceptable for air conditioning tubing. The text will not restrict any viable joining method for line sets.

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

Analysis: A review of the standard proposed for inclusion in the code, ASTM XXX-13, 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, 2013. Standard UL 207 is referenced by the 2012 IMC.

RM99-13

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

M1411.3 (NEW)-RM-BALLANCO.DOC

Updated 3/22/2013

RM100-13: Add code change as follows:

RM100 –13
M1502.4.4, M1502.4.4.3 (New)

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing Self (JBEngineer@aol.com)

Revise as follows:

M1502.4.4 Duct length. The maximum allowable exhaust duct length shall be determined by one of the methods specified in Sections M1502.4.4.1 ~~or M1502.4.4.2~~. through M1502.4.4.3.

M1502.4.4.3 Dryer exhaust duct power ventilator. The maximum length of the exhaust duct shall be determined in accordance with the manufacturer's instructions for the dryer exhaust duct power ventilator.

Reason: This is a companion change to the change adding reference to UL 705 for dryer exhaust power ventilators. UL 705 has testing requirements that will establish the maximum length permitted for a dryer duct connecting to a dryer exhaust duct power ventilator. The maximum dryer duct length must be included in the manufacturer's installation instructions.

Cost Impact: This will not increase the cost of construction.

RM100-13

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

M1502.4.4-RM-BALLANCO.DOC

Updated 3/22/2013

RM101-13: Add code change as follows:

RM101–13
M1502.4.4 (New), Chapter 44

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing Self (JBEngineer@aol.com)

Add new text as follows:

M1502.4.4 Dryer Exhaust Duct Power Ventilators. Domestic dryer exhaust duct power ventilators shall conform to UL 705 for use in dryer exhaust duct systems. The dryer exhaust duct power ventilator shall be installed in accordance with the manufacturer's instructions.

(Renumber subsequent sections)

Add new standard to Chapter 44 as follows:

UL

705-2004 Revision 5	Standard for Power Ventilators

Reason: This change is consistent with a change to the IMC and will add the requirements for dryer exhaust power ventilators for domestic dryer use. Dryer exhaust duct power ventilators are now regulated by Supplemental requirements to UL 705. These supplemental requirements specify testing for ventilators used in this application. The requirements include many safety provisions for the ventilators. The ventilator manufacturer specifies the maximum length of the dryer exhaust duct. This length is used for testing and listing the ventilator, thus verifying the instructions.

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

Analysis: A review of the standard proposed for inclusion in the code, UL 705, 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, 2013.

RM101-13

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

M1502.4.4-RM-BALLANCO.DOC

Updated 3/22/2013

IRC – PLUMBING

REVISIONS TO TENTATIVE ORDER OF DISCUSSION:

Add RP154-13 to the IRC Plumbing Hearing Order following RP36-13
Add RP155-13 to the IRC Plumbing Hearing Order following RP112-13
Add RP156-13 to the IRC Plumbing Hearing Order following RP136-13
Add RP157-13 to the IRC Plumbing Hearing Order following RP144-13
Add RP158-13 to the IRC Plumbing Hearing Order following RP150-13

TENTATIVE ORDER OF DISCUSSION

2012 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE

PLUMBING

The following is the tentative order in which the proposed changes to the code will be discussed at the public hearings. Proposed changes which impact the same subject have been grouped to permit consideration in consecutive changes.

Proposed change numbers that are indented are those which are being heard out of numerical order. Indentation **does not** necessarily indicate that one change is related to another. Proposed changes may be grouped for purposes of discussion at the hearing at the discretion of the chair. Note that some IRC code change proposals may not be included on this list, as they are being heard by other committees. Please consult the Cross Index of Proposed Changes.

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2013 PROPOSED CHANGES TO THE INTERNATIONAL RESIDENTIAL CODE

PLUMBING

Updated 3/22/2013

RP29-13: See highlighted revisions. A proponent has been added and reason statement has been updated:

RP29 – 13

R202, P2707.1, P2716, P2716.1, P2716.2, P2717.3, TABLE P2903.6, TABLE P3004.1, TABLE P3005.4.2, P3111.1, P3112.1, TABLE P3201.7

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org) and Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing InSinkErator (JBEngineer@aol.com)

Revise as follows:

PLUMBING APPLIANCE. An energized household *appliance* with plumbing connections, such as a dishwasher, food waste ~~grinder~~ disposer, clothes washer or water heater.

P2707.1 Directional fitting required. *Approved* directional-type branch fittings shall be installed in fixture tailpieces receiving the discharge from food waste ~~disposal~~ disposer units or dishwashers.

SECTION P2716
FOOD WASTE ~~GRINDER~~ DISPOSER

P2716.1 Food waste ~~grinder~~ disposer waste outlets. Food waste ~~grinder~~ disposer shall be connected to a drain of not less than 1-1/2 inches (38 mm) in diameter.

P2716.2 Water supply required. Food waste ~~grinder~~ disposer shall be provided with an adequate supply of water at a sufficient flow rate to ensure proper functioning of the unit.

P2717.3 Sink, dishwasher and food-waste ~~grinder~~ disposer. The combined discharge from a sink, dishwasher, and food waste ~~grinder~~ disposer is permitted to discharge through a single 1-1/2 inch (38 mm) trap. The discharge pipe from the dishwasher shall be increased to not less than 3/4 inch (19 mm) in diameter and shall connect with a wye fitting between the discharge of the food-waste ~~grinder~~ disposer and the trap inlet or to the head of the food waste ~~grinder~~ disposer. The dishwasher waste line shall rise and be securely fastened to the underside of the counter before connecting to the sink tail piece or the food waste ~~grinder~~ disposer.

TABLE P2903.6
WATER-SUPPLY FIXTURE-UNIT VALUES FOR VARIOUS PLUMBING FIXTURES AND FIXTURE GROUPS

TYPE OF FIXTURES OR GROUP OF FIXTURES	WATER-SUPPLY FIXTURE-UNIT VALUE (w.s.f.u.)		
Kitchen group (dishwasher and sink with/without ~~garbage grinder~~ food waste disposer)	1.9	1.0	2.5

(Portions of table not shown remain unchanged.)

TABLE P3004.1
DRAINAGE FIXTURE UNIT (d.f.u.) VALUES FOR VARIOUS PLUMBING FIXTURES

TYPE OF FIXTURE OR GROUP OF FIXTURES	DRAINAGE FIXTURE UNIT VALUE (d.f.u.)a
Kitchen group (dishwasher and sink with or without ~~garbage grinder~~ food waste disposer)	2

(Portions of table not shown remain unchanged.)

TABLE P3005.4.2
MAXIMUM NUMBER OF FIXTURE UNITS ALLOWED TO BE CONNECTED TO THE BUILDING DRAIN, BUILDING DRAIN BRANCHES OR THE BUILDING SEWER

DIAMETER OF PIPE (inches)	SLOPE PER FOOT		
	1/8 inch	¼ inch	½ inch

(Portions of table not shown remain unchanged.)

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

a. 1-1/2 inch pipe size limited to a building drain branch serving not more than two waste fixtures, or not more than one waste fixture if serving a pumped discharge fixture or ~~garbage grinder~~ food waste disposer discharge.

b. No water closets.

P3111.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks and lavatories. A combination waste and vent system shall not receive the discharge of a food waste ~~grinder~~ disposer.

P3112.1 Limitation. Island fixture venting shall not be permitted for fixtures other than sinks and lavatories. Kitchen sinks with a dishwasher waste connection, a food waste ~~grinder~~ disposer, or both, in combination with the kitchen sink waste, shall be permitted to be vented in accordance with this section.

TABLE P3201.7
SIZE OF TRAPS AND TRAP ARMS FOR PLUMBING FIXTURES

PLUMBING FIXTURE	TRAP SIZE MINIMUM (inches)
Kitchen sink (one or two traps, with or without dishwasher and ~~garbage grinder~~ food waste disposer)	11/2

(Portions of table not shown remain unchanged.)

Reason [HALL-PMGCAC]: The proposed language was approved for the 2015 IPC. The proper term used in the plumbing profession is food waste disposers, not food waste grinders. This will correct the language in the code to the proper terminology for this type of plumbing appliance.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. X7 on the PMGCAC IRC-P list.

Reason [BALLANCO]: This is a companion change to a change made to the Plumbing Code during the last cycle. The correct terminology for the appliance is a food waste disposer, not a food waste grinder.

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

RP29-13

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

P2701.1-RP-BALLANCO-HALL-PMGCAC

RP102-13: See highlighted revisions. A proponent has been added and reason statement has been updated:

RP102 – 13
P2905.2, P2905.2.1 (New), Chapter 44

Proponent: David Hall CFM, Georgetown, Texas representing the ICC PMG Code Action Committee (Dave.Hall@georgetown.org); Jeremy Brown, NSF International, (brown@nsf.org); Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P2905.2 Lead content. The lead content in pipe and fittings used in the water supply system shall be ~~have lead content of~~ not greater than 8 percent ~~lead~~.

Add new text as follows:

P2905.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent lead or less.

Add new standard to Chapter 14 as follows:

NSF
372-2010 Drinking Water System Components - Lead Content

Reason [HALL-PMGCAC]: Section P2505.2 is reworded to state the 8 percent limitation of lead content. The existing language *requires* lead content to be not greater than 8 percent. A subtle change but more correct as revised.

The new Section P2905.2.1 coordinates the IRC with Federal legislation limiting the amount of lead is pipe, pipe fittings, joints, valves, faucets, and fixture fittings that can be used to supply *drinking water*. Section P2905.2 is still necessary since remaining components in a potable water distribution system must still ne limited to 8 percent lead. The Federal legislation only applies to drinking water components. There are other components that have a greater quantity of lead than 0.25 percent and they are permitted to by Federal law. This is identical language that was approved for the 2015 IPC.

NSF 372 is the new standard used to evaluate the weighted average of lead in drinking water components. This standard allows manufacturers to perform a mathematical analysis of their product to determine the weighted average of lead. NSF 372 is consistent with the Federal legislation. This standard was approved for addition to the 2015 IPC.

This proposal is submitted by the ICC Plumbing, Mechanical and Fuel Gas Code Action Committee (PMGCAC) The PMGCAC was established by the ICC Board of Directors to pursue opportunities to improve and enhance an assigned International Code or portion thereof. This includes both the technical aspects of the codes as well as the code content in terms of scope and application of referenced standards. Since its inception in July, 2011, the PMGCAC has held 2 open meetings, multiple conference calls and multiple workgroup calls which included members of the PMGCAC. Interested parties also participated in all of the meetings and conference calls to discuss and debate the proposed changes. For PMGCAC member reference, this was item no. 57 on the PMGCAC IRC-P list.

Reason [BALLANCO]: This change will coordinate the IRC with the IPC and Federal legislation limiting the amount of lead that can be used to supply drinking water. Section 2905.2 is still necessary since remaining components in a potable water distribution system must still have a maximum of 8 percent lead. The Federal legislation only applies to drinking water components. There are other components that have a greater quantity of lead than 0.25 percent and are permitted by Federal law.

NSF 372 is the new standard used to evaluate the weighted average of lead in drinking water components. This standard allows manufacturers to perform a mathematical analysis of their product to determine the weighted average of lead. NSF 372 is consistent with the Federal legislation.

Reason [BROWN]: Section 1417 of the Safe Drinking Water Act (42 U.S.C. 300g–6) was amended by Senate Bill.3874 of 2010 http://www.gpo.gov/fdsys/pkg/BILLS-111s3874enr/pdf/BILLS-111s3874enr.pdf

This changes the definition of lead free in the Safe Drinking Water Act from not more than 8 percent lead to not more than a weighted average of 0.25 percent. The effective date of the SDWA revision is January 4, 2014. This proposal makes the corresponding adjustment to the code section.

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

RP102-13

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

P2905.2-RP-BALLANCO-BROWN-HALL-PMGCAC

Updated 3/22/2013

RP154: Add code change as follows:

RP154 – 13
P2708.2 (New)

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Add new text as follows:

P2708.2 Shower drain. Shower drains shall have a outlet size of not less than 1-1/2 inches [38 mm] in diameter.

(Renumber subsequent sections)

Reason: There is no statement in the IRC listing the size of a shower drain. The proposed size is consistent with the International Plumbing Code.

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

RP154-13

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

P2708.2 (NEW)-RP-BALLANCO.DOC

Updated 3/22/2013

RP155: Add code change as follows:

RP155–13
P2905.9.1.2

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P2905.9.1.2 Solvent cementing. Joint surfaces shall be clean and free from moisture~~,~~. Joints shall be made in accordance with the pipe, fitting or solvent cement manufacturer's installation instructions. Where such instructions require a primer to be used, ~~and~~ an *approved* primer shall be applied~~,~~ and a solvent cement, orange in color and conforming to ASTM F 493, shall be applied to joint surfaces. Where such instructions allow for a one step solvent cement, yellow or red in color and conforming to ASTM F 493, to be used, the joint surfaces shall not require application of a primer before the solvent cement is applied. The joint shall be made while the cement is wet, and in accordance with ASTM D 2846 or ASTM F 493. Solvent cement joints shall be permitted above or below ground.

~~**Exception:** A primer is not required where all of the following conditions apply:~~

~~1. The solvent cement used is third-party certified as conforming to ASTM F 493.~~
~~2. The solvent cement used is yellow in color.~~

~~3. The solvent cement is used only for joining ½ inch (12.7 mm) through 2 inch (51 mm) diameter CPVC pipe and fittings.~~

~~4. The CPVC pipe and fittings are manufactured in accordance with ASTM D 2846.~~

Reason: This section is currently very convoluted. The requirements can be simplified by referencing the pipe manufacturer's installation instructions. The installation instructions are part of the listing which is required by the code. This will also recognize changes to the listing of the joining method, rather than requiring constant changing of this section.

The current requirements are incorrect since UL lists ASTM F442 for joining with one-step solvent cement. Furthermore, UL lists the joining for pipe up to 3 inch in diameter. Neither requirement is addressed in the current code text. UL also requires the solvent cement to be red in color. Hence, when doing a multipurpose piping system, the CPVC solvent cement would have to be red in color.

Cost Impact: This change does not increase the cost of construction.

RP155-13

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

P2905.9.1.2-RP-BALLANCO.DOC

Updated 3/22/2013

RP156: Add code change as follows:

RP156-13
P3007.5

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P3007.5 Macerating toilet systems <u>and pumped waste systems</u>. Macerating toilet systems <u>and pumped waste systems</u> shall comply with CSA B45.9 or ASME A112.3.4 and shall be installed in accordance with the manufacturer's installation instructions.

Reason: The macerating toilet system standard has been harmonized between ASME and CSA. During the harmonization process, pumped waste systems were added to the standard. Pumped waste systems are used to add fixtures to existing dwelling units. They are commonly used to add handicapped accessible fixtures to an accessible level of the dwelling unit.

Cost Impact: This change does not increase the cost of construction.

Analysis: The proponent indicated in his proposal submission that the standards shown in this code section, CSA B45.9 or ASME A112.3.4, have been recently harmonized into standard ASME A112.3.4/CSA B45.9. The proponent's request for updating the standard for this section has been processed and will be included in a proposal for all standard updates that will be heard by the ADMIN committee in proposal ADM 62-13.

RP156-13

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

P3007.5-RP-BALLANCO.DOC

Updated 3/22/2013

RP157: Add code change as follows:

RP157–13
P3111.1

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing self (JBEngineer@aol.com)

Revise as follows:

P3111.1 Type of fixtures. A combination waste and vent system shall not serve fixtures other than floor drains, sinks, and lavatories. ~~A combination waste and vent systems shall not receive the discharge of a food waste grinder.~~

Reason: There is no technical justification for prohibiting a food waste grinder from discharging to a combination waste and vent system. A food waste grinder does not change the pressure in the piping system any differently than a sink operating without a food waste grinder. The food waste grinder will not impact the performance of the combination waste and vent system. A video was made showing the discharge from a food waste grinder. The video of the clear pipe shows the flow from a food waste grinder as being the same as the flow from the sink without a food waste grinder. Unfortunately, there is a mistaken belief that the discharge from a food waste grinder is a pumped waste.

Cost Impact: This change does not increase the cost of construction.

RP157-13

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

P3111.1-RP-BALLANCO.DOC

Updated 3/22/2013

RP158: Add code change as follows:

RP158–13
P3201.2, Chapter 44

Proponent: Julius Ballanco, P.E., JB Engineering and Code Consulting, P.C. representing Sure Seal (JBEngineer@aol.com)

Revise as follows:

P3201.2 Trap seals and trap seal protection. Traps shall have a liquid seal not less than 2 inches (51 mm) and not more than 4 inches (102 mm). Traps for floor drains shall be fitted with a trap primer, trap seal protection device complying with ASSE 1072 or shall be of the deep seal design. Trap seal primer valves shall connect to the trap at a point above the level of the trap seal.

Add standard to Chapter 44 as follows:

ASSE

1072-07 Performance Requirements for Barrier Type Floor Drain Tap Seal Protection Devices

Reason: This modification adds language to identify all of the methods available for protecting the trap seal of emergency floor drain traps or traps subject to evaporation. Barrier type trap seal protection devices were added to the IPC during the last cycle. This will add the same allowance for their use to the IRC. Trap seal protection devices do not require any water. They are regulated by ASSE 1072 and are tested for providing protection of the trap seal.

Cost Impact: This change does not increase the cost of construction.

Analysis: A review of the standard proposed for inclusion in the code, ASSE 1072-07 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, 2013.

RP158-13

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

P3201.2-RP-BALLANCO.DOC

2013 PROPOSED CHANGES TO THE INTERNATIONAL SWIMMING POOL AND SPA CODE

Updated 3/22/2013

SP19-13: Replace proposal as follows:

SP19 – 13

303.1; IECC C404.7, C404.7.1, C404.7.2, C404.7.3, C404.8, Chapter 5; IECC R403.9 (IRC N1104.9), R403.9.1 (New) (IRC N1104.9.1 (New)), R403.9.2 (IRC N1104.9.2), R403.9.3 (IRC N1104.9.1.3), R403.9.4 (IRC N1104.9.1.4), R403.10 (New) (IRC N1103.10 (New)), Chapter 5 (IRC Chapter 44)

Proponent: Jennifer Hatfield, J. Hatfield & Associates, PL, representing the Association of Pool & Spa Professionals (jhatfield@apsp.org)

THIS IS A 3 PART CODE CHANGE. PART I WILL BE HEARD BY THE ISPSC COMMITTEE, Part II WILL BE HEARD BY THE IECC-CE COMMITTEE, PART III WILL BE HEARD BY THE IECC-RE COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I - ISPSC

Revise as follows:

303.1 ~~General~~ Pool and spa energy consumption. The energy consumption of ~~requirements for~~ pools and ~~inground permanently~~ ~~installed~~ *permanent residential spas* shall be controlled by the requirements ~~as specified~~ in Sections 303.~~2~~ 1.1 through 303.1.4. ~~and APSP 15. The energy requirements for residential portable electric spas shall be in accordance with APSP 14.~~

303.1.1 Residential pools and permanent residential spas. *Residential swimming pools* and *permanent residential spas* shall be in accordance with APSP-15.

303.1.2 Heaters. The electric power to heaters shall be ~~equipped with~~ controlled by ~~an~~ readily accessible ~~external~~ on-off switch that is mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. ~~to allow the heater to be shutoff without adjusting the thermostat setting. Such switch shall be provided with ready access~~. Gas-fired heaters shall not be equipped with ~~continuous pilot burners~~ continuously-burning ignition pilots.

~~Exception:~~ ~~Portable residential spas and portable residential exercise spas.~~

303.1.3 Time switches. Time switches or other control methods that can automatically turn off and on heaters and pump~~s~~ motors according to a preset schedule shall be installed ~~with~~ for ~~on all~~ heaters and pump motors. Heaters and~~,~~ pump~~s and~~ motors that have built-in time~~rs~~ switches shall be ~~deemed~~ in compliance with this section ~~requirement~~.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. Pumps that operate solar- or waste-heat recovery pool heating systems.
3. ~~Portable residential spas and portable residential exercise spas.~~

303.1.4 Covers. Outdoor heated pools and outdoor ~~inground permanently-installed~~ *permanent residential spas* shall be provided with a vapor retardant cover, a liquid cover or other *approved* vapor retardant means in accordance with 104.11.

Exception: Where more than 70 percent of the energy for heating, computed over an operating season, is from site-recovered energy such as from a heat pump or solar energy source, covers or other vapor retardant means shall not be required.

303.2 Portable residential spas. The energy consumption of electric-powered *portable residential spas* shall be controlled by the requirements of APSP 14.

PART II - IECC-COMMERCIAL PROVISIONS

Revise as follows:

C404.7 Pools and ~~inground permanently installed spas.~~ spa energy consumption (Mandatory). ~~Pools and inground permanently installed spas shall comply with Sections C404.7.1 through C404.7.3.~~ The energy consumption of pools and ~~inground~~ permanent residential spas shall be controlled by the requirements in Sections C404.7.1 through C404.7.4.

C404.7.1 Heaters. The electric power to ~~all~~ heaters shall be ~~equipped with~~ controlled by a~~n~~ readily accessible ~~external~~ on-off switch that is mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. ~~to allow the heater to be shutoff without adjusting the thermostat setting. Such switch shall be provided with ready access~~. Gas-fired heaters shall not be equipped with ~~continuous pilot burners~~ continuously-burning ignition pilots.

~~**Exception:** Portable residential spas and portable residential exercise spas.~~

C404.7.2 Time switches. Time switches or other control methods that can automatically turn off and on heaters and pump motors according to a preset schedule shall be installed ~~with~~ for ~~on all~~ heaters and pump motors. Heaters and~~,~~ pump~~s and~~ motors that have built-in time~~rs~~ switches shall be ~~deemed~~ in compliance with this section ~~requirement~~.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. ~~Where~~ Pumps that ~~are required to~~ operate solar- and waste-heat-recovery pool heating systems.

C404.7.3 Covers. Outdoor heated pools and outdoor ~~inground permanently-installed~~ permanent residential spas shall be provided with a vapor retardant cover, a liquid cover or other *approved* vapor retardant means.

Exception: ~~A vapor-retardant cover is not required for pools deriving over 70 percent of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season.~~ Where more than 70 percent of the energy for heating, computed over an operating season, is from site-recovered energy such as from a heat pump or solar energy source, covers or other vapor retardant means shall not be required.

C404.8 Portable residential spas (Mandatory). The energy consumption of electric-powered portable residential spas shall be controlled by the requirements of APSP 14.

Add new standard to Chapter 5:

The Association of Pool & Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314

APSP

14-11 American National Standard for Portable Electric Spa Efficiency

Part III - IECC-Residential Provisions

Revise as follows:

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R403.9 (N1104.9) Pools and spa energy consumption ~~inground permanently installed spas.~~ (Mandatory). ~~Pools and inground permanently installed spas shall comply with Sections R403.9.1 through R403.9.3.~~ The energy consumption of pools and ~~inground~~ permanent residential spas shall be controlled by the requirements in Sections R403.9.1 through R403.9.4.

R403.9.1 Residential pools and permanent residential spas. Swimming pools and permanent spas that are accessory to detached one- and two- family dwellings and townhouses 3 stories or less in height above ground plane and that are available only to the household and its guests shall be in accordance with APSP-15.

R403.9.2 (N1104.9.2) Heaters. The electric power to heaters shall be ~~equipped with~~ controlled by ~~a~~n readily accessible ~~external~~ on-off switch that is mounted on the exterior of the heater or external to and within 3 feet (914 mm) of the heater. Operation of such switch shall not change the setting of the heater thermostat. Such switches shall be in addition to a circuit breaker for the power to the heater. ~~to allow the heater to be shutoff without adjusting the thermostat setting. Such switch shall be provided with ready access~~. Gas-fired heaters shall not be equipped with ~~continuous pilot burners~~ continuously-burning ignition pilots.

R403.9.3 (N1104.9.3) Time switches. Time switches or other control methods that can automatically turn off and on heaters and pump motors according to a preset schedule shall be installed ~~with~~ for ~~on~~ ~~all~~ heaters and pump motors. Heaters and~~,~~ pump~~s and~~ motors that have built-in time~~rs~~ switches shall be ~~deemed~~ in compliance with this section ~~requirement~~.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. ~~Where~~ Pumps that ~~are required to~~ operate solar- and waste-heat-recovery pool heating systems.

R403.9.4 (N1104.9.4) Covers. Outdoor heated pools and outdoor ~~inground permanently-installed~~ permanent residential spas shall be provided with a vapor retardant cover, a liquid cover or other *approved* vapor retardant means.

Exception: ~~A vapor-retardant cover is not required for pools deriving over 70 percent of the energy for heating from site-recovered energy, such as a heat pump or solar energy source computed over an operating season.~~ Where more than 70 percent of the energy for heating, computed over an operating season, is from site-recovered energy such as from a heat pump or solar energy source, covers or other vapor retardant means shall not be required.

R403.10 (N1103.10) Portable residential spas (Mandatory). The energy consumption of electric-powered portable residential spas shall be controlled by the requirements of APSP 14.

Add new standards to Chapter 5 (IRC Chapter 44):

The Association of Pool & Spa Professionals
2111 Eisenhower Avenue
Alexandria, VA 22314

APSP

14-11 American National Standard for Portable Electric Spa Efficiency

15-11 American National Standard for Residential Swimming Pool and Spa Energy Efficiency

Reason:
PART I: This code change provides for the following:

1. All parts work to provide consistent language with pool and spa energy provisions found in the ISPSC and IECC. Some portions have been added here that were already included in the ISPSC and vice versa on part II and III of this proposal below.
2. Clarifies APSP-15 only applies to residential pools and inground spas.
3. Changes wording to use defined terms, as found in Chapter 2 of the ISPSC.
4. Clarifications regarding on-off switches for heaters.
6. Consistent verbiage within the time switch requirements.
7. Provides for clarity that the cover requirements are only for outdoor pools.
8. Provides for options when it comes to pool and spa covers to ensure one can comply with more intricately designed pools and spas (shape, size/infinity pools/etc.). Otherwise if only one type of method can be used then the code is limiting the design of any pool or spa. The "typical" rectangle pool is no longer the norm.

PART II Reason: This code change provides for the following:

1. All parts work to provide consistent language with pool and spa energy provisions found in the ISPSC and IECC. Some portions have been added here that were already included in the ISPSC and vice versa on part II and III of this proposal below.
2. Changes wording to use defined terms, as found in Chapter 2 of the ISPSC.
3. Clarifications regarding on-off switches for heaters.
4. Consistent verbiage within the time switch requirements.
5. Provides for clarity that the cover requirements are only for outdoor pools.
6. Provides for options when it comes to pool and spa covers to ensure one can comply with more intricately designed pools and spas (shape, size/infinity pools/etc.). Otherwise if only one type of method can be used then the code is limiting the design of any pool or spa. The "typical" rectangle pool is no longer the norm.
7. Provides for a new subsection to address portable residential spas in the rare case they would be used for more than a four story building and therefore fall under the commercial code.

PART III Reason: This code change provides for the following:

1. All parts work to provide consistent language with pool and spa energy provisions found in the ISPSC and IECC. Some portions have been added here that were already included in the ISPSC and vice versa on part II and III of this proposal below.
2. Clarifies APSP-15 only applies to residential pools and inground spas.
3. Changes wording to use defined terms, as found in Chapter 2 of the ISPSC.
4. Clarifications regarding on-off switches for heaters.
5. Consistent verbiage within the time switch requirements.
6. Provides for clarity that the cover requirements are only for outdoor pools.
7. Provides for options when it comes to pool and spa covers to ensure one can comply with more intricately designed pools and spas (shape, size/infinity pools/etc.). Otherwise if only one type of method can be used then the code is limiting the design of any pool or spa. The "typical" rectangle pool is no longer the norm.
8. Provides for a new subsection to address portable residential spas, requiring their compliance with the APSP-14 energy standard, consistent with the ISPSC.

Cost impact: These code change proposals will not increase the cost of construction.

Analysis: Standards APSP 14 and APSP-15 are in the 2012 ISPSC.

SP19-13

PART I – INTERNATIONAL SWIMMING POOL AND SPA CODE

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

PART II – INTERNATIONAL ENERGY CONSERVATION CODE-COMMERCIAL

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

PART III – INTERNATIONAL ENERGY CONSERVATION CODE-RESIDENTIAL

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