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August 12, 2009

Mr. Ed Landon, Director  
 Maryland Codes Administration  
 DHCD-DCA  
 100 Community Place  
 Crownsville, MD 21032

Ref: August 14, 2009 Public Hearing on Update of the Maryland Building Performance Standards (Maryland Register, July 31, 2009)

Dear Mr. Landon:

The Codes & Standards Committee of the Maryland-National Capital Building Industry Association (MNCBIA) appreciates the opportunity to comment on the proposed adoption by Maryland of the 2009 International Building Code, the International Residential Code, and the International Energy Conservation Code as the Maryland Building Performance Standards. MNCBIA represents over 700 companies that are involved in the building industry in Maryland.

After its review of the State's previous amendments to the 2006 I-Codes, the 2009 I-Codes, and NAHB recommendations, the Association would like to offer the following comments.

We believe that the State amendments adopted with the 2006 I-Codes should be continued. These amendments have proven to be safe and reliable, and have reduced the cost of construction, leading to more affordable housing. The Stair Geometry requirements are a good example of this.

By keeping these sound amendments that have stood the test of time, the State would be leading the local jurisdictions by example. Such amendments would provide guidance to the counties in their deliberations.

In addition, the codes community knows that new codes are not perfect and need to be reviewed, discussed, and amended. The MNCBIA has done this and is proposing the following amendments be considered for adoption by the MCA:

**BUILDING HOMES, CREATING NEIGHBORHOODS**

Representing the Building and Development Industry in Calvert, Charles, Montgomery,  
 Prince George's and St. Mary's Counties and Washington, D.C.  
 Affiliated with the Maryland State Builders Association and the National Association of Home Builders

1. IECC: Table 405.5.2 (1) – Issue: The Elimination of Equipment Trade-offs
2. IRC R311.7.4.1 and R311.7.4.2 – Issue: Stair Geometry
3. IRC R612.2. – Issue: Window sill height
4. IRC R312.1 – Issue: Guardrails
5. IBC 1013.1 – Issue: Guardrails
6. IRC Table R302.1 – Issue: Fire Separation Distance

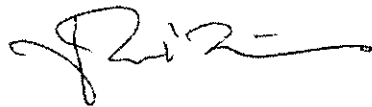
These amendments are in the appendix and the reasons they should be adopted are detailed.

Our proposed amendment to the 2009 IECC does not weaken the requirements of the IECC or Chapter 13 of the IBC.

The Maryland Codes Administration has an important role to play as Maryland's leader of the codes adoption process. The ICC process is not perfect. In many cases, National or other special interests lead to the adoption of codes that are either not appropriate due to conditions of a given jurisdiction, or are not appropriate because they serve special interests. As is done in Virginia, the District of Columbia and Pennsylvania, a vetting process is needed at the State level. We believe your oversight and guidance is necessary to complete the process of code review and recommendation of amendments necessary to improve the code and correct the deficiencies of the National process. Local jurisdictions can then utilize your amendments and thoughtful deliberations as guidance and a basis for their adoption process.

The Association and its Codes Committee hopes that our remarks will prove useful in your deliberations. If you have any questions, please contact Annette Rosenblum at 301-445-5407.

Sincerely,



John Stovall  
Chair, Codes & Standards Committee

Appendix

## Recommended State & Local Amendments to the 2009 International Energy Conservation Code (IECC)

**Issue:** The Elimination of Equipment Trade-offs

**2009 IECC Section:** Table 405.5.2(1)

**Recommended Amendment:**

*Modify the Table as shown below (Delete text, add New Text)*

**TABLE 405.5.2(1)  
SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS**

| BUILDING COMPONENT                          | STANDARD REFERENCE DESIGN   | PROPOSED DESIGN   |
|---|---|---|
| Heating systems <sup>g, h</sup> ,           | <p><del>As-proposed</del><br/> <u>Fuel type: same as proposed design</u><br/> <u>Efficiencies:</u><br/> <u>Electric: air-source heat pump with prevailing federal minimum efficiency</u><br/> <u>Nonelectric furnaces: natural gas furnace with prevailing federal minimum efficiency</u><br/> <u>Nonelectric boilers: natural gas boiler with prevailing federal minimum efficiency</u><br/>                     Capacity: sized in accordance with Section M1401.3 of the <i>International Residential Code</i></p> | <p>As proposed<br/> <u>As proposed</u><br/> <u>As proposed</u></p>  |
| Cooling system <sup>g, i</sup> ,            | <p><del>As-proposed</del><br/> <u>Fuel type: Electric</u><br/> <u>Efficiency: in accordance with prevailing federal minimum standards</u><br/>                     Capacity: sized in accordance with Section M1401.3 of the <i>International Residential Code</i></p>  | <p>As proposed<br/> <u>As proposed</u><br/> <u>As proposed</u></p>  |
| Service Water Heating <sup>g, i, j, k</sup> | <p><del>As-proposed</del><br/> <u>Fuel type: same as proposed design</u><br/> <u>Efficiency: in accordance with prevailing Federal minimum standards</u><br/> <u>Use: gal/day = 30 + 10 × Nbr</u><br/> <u>Tank temperature: 120°F</u><br/> <del>Use: same as proposed design</del></p>  | <p>As proposed<br/> <u>As proposed</u><br/> <u>Same as standard reference</u><br/> <u>Same as standard reference</u><br/>                     gal/day = 30 + 10 × Nbr</p> |

(Remainder of Table remains unchanged)

**Reason:**

The purpose of this amendment is to retain the original equipment trade-off provisions from the 2006 International Energy Conservation Code (IECC) for the heating systems, cooling systems, and service water heating.

By retaining these, builders have an opportunity to optimize a code-compliant house design by using energy efficient equipment.

Eliminating the ability to use equipment efficiency as a means to achieve whole-house energy conservation will discourage the use of higher efficiency equipment. Quite often, the use of this high efficiency equipment provides a more cost effective solution to achieve code compliance. Eliminating this ability discourages the concept of the "house as a system" approach which is a cornerstone of many state energy programs and the Federal Energy Star Program. In fact, without this amendment the current practice for constructing an Energy Star home in this jurisdiction would be disallowed.

Without accepting this amendment will force a negative impact on the installation of state-of-the-art, more energy efficient equipment, it will increase the cost of construction by driving builders to often use less efficient equipment while dramatically increasing the cost of construction of the building envelope, namely windows and fiberglass insulation.

Significant improvements in the efficiency of HVAC and water heating equipment have been made in the last 20 years.. With the increased emphasis on new and improved technologies, this trend will continue and will result in even higher energy savings in future years. Eliminating the ability to recognize the value of these technologies in the marketplace will prove detrimental to all builders and ultimately the homeowners.

One of the easiest ways to conserve energy is to utilize high efficiency equipment. The 2009 IECC code change does not provide any incentives for the builder to install high efficiency equipment, but rather continues the use of the minimum equipment efficiencies established by federal standards.

The language in the 2009 IECC effectively removes the use of high efficiency HVAC equipment as a reasonable and cost-effective solution to achieve compliance. Failure to remove the existing language concentrates solely on the building envelope by focusing on insulation/windows to meet specific energy targets.

For these reasons we encourage the adoption of this amendment.

## Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

**Issue:** Stair Geometry (8 ¼" x 9")

**2009 IRC Sections:** R311.7.4.1 and R311.7.4.2

**Recommended Amendment:**

*Modify the Section as shown below (Delete text, add new text)*

**R311.7.4.1 Riser height.** The maximum riser height shall be 8 ¼ inches (210 mm) ~~7 ¾ inches (196 mm)~~. The riser shall be measured... (no further change)

**R311.7.4.2 Tread depth.** The minimum tread depth shall be 9 inches (229 mm) ~~10 inches (254 mm)~~. The tread depth shall be measured... (no further change)

**Reason:**

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

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

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

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

townhomes.

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

# Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

**Issue:** Window Sill Height/Window Opening Devices

**2009 IRC Section:** R612.2

**Recommended Amendment:** Modify the Section as shown below (Delete text, Add new text)

**R612.2 Window sills.** In *dwelling* units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished *grade* or surface below, the lowest part of the clear opening of the window shall be a minimum of ~~24 inches (610 mm)~~ 18 inches (457 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4 inch (102 mm) diameter sphere where such openings are located within ~~24 inches (610 mm)~~ 18 inches (457 mm) of the finished floor.

## **Exceptions:**

1. Windows whose openings will not allow a 4-inch diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position.
2. Openings that are provided with window fall prevention devices that comply with Section R612.3.
3. Openings that are provided with fall prevention devices that comply with ASTM F 2090.
4. Windows that are provided with opening limiting devices that comply with Section R612.4.

**R612.3 Window fall prevention devices.** Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

**R612.4 Window opening limiting devices.** When required elsewhere in this code, window opening limiting devices shall comply with the provisions of this section.

**R612.4.1 General requirements.** Window opening limiting devices shall be self acting and shall be positioned to prohibit the free passage of a 4-in. (102-mm) diameter rigid sphere through the window opening when the window opening limiting device is installed in accordance with the manufacturer's instructions.

**R612.4.2 Operation for emergency escape.** Window opening limiting devices shall be designed with release mechanisms to allow for emergency escape through the window opening without the need for keys, tools or special knowledge. Window opening limiting devices shall comply with all of the following:

1. Release of the window opening-limiting device shall require no more than 15 pounds (66 N) of force.
2. The window opening limiting device release mechanism shall operate properly in all types of weather.

3. Window opening limiting devices shall have their release mechanisms clearly identified for proper use in an emergency.
4. The window opening limiting device shall not reduce the minimum net clear opening area of the window unit below what is required by Section R310.1.1 of the code.

**Reasons:** The 2009 R612.2 Window sills gives the maximum number of options and flexibility with respect to window devices used for opening or fall prevention. The clear opening of the window was changed from 24 inches to 18 inches above the finished floor to be in alignment with Montgomery County and the State of Virginia. Further, there is no documented relationship between the window sill height and falls from windows.

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

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

## Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

**Issue:** Guardrails

**2009 IRC Section:** R312.1

**Recommended Amendment:**

*Modify the Section as shown below (Delete text)*

**R312.1 (Supp) Where required.** Guards shall be located along open-sided walking surfaces of all decks, porches, balconies, ~~including stairs, ramps and landings that are located more than 30 inches measured vertically to the floor or grade below, at any point within 36 inches (914 mm) horizontally to the edge of the open side~~ Insect screening shall not be considered as a guard.

**Reason:**

The purpose of this amendment is to retain the provisions of the 2006 International Residential Code (IRC), where guardrails were required when the elevation difference between the walking surface was greater than 30 inches to the floor or grade directly below. The 2009 IRC now requires a guardrail where the elevation difference is greater than 30 inches from the walking surface to a horizontal point 36 inches adjacent to the leading edge of the walking surface to the grade or floor below. This change will now require the building official to carry a four foot level to conduct inspections.

During the 2007/2008 Code Development Cycle, the proponent referred to work conducted and reports written by the International Code Council's Code Technology Committee (CTC). Though, at no time during the Public Hearing, nor the Final Action Hearing, was any technical justification presented to substantiate the change requiring the building official to measure thirty-six inches away from the leading edge of the walking surface or tread to determine when a guardrail should or should not be required. After reviewing the many reports from the CTC website, it is still unclear from where the thirty-six inch requirement was derived. Currently there are no studies that can support the claims made that this will have an effect on reducing possible injuries. While the proponent promotes this as a means for consistent enforcement of the guard requirements, there was no evidence that showed an increased risk to the safety of the occupant if the current method of measuring from the edge of the walking surface to grade below is used.

Furthermore, the new language now requires a guardrail to be applied to any open-sided walking surface. This could very well be interpreted by building officials to include driveways, landscaped walkways, retaining walls and other elevated surfaces used for the purpose of walking. This change substantially expands the areas needing to be equipped with guards, beyond the previous edition of the code.

## Recommended State & Local Amendments to the 2009 International Building Code (IBC)

**Issue:** Guardrails

**2009 IBC Section:** 1013.1

**Recommended Amendment:**

*Modify the Section as shown below (Delete text and add text)*

**1013.1 Where required.** Guards shall be located along open-sided walking surfaces, including mezzanines, equipment platforms, stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade below at any point within ~~36 inches ( 914 mm) horizontally to the edge of the open side.~~ above the floor or grade below. Guards shall be adequate in strength and attachment in accordance with Section 1607.7.

**Reason:**

The purpose of this amendment is to retain the provisions of the 2006 International Building Code (IBC), where guardrails were required when the elevation difference between the walking surface was greater than 30 inches to the floor or grade directly below. The 2009 IBC now requires a guardrail where the elevation difference is greater than 30 inches from the walking surface to a horizontal point 36 inches adjacent to the leading edge of the walking surface to the grade or floor below. This change will now require the building official to carry a four foot level to conduct inspections.

During the 2007/2008 Code Development Cycle, the proponent referred to work conducted and reports written by the International Code Council's Code Technology Committee (CTC). Though, at no time during the Public Hearing, nor the Final Action Hearing, was any technical justification presented to substantiate the change requiring the building official to measure thirty-six inches away from the leading edge of the walking surface or tread to determine when a guardrail should or should not be required. After reviewing the many reports from the CTC website, it is still unclear from where the thirty-six inch requirement was derived. Currently there are no studies that can support the claims made that this will have an effect on reducing possible injuries. While the proponent promotes this as a means for consistent enforcement of the guard requirements, there was no evidence that showed an increased risk to the safety of the occupant if the current method of measuring from the edge of the walking surface to grade below is used.

This amendment will provide both the building official and the builder with the same language that has been used consistently since the introduction of the International Residential Code.

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## Recommended State & Local Amendments to the 2009 International Residential Code (IRC)

**Issue:** Fire Separation Distance

**2009 IRC Section:** Table R302.1

**Recommended Amendment:**

*Modify the Table as shown below (Delete text, add new text):*

**Table R302.1 – Exterior Walls**

| EXTERIOR WALL ELEMENT |                             | MINIMUM FIRE-RESISTANCE RATING  | MINIMUM FIRE SEPARATION DISTANCE |
|-----------------------|-----------------------------|---|----------------------------------|
| Walls                 | (Fire-resistance rated)     | 1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure to both sides | ≤3 5 Feet                        |
|                       | (Not fire-resistance rated) | 0-Hours   | >3 5 Feet                        |
| Projections           | (Fire-resistance rated)     | 1-Hour on the underside   | ≤2 4 Feet                        |
|                       | (Not fire-resistance rated) | 0-Hours   | >3 5 Feet                        |
| Openings              | Not Allowed                 | N/A   | < 3 Feet                         |
|                       | 25% Maximum of Wall Area    | 0-Hours   | 3 Feet                           |
|                       | Unlimited                   | 0-Hours   | 5 Feet                           |
| Penetrations          | All                         | Comply with Section R317.3  | < 5 Feet                         |
|                       |                             | None Required   | 5 Feet                           |

**N/A = Not Applicable**

**Reason:**

The purpose of this amendment is to retain the fire separation distances to the dimensions used in previous one- & two-family dwelling codes, and the model building codes. Without this modification, the code will have a significant impact on existing homeowners who wish to build additions or extensions to their existing property as well as limit the ability to maximize the use of smaller lots in existing communities.

During the 2004/2005 Code Development Cycle, the Code Committee disapproved this change given that the proponent failed to provide supporting evidence or data to sustain the increase in the fire separation distance. It was only by an overwhelming support from the fire service, that this change was approved during the Final Action Hearings.

To this day, there are no known reports or studies that demonstrate the previously allowed 3 foot separation distance from the property line and 6 foot separation between structures failed to provide the minimum required safe distance for fire separation. We encourage the adoption of this amendment.