Code Technology Committee
Area of Study – Child Window Safety

2009/2012 Cycle
Code changes related to the CTC area of study noted above

The following are code changes related to the CTC Child Window Safety Area of Study that will be considered at the 2009/2012 Code Development Hearings in Baltimore.

FS152–09/10
1405.13.2

Proponent: Paul K. Heilstedt, PE, FAIA, Chair, representing ICC Code Technology Committee (CTC)

Revise as follows:

IBC 1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches (610 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches (610 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere cannot pass through.

> **Exception:** Openings that are more than 75 feet above grade that are provided with window ~~guards~~ fall prevention devices that comply with ASTM F 2006 ~~or F 2090.~~

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/cc/ctc/index.html. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.

This proposed change is a result of the CTC's investigation of the area of study entitled "Child Window Safety". The scope of the activity is noted as:

Study the incidence and mechanisms of falls from open windows by children and to investigate the necessity and suitability of potential safeguards and/or revisions to the current codes.

In a related change, both the IBC and IRC are proposed to be updated to allow the use of window opening control devices to abate the hazard of child falls through windows. These devices can be used for buildings of any height and are regulated by updated standard ASTM F2090 – 2008.

The scope of ASTM F 2006 – 00 (2005) entitled "Standard Safety Specification for Window Fall Prevention Devices for Non-Emergency Escape (Egress) and Rescue (Ingress) Windows" is noted in Section 1.2 of the standard which states; "This safety specification applies only to window fall prevention devices that are to be used on windows that are not intended for escape (egress) and rescue (ingress)." Further, Section 1.3 states that: " This safety specification applies only to devices intended to be applied to windows installed at heights of more than 75 above ground level in multiple family dwelling buildings. This safety specification is not intended to apply to windows below 75 feet because all windows below 75 feet that are operable could be used as a possible secondary means of escape."

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

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

ICCFILENAME: HEILSTEDT-FS2-1405.13.2

FS153–09/10
1405.13.2, 1405.13.2.1, Chapter 35

Proponent: Julie Ruth, PE, J Ruth Code Consulting, representing the American Architectural Manufacturers Association Window Opening Control Device Task Group

1. Revise as follows:

1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches (610 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches (610 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere cannot pass.

Exceptions:

1. Openings that are provided with window guards that comply with ASTM F 2006 or F 2090.
2. Windows that are provided with window opening control devices that comply with Section 1405.13.2.1.

1405.13.2.1 Window opening control devices. When required elsewhere in this code, window opening control devices shall comply with the provisions of AAMA 909.

2. Revise Chapter 35 as follows:

AAMA

AAMA 909	Voluntary Specification for Window Opening Control Devices….. 1405.13.2.1

Reason: The 2009 IRC permits an exception to the current minimum sill height requirement of Section R612.3 for windows that are provided with window opening limiting devices. For consistency with the IRC, the IBC should permit the same. The criteria for these devices within the IRC, however, is inadequate. The 2008 edition of ASTM F2090 attempts to provide greater guidance, but the members of the AAMA Window Opening Control Device task group, which was created specifically to respond to this new requirement in the International Codes, have found inconsistencies and confusion within ASTM F2090-08 as well. Therefore, the members of the AAMA WOCD TG have committed of the development and completion of an AAMA standard in time for the 2012 International Residential Code in late 2010.

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

Analysis: A review of the standard(s) proposed for inclusion in the code, AAMA-909, for compliance with ICC criteria for referenced standards given in Section 3.6 of Council Policy #CP 28 will be posted on the ICC website on or before September 24, 2009.

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

ICCFILENAME: Ruth-FS2-1405.13.2

FS154–09/10
1013.1 (New), 1405.13.2

Proponent: Daniel E. Nichols, PE, New York State Div. of Code Enforcement and Administration

1. Add new text as follows:

1013.1 General. Guards and operable windows shall comply with this section. Guards shall comply with the provisions of Sections 1013.2 through 1013.7. Operable windows with sills located more than 72 inches above finished grade or other surface below shall comply with Section 1013.8.

(Renumber subsequent sections)

2. Relocate Section 1405.13.2 to new Section 1013.8 as follows:

~~**1405.13.2**~~ **1013.8 Window Sills**. In Occupancy Groups R-2 and R-3, one – and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches above the

finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches shall be fixed or have openings through which a 4-inch diameter sphere cannot pass.

Exception: Openings that are provided with window guards that comply with ASTM F2006 or F2090.

Reason: The reason for Section 1405.13.2 is essentially a protection from fall requirement. That is the same reason that 1013 exists. Having this section located in Chapter 14 results in it being frequently overlooked by designers and building officials alike. Section 1013.1 is modified to scope the section to include fall protection requirements from windows.

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

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

ICCFILENAME: NICHOLS-FS1-1405.13.2

RB120–09/10

R313 (New), R313.1 (New), R313.2 (New), R313.3 (New), R313.3.1 (New), R313.3.2 (New), 612.2, 612.3, 612.4, 612.4.1, 612.4.2; IBC 1013.1 (New), 1405.13.2 [IFC [B] 1013.8] (New)

Proponent: Sarah A. Rice, CBO, representing self

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. PART II WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IRC BUILDING/ENERGY

Revise as follows:

SECTION R313
WINDOW SILLS

R313.1 ~~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) 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) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inchdiameter (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 R313.2 ~~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 R313.3 ~~R612.4~~.

R313.2 ~~R612.3~~ Window fall prevention devices. Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

R313.3 ~~R612.4~~ Window opening limiting devices. When required elsewhere in this code, window opening limiting devices shall comply with the provisions of this section.

R313.3.1 ~~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.

R313.3.2 ~~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.

PART II – IBC FIRE SAFETY

1. Add new text as follows:

1013.1 (IFC [B] 1013.1) General. Guards and operable windows shall comply with this section. Guards shall comply with the provisions of Sections 1013.2 through 1013.7. Operable windows with sills located more than 72 inches above finished grade or other surface below shall comply with Section 1013.8.

2. Revise as follows:

~~**1405.13.2**~~ **1013.8 (IFC [B] 1013.8) Window Sills**. In Occupancy Groups R-2 and R-3, one – and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches shall be fixed or have openings through which a 4-inch diameter sphere cannot pass.

Exception: Openings that are provided with window guards that comply with ASTM F2006 or F2090.

Reason: PART I - See the reason for the companion change to the IBC. Code users are missing this requirement. It is even more a problem in the IRC as the requirement is 'buried' on the 201st page of the Wall Construction Chapter.

PART II - The proposal simply moves the window opening protection provisions from Chapter 14 to place it among the other guard requirements of Chapter 10. The reason for Section 1405.13.2 is essentially a protection from fall requirement. That is the same reason that 1013 exists. Having this section located in Chapter 14 results in it being frequently overlooked by designers and building officials alike. Placing it in Chapter 10 will result in better compliance.

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

PART I – IRC BUILDING/ENERGY

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

PART II – IBC FIRE SAFETY

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

ICCFILENAME: RICE-E1-1013.1

RB121–09/10

R313 (New), R313.1 (New), R313.2 (New), R313.3 (New), R313.3.1 (New), R313.3.2 (New), R612.2, R612.3, R612.4, R612.4.1, R612.4.2

Proponent: Daniel E. Nichols, PE, New York State Division of Code Enforcement and Administration

Relocate to new section as follows:

SECTION R313
WINDOW FALL PROTECTION

~~**R612.2**~~ **R313.1 Window sills.** In *dwelling* units, where the opening of an operable window is located more than 72 inches (1829 mm) above the finished *grade* or surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4 inch (102 mm) diameter sphere where such openings are located within 24 inches (610 mm) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inchdiameter (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~~ R313.2 Window fall prevention devices. Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

~~R612.4~~ R313.3 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~~ R313.3.1 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~~ R313.3.2 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.

Reason: This proposal places the requirements for fall protection under the guard section. Designers and code officials alike are missing this section as it is within the wall construction section. Other requirements regarding window location, such as light and ventilation, fire separation prohibitions, and windborne debris are all in Chapter 3. This will assist the code users as all of the architectural concerns on window locations will be in the planning chapter.

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

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

ICCFILENAME: NICHOLS-RB-1-R612

RB122–09/10
R612.2; IBC 1405.13.2

Proponent: Paul K. Heilstedt, PE, FAIA, Chair, representing ICC Code Technology Committee (CTC)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. PART II WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IRC BUILDING/ENERGY

Revise as follows:

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~~ 36 inches (610 mm) above the finished floor of the room in which the window is located. Operable sections of windows shall not permit openings that allow passage of a 4 inch (102 mm) diameter sphere where such openings are located within ~~24~~ 36 inches (610 mm) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inchdiameter(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.

PART II – IBC FIRE SAFETY

Revise as follows:

1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than ~~24~~ 36 inches (610 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of ~~24~~ 36 inches (610 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere cannot pass.

Exception: Openings that are provided with window guards that comply with ASTM F 2006 or F 2090.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/cc/ctc/index.html. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.
This proposed change is a result of the CTC's investigation of the area of study entitled "Child Window Safety". The scope of the activity is noted as:

> Study the incidence and mechanisms of falls from open windows by children and to investigate the necessity and suitability of potential safeguards and/or revisions to the current codes.

The intent of IBC Section 1405.13.2 and IRC Section R612.2 is clearly to provide safety mechanisms to reduce the possibility of children falling through a window. The CTC has determined that this can be realized in the code in three ways: window fall prevention devices; window opening control devices; or reducing the possibility of accessing the window by increasing the minimum sill height. The purpose of this code change is to reduce the potential hazard by increasing the sill height from 24 inches to 36 inches.

In response to the CTC studying the Climbability of Guards, the National Ornamental & Miscellaneous Metals Association (NOMMA) commissioned a paper entitled "Review of Fall Safety of Children Between the Ages of 18 months and 4 Years in Relation to Guards and Climbing in the Built Environment", referred to in this code change as "NOMMA paper". This paper is posted on the CTC website as noted below. The paper provides a summary of the building code requirements, a critical review of relevant per-reviewed scientific literature on guard research and injury data and includes a section entitled "Children's Interaction with the Built Environment". Included in this section is an analysis of falls from windows where it is noted that "Falls from windows are among the most common types of unintended injuries to children and they are a major health concern" (NOMMA paper page 30). The study efficiently places within a few pages the data on window fall incidents and the means of reducing the number of incidents.

U.S. Fall Injury Data
NOMMA report page 7: The 1,421,137 injuries reported by NEISS between 2002 and 2005, inclusive, correspond to a national average of 51,217,603 based on weighting data included with the record data. The average over the four years is 12,804,401. The weighted estimate of 1,117,278 incidents on average annually for children between the ages of 18 months and 4 years represents 8.7 percent of these incidents. For all the incidents to children between the ages of 18 months and 4 years, 5.6 percent involved stairs, 1.22 percent involved windows, and 0.87 percent involved porches, balconies, open-sided floors, and floor openings.

NOMMA paper page 30 – 33. The paper further cites reports which have been compiled in the table below:

Study	Location	Falls	% fatalities
Vish et al. (2005)	Chicago	11/yr	
Istre et al. (2003)	Dallas county	17/yr	
Benoit et al. (2002)	L.A. county	12/yr (11%)	4% (4 yrs old or less)
Stone et al. (2000)	Cincinnati	12/yr (6.3%)	4.7%
Benoit et al. (2000)	Northern Virginia	11/yr (11%)	

Center of Gravity

NOMMA paper page 11, Table 2: The standing center of gravity of children aged 2 to 3.5 years is 24.1 inches (50th percentile is 22.2 inches) and of children aged 3.5 to 4.5 is 25.2 (50th percentile is 23.6).

A reasonable expectation for the Code is that, absent any fall protection in the window opening, a minimum sill height will be required to reduce the ability of a child to climb onto the sill enabling the fall through the opening. Using a child target age of up to 4 years of age and the associated center of gravity, the code mandated height of 24" is not adequate. A child need only extend themselves on their toes, stand on modest stack of books or blocks or hoist themselves a matter of a few inches with their arms to be able to flop onto the sill and expose themselves to the window opening and the associated risk of falling.

The hazards associated with child window falls cannot be understated as evidenced by the following CPSC Press release dated May 15, 2008:

NEWS from CPSC
U.S. Consumer Product Safety Commission
Office of Information and Public Affairs Washington, DC 20207

FOR IMMEDIATE RELEASE
May 15, 2008
Release #08-270

CPSC Hotline: (800) 638-2772
CPSC Media Contact: (301) 504-7908

Window Falls Prompts CPSC to Issue Warning
WASHINGTON, D.C. - With the arrival of the warmer spring weather, families across the nation are opening their windows to let the fresh air in. This pleasant feeling can quickly turn tragic in households with small children. In recent weeks, several children have fallen from windows. The U.S. Consumer Product Safety Commission is warning parents and caregivers to take precautions to keep children from falling from windows.

"CPSC staff is aware of at least 18 falls from windows through media reports, including two deaths, involving small children since April," said CPSC Acting Chairman Nancy Nord. "We are issuing this warning so parents will take the necessary steps to prevent these incidents from happening."

These deaths and injuries frequently occur when kids push themselves against window screens or climb onto furniture located next to an open window.

From 2002-2004, CPSC staff received an average of 25 reports a year of fatalities associated with falls from windows. Children younger than five years of age account for approximately one-third of these reported fatalities. For all age categories, more males died from window falls than females.

To help prevent injuries and tragedies, CPSC recommends the following safety tips:
* Safeguard your children by using window guards or window stops.
* Install window guards to prevent children from falling out of windows. (For windows on the 6th floor and below, install window guards that adults and older children can open easily in case of fire.)
* Install window stops so that windows open no more than 4 inches.
* Never depend on screens to keep children from falling out of windows.
* Whenever possible, open windows from the top -- not the bottom.
* Keep furniture away from windows, to discourage children from climbing near windows.

To see this release on CPSC's web site, please go to:
http://www.cpsc.gov/cpscpub/prerel/prhtml08/08270.html

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

PART I – IRC BUILDING/ENERGY

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

PART II – IBC FIRE SAFETY

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

ICCFILENAME: HEILSTEDT-RB-2-R612-IBC 1405.13.2

RB123–09/10

R612.2, R612.3, R612.4, R612.4.1, R612.4.2; IBC 1405.13.2, 1405.13.2.1 (New)

Proponent: Paul K. Heilstedt, PE, FAIA, Chair, representing ICC Code Technology Committee (CTC)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. PART II WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IRC BUILDING/ENERGY

1. Revise as follows:

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) 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 diameter sphere where such openings are located within 24 inches 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 window fall prevention devices that comply with ASTM F 2090.
4. Windows that are provided with window opening ~~limiting~~ control devices that comply with ~~Section R612.4.~~ R612.3.

2. Delete without substitution:

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

3. Renumber and revise Section R612.4 as follows:

~~**R612.4**~~ **R612.3 Window opening ~~limiting~~ control devices.** When required elsewhere in this code, window opening ~~limiting~~ control devices shall comply with ~~the provisions of this section.~~ ASTM F 2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section R 310.1.1. The device or any portion thereof shall not project more than 1 inch into the required net clear opening for a length not exceeding 3 inches when the window is in the fully open position.

4. Delete without substitution:

~~**R612.4.1 General requirements**. Window opening limiting devices shall be self- acting and shall be positioned so as to prohibit the free passage of a 4.0-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 lbf (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.~~

PART II – IBC FIRE SAFETY

1. Revise as follows:

1405.13.2 Window sills. In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be a minimum of 24 inches (610 mm) above the finished floor surface of the room in which the window is located. ~~Glazing between the floor and a height of 24 inches (610 mm) shall be fixed or have openings such that a 4-inch (102-mm) diameter sphere cannot~~

~~pass through.~~ Operable sections of windows shall not permit openings that allow passage of a 4 inch diameter sphere where such openings are located within 24 inches of the finished floor.

Exceptions:

~~Openings that are provided with window guards that comply with ASTM F 2006 or F 2090.~~

1. Windows whose openings will not allow a 4-inch-diameter (102 mm) sphere to pass through the opening when the opening is in its largest opened position.
2. Openings that are provided with window fall prevention devices that comply with ASTM F 2090.
3. Windows that are provided with window opening control devices that comply with Section 1405.13.2.1..

2. Add new text as follows:

1405.13.2.1 Window opening control devices. When required elsewhere in this code, window opening control devices shall comply with ASTM F 2090. The window opening control device, after operation to release the control device allowing the window to fully open, shall not reduce the minimum net clear opening area of the window unit to less than the area required by Section 1029.2. The device or any portion thereof shall not project more than 1 inch into the required net clear opening for a length not exceeding 3 inches when the window is in the fully open position.

Reason: The ICC Board established the ICC Code Technology Committee (CTC) as the venue to discuss contemporary code issues in a committee setting which provides the necessary time and flexibility to allow for full participation and input by any interested party. The code issues are assigned to the CTC by the ICC Board as "areas of study". Information on the CTC, including: meeting agendas; minutes; reports; resource documents; presentations; and all other materials developed in conjunction with the CTC effort can be downloaded from the following website: http://www.iccsafe.org/cs/cc/ctc/index.html. Since its inception in April/2005, the CTC has held seventeen meetings - all open to the public.
This proposed change is a result of the CTC's investigation of the area of study entitled "Child Window Safety". The scope of the activity is noted as:

> Study the incidence and mechanisms of falls from open windows by children and to investigate the necessity and suitability of potential safeguards and/or revisions to the current codes.

This code change is a follow-up to code change RB173-07/08 last cycle. At the Final Action Hearings in Minneapolis, the membership approved RB 173-07/08 Part 1 (Public Comment 2) to the IRC to include prescriptive provisions for window opening limiting devices but failed to approve the corresponding and identical provisions to the IBC. The proposal corrects this inconsistent action as well as replaces the prescriptive provisions with a reference to a consensus standard which has been updated to specifically address these devices.

IRC/IBC coordination: The result of this two part code change will be consistency between the IBC and IRC in terms of requirements.
Updated standard ASTM F2090 – 08: Both the IBC and IRC currently reference the 2007 edition of the standard entitled "Specification for Window Fall Prevention Devices with Emergency Escape (Egress Release Mechanisms". This standard was updated in 2008 to address window opening control devices. However, it was not updated in time to be included by reference in the 2009 IBC and IRC. This standard includes the necessary window operational criteria which results in the window not being able to be opened beyond the 4 inch performance threshold which is currently found in IRC Section R612.4.1. This control device can be released to allow the window to be fully opened in order to comply with the emergency escape provisions in both the IBC (1029.2) and IRC (R310.1.1)

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

PART I – IRC BUILDING/ENERGY

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

PART II – IBC FIRE SAFETY

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

ICCFILENAME: HEILSTEDT-RB-1-R612-IBC 1405.13.2

RB124–09/10

R612.2, R612.3, R612.4, R612.4.1, R612.4.2, Chapter 44 (New)

Proponent: Julie Ruth, JRuth Code Consulting, representing AAMA Window Opening Control Device Task Group

1. Revise as follows:

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) 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) of the finished floor.

Exceptions:

1. Windows whose openings will not allow a 4-inchdiameter (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 2. Openings that are provided with fall prevention devices that comply with ASTM F 2090.
4 3. Windows that are provided with opening ~~limiting~~ control devices that comply with Section ~~R612.4~~ R612.3.

2. Delete without substitution:

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

3. Renumber and revise as follows:

~~**R612.4**~~ **612.3 Window opening ~~limiting~~ control devices.** When required elsewhere in this code, window opening ~~limiting~~ control devices shall comply with the provisions of ~~this section~~ AAMA 909.

4. Delete without substitution:

~~**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.~~

5. Add new standard to Chapter 44 as follows:

AAMA 909 Voluntary Specification for Window Opening Control Devices

Reason: The requirements of current Section R612.4 for window opening limiting devices does not provide adequate detail for their design. The 2008 edition of ASTM F2090 attempts to provide greater guidance, but as the members of the AAMA Window Opening Control Device task group, which was created specifically to respond to this new requirement in the International Codes, discovered when they began attempting to design devices to meet this standard, there are inconsistencies and confusion within ASTM F2090-08. Therefore, the members of the AAMA WOCD TG have begun the development of an AAMA standard for these devices, with a goal of completing the standard in time to be referenced in the 2012 International Residential Code.

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, AMMA 909, for compliance with ICC criteria for referenced standards given in Section 3.6 of Council Policy #CP 28 will be posted on the ICC website on or before September 24, 2009.

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

ICCFILENAME: RUTH-RB-4-R612.2-CH 44

RB125–09/10

R310.2 (New), 612.3, R612.4, R612.4.1, R612.4.2; IBC 1029.4.1 (New), 1405.13.2

Proponent: Jeff Lowinski, representing the Window and Door Manufacturers Association (WDMA)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. PART II WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IRC BUILDING/ENERGY

1. Add new text as follows:

R310.2 Window fall prevention devices. Window guards and window opening control devices, where provided, shall comply with ASTM F2090.

2. Delete without substitution:

~~**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.~~

PART II – IBC FIRE SAFETY

1. Add new text as follows:

1029.4.1 Window fall prevention devices. Window guards and window opening control devices, where provided, shall comply with ASTM F2090.

Exception. Window guards installed in windows located more than 75 feet above adjacent grade shall be permitted to comply with ASTM F2006.

2. Delete without substitution:

~~**1405.13.2 Window sills.** In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches (610 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches (610 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere~~

~~cannot pass.~~

~~Exception:~~ ~~Openings that are provided with window guards that comply with ASTM F 2006 or F 2090.~~

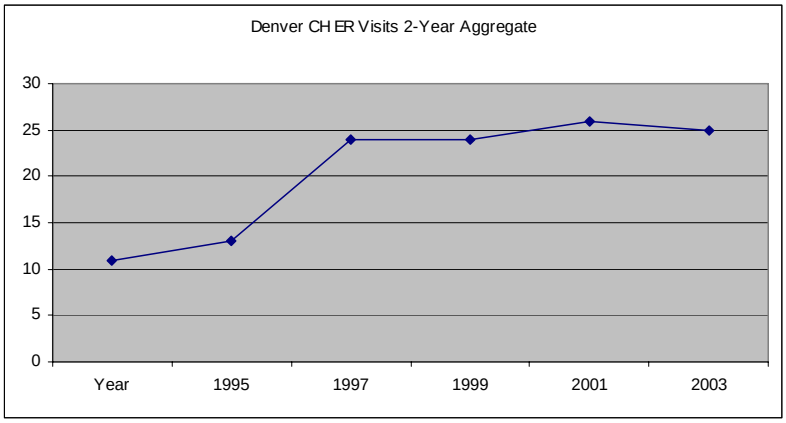
Reason: (Parts 1 and 2) The code contains requirements for minimum sill heights that were intended to reduce the likelihood of child window falls. According to the US CPSC, average annual child fall deaths have decreased from 32 to 14 between 1980 and 2000. In 2008, the CSPC reported that annual deaths dropped to less than 9 per year. This significant improvement in child fall safety is the result of the two-pronged approach of window safety education and window guard regulations enacted by local jurisdictions.

Despite this safety improvement, one large metropolitan MSA has bucked the trend. Denver Children's Hospital has shared data suggesting that ER visits resulting from child window falls have been increasing.

Denver is the only major MSA in the US that has required windows to be installed at a minimum sill height, yet the improved safety record reported by the CPSC does not apply in Denver.

WDMA believes that the continued reliance on a minimum sill height could result in more child falls as parents place furniture, including sofas, beds and cribs beneath open windows. Proponents of sill height minimums have continued to ignore the Denver scenario, but WDMA is concerned that this failure to study the issue could result in more injuries and deaths nationwide.

Approval of this proposal will remove the minimum sill height requirement, but mandate that window opening control devices and window guards comply with the appropriate ASTM standards.



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

PART I – IRC BUILDING/ENERGY

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

PART II – IBC FIRE SAFETY

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

ICCFILENAME: LOWINSKI-RB-1-R310.2-IBC-1029.4.1

RB126–09/10

R601.4 (New), R612.2, R612.3, R612.4, R612.4.1, R612.4.2; IBC 1405.13.2

Proponent: Jeff Lowinski, representing Window and Door Manufacturers Association (WDMA)

THIS IS A 2 PART CODE CHANGE. PART I WILL BE HEARD BY THE IRC BUILDING/ENERGY COMMITTEE. PART II WILL BE HEARD BY THE IBC FIRE SAFETY COMMITTEE. SEE THE TENTATIVE HEARING ORDERS FOR THESE COMMITTEES.

PART I – IRC BUILDING/ENERGY

1. Add new text as follows:

R601.4 Windows. Where window rough openings are located higher than the first story above grade, the window rough opening sill shall be a minimum of 21 inches (533 mm) above the rough floor deck of the room in which the window is located.

Exceptions:

1. Windows above an exterior deck or balcony serving that story.
2. Fixed, non-operable windows.
3. Window openings that do not permit a 4" diameter sphere to pass through the opening in the lower half of the window.
4. Window openings with devices complying with ASTM F 2090.

2. Delete without substitution:

~~**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) 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) of the finished floor.~~

~~**Exceptions:**~~
~~1. Windows whose openings will not allow a 4 inchdiameter (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.~~

PART II – IBC FIRE SAFETY

Delete and substitute as follows:

~~**1405.13.2 Window sills.** In Occupancy Groups R-2 and R-3, one- and two-family and multiple-family dwellings, where the opening of the sill portion of an operable window is located more than 72 inches (1829 mm) above the finished grade or other surface below, the lowest part of the clear opening of the window shall be at a height not less than 24 inches (610 mm) above the finished floor surface of the room in which the window is located. Glazing between the floor and a height of 24 inches (610 mm) shall be fixed or have openings through which a 4-inch (102 mm) diameter sphere cannot pass.~~

~~**Exception:** Openings that are provided with window guards that comply with ASTM F 2006 or F 2090.~~

1405.13.2 Window rough openings. Where window rough openings are located higher than the first story above grade, the window rough opening sill shall be a minimum of 21 inches (533 mm) above the rough floor deck of the room in which the window is located.

Exceptions:

1. Windows above an exterior deck or balcony serving that story.
2. Fixed, non-operable windows.
3. Window openings that do not permit a 4” diameter sphere to pass through the opening in the lower half of the window.
4. Window openings with devices complying with ASTM F2090 or F2006.

Reason: (Parts 1 and 2) The current code requirement for minimum sill heights has caused some issues with builders after window installation and the minimum is triggered. By changing the requirement to a rough opening dimension that equates to a 24” sill opening, the construction process will be streamlined. This proposal also simplifies the trigger by removing the 72” dimension from adjacent grade and inserting instead a reference to location above the first story above grade. This change will not result in a material change in the height of window installations.
Removing the prescriptive requirements for window opening-limiting devices removes conflicts between the referenced standard and the code.

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

PART I – IRC BUILDING/ENERGY

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

PART II – IBC FIRE SAFETY

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

ICCFILENAME: LOWINSKI-RB-2-R601.4-IBC 1405