

## CTC Area of study – Child Window Safety

### 2007/2008 Code Changes

**Proponent: CTC**

**Proposed change to the IRC (same proposal to IBC 1405.12.2):**

**R613.2 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. Glazing between the floor and 24 inches (610 mm) shall be fixed or have openings through which a 4-inch-diameter (102 mm) sphere cannot pass.

#### **Exceptions:**

1. Windows whose openings will not allow a 4-inch-diameter (102mm) 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 ~~guards~~ that comply with R613.3 ASTM F 2006 or F 2090.
3. Openings that are provided with fall prevention devices that comply with ASTM F 2090 or screens that comply with ANSI/SMA 6001 - 1990.
4. Windows that are provided with opening limiting devices that comply with Section R613.4.

**R613.3 Window fall prevention devices.** Window fall prevention devices and window guards, where provided, shall comply with the requirements of ASTM F 2090.

**R613.4 Window Opening Limiting Devices.** When required elsewhere in this code, window opening limiting devices shall comply with the provisions of this section.

**R613.4.1 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.

#### **R613.4.2 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.

**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 twelve 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:

To 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 CTC established a study group to review available materials on the issue of child falls through windows. It became readily apparent that public education is a key consideration in reducing the number of falls by children through windows. As far as the code is concerned, the group focused on two possible means of addressing this issue. The two being:

- Window screens
- Window fall prevention devices

This proposal provides both options, in the form of exceptions to the minimum sill height requirements in the code.

Window screens: ANSI/SMA 6001 is a standard entitled “Specifications for Metal Protection Screens.”.As noted in Section 2.1 of the standard, “This specification provides, definitions, methods of test, and performance requirements for metal protection screens designed and manufactured primarily for installation in window openings for the purpose of providing security for the building occupants by restraining or deterring forced entry and by protecting the window from vandalism”. While not specifically noting the screens use as a barrier to restrain a child, the study group concluded that the key consideration is that of providing some type of barrier. Screens designed in accordance with this standard are classified under the following classes:

Light: Load resistance between 30 – 75 pounds

Medium: Load resistance between 75 - 150 pounds.

Heavy: Load resistance between 150 – 300 pounds.

Window fall prevention devices: ASTM F 2090 is a standard entitled “Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms”. As noted in Section 1.1 of the standard, “This specification establishes requirements for devices intended to address the risk of injury and death associated with accidental falls from windows by children five years old and younger. The key operational constraint of devices which comply with this standard is compliance with Section 4.1, which states: “Window fall prevention devices shall be constructed so as to prohibit the free passage of a 4.0 in diameter rigid sphere at any point, during or after testing as specified in Section 8, when the window fall prevention device is installed in accordance with the manufacturer’s instructions.

Proposed Section R 613.4, including Items 1 – 3, is a codified version of Sections 4.1, 4.3.2, 4.3.4 of ASTM F 2090. Item 4 is primarily a reminder that full compliance with Section R 310.1.1 is required for all emergency escape and rescue openings of the window serves such purpose.