



Falls, Fires and Opening Control Devices

Balancing All Three is Not Easy

BY CHUCK ANDERSON

The risk of young children falling from windows is real. Safe Kids Worldwide reports that, on average, 18 children ages 10 and under die annually from falls from windows. The problem has engendered efforts to instill safety measures in the building codes. But this worthy mission must be reconciled with the dual role of window openings requiring emergency escape and rescue provisions. It has been a difficult balancing act to codify.

Setting Sill Heights

One approach has been to call for a minimum sill height. Another has been to require a window guard or a device that limits how far a window can be opened, yet still permit operation as an emergency exit. (Note that screens do not qualify as guards, as they were never designed to restrain the weight of a child.)

The 2006 International Building Code (IBC) for commercial structures and the International Residential Code (IRC) called for a minimum sill height of 24 inches above the floor for operable residential windows located more than 6 feet above grade. An alternate to this provision was to limit the window opening to no more than 4 inches. But such a requirement was seen as compromising egress for fire safety, so many state jurisdictions that otherwise adopted the 2006 I-codes elected not to adopt the sill height minimum.

Consequently, the International Code Council (ICC) Code Technology Committee (CTC) went back to the drawing board and introduced a new change proposal (RB173) into the last (2007/2008)

code revision cycle. That proposal expanded upon the 24-inch minimum sill height requirement by introducing exceptions to allow for emergency egress. However, the industry criticized the proposal as vague and posing significant compliance problems, and it was disapproved by the ICC at its February 2008 hearings. In response, the CTC submitted three public comments to modify the proposal, a move that ensured its reconsideration at the September 2008 final action hearings.

These public comments were adopted in part and the amended requirement was published as Section R613.2 of the International Residential Code (IRC), released January 1, 2009, for one- or two-family dwellings and town homes of fewer than three stories. It requires the 24-inch minimum sill height for windows more than 6 feet above grade, but provides an exception for windows that are equipped with “self-acting” opening control devices that restrict the initial opening of the window to no more than 4 inches.

The Role of Window Opening Devices

These devices must incorporate an intuitively operated and clearly identified release mechanism that permits further operation to provide a net clear opening compliant with Section R310.1.1 governing windows used for emergency escape and rescue. The IRC further requires that the opening control device not require more than 15 foot-pounds of force to operate and that it remains operable in “all types of weather” (which is a controversially vague

requirement). Exceptions also are made for windows equipped with fall prevention devices and window guards that comply with ASTM F2090-08, *Standard Specification for Window Fall Prevention Devices with Emergency Escape (Egress) Release Mechanisms*.

The issue still is not fully decided. For example, the current (2009/2010) cycle of code change hearings could raise the 24-inch minimum sill height requirement up to 36 inches. This proposal was the subject of one of the CTC’s public comments to the final action hearings of 2008 and has also received the support of fire protection officials. But this proposal poses serious problems inherent in fitting a double-hung window into an 8-foot wall and still allowing for a rough-opening header, a 3-foot sill and adequate egress opening.

The CTC is reviewing that issue, as well as looking into ways to integrate the requirements into the IBC successfully since the same provision was disapproved for this commercial code. Because the use of opening control devices is intended to counter the necessity of minimum sill heights—especially 36 inches—all stakeholders should remain vigilant regarding the latest code proposals and stand ready to prove the efficacy of these devices in both fall prevention and fire safety. **I**

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