

# SIGNIFICANT CHANGES TO THE 2006 I-CODES

## International Building Code

**Subject:** Guard Opening Limitations for Group R-2 Occupancies

**Change type:** Addition

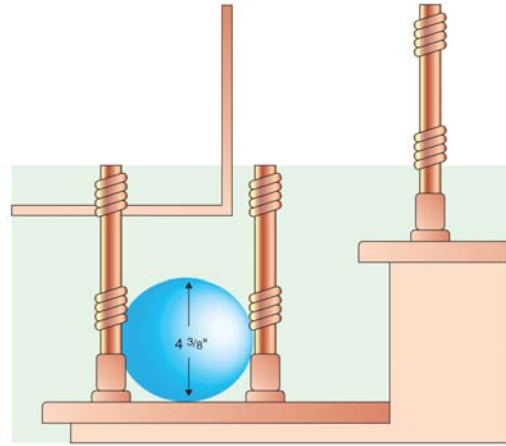
**1013.3 Opening Limitations.** Open guards shall have balusters or ornamental patterns such that a 4-inch-diameter (102 mm) sphere cannot pass through any opening up to a height of 34 inches (864 mm). From a height of 34 inches (864 mm) to 42 inches (1067 mm) above the adjacent walking surfaces, a sphere 8 inches (203 mm) in diameter shall not pass.

**Exceptions:**

(1 through 4, no change to text)

5. Within individual dwelling and sleeping units in Group R-2 and R-3 occupancies, openings for required guards on the sides of stair treads shall not allow a sphere of 4.375 inches (111 mm) to pass through.

**Change significance:** Previously, the code limited the opening size in required guards on the sides of stairs to only those configurations where a 4-inch sphere could not pass through. The  $\frac{3}{8}$ -inch increase in opening size now allows for the placement of only two balusters at each tread, based on a 10-inch tread depth, rather than three balusters. Because a tread depth of 10 inches is permitted only in limited residential occupancies, the increased opening size is applicable only within dwelling units



Applicable to stairs within sleeping units and dwelling units of Group R-2 and Group R-3 occupancies.

and sleeping units of Group R-2 and R-3 occupancies.

The general provisions for opening size remain unchanged, limiting the openings created by intermediate rails or ornamental closures to those where a 4-inch sphere is unable to pass through. However, the increase in size along the open sides of stairs is deemed acceptable because the primary concern is that infants on stairs should not be able to crawl through a side guard. The greater hazard is that of infants falling down the stairs.

*(continued on page 16)*



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7-61904-01

# SIGNIFICANT CHANGES TO THE 2006 I-CODES

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## International Residential Code

**Subject:** Wall Anchorage

**Change type:** Addition

**R602.11.1** Wall Anchorage. Braced wall line sills shall be anchored to concrete or masonry foundations in accordance with Sections R403.1.6 and R602.11.

For all buildings in Seismic Design Categories  $D_{0-2}$ , D1; and D2 and townhouses in Seismic Design Category C, plate washers, a minimum of  $\frac{1}{4}$  0.229 inch by 3 inches by 3 inches (5.8 mm by 76 mm by 76 mm) in size, shall be installed between the foundation sill

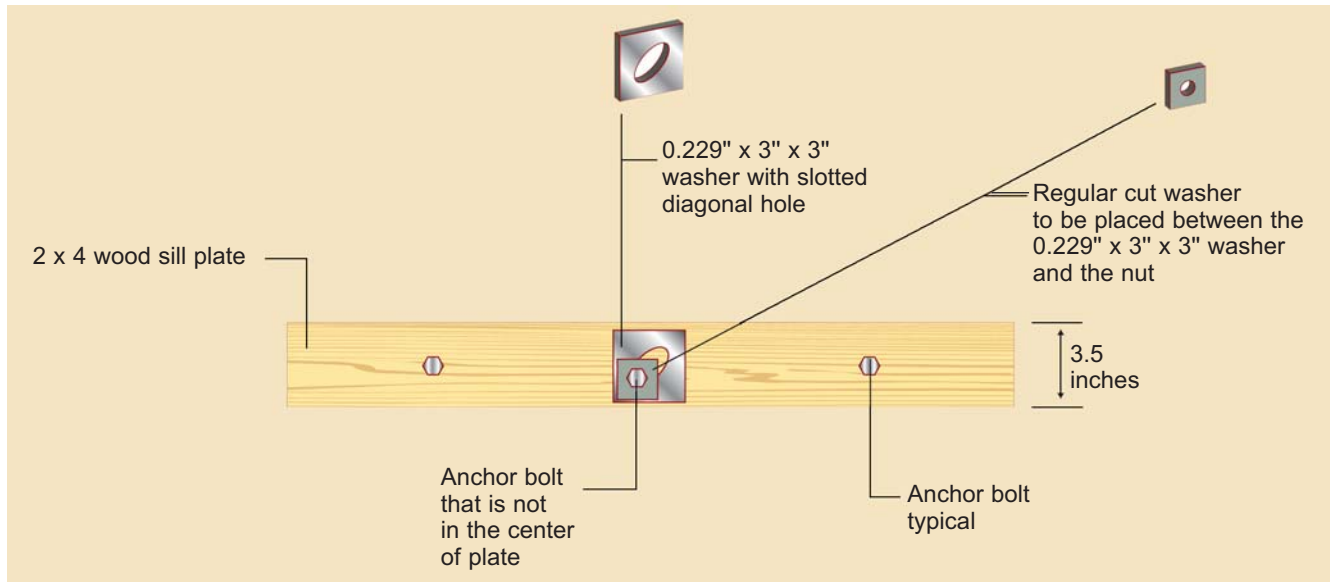


plate and the nut. The hole in the plate washer is permitted to be diagonally slotted with a width of up to  $\frac{3}{16}$  inch (5 mm) larger than the bolt diameter and a slot length not to exceed  $1\frac{3}{4}$  inches (44 mm), provided a standard cut washer is placed between the plate washer and the nut.

**Change significance:** The plate washer thickness has been changed from  $\frac{1}{4}$ -inch nominal (0.25 inch) to a 0.229-inch actual thickness. Even though this is a reduction in washer thickness, it is believed to still be able to carry the required loads and is much more readily available. Additionally, because of some construction tolerance issues for 3 by 3 by 0.229-inch plate washers, an alternative method of diagonal holes has now been provided in the code. This new text permits use of diagonal slotted holes in the plate washers to address such construction tolerance issues. The language for the slotted holes is taken directly from 2003 National Earthquake Hazards Reduction Program (NEHRP) provisions. The Wood Frame Project found that in order to reduce sill splitting, it is critical to get the edge of the plate washer very close to the edge of the sill at which braced wall sheathing is fastened. Tests with larger distances between edge of sill and edge of washer revealed splitting at significantly lower force levels. The diagonal slotted hole provisions in the 2006 IRC were provided in lieu of the original proposal that attempted to reduce the washer sizes to  $2\frac{1}{2}$  by  $2\frac{1}{2}$  by  $\frac{3}{16}$  inches. Because washers of minimum size 3 by 3 by 0.229 inches are needed, the diagonal slotted holes were approved for inclusion in the code.

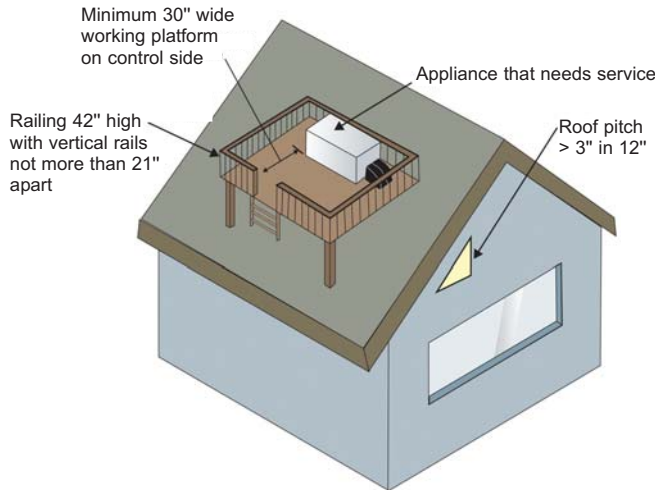
# SIGNIFICANT CHANGES TO THE 2006 I-CODES

## International Mechanical Code

**Subject:** Sloped Roofs

**Change type:** Clarification

**306.6 306.5.1 Sloped Roofs.** Where appliances, equipment, fans or other components that require service are installed on a roof having a slope of 3 units vertical in 12 units horizontal (25% slope) or greater and having an edge more than 30 inches (762 mm)



above grade at such edge, a level platform shall be provided on each side of the appliance to which access is required by the manufacturer's installation instructions for service, repair or maintenance. The platform shall be not less than 30 inches (762 mm) in any dimension, and shall be provided with guards in accordance with Section 304.16. The guards shall extend not less than 42 inches above the platform, shall be constructed so as to prevent the passage of a 21-inch (533 mm) diameter sphere and shall comply with the loading requirements for guards specified in the *International Building Code*.

**Change Significance:** The requirements for guards around service panels of mechanical equipment in elevated locations have always been in the code. It was never clear whether these requirements applied to level service platforms on sloped roofs and whether they applied to all equipment, regardless of service needs. The hazards to service personnel are the same, regardless of whether the equipment is installed on a flat roof or a service platform of a sloped roof. The possibility of someone falling or service equipment being knocked off onto the ground and injuring someone are the same in both applications. The revisions in this section clarify that guards are required in all elevated locations where service of equipment is needed.

## International Plumbing Code

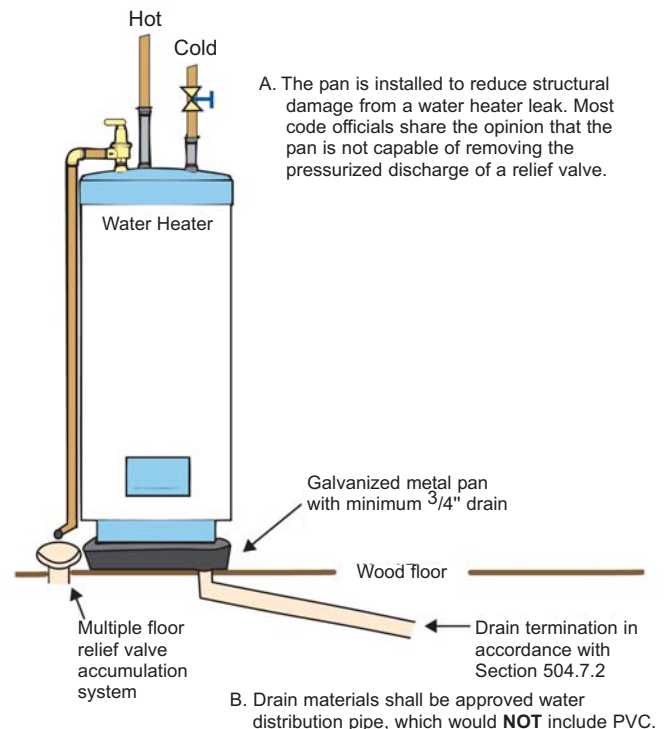
**Subject:** Pan Size and Drain

**Change type:** Clarification

**504.7.1 Pan Size and Drain.** The pan shall be not less than 1.5 inches (38 mm) deep and shall be of sufficient size and shape to receive all dripping or condensate from the tank or waterheater. The pan shall be drained by an indirect waste pipe having a minimum diameter of  $\frac{3}{4}$  inch (19 mm). Piping for safety pan drains shall be of those materials listed in Table 605.4.

**Change Significance:** The 2003 text that clarified which drainpiping could be used in conjunction with which pans was located in the incorrect section (504.6.2). The text is now located correctly in Section 504.7.1 because it contains the requirements for piping materials for safety drain pans.

Code officials and installers are strongly cautioned here to consider the ramifications of material selection for drain pan piping by the contractor. The table reference 605.4 is for water distribution pipe, which considers piping for temperatures higher than common drainage waste and vent piping. PVC, which is the common piping selected by installers as drain material for smaller lines, is not included in the table. The most frequent application here would be multiple pans for water heaters draining through a stacked apartment heater installation.



Note: Items A and B are controversial issues and must be resolved during the structure's design.

(continued)

# SIGNIFICANT CHANGES TO THE 2006 I-CODES

(continued)

## International Fire Code

**Subject:** Plastic Pallets and Shelves in Rack Storage

**Change Type:** Modification

**2308.2.1 Plastic Pallets and Shelves.** Storage on plastic pallets or plastic shelves shall be protected by approved specially engineered fire protection systems.

**Exception:** Plastic pallets listed and labeled in accordance with UL 2335 shall be treated as wood pallets for determining required sprinkler protection.

**Change Significance:** This revision provides a reference to recognize the reduced fire hazard associated with some plastic pallets. The new exception recognizes UL 2335, *Fire Tests of Storage Pallets*, as a basis for testing and listing of reduced-hazard pallets. Chapter 45 has also been modified to add a reference to adopt UL 2335. At the time that this code change was considered by the ICC membership, the code change proponent indicated that five companies had pallets listed to UL 2335.

There is precedence for recognizing these types of pallets in the NFPA 13–2002 edition, Section 12.1.9.2.1 (6), which permits nonwood pallets to be protected in the same manner permitted for wood when the nonwood pallets present a fire hazard not exceeding that of wood. However, this provision applies only to idle pallets, as opposed to those that are being used with stored commodities. In-service nonwood pallets are regulated by NFPA 13–2002, Section 5.6.2, which prescribes specific requirements for protecting commodities stored on these pallets. Note that NFPA 13 is moving to eliminate the use of the term “plastic pallet” in favor of the term “nonwood pallet.”

Overall, the consequence of the new exception to Section 2308.2.1 is that, for racked storage, which is the topic governed by Section 2308, sprinkler protection is permitted to be designed on the basis of wood pallets as opposed to plastic

when the pallets are listed per UL 2335. Although this is not consistent with provisions in the 2002 edition of NFPA 13, which ordinarily governs sprinkler design based on the adoption reference in IFC Chapter 45, representatives of Underwriters Laboratories who served as the proponent of this change indicated that the IFC approach is appropriate because UL requires comparable fire performance of nonwood versus wood pallets loaded with commodity as part of the UL 2335 listing evaluation. Because the IFC prevails when there is a conflict



Goods stored on plastic pallets that are listed and labeled as meeting UL 2335 are allowed to be treated as goods stored on wood pallets, for rack storage of commodities. (Photo courtesy of Buckhorn Incorporated.)

between the IFC and referenced standards, Section 2308.2.1 takes precedence over conflicting provisions in NFPA 13.

It must be emphasized that this change has no bearing on storage arrangements other than rack storage because the change falls under Section 2308. ♦

*Excerpted from the 2006 editions of Significant Changes to the International Building Code; Significant Changes to the International Residential Code; Significant Changes to the International Plumbing Code, International Mechanical Code, and International Fuel Gas Code; and Significant Changes to the International Fire Code.*

*The Significant Changes series of books have been developed by ICC and published by Thomson-Delmar Learning to accommodate the transition from the 2003 editions of the I-Codes to the 2006 editions. To purchase books in the series, visit the ICC website at [www.iccsafe.org/e/category.html](http://www.iccsafe.org/e/category.html).*