

# INTERNATIONAL CODE COUNCIL

## 2012 CODE DEVELOPMENT CYCLE

### 2012 FINAL ACTION AGENDA UPDATES

#### INTERNATIONAL BUILDING CODE®

-FIRE SAFETY

-GENERAL

-MEANS OF EGRESS

-STRUCTURAL

#### INTERNATIONAL EXISTING BUILDING CODE® *(Structural portions)*

#### INTERNATIONAL FUEL GAS CODE®

#### INTERNATIONAL MECHANICAL CODE®

#### INTERNATIONAL PLUMBING CODE®



**October 22<sup>nd</sup>, 24<sup>th</sup> – 28<sup>th</sup>, 2012**

**OREGON CONVENTION CENTER**

**PORTLAND, OR**

The following updates to the Final Action Agenda. The updates were posted on the ICC website, [www.iccsafe.org](http://www.iccsafe.org), on the dates noted.

**2012 ICC CODE DEVELOPMENT CYCLE  
TECHNICAL UPDATES TO THE 2012 FINAL ACTION  
AGENDA FOR THE PROPOSED CHANGES  
TO THE:**

INTERNATIONAL BUILDING CODE®

-FIRE SAFETY

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INTERNATIONAL PLUMBING CODE®

**Updated 10/08/2012**

**SUMMARY OF ERRATA:**

**TENTATIVE HEARING ORDER:**

**E228-12:**                      **Add to hearing order after E141-12**                      *(see page 3)*

**INTERNATIONAL PLUMBING CODE:**

**P130-12:**                      **Correction made to the Public Comment**                      *(see page 4)*

**INTERNATIONAL BUILDING CODE – MEANS OF EGRESS:**

**E25-12:**                      **Correction made to the Instruction Line**                      *(see page 5)*

**E228-12:**                      **Add Public Comment**                      *(see page 7)*

**INTERNATIONAL BUILDING CODE – STRUCTURAL:**

**S298-12:**                      **Correction made to the Commenter's Reason**                      *(see page 10)*

## TENTATIVE HEARING ORDER FOR EACH INDIVIDUAL CONSIDERATION AGENDA

E228-12: Add after E141-12

**Note:** Code changes to be heard out of numerical order or to be heard with a different code designation are indented. Be sure to review the cross index on page xxix for code change which affect codes other than those under their respective code change number prefix.

### **IFGC**

**(See page 1)**

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FG3-12, Part II  
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FG8-12  
FG11-12  
FG13-12  
FG15-12  
FG16-12  
FG17-12  
FG21-12  
FG22-12  
FG24-12  
FG29-12  
FG31-12  
FG32-12  
FG34-12  
FG35-12  
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### **IPC**

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### **IMC**

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M38-12, Part II  
M39-12, Part I  
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### **IBC Fire Safety**

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FS20-12	FS147-12	G86-12	G195-12
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FS24-12	FS150-12	G99-12	G203-12
FS26-12	FS151-12	G100-12	G199-12
FS27-12	FS152-12	G103-12	G201-12
FS31-12	FS153-12	G104-12	G205-12 Part I
FS32-12	FS161-12	G108-12	G205-12 Part II
FS37-12	FS163-12	G109-12	G205-12 Part III
FS41-12	FS167-12	G110-12	G205-12 Part IV
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FS83-12	G29-12	G140-12	G244-12
FS84-12	G30-12	G141-12	G254-12
FS86-12	G36-12	G142-12, Part I	G255-12
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FS89-12	G33-12	G146-12	<b><u>IBC-Means of Egress</u></b>
FS91-12	G41-12	G147-12	<b><u>(See page 1037)</u></b>
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FS109-12	G49-12	G168-12, Part I	E4-12
FS108-12	G53-12	G168-12, Part II	E12-12
FS113-12	G54-12	G173-12	E17-12
FS114-12	G55-12	G174-12, Part I	E15-12
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FS119-12	G59-12	G185-12	E18-12
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E65-12	EB26-12	S319-12	S298-12
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E91-12	EB1-12	S111-12	S311-12
E94-12	EB2-12	S335-12	FS168-12
E95-12	EB3-12	S114-12	FS192-12
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<u>E228-12</u>	S13-12	S172-12	
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E154-12	S18-12	S184-12	
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E169-12	S31-12	S202-12	
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E191-12	S28-12	S244-12	
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<b><u>IEBC</u></b>			
<b><u>(Structural portions)</u></b>			
<b><u>(See page 1257)</u></b>			

## INTERNATIONAL PLUMBING CODE

**P130-12: Changes made to Section 607.2.3 and to Table 607.2.3.1.**

### **Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Gary Klein, Affiliated International Management, LLC, representing self, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**607.2.3 Efficient hot and tempered water supply piping.** Hot and tempered water supply piping shall be in accordance with Section 607.2.3.1 or Section 607.2.3.2. The flow rate through ¼ inch piping shall not exceed 0.5 gpm (1.9 Lpm). The flow rate through ¾ ~~5/16~~ inch piping shall not exceed 1 gpm (3.8 Lpm). The flow rate through ~~5/16~~ 3/8 inch piping shall not exceed 1.5 gpm (5.7 Lpm).

**607.2.3.1 Maximum allowable pipe length method.** The maximum allowable piping length from the source of hot or tempered water to the termination of the fixture supply pipe shall be in accordance with the maximum piping length columns in Table 607.2.3.1. Where the piping contains more than one size of pipe, the largest size of pipe within the piping shall be used for determining the maximum allowable length of the piping in Table 607.2.3.1

*(Portions of public comment not shown remain unchanged).*

# INTERNATIONAL BUILDING CODE – MEANS OF EGRESS

E25-12: Instruction line has been changed to “Modify the proposal”.

## E25-12

### 1006.1.1 (New) [IFC [B] 1006.1.1(New)]

#### *Individual Consideration Agenda*

This item is on the agenda for individual consideration because public comments were submitted.

#### *Public Comment 1:*

**John Williams, Adhoc Health Care – MOE study group, requests Approval as Modified by this Public Comment.**

**Modify the proposal with the following:**

**1006.1 (IFC [B] 1006.1) Illumination required.** The *means of egress*, including the *exit discharge*, shall be illuminated at all times the building space served by the *means of egress* is occupied.

#### **Exceptions:**

1. Occupancies in Group U.
2. *Aisle accessways* in Group A.
3. *Dwelling units* and *sleeping units* in Groups R-1, R-2 and R-3.
4. *Sleeping units* of Group I occupancies.
5. Portions of the *means of egress* provided with automatic lighting controls installed in accordance with Section 1006.1.1.

**1006.1.1 (IFC [B] 1006.1.1) ~~Occupancy sensors~~ Automatic lighting controls.** ~~Occupancy sensors~~ Automatic lighting controls shall be permitted to activate the required illumination for the means of egress provided they meet all of the following conditions:

1. The controls shall be configured to provide the required illumination within each room or space while occupied.
2. Where provided, occupant sensors shall activate the required illumination ~~the occupancy sensor is activated by an occupant the area served is illuminated for a minimum duration of 15 minutes.~~
- ~~4.~~ 3. Where the automatic lighting controls fail, the controls shall fail in the on or operating state. The occupancy sensors operate as fail-safe devices when the occupancy sensor fails;
4. Occupant sensors shall not extinguish lighting ~~The means of egress is not required to have illumination to charge luminous egress path markings in accordance with Section 1024.5~~
- ~~3.~~ 5. All designated emergency lighting luminaries in the means of egress path shall operate in the event of emergency system activation providing light levels in accordance with Section 1006.3. The occupancy sensor operates as a fail-safe device in the event of a power supply failure to the emergency lighting system required by Section 1006.3.
6. The automatic lighting controls shall be tested as a component of the emergency lighting equipment in accordance with the IFC Section 604.5.

**Commenter's Reason:** The revised proposal responded to the committee's comments. The testing section was added in Item 6. Item 5 refines how the emergency means of egress lighting if used. We refined other areas of the proposal to indicate the need to fail on and not interfere with any of the luminous marking system needs.

**Today's practice:**

	Emergency fixture options		
	Battery powered wall fixtures	Battery back-up ceiling fixtures	Designated fixtures connected to emergency panels
Normal power ON	OFF as standard feature	May be turned OFF when space unoccupied, maybe left ON depending on design	Mostly ON 24/7
Normal power OFF	ON as standard feature	ON as standard feature	ON when transfer switch connects to emergency generator

**Change we would like to see with this proposal:**

	Emergency fixture options		
	Battery powered wall fixtures	Battery back-up ceiling fixtures	Designated fixtures connected to emergency panels
Normal power ON	OFF as standard feature	Turned OFF when space unoccupied	Turned OFF when space unoccupied
Normal power OFF	ON as standard feature	ON as standard feature	ON when transfer switch connects to emergency generator

The AHC was established by the ICC Board of Directors to evaluate and assess contemporary code issues relating to hospitals and ambulatory healthcare facilities. The AHC is composed of building code officials, fire code officials, hospital facility engineers, and state healthcare enforcement representatives. The goals of the committee are to ensure that the ICC family of codes appropriately addresses the fire and life safety concerns of a highly specialized and rapidly evolving healthcare delivery system. This process is part of a joint effort between ICC and the American Society for Healthcare Engineering (ASHE), a subsidiary of the American Hospital Association, to eliminate duplication and conflicts in healthcare regulation. Since its inception in April, 2011, the AHC has held 7 open meetings and over 100 workgroup calls which included members of the AHC as well as any interested party to discuss and debate the proposed changes. All meeting materials and reports are posted on the AHC website at: <http://www.iccsafe.org/cs/AHC/Pages/default.aspx>.



## Add E228-12 Public Comment:

**E228-12****1022.6, Chapter 35; (IFC [B] 1022.6, Chapter 80) (IMC [B] 601.3, Chapter 15)****Proposed Change as Submitted**

**Proponent:** Tony Crimi, A.C. Consulting Solutions Inc, representing International Firestop Council (tcrimi@sympatico.ca)

**Revise as follows:**

**1022.6 (IFC [B] 1022.6) Ventilation.** Equipment and ductwork for interior exit stairway and ramp ventilation as permitted by Section 1022.5 shall comply with one of the following items:

1. Such equipment and ductwork shall be located exterior to the building and shall be directly connected to the interior exit stairway and ramp by ductwork enclosed in construction as required for shafts.
2. Where such equipment and ductwork is located within the interior exit stairway and ramp, the intake air shall be taken directly from the outdoors and the exhaust air shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required for shafts.
3. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with construction as required for shafts.
4. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with ductwork tested and listed for not less than 2-hour fire-resistance in accordance with ASTM E2816-11.

In each case, openings into the fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by opening protectives in accordance with Section 716 for shaft enclosures. The interior exit stairway and ramp ventilation systems shall be independent of other building ventilation systems.

**IMC [B] 601.3 Exits.** ~~Equipment and ductwork for exit enclosure~~ interior exit stairway and ramp ventilation shall comply with one of the following items:

1. Such *equipment* and ductwork shall be located exterior to the building and shall be directly connected to the ~~exit enclosure interior exit stairway and ramp~~ by ductwork enclosed in construction as required by the *International Building Code* for shafts.
2. Where such *equipment* and ductwork is located within the exit enclosure, the intake air shall be taken directly from the outdoors and the *exhaust air* shall be discharged directly to the outdoors, or such air shall be conveyed through ducts enclosed in construction as required by the *International Building Code* for shafts.
3. Where located within the building, such *equipment* and ductwork shall be separated from the remainder of the building, including other mechanical *equipment*, with construction as required by the *International Building Code* for shafts.
4. Where located within the building, such equipment and ductwork shall be separated from the remainder of the building, including other mechanical equipment, with ductwork tested and listed for not less than 2-hour fire-resistance in accordance with ASTM E2816-11.

In each case, openings into fire-resistance-rated construction shall be limited to those needed for maintenance and operation and shall be protected by self-closing fire-resistance-rated devices in accordance with the *International Building Code* for enclosure wall opening protectives. ~~Exit enclosure~~ The interior exit stairway and ramp ventilation systems shall be independent of other building ventilation systems.

**Add referenced standard to Chapter 35 (IFC Chapter 80, IMC Chapter 15) as follows:**

ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems

**Reason:** This proposal would allow an additional tested method of protection for duct enclosures used for ventilation of exit enclosures. The ductwork would be permitted to be used if it were protected by a tested and listed assembly conforming to the new *ASTM E2816-11, Standard Test*

*Methods for Fire Resistive Metallic HVAC Duct Systems* evaluated for the specific purpose. This test is now also referenced as part of ICC-ES AC179, Acceptance Criteria for Metallic HVAC Duct Enclosure Assemblies. The purpose of these acceptance criteria is to establish requirements for fire protection enclosure systems applied to metallic HVAC ducts, which provides an alternate to required fire-resistance-rated shafts or an alternate to required fire dampers in specific locations. This criterion provides an alternate to shaft enclosures for vertical ducts.

This Standard has criteria for testing rigid or flexible fire protection enclosure systems (including stability, integrity, and insulation) that are installed on or as part of metallic HVAC ducts, yielding an alternate to required fire-resistance-rated shafts which are required to be protected from both internal and external fire exposure. This criteria provides an alternate to shaft enclosures for horizontal and vertical ducts.

The new ASTM Standard evaluates the HVAC duct systems for surface burning characteristics, non-combustibility, fire resistance, durability, and fire engulfment with horizontal and vertical through-penetration firestops. The Standard can evaluate the fire performance of HVAC ducts for both supply (pressurization) and return air, in the vertical and horizontal orientation, with or without openings. These test methods evaluate the ability of a HVAC duct system to resist the spread of fire from one compartment to another compartment separated by fire resistance rated construction when the HVAC duct system is exposed to fire from the outside of the horizontal or vertical HVAC duct system, or from the outside with hot gases entering the inside of the HVAC duct system from unprotected openings, when subjected to the standard time-temperature curve of ASTM E119.

The change from 'exit enclosure' to 'interior exit stairway and ramp' is for consistency in language between the documents. This was part of E5-09/10 during the last cycle.

**Cost Impact:** This change will reduce the cost of construction.

**Analysis:** A review of the standard proposed for inclusion in the code, ASTM E2816-11 with regard to the ICC criteria for referenced standards (Section 3.6 of CP#28) will be posted on the ICC website on or before April 2, 2012.

1022.6-E-Godwin-NICHOLAS.doc

## **Public Hearing Results**

**Committee Action:**

**Disapproved**

For staff analysis of the content of the ASTM E2816-11 standard relative to CP#28, Section 3.6, please visit: <http://www.iccsafe.org/cs/codes/Documents/2009-10cycle/ProposedChanges/Standards-Analysis.pdf> :

**Committee Reason:** The proposed language does not appear to add anything to the code, and may in fact decrease life safety. There is a question if this product is better evaluated as an alternative means through an evaluations services report. There was also a question as to if this requirement might be proprietary.

**Assembly Action:**

**None**

## **Individual Consideration Agenda**

**This item is on the agenda for individual consideration because a public comment was submitted.**

*Public Comment:*

**Tony Crimi, A.C. Consulting Solutions Inc., representing International Firestop Council, requests Approval as Submitted.**

**Commenter's Reason:** Contrary the committee reason statement that suggested the proposed language does not appear to add anything to the code, this proposal simply allows an additional option for protection of equipment and ductwork for interior exit stairway and ramp ventilation. It is based on using HVAC ducts protected by a tested and listed assembly conforming to the new ASTM E2816-11, Standard Test Methods for Fire Resistive Metallic HVAC Duct Systems evaluated for the specific purpose.

The ASTM E2816 standard is a full-consensus, fire-resistive test method approved by Committee E05 on Fire after 7 years of development. The Standard evaluates the fire performance of HVAC ducts for both supply (pressurization) and return air, in the vertical and horizontal orientation, with or without openings. It evaluates the ability of a HVAC duct system to resist the spread of fire from one compartment to another compartment separated by fire resistance rated construction when the HVAC duct system is exposed to fire from the outside of the horizontal or vertical HVAC duct system, or from the outside with hot gases entering the inside of the HVAC duct system from unprotected openings, when subjected to the standard time-temperature curve of ASTM E119. This test is already referenced as part of ICC-ES AC179, Acceptance Criteria for Metallic HVAC Duct Enclosure Assemblies. The purpose of that acceptance criteria is specifically to establish requirements for fire protection enclosure systems applied to metallic HVAC ducts, which provides an alternate to required fire-resistance-rated shafts or an alternate to required fire dampers in specific locations. This proposal is consistent with AC 179 criterion providing an alternate to fire dampers in horizontal ducts (penetrating fire barriers, fire partitions, and or smoke barriers) and vertical ducts.

To address the committee statement that indicated the additional requirement may decrease life safety, to the contrary, current conventional shafts are tested per ASTM E119 as a non-loadbearing wall assembly, not as an enclosure assembled around a duct. ASTM E2816 tests an HVAC duct system as an assembled fire-resistance-rated shaft enclosure. This means the entire HVAC duct system is surrounded by the ASTM E119 fire exposure (fire engulfment), a more severe fire test condition.

Testing in a shaft configuration also means that the effect of the forces applied during an ASTM E119 fire exposure to the HVAC duct system are evaluated. These forces include compression of the HVAC duct system by the horizontal assembly deflecting under the ASTM E119 fire exposure. These forces may also affect the integrity of the corners of the HVAC duct system. The current shaft enclosure tested as a non-loadbearing wall assembly is not tested with corners or subjected to any load.

The current shaft enclosure, a non-loadbearing wall assembly, is not required to be subject to positive furnace pressure. The HVAC duct system is tested under a positive furnace pressure using the ASTM E119 fire exposure, a more severe fire test condition. The HVAC duct system is also tested under a negative pressure within the entire HVAC duct, again a more severe fire test condition as any breach in the HVAC duct at joints will also draw the ASTM E119 fire into the HVAC duct. There is no interior temperature test data on a conventional shaft engulfed in an ASTM E119 fire exposure because the shaft is not tested. A conventional shaft engulfed by an ASTM E119 fire exposure that is subjected to a positive furnace pressure and a negative shaft pressure, both worse case fire test conditions, would yield the data needed to compare the conventional shaft to the ASTM E2816 HVAC duct system.

**E228-12**

Final Action:           AS                   AM                   AMPC\_\_\_\_\_           D

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# INTERNATIONAL BUILDING CODE – STRUCTURAL

**S298-12: See change made to the Commenter’s Reason.**

**Individual Consideration Agenda**

This item is on the agenda for individual consideration because a public comment was submitted.

*Public Comment:*

**Tim Pate, City & County of Broomfield Building Department, representing Colorado Chapter Code Change Committee, requests Approval as Modified by this Public Comment.**

**Modify the proposal as follows:**

**2406.4.7 Glazing adjacent to the bottom stair landing.** Glazing adjacent to the landing at the bottom of a stairway where the glazing is less than 36 inches (914 mm) above the landing and within a 60 inch (1524 mm) horizontal arc less than 180 degrees from the bottom tread nosing shall be considered a hazardous location.

**Exception:** Glazing that is protected by a guard complying with Sections 1013 and 1607.8 where the plane of the glass is greater than 18 inches (457 mm) from the guard.

**Commenter’s Reason:** The Structural Code Change Committee disapproved this proposed code change based on the following:

**Committee Reason:** This code change does not clarify the requirements for glazing adjacent to the bottom stair landing. The term arc is not necessary and an illustration in the reason could help clarify the intent of this revision.

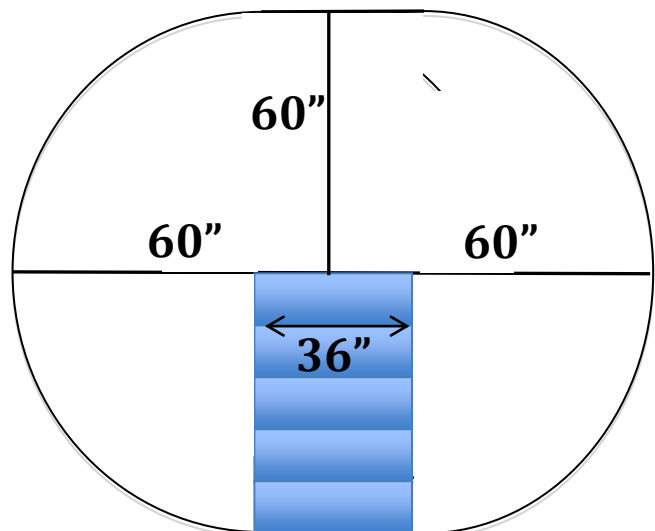
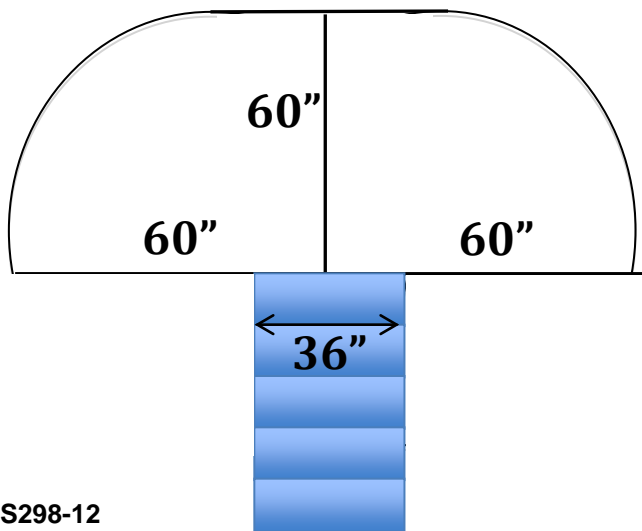
This code change does not clarify the requirements for glazing adjacent to the bottom stair landing. The term arc is not necessary and an illustration in the reason could help clarify the intent of this revision.

Previous editions of the IBC before the 2012 required glazing that is 60” horizontally in any direction to be approved safety glazing. It is not clear why this requirement was changed in the 2012. The previous editions had the additional wording “in any direction” when applying the 60” horizontal rule. This is due to the “splay” factor for when someone gets to the last tread and falls. The tendency is for someone to flail out in any direction.

This added wording will make this section only apply to any glazing that is in a wall that is less than 180 degrees from the bottom tread nosing. I believe that adding the wording which would limit the area needing safety glazing to any glazing that falls within a 180 degree arc from bottom tread nosing and extending out 60” makes more sense since it is extremely unlikely that someone will fall out and backwards. I have added an illustration which should help everyone see what this changed wording will do.

Please note that there is still a requirement to provide approved safety glazing when located within 36” horizontally of the sides of the stairs.

The new code language will incorporate the areas shown on the left diagram while the current code language covers the areas on the right diagram.



**S298-12**

Final Action:

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