



ICC A117.1 STANDARD
THIRD PUBLIC REVIEW DRAFT
BACKGROUND REPORT

July 2, 2015

ICC/ANSI A117.1 STANDARD
DEVELOPMENT - 2015 EDITION

**ICC A117.1 Standard – Accessible and Usable Buildings and Facilities
Third Public Review Draft – Background Report
July 2, 2015**

This document is an informational companion to the Third Public Review Draft of the 2015 edition of the ICC A117.1 Standard. The Third Public Review Draft only shows the changes to the text of the standard which are changes to the Second Public Review Draft. These changes were approved based on:

- Background information provided by the proponents;
- Information supplied by those submitting comments to the First Public Review Draft as supplemented through the Committee's consideration;
- Public comments received on the Second Public Review draft as supplemented through the committee's consideration of those public comments.

This Background Report contains the information supporting each change included in the Third Public Review Draft. The information is presented in chronological order from initial change proposal in 2012 through to the current A117.1 Committee action which approved the most recent version of each change.

Change identification

The history of each proposed change is numbered based on the initial identification of each proposal. Subsequent actions related to that initial change proposal are numbered with additional information. Examples:

- 9-7-12. Initial change proposal number.
- 9-7-12 PC2. Public comment received regarding Committee's initial action.
- 9-7-12 PC2.1. Public comment on changes resulting from a PC related action.

(For the ease of the Committee's consideration at its February 2015 meeting – each public comment was also given an Agenda Item number between #1 and #53) These numbers are used in this report for each corresponding change.

For further information please see the following documents. The documents are found the A117.1 Standard page of the ICC website. <http://www.iccsafe.org/icc-asc-a117/>

1. Third Public Review Draft
2. Third Public Review Draft – Supplement
3. First Public Review Draft Background Report.
4. Second Public Review Draft Background Report.

Providing Public Comment on the Third Public Review Draft

Comments can be made to the Third Public Review Draft. Comments will only be accepted on the changes which have been approved by the Committee and are included Third Public Review Draft. Comments on changes in the first two Public Review Drafts or other comments unrelated to the changes in the Third Public Review Draft will be set aside for consideration after the 2015 edition is published.

If you have questions, please direct them to Kermit Robinson, krobinson@iccsafe.org

Closing Date for Public Comments – Monday, August 17, 2015.

**ICC A117.1 Standard – Accessible and Usable Buildings and Facilities
2012 to 2015* Development Cycle.**

Chronology

	Date	Event.	
1.	2012	Notice	Call for proposal to amend the 2009 edition of the ASC/ICC A117.1 Standard.
2.	July 2012	Publish	New Proposals to amend standard published.
3.	August 27-31, 2012 January 14-18, 2013	Meetings	Committee consideration of new proposals.
4.	March 12, 2013	Publish	Committee Action Report (CAR) actions on proposed changes
5	April 19, 2013	Notice	Proponents of new proposals notified of Committee's action and their opportunity to comment.
6	March-May 2013	Ballot	Committee confirms actions of CAR or provides negative ballot comment
7	June 14, 2013	Publish	Ballot Comment and Proponent Comment Agenda
8	July 15-19, 2013	Meeting	Committee consideration of Ballot and Proponent Comments.
9	August 7, 2013	Publish	Committee Action Report (CAR) on Ballot and Proponent Comments
10	September 20, 2013	Notice	Proponents asked if their issue has been resolved by the committee's action
11	August-October, 2013	Ballot	Committee confirms actions of CAR (actions published 8/7/13)
12	October 25, 2013	Publish	First Public Review Draft – Open draft for public comments
13	December 23, 2013	Publish	Public Comment Report – Comments on First Public Review Draft
14	January 3, 2014	Publish	Unresolved Issues Report
15	January 21-24, 2014 July 14-16, 2014	Meetings	Committee consideration of Public Comment Report and Unresolved Issues Report
16	August 21, 2014**	Publish	Committee Action Reports (CAR) on Public Comments and Unresolved Issues Reports
17	November 7, 2014	Publish	Second Public Review Draft – Draft available for public comments
18	December 22, 2014	Deadline	Close of public comment period on Second Public Review Draft.
19	January, 2015	Publish	Public Comment Report – Comments on Second Public Review Draft
20	February 2-6, 2015	Meeting	Committee consideration of Public Comment report – Second Public Review Draft
21	March 20, 2015	Publish	Committee Action Reports (CAR) on Public Comments on Second Public Review Draft
22	July 2, 2015	Publish	Third Public Review Draft – Draft available for public comments
23	August 17, 2015	Deadline	Close of public comment period on Third Public Review Draft.
24	September TBD	Publish	Public Comment Report – Comments on Third Public Review Draft
25	November 16-18	Meeting	Committee consideration of Public Comment report – Third Public Review Draft

* Earlier documents identified the next edition as the 2014 edition.

Third Public Review Draft – Background Report
July 2, 2015

Chapter 1

See the following items for changes to the list of referenced standards.

4-23-12 PC2.2 – Page 21

5-22-12 PC4.1 – Page 33

7-1-12 PC3.1 – Page 54

8-6-12 PC1.1 – Page 70

Otherwise there are no changes to Chapter 1 in this public review draft.

Chapter 3

3-5 – 12

Ed Roether, Chair of Harmonization Task Group, proponent, asked for further consideration of Proposal 3-5-12.

Reason: Many valid points and concerns were raised during the ballot stage, but based upon the committee's action, comment 3-5 is unresolved. Potentially, some items in the proposal may be unresolvable. But, in an effort to reach a consensus please consider the following comments: The proposed change to 304.2 is consistent with the ADA Advisory to 304.2 and therefore harmonizes with the 2010 ADA Standards. It is recognized that the ANSI Standards can exceed ADA, but please understand that many floor surfaces are incapable of providing a pure planar surface. If ANSI's intent is for a pure planar surface then the Standard would prohibit some floor surfaces even though many members of the committee would consider many of those "non-compliant" floor surfaces acceptable. The ANSI Standard does not include the clarifying language regarding its intent that is found in the ADA Standards where it states: "changes in level refers to surfaces with slopes and to surfaces with abrupt rise exceeding that permitted in Section 303.3".

The proposed change to 305.2, 404.2.3.1, 405.7.1, 502.5, 503.4 & 802.2 is intended for harmonization with the 2010 ADA Standards based upon the ADA Advisory to 304.2 statement that the phrase "changes in level refers to surfaces with slopes and to surfaces with abrupt rise exceeding that permitted in Section 303.3. Such changes in level are prohibited in required clear floor and ground spaces, turning spaces, and in similar spaces where people using wheelchairs and other mobility devices must park their mobility aids such as in wheelchair spaces, or maneuver to use elements such as at doors, fixtures, and telephones."

If the committee cannot accept the limits of 303.3 then the question to be answered is what limits would be acceptable for 304.2, 305.2, 404.2.3.1, 405.7.1, 502.5, 503.4 & 802? This proposed change was to harmonize with the 2010 ADA Standards. A pure planar surface for each of these conditions is unrealistic considering construction materials currently available. Developing limits that are attainable would better assure that each of these conditions could be constructed in compliance with the committee's intent. This comment will be unresolved until the committee's intent is clarified.

The remaining proposed changes account for where the term "changes in level" occurred within the standards. However, 504.4 address conditions where people using wheelchairs and other similar mobility devices would not park or maneuver. Even though other mobility aids would use the tread surface, this may not truly be a harmonization issue. It should receive similar consideration regarding the committee's intent, but for this comment the proposed change to 504.4 in 3-5 is withdrawn. Similarly, the committee's action to 405.4 is accepted and harmonizes with the 2010 ADA Standards, so a proposed change to 405.4 in 3-5 is not included with this comment.

304 Turning Space

304.2 Floor Surface. Floor surfaces of a turning space shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the turning space.

~~**EXCEPTION:** Slopes not steeper than 1:48 shall be permitted.~~

305 Clear Floor or Ground Space

305.2 Floor Surfaces. Floor surfaces of a clear floor space shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the clear floor space.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

404.2 Manual doors

404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the maneuvering clearances.

405 Ramps

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the landings.

502 Parking spaces

502.5 Floor Surfaces. Parking spaces and access aisles shall comply with Section 302 and have surface slopes not steeper than 1:48. Access aisles shall be at the same level as the parking spaces they serve. Changes in level exceeding that permitted by Section 303.3 are not permitted within the parking spaces and access aisles.

503 Passenger loading zones

503.4 Floor Surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with Section 302 and shall have slopes not steeper than 1:48. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level exceeding that permitted by Section 303.3 are not permitted within the vehicle pull-up spaces and access aisles.

802 Wheelchair spaces

802.2 Floor Surfaces. The floor surface of wheelchair space locations shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the floor surface of wheelchair space locations.

Committee action on 3-5-12 Unresolved Issue

Approve Item 3-5-12 as requested above.

Reason: The seven changes reflect the essential pieces of the original 3-5-12 proposal which are essential for coordination with the 2010 ADA.

Public Comment on Second Public Review Draft	
Agenda Item #1	
Comment No: 3-5-12 PC1.1	Submitted by: Marilyn Golden – DREDF Jim Pecht – Access Board
	<p>Revise as follows:</p> <p>304 Turning Space</p> <p>304.2 Floor Surface. Floor surfaces of a turning space shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the turning space.</p> <p>305 Clear Floor or Ground Space</p> <p>305.2 Floor Surfaces. Floor surfaces of a clear floor space shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the clear floor space.</p> <p>404.2 Manual doors</p> <p>404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the maneuvering clearances.</p> <p>405 Ramps</p> <p>405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the landings.</p> <p>502 Parking spaces</p> <p>502.5 Floor Surfaces. Parking spaces and access aisles shall comply with Section 302 and have surface slopes not steeper than 1:48. Access aisles shall be at the same level as the parking spaces they serve. Changes in level exceeding that permitted by Section 303.3 are not permitted within the parking spaces and access aisles.</p> <p>503 Passenger loading zones</p> <p>503.4 Floor Surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with Section 302 and shall have slopes not steeper than 1:48. Access aisles shall be at the same level as the vehicle pull-up space they serve. Changes in level exceeding that permitted by Section 303.3 are not permitted within the vehicle pull up spaces and access aisles.</p> <p>802 Wheelchair spaces</p> <p>802.2 Floor Surfaces. The floor surface of wheelchair space locations shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the floor surface of wheelchair space locations.</p>
<p>Reasons for Comment: Golden: This change restores the original concept in each of these sections.</p>	

Redundant references to Section 303.3 have been removed. Section 303.3, which details what changes in level are permitted, continues to apply to each of these sections, regardless of whether it is explicitly referenced in each Section or not. This proposal returns the text to the ANSI A117's standard convention of not including redundant references to other sections that may happen to apply.

Had this proposal simply returned the text to what it was prior to this cycle, two of the sections, 304.2 and 305.2, would still include the language "Changes in level are not permitted within the turning space [or clear floor space]." While this language is important for accessibility, it has garnered objections due to the difficulty in complying with a ban on any level change. So, the deletion of this language represents a compromise. It will benefit builders and enforcers to remove any blanket bans on changes in level from the standard. And it will benefit accessibility to remove the redundant, unnecessary references to Section 303.3 which were added by proposal 3-5 during this cycle, but which are of great concern to the disability community by virtually inviting designers to insert the maximum level changes allowed in the parts of the building most sensitive for accessibility, such as turning spaces, clear floor spaces, maneuvering clearances at doors, on ramps, in wheelchair space locations, etc.

Pecht: While there is an advisory in the ADA Standards that was the basis for this harmonization issue, advisories are not substitutes for requirements. It should be noted that the Department of Justice chose not to adopt the advisories in the Board's Guidelines into their enforceable Standard. After reconsideration, we feel that this issue needs to be more fully deliberated by the Committee during the next cycle and recommend that the language be returned to the language in the current standard. Several issues need to be considered in the Committee's deliberation, for instance small inconsistencies in a surface such as tile grout line, while possible changes in level, may be more appropriately discussed with regard to the openings requirement in 302.2 and not in this section. Changes in level up to ½ inch may adversely affect mobility aid maneuvering and should be considered in more detail. Also if certain changes in level are to be allowed on these surfaces, what distance should be maintained between multiple level changes?

Committee Action of February 2015 regarding Agenda Item #1 – comment number 3-5-12 PC 1.1

Approved as modified:

Modification:

Modification:

304.2 Floor Surface. Floor surfaces of a turning space ~~shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the turning space.~~

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

305.2 Floor Surfaces. Floor surfaces of a clear floor space ~~shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level exceeding that permitted by Section 303.3 are not permitted within the clear floor space.~~

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302. ~~Changes in level exceeding that permitted by Section 303.3 are not permitted within the maneuvering clearances.~~

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302. ~~Changes in level exceeding that permitted by Section 303.3 are not permitted within the landings.~~

502.5 Floor Surfaces. Parking spaces and access aisles shall comply with Section 302 and have surface slopes not steeper than 1:48. Access aisles shall be at the same level as the parking spaces they serve. ~~Changes in level exceeding that permitted by Section 303.3 are not permitted within the parking spaces and access aisles.~~

503.4 Floor Surfaces. Vehicle pull-up spaces and access aisles serving them shall comply with Section 302 and shall have slopes not steeper than 1:48. Access aisles shall be at the same level as the vehicle pull-up space they serve. ~~Changes in level exceeding that permitted by Section 303.3 are not permitted within the vehicle pull-up spaces and access aisles.~~

802.2 Floor Surfaces. The floor surface of wheelchair space locations shall have a slope not steeper than 1:48 and shall comply with Section 302. ~~Changes in level exceeding that permitted by Section 303.3 are not permitted within the floor surface of wheelchair space locations.~~

Reason:

The committee wrangled with this issue of changes of level within the spaces addressed in these sections. While the standard overtly prohibits any change in level within these spaces, the committee recognized some surface materials such as tile or wood boards can result in numerous little changes within these surfaces. The 3-5-12 change was originally proposed by the Harmonization Task Group in an attempt to provide consistency with the ADA. However, this ADA issue was raised not by the ADA itself but an Access Board advisory. While the Committee agrees that the issue of surface materials needs to be addressed, language has not been found over the last couple of years of effort, therefore the Committee concluded the best action is to not accept the original proposal or the version was included in the Second Public Review Draft and to return the standard to its 2009 text. The preceding modification revises the text found in the Second Public Review Draft back to the 2009 edition text

3-6 – 12

Change 3-6-12 was one of a series of changes which addressed key dimensional requirements in the standard and whether those key requirements needed to be revised. Based on research involving people using a variety of wheeled mobility devices the A117.1 Committee has approved many changes. The full background for those changes can be found in the background reports for the First and Second Public Review Drafts.

In considering comments on the First Public Review Draft public comment 3-6-12 PC2 provided additional revisions to the standard with respect to this collection of changes and how such would be applied to existing buildings. A single public comment addressed this topic – but it affected a series of changes. Those changes are as follows:

3-6-12	3-13E-12	4-10-12
3-6C-12	3-13F-12	4-11-12
3-6D-12	3-13H-12	4-15-12
3-6E-12	3-13K-12	4-56-12
3-8-12	3-20-12	6-46-12
3-9-12	4-5-12	8-2-12
3-13-12	4-6-12	8-3-12
3-13B-12	4-7-12	8-9-12
3-13C-12	4-8-12	
3-13D-12	4-9-12	

3-6-12 PC2 was approved by the A117.1 Committee and included in the Second Public Review Draft. For additional background and the approved changes to the standard, please consult the Second Public Review Draft and related documents. Sections 308.2, 502.4.2 and 802.2.2 are the only three sections of the 28 change listed above which are the subject of further revision based on Public Comment 3-6-12 PC2.1 (a.k.a Agenda Item #2), see Page 13. The revisions that are the topic of the public comment are as follows:

Revise as follows:

308.2 Forward Reach.

308.2.1 Unobstructed.

308.2.1.1 New buildings. In new buildings, where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 23 inches (585 mm) minimum above the floor.

308.2.1.2 Existing buildings and within new Type B units. In existing buildings and within new Type B units, where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.

502.4.2 Width.

502.4.2.1 New buildings. In new buildings, access aisles serving car and van parking spaces shall be 67 inches (1700 mm) minimum in width.

502.4.2.2 Existing buildings and within new Type B units. In existing buildings and seving new Type B units, access aisles serving car and van parking spaces shall be 60 inches (1525 mm) minimum in width.

804 Kitchens and Kitchenettes

804.2.2 U-Shaped Kitchens.

804.2.2.1 New buildings. In new buildings, in kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, countertops, appliances, or walls within kitchen work areas shall be 67 inches (1700 mm) minimum.

EXCEPTION: U-shaped kitchens with an island shall be permitted to comply with Section 804.2.1.

804.2.2.2 Existing buildings. In existing buildings, in kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, countertops, appliances, or walls within kitchen work areas shall be 60 inches (1525 mm) minimum.

EXCEPTION: U-shaped kitchens with an island shall be permitted to comply with Section 804.2.1.

Reason: The A117.1 Committee has proposed major changes to the basic building blocks in Chapter 3, accessible routes in Chapter 4, general site and building elements in Chapter 5, plumbing elements and facilities in Chapter 6, special rooms and spaces in Chapter 8, and recreational facilities in Chapter 10. The Committee debated both the need and cost of these changes prior to the release of the current Public Review Draft. While these major changes represent a significant construction cost increase for new buildings, they would represent a much more significant cost impact to existing buildings. More importantly, in many cases these changes will impose an impossible burden on these facilities by requiring dimensions that cannot be implemented given structural and other limitations in existing buildings. This comment proposes to include separate existing building provisions, most of which leave in place the current dimensions for the affected sections of the Standard for existing buildings while continuing to incorporate the revised dimensions included in the current Public Review draft for new buildings. This approach follows historical trends in recognizing the need to have exceptions for existing accessibility regulations such as in the ADAAG and earlier editions of Standard A117.1.

Committee action

This public comment contains revisions to various parts of the standard and was therefore technically a series of public comments. The committee took a single action on the group of public comments consolidated under 3-6-12 PC2.

Reason: See reasons statement for 3-6-12 PC1. The proposal provides a comprehensive set of changes to address the impact of the new Wheeled Mobility Study standards would have on existing buildings if not addressed in this manner. Many on the Committee are concerned that these provisions should not be in the standard but should be in the International Existing Buildings Code and similar scoping documents. On the assumption that these are contained in the Second Public Review Draft of the standard, it will allow the public to comment on the approach to the issue of exit

Public Comment on Second Public Review Draft	
Agenda Item #2	
Comment No: 3-6-12 PC2.1	Submitted by: Kim Paarlberg – ICC
	<p>Further revise as follows:</p> <p>308.2 Forward Reach.</p> <p>308.2.1 Unobstructed.</p> <p>308.2.1.1 New Buildings. In new buildings, where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 23 inches (585 mm) minimum above the floor.</p> <p>308.2.1.2 Existing Buildings and Within New Type B Units. In existing buildings and within new Type B units, where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.</p> <p>502 Parking Spaces</p> <p>502.4.2.1 New Buildings. In new buildings, access aisles serving car and van parking spaces shall be 67 inches (1700 mm) minimum in width.</p> <p>502.4.2.2 Existing Buildings and Within New Type B Units. In existing buildings and serving new Type B units, access aisles serving car and van parking spaces shall be 60 inches (1525 mm) minimum in width.</p> <p>804.2.2 U-Shaped Kitchens.</p> <p>804.2.2.1 New Buildings. In new buildings, in kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, countertops, appliances, or walls within kitchen work areas shall be 67 inches (1700 mm) minimum.</p> <p style="padding-left: 40px;">EXCEPTION: U-shaped kitchens with an island shall be permitted to comply with Section 804.2.1.</p> <p>804.2.2.2 Existing Buildings. In existing buildings, in kitchens enclosed on three contiguous sides, clearance between all opposing base cabinets, countertops, appliances, or walls within kitchen work areas shall be 60 inches (1525 mm) minimum.</p> <p style="padding-left: 40px;">EXCEPTION: U-shaped kitchens with an island shall be permitted to comply with Section 804.2.1.</p>
<p>Comment Reason by Kim Paarlberg: Three sections went back to the 2009 A117.1 numbers. If those proposals stand, then the language for existing buildings is not needed. This is an editorial coordination only.</p> <p>3-13-12 PC4 restored the current reach range requirements 3-6C-12 PC3-PC10 restored the 60" access aisle 3-6E-12 PC4-PC6 restored the 60" space between counters in a U-shaped kitchen.</p>	

**Committee Action of February 2015 regarding Agenda Item #2
– comment number 3-6-12 PC 2.1**

Approved:

Reason:

The committee approved this comment based on the proponent's reason statement. These provisions for new and existing building are not needed as part of the 3-6-12 PC2 changes because the original change to these sections were subsequently deleted. This action is essentially an editorial action to remove unnecessary language.

3-13 – 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

305.3 Size. The clear floor space shall be ~~48 inches (1220 mm)~~ 52 inches (1320 mm) minimum in length and 30 inches (760 mm) minimum in width.

305.7.2 Forward Approach. Where the clear floor space is positioned for a forward approach, the alcove shall be 36 inches (915 mm) minimum in width where the depth exceeds ~~24~~ 20 inches (~~610~~ 508 mm).

3-13-12 PC4

Kimberly Paarlberg, representing ICC

Revise as follows:

305.3 Size. The clear floor space shall be 52 inches (1320 mm) minimum in length and 30 inches (760 mm) minimum in width.

305.7.2 Forward Approach. Where the clear floor space is positioned for a forward approach, the alcove shall be 36 inches (915 mm) minimum in width where the depth exceeds 20 inches (508 mm).

Exception: Alcoves in a kitchen or bathroom, formed by cabinets or appliances and providing for access to a sink, lavatory or accessible work surface, shall be 36 inches (915 mm) minimum in width where the depth exceeds 24 inches (610 mm).

Reason: The change in the alcove provisions will force all openings under sinks, lavatories and work surfaces to be at least 36" wide. There are already requirements for specific requirements for kitchens and bathrooms that should not be overridden. In addition, this could force sinks farther from the wall than required by the International Plumbing Code, thus creating another conflict.

Committee action on 3-13-12 PC4

Approve Public Comment 3-13-12 PC4.

Reason: The public comment provides a necessary coordination of the Wheeled Mobility Study dimensional changes and kitchen requirements.

Public Comment on Second Public Review Draft	
Agenda Item #5	
Comment No: 3-13-12 PC4.1	Submitted by: Edward Steinfeld – RESNA
	<p>Further revised as follows:</p> <p>305.7.2 Forward Approach. Where the clear floor space is positioned for a forward approach, the alcove shall be 36 inches (915 mm) minimum in width where the depth exceeds 20 inches (508 mm) <u>24 inches (610 mm)</u>.</p> <p>Exception: Alcoves in a kitchen or bathroom, formed by cabinets or appliances and providing for access to a sink, lavatory or accessible work surface, shall be 36 inches (915 mm) minimum in width where the depth exceeds 24 inches (610 mm).</p>
<p>Comment Reason by Edward Steinfeld: Kitchens have the greatest need for accessibility so if we agree that the depth trigger can be 4 inches deeper there, we should allow it everywhere. The proposed change would result in a more consistent standard that is easier to use and administer.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #5 – comment number 3-13-12 PC 4.1</p> <p>Approved:</p> <p>Reason: The Committee agreed with Mr. Steinfeld that since the exception was acceptable, that it really should be the rule, not the exception. Approval simplifies the standard. See Comment Reason statement by Mr. Steinfeld.</p>	

5-24- 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

309.1 General. Operable parts required to be accessible shall comply with Section 309.

Exception: Equipment used only for emergencies by emergency responders or emergency personnel shall not be required to comply with Section 309.

5-24-12 PC1

Marsha K. Mazz, representing U.S. Access Board (ATBCB)

Further revise as follows:

309.1 General. Operable parts required to be accessible shall comply with Section 309.

Exception: Equipment Firefighting devices, such as hose connections, valve controls, gauges, and annunciator panels shall not be required to comply with Section 309 provided that they are used only for emergencies by emergency responders or emergency personnel shall not be required to comply with Section 309 acting in their official capacity.

Reason: The terms “emergency responder” and “emergency personnel” are somewhat ambiguous. Anyone who responds to an emergency can be considered an emergency responder. This proposal clarifies that the exception applies only where responders would act in an official capacity to distinguish between professional responders and ordinary building occupants. We found the list in the original proposal.

Committee action on 5-24-12 PC1

Approved Public Comment 5-24-12 PC1.

Reason: The revisions included in the public comment clarified that the application of the exception will be for equipment which is part of the building versus portable or non-permanent equipment.

Public Comment on Second Public Review Draft

Agenda Item #7

Comment No:
5-24-12 PC1.1

Submitted by:
Gene Boecker – NATO

Further revise as follows:

309.1 General. Operable parts required to be accessible shall comply with Section 309.

Exception: ~~Firefighting~~ Emergency Aid devices, such as ~~fire department~~ hose connections, valve controls, gauges, police call boxes and annunciator panels shall not be required to comply with Section 309 provided that they are used only for emergencies by emergency personnel acting in their official capacity.

Comment Reason by Gene Boecker:

The exemption should not be limited to only firefighting devices. Two additional examples are included to help with this understanding. Police call boxes which are used by the police department to communicate with a substation are

not accessed by the public or employees and should be outside the requirement for operable parts although the box may be installed as part of the scope of work. The text in the last line approved in the prior public comment makes it clear that the exception only applies where the devices are ONLY used by emergency responders and not available for use by employees such as AED's.

**Committee Action of February 2015 regarding Agenda Item #7
– comment number 5-24-12 PC 1.1**

Approved:

Reason:

The committee found that the revised language provided in the comment improved the intent of this new provision of the standard. See also the Comment Reason provide by Mr. Boecker.

Chapter 4

4-23 – 12

Please Note: The version of 4-23-12 included in the public review draft was not the final version of 4-23-12 as approved by the committee. The version approved by the committee is as shown in 4-23-12 PC1.

4-23-12 PC1

Michael Tierney, representing The Builders Hardware Manufacturers Association

Please note: The following reflects the version of 4-23-12 approved by the Committee.

404.2.6 Door Hardware. Handles, pulls, latches, locks, and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate. The operational force to retract latches or disengage devices that hold the door in a closed position shall be as follows:

1. Hardware operation by a forward, pushing or pulling motion: 15 pounds (66.7 N) maximum
2. Hardware operation by a rotational motion: 28 inch-pounds (315 N-cm) maximum

Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the floor. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

EXCEPTION: Locks used only for security purposes and not used for normal operation are permitted in any location.

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable in scoping provisions adopted by the appropriate administrative authority. For other doors, the ~~The~~ force for pushing or pulling open doors ~~other than fire doors~~ shall be as follows:

1. Interior hinged door: 5.0 pounds (22.2 N) maximum
2. Sliding or folding door: 5.0 pounds (22.2 N) maximum

~~These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position.~~

Committee action on 4-23-12 PC1

Approve Public Comment 4-23-12 PC1.

Reason: The Committee approved PC1 which reconfirms their previous approval of 4-23-12 as modified.

4-23-12 PC2

Julie Ruth, JRuth Code Consulting, representing American Architectural Manufacturers Association

Further revise as follows:

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable in scoping provisions adopted by the appropriate administrative authority. For other doors the force for pushing or pulling open doors shall be as follows:

1. Interior hinged door: 5.0 pounds (22.2 N) maximum
2. Interior Sliding or folding door: 5.0 pounds (22.2 N) maximum
3. Exterior sliding door: 10.0 pounds (45 N) maximum

Opening forces for exterior sliding doors shall be determined in accordance with AAMA 513.

Add new reference standard as follows:

106.2.12 Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts of CW and AW Class Operable Windows, Sliding Glass Doors and Terrace Doors in Accessible Spaces, AAMA 513 - 12 (AAMA, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268)

Reason: This comment specifies the standard to be used to measure the opening force of accessible exterior sliding doors and it provides a more achievable maximum opening force of 10 pounds for these doors.

An informal survey of AAMA members whose product met the requirements of the International Building Code for resistance to structural load and water penetration, and the International Energy Conservation Code for air leakage, indicate that at the present time there are no commercial class, manually operated exterior sliding doors that can be opened with no more than 5 pounds force. The survey results did indicate, however, that some residential class horizontal sliding windows of up to 6 feet in height can be opened manually with no more than 10 lbs force. This information indicates that although achieving a manually operated, exterior sliding door that can be opened with no more than 10 pounds force would be a challenge, it may be achievable.

This comment separates the requirement for interior sliding doors from that for exterior sliding doors. Exterior sliding doors are subjected to concerns that do not apply to interior products. These include the code required resistance to wind, water penetration, air leakage and forced entry that is mentioned above. For interior products that are not subject to these concerns a 5 pound opening force may be reasonable.

The comment also adds reference to AAMA 513 for measuring the opening force of these doors. AAMA 513 was developed specifically to clarify the methodology that is to be used to measure the force required to open, close, lock and unlock, latch and unlatch commercial grade (Class CW and AW) operable windows, exterior sliding glass doors and exterior side hinged doors. Section 404.2.8 only addresses the force to open accessible doors. Therefore, the reference to AAMA 513 in this section only pertains to its use to determine opening force.

Committee action on 4-23-12 PC2

Approve Public Comment 4-23-12 PC2.

Reason: Opening force for doors remains an ongoing issue. AAMA has developed a standard to, among other things, measure the force needed. The Committee has approved this change to allow consideration of the AAMA 513 standard during the next Public Review Draft.

Public Comment on Second Public Review Draft	
Agenda Item #9	
Comment No. 4-23-12 PC2.1	Submitted by: Kim Paarlberg – ICC
	<p>Further Revise as follows:</p> <p>404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable in scoping provisions adopted by the appropriate administrative authority. For other doors the force for pushing or pulling open doors shall be as follows:</p> <ol style="list-style-type: none"> 1. Interior hinged door: 5.0 pounds (22.2 N) maximum 2. Interior sliding or folding door: 5.0 pounds (22.2 N) maximum 3. Exterior sliding door: 10.0 pounds (45 N) maximum <p>Opening forces for exterior sliding doors shall be determined in accordance with AAMA 513.</p>
<p>Comment Reason by Kim Paarlberg: Exterior doors are not required to have an opening force by the IBC, NFPA or ADA. The reason is that pressure differences due to climate controls within the building, weather outside the building and wind direction can result in an exterior door having different force to open on different days. An exterior force should not be specified her for sliding doors. While there is not some of the same issues as swinging doors, exterior doors shrink or swell based on temperature and humidity.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #9 – comment number 4-23-12 PC 2.1</p> <p>Approved:</p> <p>Reason: The standard has avoided attempting to regulate the opening force of exterior doors. The committee agreed that this was not the direction the standard should go.</p>	

Public Comment on Second Public Review Draft	
Agenda Item #10	
Comment No. 4-23-12 PC2.2	Submitted by: Julie Ruth – JRuth Code Consulting representing American Architectural Manufacturers Association (AAMA)
	<p>Further Revised as follows:</p> <p>106.2.13 Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts of CW and AW Class Operable Windows, Sliding Glass Doors and Terrace Doors in Accessible Spaces, AAMA 513 – 14-12-(AAMA, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268)</p>

Comment Reason by Julie Ruth:

During the development of the second Public Review Draft the ANSI A117 committee approved 4-23 PC2, which added reference to AAMA 513 - 12 for the determination of the opening force for exterior sliding doors.

In response to comments received from the ANSI A117 committee with regards to referencing AAMA 513 - 12 for operable windows (5-23 PC4), AAMA 513 has been revised.

The new edition, with revised title, is indicated in this comment. It updates the previously approved edition of the proposed referenced standard to the recently revised edition. The committee will be asked to consider this recent edition via a separate comment on 5-23 PC4. If approved, approval of this comment would be appropriate for consistency.

**Committee Action of February 2015 regarding Agenda Item #10
– comment number 4-23-12 PC 2.2****Approved:****Reason:**

The committee accepted referencing the revised standard. AAMA revised the standard to address issues raised by the A117.1 Committee during earlier change considerations.

4-33– 12

Joseph Hetzel, proponent, asked for further consideration of Proposal 4-33-12.

We request that Proposal 4-33-12, which was originally disapproved, be approved as modified using Public Comment 4-33.2 and as further modified by the following editorial changes:

404.3 Automatic Doors. Automatic doors and automatic gates shall comply with Section 404.3. Full powered automatic doors shall comply with ANSI/BHMA A156.10 listed in Section 105.2.4. Power-assist and low-energy doors shall comply with ANSI/BHMA A156.19 listed in Section 105.2.3.

EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 404.3.2, 404.3.4 and 404.3.5.

Where more than two doors are located at an accessible route entrance to a building or facility, other than dwelling units and sleeping units, at least one door shall be an automatic door. Where an accessible route entrance has a vestibule with more than two exterior entrance doors and more than two interior entrance doors, at least one exterior automatic door and one interior automatic door shall be provided.

Reason: The Committee supports the principle that automatic doors enhance accessibility. To fulfill that principle, the standard needs clear threshold based requirements for specifying automatic doors in locations involving higher public traffic areas.

We believe the Committee should be working toward approving a proposal that satisfies the “automatic doors enhance accessibility” principle. Therefore, we believe Committee disapproval of our comment 4-33.2 is insufficient toward that goal. Our response to the Committee reasoning is as follows:

Committee point #1: The proposed text was found to be vague. It is unclear what is intended by ‘accessible doors’?

AAADM response: The proposal intends to address building/facility entrance situations involving more than two doors in an “accessible route”, a term used throughout A117.1 including the Chapter 4 title. Therefore, we have made editorial changes accordingly. Our editorial changes result in the proposed text being clear and not vague.

Committee point #2: Is it clear that across a vestibule that these automatic doors should line up?

AAADM response: A Committee member actually pointed out that doors do not always line up in a vestibule. Exterior doors may be side entrances at a 90 degree angle to interior entrances. Therefore, this Committee point should not be a reason to disapprove the proposal.

Committee point #3: The proposal seemed to make what had been an exception in the original proposal, a requirement.

AAADM response: The originally submitted proposal is a requirement along with two Exceptions to that requirement.

Therefore, we request that the Committee reconsider their action on comment 4-33.2, and approve new language in Section 404.3 supporting accessibility enhancement through automatic doors.

Committee action on 4-33-12 Unresolved Issue

Approve Proposal 4-33-12 with modifications: The modification is a substitute proposal for the original submittal:

Modification – Add new section as follows:

404.3.1 Public Entrances. Where an automatic door is required at a building or facility public entrance, it shall be a full powered automatic door or a low-energy door. Where the entrance includes a vestibule that has exterior and interior entrance doors, at least one exterior door and one interior door in the vestibule shall be either a full powered automatic door or a low-energy door.

Reason: The Committee via this proposal has been exploring how to make automatic doors essential to building entrances in an accessible route. This approved proposal is intended to be of a technical origin.

If an automatic door is specified for an application, full powered automatic doors and low-energy doors hold a distinct advantage over power-assist doors from an accessibility standpoint, because they require no intended effort on the part of the door user to access the building or facility. This results in access for a much wider range of people with disabilities.

Clarification is needed regarding automatic doors used in vestibules. The proposed vestibule language is from GSA Facilities Standard P100. Both doors need to be either full powered or low-energy to support the concept of getting people completely inside a building or facility.

Public Comment on Second Public Review Draft	
Agenda Item #11	
Comment No. 4-33-12 PC1.1	Submitted by: Gene Boecker – NATO
	<p>Further revises as follows:</p> <p>404.3.1 Public Entrances. Where an automatic door is required <u>provided</u> at a building or facility public entrance, it shall be a full powered automatic door or a low-energy door. Where the entrance includes a vestibule that has exterior and interior entrance doors, at least one exterior door and one interior door in the vestibule shall be either a full powered automatic door or a low-energy door.</p>
<p>Comment Reason by Gene Boecker:</p> <p>This discussion began during the prior committee meeting whether the technical criteria herein should be applied where the automatic doors are provided or if it would only be applicable if the automatic doors are required by some outside scoping document. If the latter is intended then the requirement that automatic doors be operable for both the exterior and interior vestibule would only be applicable in limited jurisdictions. In the rest of the country, one door could be full power automatic and the other could be manual or power-assist. If that is the intent, then defeat the public comment. If the intent is that both sets of vestibule doors should be operated by either full automatic or low energy, then approve the proposal.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #11 – comment number 4-33-12 PC 1.1</p> <p>Approved as modified:</p> <p>Modification:</p> <p>404.3.1 Public Entrances. Where an automatic door is required at a building or facility public entrance, it shall be a full powered automatic door or a low-energy door.</p> <p>404.3.2 Vestibules. Where the an <u>an</u> entrance includes a vestibule that has exterior and interior entrance doors, at least one exterior door and one interior door in the vestibule shall be either a full powered automatic door or a low-energy door <u>have the same type of automatic door opener.</u></p> <p>Reason:</p> <p>The modification above more clearly addresses the concern raised by Mr. Boecker in his comment. The standard will be clear that two 'automated' doors on the same vestibule will be the same type.</p>	

4-34-12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

404.3.4 Two Doors in Series. Doors in series shall comply with Section 404.2.5.

EXCEPTION: Full power automatic doors in a series are not required to provide a turning space complying with Section 304.

404.3.5 Control Switches. Manually operated control switches shall comply with Section 309. The clear floor space adjacent to the control switch shall be located beyond the arc of ~~the~~ door swings.

404.3.6 Door Hardware. Handles, pulls, latches, locks, and other operable parts shall comply with Section 404.2.6.

4-34-12 PC1

Kim Paarlberg, representing International Code Council

Further revise as follows:

404.3.4 Two Doors in Series. Doors in series shall comply with Section 404.2.5.

~~**EXCEPTION:** Full power automatic doors in a series are not required to provide a turning space complying with Section 304.~~

404.3.5 Control Switches. Manually operated control switches shall comply with Section 309. The clear floor space adjacent to the control switch shall be located beyond the arc of ~~the~~ door swings.

404.3.6 Door Hardware. Handles, pulls, latches, locks, and other operable parts shall comply with Section 404.2.6.

Reason: The exception is already covered in 4-31-12. This change will coordinate 4-11, 4-30, 4-31 and 4-34.

Committee action on 4-34-12 PC1

Approve Public Comment 4-34-12 PC1.

Reason: This change will coordinate 4-11, 4-30, 4-31 and 4-34.

Public Comment on Second Public Review Draft

Agenda Item #13

Comment No.
4-34-12 PC1.1

Submitted by:
Kim Paarlberg – ICC

Revise as follows:

404.3.4 Two Doors or Gates in Series. Doors or gates in series shall comply with Section 404.2.5.

	<p><u>EXCEPTION:</u> Full power automatic doors or gates in a series are not required to provide a turning space complying with Section 304.</p>
<p>Comment Reason by Kim Paarlberg: I was the original proponent of the code change that added the turning space in a vestibule. The concern was possible entrapment when a person was not strong enough to open an exterior door. Providing an automatic door to address that concern is a preferred option. They should not lose the allowance for a smaller vestibule when they are offering a higher level of accessibility.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #13 – comment number 4-34-12 PC1.1</p> <p>Approved as modified:</p> <p>Modification:</p> <p>404.3.4 Two Doors or Gates in Series. Doors or gates in series shall comply with Section 404.2.5.</p> <p><u>EXCEPTION:</u> Where both doors or gates in series are power assist doors, low energy automatic doors or full power automatic doors, the two doors and gates in a series shall not be required to provide a turning space between the doors.</p> <p>Reason: The committee agreed with Ms. Paarlberg that the exception which provides a higher level of accessibility through the provision of automatic or power assist doors makes waiver of the turning space reasonable. In conjunction with the action on Agenda #11, requiring the two doors of a vestibule to be the same technology, the turning space waiver is appropriate.</p>	

Chapter 5

5-16 – 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

504.9 ~~Stair Level Identification~~ Tactile signage within the stairway enclosure. Stair level identification signs in raised characters and braille complying with Sections 703.3 and 703.4 shall be located at each floor level landing in all enclosed stairways adjacent to the door leading from the stairwell into the corridor to identify the floor level. The exit door discharging to the outside or to the level of exit discharge shall have a sign with raised characters and braille stating "EXIT."

504.10 Tactile signage at exits. A sign stating EXIT in raised characters and Braille and complying with Sections 703.3 and 703.4 shall be provided adjacent to each door to an area of refuge, an exterior area for assisted rescue, an exit stairway, an exit ramp, an exit passageway and the exit discharge.

5-16-12 PC1

Christopher G. Bell, representing American Council of the Blind

Comment: ACB is concerned that 504.9 & 504.10 only require signage which is tactile, and in braille. There is no cross-reference whether such signage is required to satisfy the BSF LRV standard provided for in Chapter 7. There are many different ways that 504.9 & 504.10 could be amended to make clear that the reference signage must also provide sufficient contrast. Revisions could also be made to proposal number 7-1– 12

To rectify this issue. ACB is not providing a proposed revision to solve these issues because there are so many possible ways by which this issue could be addressed. However, ACB strongly believes that the signage referenced in 504.9 & 504.10 must have the requisite contrasting colors for the text.

Committee action on 5-16-12 PC1

Approve with additional modifications - Public Comment 5-16-12 PC1.

Modification:

504.10 Tactile signage at exits. A sign stating EXIT in raised characters and Braille and complying with Sections 703.3 and 703.4 shall be provided adjacent to each door to ~~an area of refuge~~, an exterior area for assisted rescue, an exit stairway, an exit ramp, an exit passageway and the exit discharge.

Reason: Elevator lobbies are sometimes the location of an area of refuge. An elevator lobby is not an exit and requiring a sign at such locations stating the such is an exit would be incorrect.

Public Comment on Second Public Review Draft	
Agenda Item #16	
Comment No. 5-16-12 PC1.1	Submitted by: Kim Paarlberg – ICC
	<p>Revise as follows:</p> <p>504.10 Tactile signage at exits. A sign stating EXIT in raised characters and Braille and complying with Sections 703.3 and 703.4 shall be provided adjacent to each door to <u>an area of refuge providing direct access to a stairway</u>; an exterior area for assisted rescue, an exit stairway, an exit ramp, an exit passageway and the exit discharge.</p>
<p>Comment Reason by Kim Paarlberg:</p> <p>I understand that you would not want an exit sign at an area of refuge in front of an elevator with standby power. However, where an area of refuge is in front of a stairway, a person with vision impairment needs to know to go through the area of refuge to get to the exit stairway. This revision should address the concern raised by the committee about the area of refuge at the elevator.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #16 – comment number 5-16-12 PC 1.1</p> <p>Approved:</p> <p>Reason:</p> <p>The committee agreed with Ms. Paarlberg that signage should be provide where doors lead to an area of refuge adjoining a stairway. Previous action had removed the text because it inappropriately applied to elevator lobbies. This action restores the language without any impact on elevator lobbies.</p>	

5-22– 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

506.1 General. Where operable Accessible windows are provided in an accessible room or space, at least one shall be accessible and have operable parts complying with Section 309. Where operable windows required to provide natural ventilation or operable windows are required to provide an emergency escape and rescue openings that window shall be the accessible operable window.

EXCEPTIONS:

1. Operable windows that are operated only by employees are not required to comply with this section.
2. Operable windows in Type A units that comply with Section 1003.13.
3. Operable skylights are not required to comply with this section.

506.2 Opening force. The opening force for opening operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for casement or horizontal sliding windows
2. 25 pounds (111 N) maximum for double hung windows

1002.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, ~~operating hardware for operable windows~~, plumbing fixture controls, and user controls for security or intercom systems shall comply with Section 309.

EXCEPTIONS:

(Exceptions are not changed)

1002.13 Windows. Operable windows shall comply with Section 4002.13 506.1.

EXCEPTIONS:

1. Windows in kitchens are not required to comply with this section.
2. Windows in bathrooms are not required to comply with this section.

~~**1002.13.1 Natural ventilation.** Operable windows required to provide natural ventilation shall comply with Sections 309.2 and 309.3.~~

~~**1002.13.2 Emergency escape.** Operable windows required to provide an emergency escape and rescue opening shall comply with Section 309.2.~~

1003.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, ~~operating hardware for operable windows~~, plumbing fixture controls, and user controls for security or intercom systems shall comply with Section 309.

EXCEPTIONS:

(Exceptions are not changed)

1003.13 Windows. Operable windows shall comply with Section 1003.13.

1003.13.1 Natural ventilation. Operable windows required to provide natural ventilation shall comply with Sections 309.2 and 309.3.

1003.13.2 Emergency escape. Operable windows required to provide an emergency escape and rescue opening shall comply with Section 309.2.

5-22-12 PC2

Hope Reed, representing New Mexico Governor's Commission on Disability (NMGCD)

Further revise as follows:

506.1 General. Where operable windows are provided in an accessible room or space, at least one shall be accessible and have operable parts complying with Section 309. Where operable windows required to:

1. Provide natural ventilation.
2. To provide an emergency escape and rescue ~~openings~~ opening or operable windows are required that window shall be the accessible operable window.

EXCEPTIONS:

1. Operable windows that are operated only by employees are not required to comply with this section.
2. Operable windows in Type A units that comply with Section ~~4003.13~~ 1103.13.
3. Operable skylights are not required to comply with this section.

506.2 Opening force. The opening force for opening operable windows shall be as follows:

1. 5.0 pounds (22.2 N) 8.5 pounds (37.7 N) maximum for casement or horizontal sliding windows
2. ~~25 pounds (111 N) maximum for double hung windows~~

(Balance of 5-22-12 remains unchanged)

Reason: Correct citation number from ~~4003.13~~ to 1103.13

ANSI's general approach to measurements is to provide a range. There are windows on the market that can be operable with 5 pounds of force. To be consistent with ANSI, GCD recommends providing a range for casement and sliding window opening force. This will encourage designers to find windows with the lowest opening force.

Delete the exception to allow 25 opening force for double hung widows. This is not an accessible standard. This is not usable by people with disabilities. This is the industry standard, it does not provide good access, and does not belong in ANSI.

Double hung windows can be operably at less than 5 lbs. opening force with an attached operating mechanism. ANSI should lead designers to find the most accessible window on the market.

ANSI should not provide a double hung window opening force just as it does not providing an exterior door opening weight. Remain silent if there is no good solution.

Committee action on 5-22-12 PC2

Approve PC 5-22-12 PC2 with modifications

This proposal complete replaces the original public comment PC2

506.2 Opening force. The opening force for opening operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for casement or horizontal sliding windows
2. ~~25 pounds (111 N) maximum for double hung windows.~~

Reason: Twenty-five pound of force should not be considered accessible.

Public Comment on Second Public Review Draft

Agenda Item #17

Comment No. 5-22-12 PC2.1	Submitted by: Julie Ruth – JRuth Code Consulting representing American Architectural Manufacturers Association (AAMA)
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Further revise as follows:

506.2 Operating force. The operating force for windows includes forces for opening, closing, locking or latching, and unlocking or unlatching. Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required for locking or latching and unlocking or unlatching shall be 5 pounds (22.2 N) maximum. The operating force for opening and closing operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for ~~casement~~ vertical and horizontal sliding windows
2. 5 pounds (22.2 N) maximum for all other types of operable windows.

Comment Reason by Julie Ruth:

The purpose of this comment is to clarify the maximum operable force permitted for ALL operable windows.

Through the action by the committee on both PC2 and PC4 to proposal 5-22, Section 506.2 would specify the maximum operating force permitted for casement and horizontal sliding windows, but not the maximum operating force permitted for all other types of operating windows. As such, the maximum permitted operating force for other types of operable windows, such as awning windows, projected windows, single and double hung windows, etc. is not given.

Clarification is needed for all types of operable windows.

This comment clarifies that the maximum operating force for all types of operable windows shall be either 5 or 8.5 lbs. It also reduces the maximum operating force permitted for casement windows from 8.5 lbs to 5.0 lbs, while establishing the higher operating force of 8.5 lbs for vertical (hung) as well as horizontal sliding windows.

Committee Action of February 2015 regarding Agenda Item #17 – comment number 5-22-12 PC 2.1

Approved:

Reason:

The proponents offered two options for the committee to address operating forces on windows. Those options being Agenda Items #17 and #18. The committee approved this item as it reconfirms the standard's commitment to a 5 pound operating force for other than sliding windows.

5-22-12 PC4

Julie Ruth, representing American Architectural Manufacturers Association

Further revise as follows:

506.1 General. Where operable windows are provided in an accessible room or space, at least one shall be accessible and have operable parts complying with Section 309. Where operable windows required to provide natural ventilation or operable windows are required to provide an emergency escape and rescue openings that window shall be the accessible operable window.

EXCEPTIONS:

1. Operable windows that are operated only by employees are not required to comply with this section.
2. Operable windows in Type A units that comply with Section 1003.13.
3. Operable skylights are not required to comply with this section.

506.2 Opening Operating force. The operating force for windows includes forces for opening, closing, locking or latching, and unlocking or unlatching, and shall be determined in accordance with AAMA 513. Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required for locking or latching and unlocking or unlatching shall be 5 pounds (22.2 N) maximum. The opening operating force for opening and closing operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for casement or horizontal sliding windows
2. 25 pounds (111 N) maximum for double hung windows

Add new reference standard as follows:

106.2.12 Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts of CW and AW Class Operable Windows, Sliding Glass Doors and Terrace Doors in Accessible Spaces AAMA 513 (AAMA, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268)

(Balance of 5-22-12 remains unchanged)

Reason: This comment specifies the standard to be used to measure the operating force of accessible, operable windows. AAMA 513 was developed specifically to clarify the methodology that is to be used to measure the force required to open, close, lock and unlock, latch and unlatch commercial grade (Class CW and AW) operable windows. Applicable provisions of Section 309 regarding the operability of the accessible components have also been brought forward to clarify that these provisions apply to window operation as well.

Committee action on 5-22-12 PC4

Approve PC 5-22-12 PC4 with modifications:

506.2 Operating force. The operating force for windows includes forces for opening, closing, locking or latching, and unlocking or unlatching, ~~and shall be determined in accordance with AAMA 513.~~ Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist.

The force required for locking or latching and unlocking or unlatching shall be 5 pounds (22.2 N) maximum. The operating force for opening and closing operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for casement or horizontal sliding windows
2. 25 pounds (111 N) maximum for double hung windows

~~**106.2.12** Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts of CW and AW Class Operable Windows, Sliding Glass Doors and Terrace Doors in Accessible Spaces AAMA 513 (AAMA, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268)~~

Reason: The AAMA standard was not completed at the time of committee review. Therefore reference to it was removed. The balance of the public comment provided improved language for the standard.

Public Comment on Second Public Review Draft

Agenda Item #19

Comment No.
5-22-12 PC4.1

Submitted by:
Julie Ruth – JRuth Code Consulting
representing American Architectural Manufacturers Association (AAMA)

Revise as follows:

506.2 Operating force. The operating force for windows includes forces for opening, closing, locking or latching, and unlocking or unlatching, and shall be determined in accordance with AAMA 513. Operable parts shall be operable with one hand and shall not require tight grasping, pinching or twisting of the wrist. The force required for locking or latching and unlocking or unlatching shall be 5 pounds (22.2 N) maximum. The operating force for opening and closing operable windows shall be as follows:

1. 8.5 pounds (37.7 N) maximum for casement and horizontal sliding windows

Add reference standard as follows:

106.2.13 Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts of Operable Windows and Doors in Accessible Spaces, AAMA 513 - 14(AAMA, 1827 Walden Office Square, Suite 550, Schaumburg, IL 60173-4268)

Comment Reason by Julie Ruth:

The purpose of this comment is to establish a standard test method to be used to determine the operating force of operable, accessible windows.

The first edition of AAMA 513 (AAMA 513-12 *Standard Laboratory Test Method for Determination of Forces and Motions Required to Activate Operable Parts on CW and AW Class Operable Windows, Sliding Glass Doors and Terrace Doors in Accessible Spaces*) was specifically developed to specify how the operating force of Commercial and Architectural grade windows and specialty glass doors was to be determined. The ANSI A117 committee was asked to approve the use of this standard for doors through PC2 to proposal 4-23, and for operable windows through PC4 to proposal 5-22.

Although the committee accepted the use of AAMA 513 for doors by approving PC2 to proposal 4-23, some concerns were raised when it was considered for operable windows. AAMA 513 has been revised in response to the concerns raised by the committee members. Through this comment the committee is asked to consider accepting reference to this newly revised edition of this standard for the determination of operating force of accessible windows.

AAMA 513-14 responds to the committee's concerns in the following manner:

Concern #1: The scope of the standard is too narrow.

Response: The scope of the standard has been expanded to include all operable, accessible windows (including residential) and doors.

Concern #2: Since AAMA 513 only provides for laboratory testing of operating force, the language proposed in 5-22 PC4 would require the use of operable windows that had already been tested for operating force in a laboratory. There were no provisions to field test operable windows that had not already been tested in a laboratory.

Response: Appendix A has been added to AAMA 513-14 for Field Testing Applications.

Concern #3: A disclaimer in Section 8.3.2 of AAMA 513-12 placed the burden of determining compliance of the installation entirely upon the building's Architect or Engineer of Record.

Response: The provision causing concern has been removed, and does not occur in AAMA 513-14.

AAMA believes a standard method for measuring operating force of fenestration is needed in ANSI A117. The committee appeared to be in agreement when it approved the use of AAMA 513, through the approval of our PC2 to 4-23. During its discussion of PC4 to 5-22 AAMA was encouraged to revise the standard to address the committee's concerns, and bring it back for reconsideration by the committee. AAMA believes they have now addressed the committee's concerns, and asks the committee to approve this important addition to the next edition of ICC/ANSI A117.

**Committee Action of February 2015 regarding Agenda Item #19
– comment number 5-22-12 PC 4.1**

Approved:

Reason:

Following comments by the A117.1 Committee, AAMA worked to expand the scope of the AAMA 513 standard to address opening forces for windows. Earlier actions by this committee adopted this standard by reference for doors. This action adds the appropriate companion reference for windows.

Chapter 6

6-20-12

(This represents the language approved by the committee for the First Public Review Draft)

Revise Table as follows:

Table 604.9.3.1 – Door Opening Locations

Door Opening Location	Measured From	Dimension
Front Wall or Partition	From the side wall or partition closest to the water closet	56 inches (1420 mm) minimum
	Or	
	From the side wall or partition farthest from the water closet	4-5 inches (402-127 mm) maximum
Side Wall or Partition - Wall-Hung Water Closet	From the rear wall	52 inches (1320 mm) minimum
	Or	
	From the front wall or partition	4-5 inches (402-127 mm) maximum
Side Wall or Partition - Floor-Mounted Water Closet	From the rear wall	55 inches (1395 mm) minimum
	Or	
	From the front wall or partition	4-5 inches (402-127 mm) maximum

6-20-12 PC1

Kim Paarlberg, representing ICC

Disapprove the change. Return the text to that found in existing standard.

Reason: The committee did a great job last cycle of revising the requirements to allow for larger stalls and the correct placement of the door. The proposal to change the 4" to 5" was based on the proponent saying then needed more than 4" for support. Well, they could already do that under the current provisions by providing a larger stall so they could get any size support they wanted. There was no technical justification for requiring an additional 1" for the inside stall dimension. Other manufacturers have not identified that that the 4" support does not work for them. In addition, this could put bathrooms currently in compliance in violation for no technical reason. This text should be restored to what it says in the 2009 ICC A117.1.

Committee action on 6-20-12 PC1

Approve as modified – 6-20-12 PC1

Modification:

Table 604.9.3.1 – Door Opening Locations

Door Opening Location	Measured From	Dimension
Front Wall or Partition	From the side wall or partition closest to the water closet	56 inches (1420 mm) minimum
	Or	
	From the side wall or partition farthest from the water closet	5 inches (127 mm) maximum

Side Wall or Partition - Wall-Hung Water Closet	From the rear wall	52 inches (1320 mm) minimum
	Or	
	From the front wall or partition	5 inches (127 mm) maximum
Side Wall or Partition - Floor-Mounted Water Closet	From the rear wall	55 inches (1395 mm) minimum
	Or	
	From the front wall or partition	5 inches (127 mm) maximum

Reason: Upon reconsideration of this item, the Committee addressed Ms. Paarlberg's concern by deleting the 'or' from the table in 3 locations. This allows compliance even though the original change from 4 to 5 inches provided compliance issues when mixed with the other measurement.

Public Comment on Second Public Review Draft

Agenda Item #24A

Comment No:
6-20-12 PC2.1

Submitted by:
Kim Paarlberg – ICC

Revise as follows:

Table 604.9.3.1 – Door Opening Locations

Door Opening Location	Measured From	Dimension
Front Wall or Partition	From the side wall or partition closest to the water closet	56 inches (1420 mm) minimum
	Or	
	From the side wall or partition farthest from the water closet	4 5 inches (125 mm) maximum
Side Wall or Partition - Wall-Hung Water Closet	From the rear wall	52 inches (1320 mm) minimum
	Or	
	From the front wall or partition	4 5 inches (125 mm) maximum
Side Wall or Partition - Floor-Mounted Water Closet	From the rear wall	55 inches (1395 mm) minimum
	Or	
	From the front wall or partition	4 5 inches (125 mm) maximum

Comment Reason by Kim Paarlberg:

The language that was approved by the committee will require the partitions to be placed at 61 inches apart for the accessible stall while the clear floor space for the water closet is still 60 inches. This will be very confusing for the user. There is no technical reason provided that this was needed to improve accessibility. In existing building where the bathrooms were being brought up to new accessibility provision, if the accessible stall is the end stall, this could literally require all the stall walls to be moved over 1 inch.

The proposal that switched this from 4 inches (2009 A117.1) to 5 inches sited that stall builders needed to have a 5 inch station. That option was already available to them in the 2009 A117.1 – they could just have provided the larger stall.

To leave the 'or' in and leave the 5 inch dimension would be a violation of the ADA.

This proposal restores the requirements found in 2009 A117.1 for a minimum stall that is required by ADA and matches the toilet clearance requirements. Where the designer wants or needs large supports, they can exceed this requirement and provide larger stalls.

**Committee Action of February 2015 regarding Agenda Item #24A
– comment number 6-20-12 PC 2.1**

Approved:

Reason:

The Committee agreed with Ms. Paarlberg that the previously approved change rather than providing the option the original proponent has been seeking actually results in requiring larger compartments in all instances. A larger compartment has not been shown to be justified in this proposal. Please see Comment Reason provided by Ms. Paarlberg.

6-46– 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

608.2.1.2 Clearance. A clearance of ~~48~~ 52 inches (~~1220~~ 1360 mm) minimum in length measured perpendicular from 12 inches (305 mm) beyond the control seat wall, and 36 inches (915 mm) minimum in depth shall be provided adjacent to the open face of the compartment.

6-46-12 PC2

Kimberly Paarlberg, representing ICC

Further revise as follows:

608.2.1.2 Clearance. A clearance of 52 inches (1360 mm) minimum in length measured perpendicular from ~~42 inches (305 mm) beyond the control seat~~ wall, and 36 inches (915 mm) minimum in depth shall be provided adjacent to the open face of the compartment.

Reason: The increased clear floor space, combined with the change to measure from the seat wall instead of the control wall now prohibits the transfer shower from ever being located in the corner. The shower has to have at least 4" offset (see figure). The study information provided for the increase in clear floor space did not include information on acceptable transfers. The plumbing industry has done these studies. They should be investigated before revising this measurement.

In addition, the transfer location in an alternate roll-in shower does not include the same offset. Therefore, the standard is inconsistent in application.

608.2.3 Alternate Roll-in-Type Shower Compartments. Alternate roll-in-type shower compartments shall comply with Section 608.2.3.

608.2.3.1 Size. Alternate roll-in shower compartments shall have a clear inside dimension of 60 inches (1525 mm) minimum in width, and 36 inches (915 mm) in depth, measured at the center point of opposing sides. An entry 36 inches (915 mm) minimum in width shall be provided at one end of the 60-inch (1525 mm) width of the compartment. A seat wall, 24 inches (610 mm) minimum and 36 inches (915 mm) maximum in length, shall be provided on the entry side of the compartment.

Committee action on 6-46-12 PC2

Approve Public Comment 6-46-12 PC2.

Reason: The public comment changes how the length of the clearance next to the transfer shower is to be measured. The comment shifts focus from the seat wall to the control wall.

Public Comment on Second Public Review Draft	
Agenda Item #25	
Comment No: 6-46-12 PC2.1	Submitted by: Edward Steinfeld - RESNA
	<p>Revise as follows:</p> <p>608.2.1.2 Clearance. A clearance of 52 inches (1320 mm) minimum in length measured perpendicular from 12 inches (305 mm) beyond the seat wall, and 36 inches (915 mm) minimum in depth shall be provided adjacent to the open face of the compartment. The seat</p>

	<p>wall shall align with the wheelchair seat back as per Section 305.8 Seat Back Location, or be 4 inches (100 mm) maximum behind the seat wall.</p> <p>305.8 Seat Back Location. For the purposes of this standard, the seat back of a wheelchair within the clear floor space shall be considered 40 inches (1015 mm) from the front or 12 inches (305mm) from the rear of the wheelchair space.</p>
<p>Comment Reason by Edward Steinfeld: We support the PC3 option over PC2 since it better aligns the seat back of wheelchairs with the back of the shower seat. However, consistent with my comments on 3-13E-12 PC3, the seat back should be part of the clear floor space section because it can be used for many purposes. Designers should learn about seat back location because it plays a role in reachability. The IDeA Center can prepare an illustration that will be useful for many purposes. The current alignment in the standard is 12 inches and there is insufficient evidence to increase this to 16 inches. Thus, the general rule should remain 12 inches from the rear; and exceptions provided to address specific concerns where they arise. In this case, there is disagreement as to whether 12 or 16 should be allowable. While I support leaving the 12 and believe this would provide better access, I do understand the concerns of those opposed. The solution I am proposing reaffirms 12 as the rule (as it is currently), but gives designers the flexibility to choose 16 if they wish, thereby addressing the concerns of those who wish to provide more flexibility.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #25 – comment number 6-46-12 PC 2.1</p> <p>Approved:</p> <p>Reason: See Comment Reason provided by Mr. Steinfeld. The committee found this revision to provide a long term improvement to the standard. It provides a new building block specifying where the seat back of the mobility device should be assumed to be located in the clear floor space. This allows consistent application in various code provisions by allowing reference back to the new building block.</p>	

6-55-12

Please Note: The version of 6-55-12 included in the public review draft was not the final version of 6-55-12 as approved by the committee. The version approved by the committee is shown in 6-55-12 PC1

6-55-12 PC1

Kim Paarlberg, representing ICC

Please note: The following reflects the version of 6-55-12 that was approved by the Committee.

608.3.2 Standard Roll-in-Type Showers. Grab bars in standard roll-in showers shall comply with Section 608.3.2.

608.3.2.1 Back wall grab bar. In standard roll-in type showers, a grab bar shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be provided above the seat. The back wall grab bar shall extend the length of the wall and extend within 6 inches (150 mm) maximum from the adjacent side wall opposite the seat.

Exceptions:

1. The back wall grab bar ~~but~~ shall not be required to exceed 48 inches (1220 mm) in length.
2. The back wall grab bar is not required to extend within 6 inches (150 mm) of the adjacent side wall opposite the seat if it would require the grab bar length to exceed 48 inches (1220 mm) in length.

608.3.2.2 Side wall grab bars. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, a grab bar shall be provided on the side wall opposite the seat. The side wall grab bar shall extend the length of the wall and extend within 6 inches (150 mm) maximum from the adjacent back wall.

Exception: The side wall grab bar ~~but~~ shall not be required to exceed 30 inches (760 mm) in length. ~~Grab bars shall be 6 inches (150 mm) maximum from the adjacent wall.~~

Committee action on 6-55-12 PC1

Approve Public Comment 6-55-12 PC1.

Reason: The committee approved the public comment; reaffirming its earlier approved version of 6-55-12.

6-55-12 PC3

Curt Wiehle, Minnesota Construction Codes and Licensing, representing self

Further revise as follows:

608.3.2.1 Back wall grab bar. In standard roll-in type showers, a grab bar shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be provided above the seat. The back wall grab bar shall extend the length of the wall and extend within 6 inches (150 mm) maximum from the adjacent side wall opposite the seat.

Exceptions:

1. The back wall grab bar ~~but~~ shall not be required to exceed 48 inches (1220 mm) in length.
2. ~~The back wall grab bar is not required to extend within 6 inches (150 mm) of the adjacent side wall opposite the seat if it would require the grab bar length to exceed 48 inches (1220 mm) in length.~~

Reason: The first exception already limits the length of the bar to 48 inches. Exception 2 is redundant.

Committee action on 6-55-12 PC3

Approve Public Comment 6-55-12 PC3.

Reason: The Committee agreed with Mr. Wiehle's observation that the 2nd exception is redundant.

Public Comment on Second Public Review Draft	
Agenda Item #28	
Comment No: 6-55-12 PC3.1	Submitted by: Edward Steinfeld – RESNA
	<p>Revise as follows:</p> <p>608.3.2.1 Back wall grab bar. In standard roll-in type showers, a grab bar shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be provided above the seat. The back wall grab bar shall extend the length of the wall and extend within 6 inches (150 mm) maximum from the adjacent side wall opposite the seat.</p> <p style="padding-left: 40px;">Exceptions:</p> <ol style="list-style-type: none"> 1. The back wall grab bar but shall not be required to exceed 48 inches (1220 mm) in length. 2. The back wall grab bar is not required to extend within 6 inches (150 mm) of the adjacent side wall opposite the seat if it would require the grab bar length to exceed 48 inches (1220 mm) in length. <p>Option # 1- Proposed Change</p> <p><u>608.3.2.1. Back Wall Grab Bar. In standard roll-in shower stalls, a grab bar shall be provided along the entire length of the back wall from 6 inches (150 mm) maximum of one corner to within 6 inches (150 mm) maximum of the opposite corner.</u></p> <p style="padding-left: 40px;">Exception: <u>If a permanent seat is provided, the grab bar shall terminate at the leading edge of the seat.</u></p> <p>... OR ...</p>

	<p>Option #2</p> <p><u>608.3.2.1. Back Wall Grab Bar.</u> In standard roll-in shower stalls, a grab bar shall be provided along the entire length of the back wall from 6 inches (150 mm) maximum of one corner to within 6 inches (150 mm) maximum of the opposite corner.</p> <p><u>Exceptions:</u></p> <ol style="list-style-type: none"> 1. <u>If a permanent seat is provided, the grab bar shall terminate at the leading edge of the seat.</u> 2. <u>If the shower stall is longer than 60 inches (1525 mm), and a 48 inches (1220 mm) long grab bar is provided at minimum, then the distance from the end of the grab bar to either corner can exceed 6 inches (150 mm).</u>
<p>Comment Reason by Edward Steinfeld:</p> <p>We are offering two alternatives to the existing proposed change depending on whether the Committee decides that mandating a 48 in. max. bar is necessary: Version 1 (preferred) requires the bar to be long enough to reduce “unprotected” wall length to only 6 in. at either end. Version 2 allows the grab bar to be only 48 in. long if the stall is greater than 60 in.</p> <p>A roll in shower stall should also be safe for people who are standing while taking a shower. In the 1980 standard, where the roll in shower stall was first introduced, the bar was required along the entire length of the stall, with the exception of 6 in. at each end in recognition that a bar that did not wrap around was not necessary because it was unlikely anyone would grab the bar right in the corner. This ensured that someone standing would always have a bar within reach and that a movable seat could be located at any location within the stall. At that time, a permanent seat was not required in a roll in shower. In the 2009 revisions, the Committee required a folding seat and allowed the bar to max out at 48 in. The length of 48 in. is arbitrary, with no basis in research. It is a legacy of the original illustration showing a 60 in. long shower stall area minus the 6 in. allowances at both corners. The maximum length not only introduces too much complexity in the wording but it also allows very large shower stalls to have back walls that do not have bars along their entire length. Further it specifies a specific location of the bar when that is not always where it might be best, depending on other features of the stall. The language is exceedingly complex and difficult to understand which has been demonstrated by the numerous attempts to adjust it during this cycle. The proposed revision in Alternate #1 above significantly simplifies the text by stating the basic rule in the main paragraph and corrects the oversight related to the 48 in. maximum at the same time, bringing back the original intent. If the Committee still desires to limit the length of the back bar to 48 in. The paragraph could be altered as in Alternate #2 which states the basic rule and allows the designer to put the 48 in. grab bar at the most appropriate location. Moreover, it clearly conveys the intent that it is better to have a longer grab bar for safety.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #28 – comment number 6-55-12 PC 3.1</p> <p>Approved as modified:</p> <p>Modification:</p> <p>Option #1 was approved.</p> <p><u>608.3.2.1. Back Wall Grab Bar.</u> In standard roll-in shower stalls, a grab bar shall be provided along the entire length of the back wall from 6 inches (150 mm) maximum of one corner to within 6 inches (150 mm) maximum of the opposite corner.</p> <p><u>Exception:</u> If a permanent seat is provided, the grab bar shall terminate at the leading edge of</p>	

the seat.

Reason:

Please see Comment Reason provided by Mr. Steinfeld (above). The revised text of the comment provides clear language for the length and placement of the back wall grab bar.

6-61– 12

Hope Reed, proponent, asked for further consideration of Proposal 6-61-12.

Using the **Approved as Modified proposal 6-60** as the basis, see below further modifications from NMGCD in support of proposal **6-61.5 (Ambulatory Roll-in Showers)** and companion proposal for Grab Bars:

608.4 Controls and Hand Showers. Controls and hand showers shall comply with Section 608.4 and 309.4.

608.4.1 Transfer-Type Showers. In transfer-type showers, the controls and hand shower shall be located:

1. On the control wall opposite the seat,
2. At a height of 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor, and
3. 15 inches (380 mm) maximum, from the centerline of the control wall toward the shower opening.

608.4.2 Standard Roll-in Showers. In standard roll-in showers, the controls and hand shower shall not be located above the seat. Controls and hand showers shall be located:

1. On the back wall,
2. At a height of 38 inches minimum and 48 inches (1220 mm) maximum above the shower floor, and
3. 16 inches (405 mm) minimum and 27 inches (685 mm) maximum from the wall behind the seat.

608.4.2.1 Ambulatory Roll-In Showers. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, an additional shower control and hand shower may be located on this side wall:

1. At a height of 38 inches (965 mm) minimum to 48 inches (1220 mm) maximum above the shower floor, and
2. 17 inches (430 mm) to 19 inches (485 mm) from the back wall.

608.4.3 Alternate Roll-in Showers. In alternate roll-in showers, the controls and hand shower shall be located:

1. At a height of 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor, and
2. Where the controls and hand shower are located on the end wall adjacent to the seat, the controls and hand shower shall be 16 inches (405 mm) minimum and 27 inches (685 mm) maximum from the wall behind the seat wall, or
3. Where the controls and hand shower are located on the back wall opposite the seat, the controls and hand shower shall be located within 15 inches (380 mm) maximum from, the centerline of the seat toward the transfer space.

Companion proposal for Grab Bars:

608.3 Grab Bars.

608.3.2 Standard Roll-in Type Showers. Grab bar for standard roll-in showers shall comply with Section 608.3.2. ~~In standard roll-in type showers, grab bars shall be provided~~

608.3.2.1 Horizontal Grab Bars. Horizontal grab bars shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be located above the seat. The back wall grab bar shall extend the length of the wall but shall not be required to exceed 48 inches (1220 mm) in length. Where a side wall is provided opposite the sea within 72 inches (1830 mm) of the seat wall, a grab bar shall be provided on the side wall opposite the seat. The side wall grab bar shall extend the length of the wall but shall not be required to exceed 30 inches (760 mm) in length. Grab bars shall be 6 inches (150 mm) maximum from the adjacent wall.

608.3.2.1.1 Vertical Grab Bar. Where an ambulatory roll-in shower control and hand spray are provided, a vertical grab bar shall be provided. A vertical grab bar 18 inches (45 mm) minimum in length shall be provided on the ambulatory control side wall 3 inches (75 mm) minimum and 6 inches (150 mm) maximum above the horizontal grab bar, and 4 inches (100 mm) maximum inward from the front edge of the shower.

Reason: Many people with walking disabilities prefer to walk into the shower and stand while they shower. People with walking disabilities frequently have knee or hip problems that severely restrict their ability to easily sit and rise from a wet shower seat. The roll-in shower controls and spray located on the back wall are not easily usable by a person who prefers to stand and use the grab bars while showering because the water sprays out into the room and their elbows hit the back wall. Provide option for additional Ambulatory Roll-in Shower Controls and Hand Shower. See sketches at end.

Four benefits of this proposal include:

1. Serve a greater number of people with disabilities in the Standard Roll-in Shower (those using wheelchairs and those who are walking impaired)
2. Add language for consistency in preventing installation of controls and hand showers above the seat in 608.4.2
3. Reformat a Standard Roll-in Shower and add new section for optional Ambulatory Roll-in Showers controls and hand showers in 608.4.2.1
4. Re-format Roll-in Showers horizontal grab bar, and add optional vertical grab bar for consistency in 608.3.2

Committee action on 6-61-12 Unresolved Issue

Approve proposal 6-61-12 as outlined above.

Reason: The proposal allows more flexibility in the use of roll-in showers for persons who are ambulatory and not just those who use a wheelchair or other mobility device.

Public Comment on Second Public Review Draft

Agenda Item #30

Comment No:
6-61-12 PC1.2

Submitted by:
Kim Paarlberg - ICC

Revise as follows:

608.3 Grab Bars.

608.3.2 Standard Roll-in Type Showers. Grab bar for standard roll-in showers shall comply with Section 608.3.2.

608.3.2.1 Horizontal Grab Bars. Horizontal grab bars shall be provided on the back wall

	<p>beginning at the edge of the seat. The grab bars shall not be located above the seat. The back wall grab bar shall extend the length of the wall but shall not be required to exceed 48 inches (1220 mm) in length. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, a grab bar shall be provided on the side wall opposite the seat. The side wall grab bar shall extend the length of the wall but shall not be required to exceed 30 inches (760 mm) in length. Grab bars shall be 6 inches (150 mm) maximum from the adjacent wall.</p> <p>608.3.2.2 608.3.2.1.4 Vertical Grab Bar. <u>Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, Where an ambulatory roll-in shower control and hand spray are provided, a vertical grab bar shall be provided. A vertical grab bar 18 inches (45 mm) minimum in length shall be provided on the ambulatory control side wall 3 inches (75 mm) minimum and 6 inches (150 mm) maximum above the horizontal grab bar, and 4 inches (100 mm) maximum inward from the front edge of the shower.</u></p> <p>608.4 Controls and Hand Showers. Controls and hand showers shall comply with Section 608.4 and 309.4.</p> <p>608.4.1 Transfer-Type Showers. In transfer-type showers, the controls and hand shower shall be located:</p> <ol style="list-style-type: none"> 1. On the control wall opposite the seat, 2. At a height of 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor, and 3. 15 inches (380 mm) maximum, from the centerline of the control wall toward the shower opening. <p>608.4.2 Standard Roll-in Showers. In standard roll-in showers, the controls and hand shower shall not be located above the seat. Controls and hand showers shall be located <u>in accordance with the following:</u></p> <ol style="list-style-type: none"> 1. On the back wall, 2. At a height of 38 inches minimum and 48 inches (1220 mm) maximum above the shower floor, and 3. 16 inches (405 mm) minimum and 27 inches (685 mm) maximum from the wall behind the seat. <p>608.4.2.1 Ambulatory Roll-In Showers <u>Additional control and hand shower.</u> <u>Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, an additional shower control and hand shower may shall be located on this side wall <u>in accordance with the following:</u></u></p> <ol style="list-style-type: none"> 1. At a height of 38 inches (965 mm) minimum to 48 inches (1220 mm) maximum above the shower floor, and 2. <u>17 inches (430 mm) to 19 inches (485 mm) from the back wall. 15 inches (380 mm) maximum, from the centerline of the control wall toward the shower opening.</u>
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Comment Reason by Kim Paarlberg:

The trigger in 608.3.2.2 and 608.4.2.1 should be the same to avoid confusion. This also limits the need for a new name (which is only in the title in Section 608.4.2.1). If you call it a different name you start to look for where this is sized, which is not part of the change.

The change to 608.4.1 places the controls to that they can be reached from the outside of the shower similar to the transfer shower (see section 608.4.1). 17" to 19" is too tight of a range and has no clear technical basis.

This is making the control and grab bar mandatory for a standard roll-in shower. Alternative public comments are offered for if this control is something that is an option that exceeds code, or if this should be a different type of

shower that should be scoped.

**Committee Action of February 2015 regarding Agenda Item #30
– comment number 6-61-12 PC 1.2**

Approved as modified:

Modification:

The amendments to Sections 608.3.2.2 and 608.4.2 were approved. The balance was not accepted.

608.3.2.2 608.3.2.1.4 Vertical Grab Bar. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, ~~Where an ambulatory roll-in shower control and hand spray are provided,~~ a vertical grab bar shall be provided. A vertical grab bar 18 inches (45 mm) minimum in length shall be provided on the ambulatory control side wall 3 inches (75 mm) minimum and 6 inches (150 mm) maximum above the horizontal grab bar, and 4 inches (100 mm) maximum inward from the front edge of the shower.

608.4.2 Standard Roll-in Showers. In standard roll-in showers, the controls and hand shower shall not be located above the seat. Controls and hand showers shall be located in accordance with the following:

1. On the back wall,
2. At a height of 38 inches minimum and 48 inches (1220 mm) maximum above the shower floor, and
3. 16 inches (405 mm) minimum and 27 inches (685 mm) maximum from the wall behind the seat.

Reason:

Original action was to disapprove this item. However discussion on Agenda Item #32 provided that elements of both Agenda items needed to be approved to provide the appropriate solution. Therefore Agenda Item #30 was reconsidered and approved after Agenda Item #32. Agenda item #32 eliminates Section 608.4.2.1 which would have required a second handheld shower and second set of controls. Item #30 was approved to improve the text addressing the vertical grab bar requirement and placement. This portion of Item #30 takes precedence over Item #32's elimination of the vertical grab bar provisions.

Public Comment on Second Public Review Draft	
Agenda Item #32	
Comment No: 6-61-12 PC1.4	Submitted by: Kim Paarlberg - ICC
	<p>Revise as follows:</p> <p>608.3 Grab Bars.</p> <p>608.3.2 Standard Roll-in Type Showers. Grab bar for standard roll-in showers shall comply with Section 608.3.2. In standard roll-in type showers, horizontal grab bars shall be provided</p>

	<p>608.3.2.1 Horizontal Grab Bars. Horizontal grab bars shall be provided on the back wall beginning at the edge of the seat. The grab bars shall not be located above the seat. The back wall grab bar shall extend the length of the wall but shall not be required to exceed 48 inches (1220 mm) in length. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, a grab bar shall be provided on the side wall opposite the seat. The side wall grab bar shall extend the length of the wall but shall not be required to exceed 30 inches (760 mm) in length. Grab bars shall be 6 inches (150 mm) maximum from the adjacent wall.</p> <p>608.3.2.1.1 Vertical Grab Bar. Where an ambulatory roll-in shower control and hand spray are provided, a vertical grab bar shall be provided. A vertical grab bar 18 inches (45 mm) minimum in length shall be provided on the ambulatory control side wall 3 inches (75 mm) minimum and 6 inches (150 mm) maximum above the horizontal grab bar, and 4 inches (100 mm) maximum inward from the front edge of the shower.</p> <p>608.4 Controls and Hand Showers. Controls and hand showers shall comply with Section 608.4 and 309.4.</p> <p>608.4.1 Transfer-Type Showers. In transfer-type showers, the controls and hand shower shall be located:</p> <ol style="list-style-type: none"> 1. On the control wall opposite the seat, 2. At a height of 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower floor, and 3. 15 inches (380 mm) maximum, from the centerline of the control wall toward the shower opening. <p>608.4.2 Standard Roll-in Showers. In standard roll-in showers, the controls and hand shower shall not be located above the seat. Controls and hand showers shall be located:</p> <ol style="list-style-type: none"> 1. On the back wall, 2. At a height of 38 inches minimum and 48 inches (1220 mm) maximum above the shower floor, and 3. 16 inches (405 mm) minimum and 27 inches (685 mm) maximum from the wall behind the seat. <p>608.4.2.1 Ambulatory Roll-In Showers. Where a side wall is provided opposite the seat within 72 inches (1830 mm) of the seat wall, an additional shower control and hand shower may be located on this side wall:</p> <ol style="list-style-type: none"> 1. At a height of 38 inches (965 mm) minimum to 48 inches (1220 mm) maximum above the shower floor, and 2. 17 inches (430 mm) to 19 inches (485 mm) from the back wall.
	<p>Comment Reason by Kim Paarlberg: In the proposed language a vertical grab bar and additional control 'may' be provided. It is not necessary to state that something that exceeds code is permitted. Therefore the language should be removed. Some minor editorial cleanup has been kept. Other public comments are proposed for if the committee wants a new type that can be scopes, or if they want to require the additional control and grab bar for certain size standard roll-in showers.</p>

**Committee Action of February 2015 regarding Agenda Item #32
– comment number 6-61-12 PC 1.4**

Approved:

Reason:

While this Agenda Item was considered after Agenda Item #30 was initially disapproved, the committee concluded that combined actions on the two items resulted in the preferred solution.

The committee agreed with Ms. Paarlberg that the standard doesn't need to state that something 'may' be provided. Such is the case with many devices or installations that go above the minimum of the standard. The primary impact of this approval is to remove Section 608.4.2.1. See subsequent action on Agenda Item 30.

Chapter 7

7-1– 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

105.2.13 Light reflectance value (LRV) of a surface. Method of Test. BS 8493:2008 + A1: 2010 (British Standards Institution, 389 Chiswick High Road, London W4 4AL, United Kingdom).

701.1.2 Light Reflectance Value. The light reflectance value (LRV) of surfaces shall be determined in accordance with BS 8493 for the following surface types:

1. Opaque paint coatings and paint systems, including those that cause extreme angular dependences of reflected light and those that have a surface texture of less than 2 mm;
2. Opaque coverings including those that cause extreme angular dependences of reflected light, and those that have an unyielding texture of less than 2 mm;
3. Opaque coverings with a yielding pile, e.g. carpet;
4. Opaque materials, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm, e.g. finished metals;
5. Opaque materials coated with non-opaque coatings or coverings, e.g. timber door coated with a woodstain, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm;
6. Multi-colored surfaces;

701.1.2.1 Other Surfaces. Other surfaces shall comply with Section 703.1.3.1.

701.1.3 Contrast Value. The contrast between the LRVs of adjacent surfaces required by Sections 703.2.1.2, 703.5.3.2, 703.6.3.2, 705.3, and 504.5.1 shall be determined by Equation 7-1,

Contrast = $[(B1-B2)/B1] \times 100$ percent **Equation 7-1**

Where

B1 = light reflectance value (LRV) of the lighter surface,

B2 = light reflectance value (LRV) of the darker surface.

701.1.3.1 Other Surfaces. Surfaces not within the scope of BS 8493 shall provide contrast between adjacent surfaces that are either light on dark or dark on light.

Revise as follows

703.2.1 General. Visual characters shall comply with the following:

(Balance of section is not changed)

703.2.1.1 Nonglare Finish. The glare from coverings, the finish of characters and their background shall not exceed 19 as measured on a 60-degree gloss meter.

703.2.1.2 Contrast. The Light Reflectance Value (LRV) of characters and their background shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

703.5.3 Finish and Contrast. Pictograms and their fields shall have a nonglare finish. Pictograms shall contrast with their fields, with either light pictograms on a dark field, or dark pictograms on a light field.

703.5.3.1 Nonglare Finish. The glare from coverings and the finish of pictograms and their fields shall not exceed 19 as measured on a 60-degree gloss meter.

703.5.3.2 Contrast. The Light Reflectance Value (LRV) of pictograms and their fields shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

703.6.2 Finish and Contrast. Symbols of accessibility and their backgrounds shall have non-glare finish. Symbols of accessibility shall contrast with their backgrounds with either a light symbol on a dark background or a dark symbol on a light background.

703.6.3.1 Nonglare Finish. The glare from coverings and the finish of symbols of accessibility and their backgrounds shall not exceed 19 as measured on a 60-degree gloss meter.

703.6.3.2 Contrast. The Light Reflectance Value (LRV) of symbols of accessibility and their backgrounds shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

705.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent surfaces, either light-on-dark or dark-on-light.

The Light Reflectance Value (LRV) of the surfaces shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

504.5.1 Visual Contrast. The leading 2 inches (51 mm) of the tread shall have visual contrast of dark-on-light or light-on-dark from the remainder of the tread.

The Light Reflectance Value (LRV) of the 2-inch (51 mm) stripe and tread shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

7-1-12 PC3

Teresa E. Cox, representing International Sign Association

Delete and substitute as follows:

~~105.2.13 Light reflectance value (LRV) of a surface. Method of Test. BS 8493:2008 + A1: 2010 (British Standards Institution, 389 Chiswick High Road, London W4 4AL, United Kingdom).~~

701.1.2 Light Reflectance Value. The light reflectance value (LRV) of surfaces shall be determined in accordance with BS 8493 for the following surface types:

1. Opaque paint coatings and paint systems, including those that cause extreme angular dependences of reflected light and those that have a surface texture of less than 2 mm;
2. Opaque coverings including those that cause extreme angular dependences of reflected light, and those that have an unyielding texture of less than 2 mm;
3. Opaque coverings with a yielding pile, e.g. carpet;
4. Opaque materials, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm, e.g. finished metals;
5. Opaque materials coated with non-opaque coatings or coverings, e.g. timber door coated with a woodstain, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm;
6. Multi-colored surfaces;

701.1.2.1 Other Surfaces. Other surfaces shall comply with Section 703.1.3.1.

701.1.3 Contrast Value. The contrast between the LRVs of adjacent surfaces required by Sections 703.2.1.2, 703.5.3.2, 703.6.3.2, 705.3, and 504.5.1 shall be determined by Equation 7-1,

$$\text{Contrast} = \frac{B1 - B2}{B1} \times 100 \text{ percent} \quad \text{Equation 7-1}$$

Where

B1 = light reflectance value (LRV) of the lighter surface,
B2 = light reflectance value (LRV) of the darker surface.

701.1.3.1 Other Surfaces. Surfaces not within the scope of BS 8493 shall provide contrast between adjacent surfaces that are either light on dark or dark on light.

Revise as follows

703.2.1 General. Visual characters shall comply with the following:

————— *(Balance of section is not changed)*

703.2.1.1 Nonglare Finish. The glare from coverings, the finish of characters and their background shall not exceed 19 as measured on a 60-degree gloss meter.

703.2.1.2 Contrast. The Light Reflectance Value (LRV) of characters and their background shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

703.5.3 Finish and Contrast. Pictograms and their fields shall have a nonglare finish. Pictograms shall contrast with their fields, with either light pictograms on a dark field, or dark pictograms on a light field.

~~**703.5.3.1 Nonglare Finish.** The glare from coverings and the finish of pictograms and their fields shall not exceed 19 as measured on a 60-degree gloss meter.~~

~~**703.5.3.2 Contrast.** The Light Reflectance Value (LRV) of pictograms and their fields shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.~~

~~**703.6.2 Finish and Contrast.** Symbols of accessibility and their backgrounds shall have non-glare finish. Symbols of accessibility shall contrast with their backgrounds with either a light symbol on a dark background or a dark symbol on a light background.~~

~~**703.6.3.1 Nonglare Finish.** The glare from coverings and the finish of symbols of accessibility and their backgrounds shall not exceed 19 as measured on a 60-degree gloss meter.~~

~~**703.6.3.2 Contrast.** The Light Reflectance Value (LRV) of symbols of accessibility and their backgrounds shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.~~

~~**703.3 Contrast.** Detectable warning surfaces shall contrast visually with adjacent surfaces, either light-on-dark or dark-on-light.~~

~~The Light Reflectance Value (LRV) of the surfaces shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.~~

~~**504.5.1 Visual Contrast.** The leading 2 inches (51 mm) of the tread shall have visual contrast of dark-on-light or light-on-dark from the remainder of the tread.~~

~~The Light Reflectance Value (LRV) of the 2-inch (51 mm) stripe and tread shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.~~

703.2.1 General. Visual characters shall comply with the following:

(Balance of section is not changed)

703.2.1.1 Nonglare Finish. The glare from coverings, the finish of characters and their background shall not exceed 19 as measured on a 60-degree gloss meter.

703.2.10 Contrast. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.

703.5.3.1 Nonglare Finish. The glare from coverings and the finish of pictograms and their fields shall not exceed 19 as measured on a 60-degree gloss meter.

703.5.3.2 Contrast. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.

703.6.2 Finish and Contrast. Symbols of accessibility and their backgrounds shall have non-glare finish. Symbols of accessibility shall contrast with their backgrounds with either a light symbol on a dark background or a dark symbol on a light background.

703.6.3.1 Nonglare Finish. The glare from coverings and the finish of symbols of accessibility and their backgrounds shall not exceed 19 as measured on a 60-degree gloss meter.

705.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent surfaces, either light-on-dark or dark-on-light.

504.5.1 Visual Contrast. The leading 2 inches (51 mm) of the tread shall have visual contrast of dark-on-light or light-on-dark from the remainder of the tread.

Reason: 1. The LRV's of many standard sign materials cannot be measured using the British Standard Method of Test.

2. Site conditions, particularly the type and intensity of lighting, have great impact on perceived contrast. Following the formula without considering site conditions, would allow combinations that do not have enough contrast, and prohibit others that are perfectly legible when appropriate lighting is provided.

3. The British Standard states in part "The method described in this standard is not appropriate for making on-site measurements. Therefore it is recommended that published LRV data, determined in accordance with this standard, are used for the determination of visual contrast." Relying on the British Standard (BS) establishes a design standard that lacks a corresponding field method to accurately calculate conforming color contrast of signs installed on-site.

4. The BS is referenced by a British government accessibility standard, Approved Document M (ADM 2010, with 2013 amendments), in association with measuring the difference in LRV's of adjacent building elements. Consistent with this application, the BS specifies sample sizes ranging from 450 mm x 450 mm (appx. 17.7 inches x 17.7 inches) to 25 mm x 25 mm (appx. 1 inch x 1 inch). But there appears to be no supporting evidence that the BS's LRV difference measurements are predictive of legibility for any population with special visual needs (e.g. elders, those with mild low vision), and the BS does not provide a means to measure for conformance, under actual field conditions, the LRV's of small graphic elements, especially text or visual symbols.

5. This proposal is really no different than proposals that have been defeated numerous times for multiple reasons, except for the addition of a new standard of questionable utility. The mere addition of any new standard, though, does not in any way support the adoption of 70% as a threshold value. In fact, the 70% figure is not mentioned in the BS.

6. Research is sorely needed to provide a rational basis for a signage contrast standard that can be applied simply, and prior to final site installation, whose conformance is predictive of legibility under typical if not actual field conditions.

Committee action on 7-1-12 PC3

Approve Public Comment 7-1-12 PC3.

Reason: The Committee concluded that there was insufficient information for the standard to use the contrast analysis methods and testing included in 7-1-12. They wish for the discussions and research to continue, and by making this amendment, the issue appears in the next public review draft and is available for comment. The glare provisions are appropriate to maintain going into the next edition of the standard.

Public Comment on Second Public Review Draft	
Agenda Item #35	
Comment No: 7-1-12 PC3.1	Submitted by: Sharon Toji – HLAA Eugene Lozano, Jr. – California Council of the Blind Billie Lousie (Beezy) Bentzen – Accessible Design for the Blind on behalf of AERBVI
	Revise as follows: <u>106.2.XX Light reflectance value (LRV) of a surface. Method of Test. BS 8493:2008 + A1: 2010 (British Standards Institution, 389 Chiswick High Road, London W4 4AL, United Kingdom).</u> 504.5.1 Visual Contrast. The leading 2 inches (51 mm) of the tread shall have visual contrast of dark-on-light or light-on-dark from the remainder of the tread. The Light Reflectance Value

(LRV) of the 2-inch (51 mm) stripe and tread shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

701.1.2 Light Reflectance Value. The light reflectance value (LRV) of surfaces shall be determined in accordance with BS 8493 for the following surface types:

1. Opaque paint coatings and paint systems, including those that cause extreme angular dependences of reflected light and those that have a surface texture of less than 2 mm;
2. Opaque coverings including those that cause extreme angular dependences of reflected light, and those that have an unyielding texture of less than 2 mm;
3. Opaque coverings with a yielding pile, e.g. carpet;
4. Opaque materials, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm, e.g. finished metals;
5. Opaque materials coated with non-opaque coatings or coverings, e.g. timber door coated with a woodstain, including those that cause extreme angular dependences of reflected light, and those that have a texture of less than 2 mm;
6. Multi-colored surfaces;
7. Ordinary materials as defined in 3. Terms and Definitions, 3.3, by BS 8493:2008 + A1: 2010;

701.1.2.1 Other Surfaces. Other surfaces shall comply with Section 703.1.3.1.

701.1.3 Contrast Value. The contrast between the LRVs of adjacent surfaces required by Sections 703.2.1.2, 703.5.3.2, 703.6.3.2, 705.3, and 504.5.1 shall be determined by Equation 7-1.

Contrast = [(B1-B2)/B1] x 100 percent Equation 7-1

Where

B1 = light reflectance value (LRV) of the lighter surface,

B2 = light reflectance value (LRV) of the darker surface.

701.1.3.1 Other Surfaces. Surfaces not within the scope of BS 8493 shall provide contrast between adjacent surfaces that are either light on dark or dark on light.

703.2.1 General. Visual characters shall comply with the following:
(Balance of section is not changed)

703.2.1.1 Nonglare Finish. The glare from coverings, the finish of characters and their background shall not exceed 19 as measured on a 60-degree gloss meter.

703.2.1.2 Contrast. The Light Reflectance Value (LRV) of characters and their background shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.

~~**703.2.10 Contrast.** Characters and their background shall have a non-glare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.~~

~~**703.5.3 Finish and Contrast.** Pictograms and their fields shall have a nonglare finish.~~

	<p>Pictograms shall contrast with their fields, with either light pictograms on a dark field, or dark pictograms on a light field.</p> <p>703.5.3.1 Nonglare Finish. The glare from coverings and the finish of pictograms and their fields shall not exceed 19 as measured on a 60-degree gloss meter.</p> <p>703.5.3.2 Contrast. <u>The Light Reflectance Value (LRV) of pictograms and their fields shall contrast 70 percent minimum as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.</u></p> <p>703.6.2 Finish and Contrast. Symbols of accessibility and their backgrounds shall have non-glare finish. Symbols of accessibility shall contrast with their backgrounds with either a light symbol on a dark background or a dark symbol on a light background.</p> <p>703.6.3.1 Nonglare Finish. The glare from coverings and the finish of symbols of accessibility and their backgrounds shall not exceed 19 as measured on a 60-degree gloss meter.</p> <p>703.6.3.2 Contrast. <u>The Light Reflectance Value (LRV) of symbols of accessibility and their backgrounds shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.</u></p> <p>705.3 Contrast. Detectable warning surfaces shall contrast visually with adjacent surfaces, either light on dark or dark on light.</p> <p><u>The Light Reflectance Value (LRV) of the surfaces shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.</u></p>
<p>Reasons:</p> <p>Reasons and documentation supplied by Sharon Toji:</p> <p>Reasons why we need a measurable standard for contrast in the ANSI A117.1 Standard</p> <p>I can cite many anecdotal incidents where contrast for signs covered by the ANSI standards and the ADA SAD have insufficient contrast. These are signs that are sometimes very consequential in safely and efficiently gaining access to public buildings.</p> <p>In one such anecdote, a building inspector wrote in my LinkedIn group that he was in a high rise hotel during a fire. He went down the corridor to what he thought was an appropriate exit, only to find that the sign adjacent to the door stated that the stair did not actually lead to the public way, so he had to travel back a distance to a different stair. He blamed a non-contrasting sign, and said "I would have liked to get my hands on the inspector who passed that sign as having adequate contrast.</p> <p>Hospitals often have non-contrasting signs on walls because the colors are left to designers, and pale silver on off-white walls are particularly popular. Elevator floor indicators and informational signs in transit venues such as airports and rail stations often use red characters on black backgrounds, virtually invisible to a large number of people with common "color blindness."</p> <p>I believe that if we had a standard, it would serve as a guide for designers and sign companies, and we would get much better understanding of the requirement for light/dark contrast that is part of the ANSI standard as well as the Americans with Disabilities Act Design Standards.</p> <p>Such a standard would, I believe, prompt manufacturers of measurement devices to come out with many more useful devices that could be used in the field. Already, there is one such device out, and it costs less than \$250 for a device that can measure a color stroke as small as 3 MM in width. There is no doubt that more companies would enter the field with such devices if a standard were in place. Already, there are many devices that do measure color on computer screens as well as colors on walls and furniture, but other than the above device, I don't know of any that have such a small aperture, so they don't work for small sign character strokes. The fact that the devices exist, however, shows that the ability is there to adapt them for sign use.</p> <p>We also have, thanks to the British Standards Institute, a "Standard of Test" for LRVs that applies to the great</p>	

majority of the materials used for the kinds of signs that are covered by the ADA design standards, as well as materials used for stair striping and detectable warning surfaces. Because of the availability of this standard, LRV measurements are being adopted internationally as a standard for measuring contrast in the built environment. If you read the British Standard carefully, you will see that about the only surfaces that cannot be measured are those that change color when exposed to light (such as photo luminescent materials) and materials that would have to be measured on curved surfaces. That appears to be a minor consideration in light of the number of signs that could be tested, even on site. Also, just as with braille, once you have determined that one sign fabricated of particular materials is compliant, there is no need to measure all the remainder of the signs made of identical materials, even if some of those are displayed on curved surfaces.

In my opinion, we are holding up a much higher standard of research for this one item than we usually do for many other issues that come before the committee. Virtually all the measurements that we deal with are compromise measurements. They all strive to affect the majority of persons with various types of disabilities, but can never be considered the one and only perfect measurement for all. Vision is especially difficult to calibrate in this way, because it is so complex, and one person can have a combination of vision issues, all of which are subject to change. Finding the perfect "sample population" would be virtually impossible. The purpose of the figure we chose (i.e. 45 LRV) as the minimum lighter color merely gets us to a point where we are forcing the designer to choose at least one of the colors from the lighter end of the spectrum. Otherwise, they are free to choose two colors from the darker end, and the formula flaw then becomes obvious.

There are instances going back many years, during the history of the 70 percent contrast ratio, where reports suggested that the way to correct the flaw in the formula, which tends to give contrast preference to dark colors, due to the mathematical curve created because of the uneven intervals between LRV points, would be to require a minimum light color. That is why the work group on Contrast took that direction.

Establishing this dividing line where light colors are divided from dark colors is important for two reasons: First, many people still think we are talking about color (or hue) when we talk about contrast. Without the LRV standard, that belief persists and color choices are made accordingly. Second, there is a tendency to interpret the code as "darker colors versus lighter colors," or vice versa. When I ask architects or inspectors why certain choices were made, or two obviously non-contrasting colors were passed, I'm told "this color is darker than this color, so it complies." In one case some years ago, which some Committee members might remember, the two colors were white and ivory. I just saw another new college building with a complete system of signs with white characters on very light beige backgrounds, barely better than the white on ivory example.

How did we choose 45? After a lot of study of various reports and charts, and viewing of different combinations, we saw this was the area that was the rational point to divide light from dark. We obviously could have chosen 46 or 44. Numbers in the standard are almost always somewhat arbitrary. Why is a reach range 48 and not 47 or 49? We chose 45 instead because we often count or measure by fives, just as 48 was chosen because it represents 4 feet.

The British approach contrast in a slightly different manner, by dictating the difference between LRV figures. For some elements, such as doors and hardware, they chose 30 points. However, unless they choose a very high number, they end up with a flaw as well. Thirty points of difference between darker colors is much different than it is between lighter colors. For signs, they solved the problem by stating that the two LRV numbers for sign characters and background must be 70 points apart. This restricts the number of hues for signs to relatively few, only the very darkest and lightest colors. Our method, requiring that the lighter color have a number of 45 or higher, allows designers much more latitude, so we think it is a better way to correct the flaw, and one that allows for more creativity and will encourage much more compliance.

In other words, we are not trying to find a "perfect" number at which everyone with a vision impairment, but with usable vision, will be able to detect the difference between the characters and background of a sign. This is a minimum, and it is a compromise that will not serve every person, although it will be fine for many as well. We are merely giving the designer a boundary, and saying, we are going to call colors with an LRV of 45 or higher "light colors," and those below that numbers "dark colors." Then we are going to require that the contrast be 70 percent, by applying a formula to those two numbers. And, we are referring to the British standard of test in case there is a question about the correctness of the LRV number assigned to a material. That means that the LRV can be determined in a laboratory environment using an instrument that conforms to certain specifications, following a specific procedure.

Since most colored materials are already tested using similar procedures for consistency reasons, or for architects who want to use the latest "green" design standards, only custom materials will need special testing. An architectural materials company in the UK has reported that they set up the material and trained their personnel to do the testing, and have added this to their services with great success. I have been told by employees of UL that they would be willing to add the service as well, although I think some large design and

sign firms and architects might invest in it for in-house use.

There are literally hundreds of combinations of colors that will be available to designers, and a great variety of materials, including wood, painted surfaces, plastics, metals, and even carpet if they care to use them for signs, by using this standard and method of test. And, there are many different brands of scientific instruments that can correctly measure the LRV, as well as at least one device currently available for a modest price that an inspector could use for a site measurement. There is even an "ap" available for many phones and tablets that will instantly calculate the 70 percent formula. Measurement only takes seconds using this device and application, and does not depend on ambient light.

Another argument of opponents was that contrast does not affect many people. I think those people are forgetting that, in addition to the significant number of people who have a variety of vision impairments, but still use their vision, color deficiencies are a serious problem for many people with otherwise normal vision. About 8 percent of the male population has the most common form of "color blindness" and for those people, some signs might as well be invisible if they do not have sufficient light/dark contrast. I have read statements that, if we also include women, and those with vision conditions that also include certain color deficiencies, the percentage of the population could be as high as 12 percent. Aging affects the color vision of most people, and there are increasing number of elderly people who are living longer and who remain active to a more advanced age so they are also accessing public buildings.

Color deficient vision is of such importance to science and industry, that there are entire firms, including firms for both research and testing, devoted to it. NASA has also done significant research on the topic, and has reports on their site. I have received letters in support of the need for contrast from some of their staff, as well as from others in the defense department. Most people are not aware of the number of crucial professions that rely on adequate color vision. These institutions are concerned about the numbers of people who do not have normal color vision, and are trying to solve those problems. One possible solution for some problems is obviously determining contrast standards, and being able to substitute materials of varied darkness and lightness. In one study, NIST was investigating the colors of electrical wires in aircraft to determine contrast.

Another issue is lighting. Of course adequate lighting influences vision. However, at this time we have few lighting standards, and even if we did, it would be difficult to control, on a day to day basis, whether or not a specific sign is lighted sufficiently. What we can control, is that the sign comes from the manufacturer with enough contrast that it can be read under normal lighting conditions in most public buildings.

Another point to consider is that the National Institute of Building Sciences has been dealing with many of the same questions under the auspices of a committee studying the needs of the low vision community. This is a topic that is getting increasing attention, as we think beyond the needs of those with the most significant life-long disabilities, and the discrimination they have lived with, to the needs of others in the population as they access the built environment, and particularly older people, who will represent a major part of the population. Here is the link to the most recent draft version of their report: http://www.nibs.org/?page=lvdc_guidelines

It is long past time for us to have a measurable standard since this is a very far reaching problem, affecting not only those who are classified as blind, but anyone who is deaf or hard of hearing, those with mobility impairments, or those who cannot speak or be understood by others when they ask directions. Being able to read the signs that direct us around facilities, give us important safety information, travel information, rules and regulations for using buildings, or even inform us during disasters, is crucial.

We need to put this proposed standard in perspective: Like many of our standards, there is more to be learned on the condition that prompts the standard. New technology will emerge that will make all or some parts of our standards obsolete. Because of digital advances, new wayfinding possibilities, including for those with vision impairments, are emerging monthly. This is a simple attempt to provide a reasonable divide between light and dark colors, so that a contrast ratio long in existence can be used in a reasonably consistent manner. The use of light reflectance values to establish contrast is based on solid research on contrast by respected individuals in the UK, most of it already in use in Europe and other countries as they establish international standards. Why are we resisting such a step forward for people who need to be able to read signs in order to get around and use public services in a safe and efficient manner?

Areas of Particular Interest from the NIBS Report

These are some excerpts from the National Institute of Building Sciences report, which states that lighting and contrast are the two biggest influences on use of buildings by people with low vision.

2.8 Wayfinding (pages 21-22)

Tactile wayfinding aids (braille) are generally not familiar to older adults and persons with low vision, but all

wayfinding aids should comply with the following:
Information displays, lettering styles, spacing and other features should comply with ADA Standards 703.2 (30), and as follows:

- ♣ Signs are more legible for people with low vision when characters contrast with their background with a Light Reflectance Value (LRV) as recommended in Table 4C-2.
- ♣ Lettering and other graphics should be monochromatic white information on black field because many persons with low vision have some degree of color blindness and difficulty with low contrast. See also Table 4C-2.
- ♣ Raised or incised lettering not contrasting in color or value with the surrounding field is not recommended for use by persons with low vision. Shadows may confuse rather than enhance visibility.

Wayfinding surface illumination should be uniform and as recommended in Table 5C-1, Ref. 4, in daylight and after dark and the sign surfaces should be shielded from the light source to avoid reflected glare.

Internally illuminated or backlit signs may be difficult for persons with low vision due to glare.

Variable message signs may be suitable with the following recommendations (28):

- ♣ Use left-justified text a minimum of 22 mm (7/8 in.) high but not less than 1 percent of the distance at which the sign is to be read.
- ♣ Use sans-serif fonts with upper and lower-case in simple sentences without abbreviations.
- ♣ Space characters about ¼ of the font width, and space words more than characters.
- ♣ Space lines apart 50 percent of text height where multiple lines are needed, but avoid fewer than 3 lines.
- ♣ Do not use multiple colors or flashing messages.

Liquid crystal displays may be difficult for persons with low vision, especially where they may be subject to direct sunlight or strong shadows. LED and other internally illuminated displays are preferable.

3.3.2 Wayfinding Aids (page 31)

Directional and wayfinding graphic aids are important for all buildings used by the public, especially for people visiting for the first time. In addition to the guidance provided for signs in ADA Standards 703 (30), the following is recommended to accommodate persons with low vision:

- Persons with low vision may not be proficient in interpreting braille. Therefore, visual aids are more appropriate, and should be placed as close to the main entrance doors as possible to be readable before entering the lobby without having to search for the reception desk, security facilities, etc.
- All graphics must be adequately illuminated at all hours, and should have high-contrasts between figures or text and background field. See introductory discussion to this chapter and Table 4C-2 for additional guidance.

3.5.9 Wayfinding Aids (page 34)

Wherever possible, wayfinding aids should be placed facing the direction of travel rather than on walls and doors along the corridor sides. Signage placed across corridors at the ceilings may be difficult to see for some people with low vision to see and may be difficult to illuminate properly.

- All wayfinding aids must be in high contrast with the surrounding fields in color and value. See Table 4C-2.
- All wayfinding aids require electric lighting illumination that does not result in glare from reflections off the signage or adjacent surfaces (34).

3.6 Stairways

3.6.1 Surface Finishes (page 35)

- Stair risers should contrast with treads to aid in visibility to persons ascending the stairs.
- Stair tread nosings should be in high contrast colors and values from stair treads and should be 50 mm (2 in.) wide so that the edge of each tread is highly visible to the user descending.
- Stringers or skirting should be darker and have a strong value contrast with treads and risers to enhance their visibility.
- Highly figured or patterned materials should be avoided, as they may be confusing to those with low vision. Continuous carpeted stair runners with such designs may camouflage the edge of the tread and create a fall hazard.
- The sloping undersides of stairs and escalators could become a head-bumping hazard, so spaces under the stairs or escalators must be enclosed or otherwise protected to prevent access below a height of 2030 mm (80 in) See also ADA Standards 307.4 (30).
 - See Table 4C-2 for further guidance.

3.10.6 Other Design Considerations (pages 40-41)

Menus may be a reading challenge for many people with low vision due to small font size. Menu boards mounted on the wall behind preparation areas of cafeteria stations and short order counters may be difficult for many people to read, especially when the menu selection is large and restrictive space dictates using small font size. At tables in dining areas with wait staff, printed menus may be hard to read due to low lighting. Some options to be considered to address this issue follow (28):

- If space is available at the beginning of the cafeteria line or short order counters, task-lit menu boards and other information may be located there. Labels of food and beverage selections located at the place of display or point of sale such as at the steam table or dessert case may also be helpful.
- Hand-out paper menus in large font size, with contrasting print on a matte finish, at the beginning of the cafeteria line or short-order counter may be a simple way to accommodate low-vision customers.
- Task lighting luminaires at tables can help diners read traditional menus and see their food and dishes in otherwise low ambient light.
- Video and touchscreens may also be useful tools for presenting menus and other information.

Note: the Chart referenced shows the familiar 70 percent contrast ratio as required for signs, and gives the formula, but does not mention the need for a minimum lighter color or the flaw in the formula. For other types of surfaces, such as stair striping, they recommend a minimum number of points. For stair striping, a minimum difference of 50 points is recommended. Depending on what colors were used, a 50 point difference could mean anything from a high of 89 percent to a low of 54 percent. It would depend on whether you were comparing a black stripe with a medium color step, or a white stripe with a medium-light color step.

Dr Geoff Cook's research was used prominently by the committee, according to two of the members with whom I met to discuss the report.

Material in Support of Contrast Standard

The following two page document is an excerpt from the British Standard of Test for Light Reflectance Values.

I maintain that the adopted amendment to my original proposal has omitted a very significant category of material types, which I believe has the result of greatly reducing the effectiveness of the proposed standard.

The implication of comments made by some committee members was that the list of materials that could be tested according to the British Standard of Test is very restrictive. I have included two pages that refer to these comments, and I believe show the fallacy of that conclusion.

As a matter of fact, I maintain that a careful and correct reading of the standard details shows that the method of test can be used for a very broad array of materials that are commonly used for signs, in addition to their use for other architectural elements, such as stair striping, that are also covered by this proposal.

I have highlighted the sections that I believe demonstrate this, so they are easy to locate.

First, under Section 1 Scope, there is a list of materials that the method of test applies to. The text emphasizes, with the use of the word “including” in the descriptions of the materials, that not only is the test applicable, for example, to “opaque paint coatings and paint systems,” but it also includes what might be considered an unusual material, “those that cause extreme angular dependences of reflected light and those that have a surface texture of less than 2 mm.” So, it isn’t confined to such materials, but includes them in addition to all the more usual opaque paint coatings and paint systems.

The proponents of the amended text also left out a very important item on the list, the term “ordinary materials.”

Perhaps they thought the term was too general to include, but as a matter of fact, it is a fairly carefully defined term in the standard, and should be included in the list.

Skipping to 3 Terms and Definitions, 3.3 ordinary materials, we see all materials that are not considered “ordinary materials.” That would mean that most of the plastics, for instance, that are used for signs could be tested. We already have a very inclusive list of other materials that can be tested.

Then, to give us even more specificity, the scope goes on to list the surfaces that cannot be tested: thermochromic, photochromic, retroreflecting, fluorescent, phosphorescent, those involving electrical power, and self-luminous, or composed of free-standing, curved non-opaque materials such as curved glass or clear plastic.

Those who actually design and fabricate the types of architectural signs that must comply with accessibility standards will ascertain, I believe, that very few of these materials are used for such signs. Photoluminescent material used for exit signs, for instance, would be one exception. Many of these materials cannot be tested because they actually change color with temperature or light change. I have also been informed by Geoff Cook, who was the lead for this standard, that a material that is fabricated in its flat state, such as a piece of plastic that has the graphics applied to it while flat, can be accurately tested, even though later it may be forced into an extrusion that will cause it to be curved. You cannot, however, test a curved surface.

The question of opaque materials coated or covered with non-opaque coatings or coverings are covered in the highlighted area on the second page. Dr Cook has ascertained that if each material is tested individually with its coating or covering, the LRV will be valid. For instance, even though both materials would be otherwise identical, if they are different colors, and each is coated or covered, each would have to be tested. You cannot assume that the difference in the LRV caused by deflection will be identical.

I propose, therefore, that the materials called “ordinary materials” be included on the list that can be tested. This will greatly reduce the materials that will revert to the vague “light on dark or dark on light” standard.

Reason provided by Eugene Lozano, Jr.:

The California Council of the Blind, Inc. (CCB) is a statewide membership organization. Its members are blind, visually impaired and fully sighted individuals who are concerned about the dignity and well-being of blind and visually impaired people throughout the state. Formed in 1934, the Council has become the largest organization of people who are blind or visually impaired in the state of California, with over 40 chapters and special interest affiliates and a membership of over 2,000.

Through a variety of programs and services, CCB enables people who are blind and visually impaired to live and work independently and to participate in their own communities. The Council has influenced change in such areas and issues as civil rights, employment, rehabilitation, transportation, environmental access, travel, recreation, Social Security, and other benefits. To strengthen advocacy efforts, the Council often works in coalition with other state disability groups.

The CCB is in support of reinstating Proposal 7-1-12, which cover Sections 105.2, 504.5.1, 701.1.2, 701.1.3, 701.2.1, 701.2.1.2, 703.2.10, 703.5.3, 703.5.3.2, 703.6.3.2, and 705.3. The reinstatement of the Proposal and the adoption of these sections will make the difference in having effective and useable visual cues for detectable warning surfaces, stair-striping for the edge of stair trends, signage, and other applications which will increase the safety and access for persons with low vision.

We are in full agreement with the supporting documentation which has been submitted by Sharon Toji, Access Communications, on behalf of Hearing Loss Association of America. Her comments are based on independent and scientifically-based research from the Reading University in the UK, which eventually became an officially recognized standard.

The CCB feels additional research is unnecessary at this time and that the ANSI A117.1 committee should adopt the British standard to establish a method for measuring contrast between foreground and background. Also it is important there be at least a 70% contrast between adjoining surfaces.

Reason provided by Billie Louise (Beezy) Bentzen:

The perfect has been the enemy of the good for far too long regarding standards for visual contrast and glare. Numerous other countries as well as the ISO have measurable, enforceable standards for visual contrast. The US standard of light-on-dark or dark-on-light is an embarrassment that serves no one well. It is totally subjective, not measurable, and serves no sign readers well. It is high time that ANSI A117 remedied this situation by adopting a standard that includes a well-researched formula and for which there are modestly priced and reasonably accurate measurement instruments that can be used in the field.

Establishing this standard can reasonably be expected to improve legibility of signs not only for people with impaired visual acuity or color vision, but for all people who sometimes need to read signs in low illumination. Failure to establish this measurable, enforceable, research-based standard tells the world once again, that legibility of signs is not really important to US standards bodies. Perceived beauty, ease and expense of manufacturing trump the fundamental purpose of signs—to provide information that people can read and understand.

**Committee Action of February 2015 regarding Agenda Item #35
– comment number 7-1-12 PC 3.1**

Approved as modified:

Modification:

The full comment was approved with the exception of the change to Section 504.5.1. The existing text of 504.5.1 would be retained. The following shows as a revision to the comment which therefore retains existing text of the standard.

504.5.1 Visual Contrast.~~The leading 2 inches (51 mm) of the tread shall have visual contrast of dark-on-light or light-on-dark from the remainder of the tread. The Light Reflectance Value (LRV) of the 2-inch (51 mm) stripe and tread shall contrast 70 percent minimum, as determined in accordance with Equation 7-1. The lighter surface shall have a LRV of not less than 45.~~

Reason:

The Committee is not unanimous in its support of these provisions for measuring contrast. The topic is strongly debated each time it comes to the Committee's agenda. The conclusion at this time is that this referenced standard and the measurement of contrast is a good start for addressing the variety of factors affecting the readability of signs, pictograms and symbols of accessibility. While not all aspects are addressed, adding this specificity for this element improves accessibility. Concern was raised that this restricts the options of designers to provide other solutions. The other factors going into signs and other displays remain available for full flexibility. The final conclusion was that on balance these provisions need to be added to the A117.1 standard.

The provisions for of Section 504.5.1 were not included because other proposals have adequately addressed by other approved changes.

7-16– 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

704.8 Visual Relay Service Booth. Each public Visual Relay Service Booth shall be accessible and accommodate one user with seating, a visual monitor, control device, diffuse lighting with a minimum lighting level of 20 foot candles (215 lux). And privacy enclosure with a flat, non-textured surface and finish color in contrast with the full range of human skin tones to provide a background for clear visual communication.

7-16-12 PC2

Rick Lupton, representing self

Revise as follows:

704.8 Visual Relay Service Booth. Each public Visual Relay Service Booth shall be ~~accessible and~~ accommodate one user with seating and privacy enclosure, a visual monitor, a video camera device, control device, diffuse lighting with a minimum lighting level of 20 foot candles (215 lux). ~~And privacy enclosure with a flat, non-textured surface and finish color in contrast with the full range of human skin tones to provide a background for clear visual communication.~~ The background of the seating area, and within range of the video camera device, shall have a flat, non-textured surface and finish color in the bright green or blue range.

Reason: The current proposal omits necessary equipment for the facility, includes language that cannot be consistently enforced, and is grammatically incorrect. This Public Comment attempts to address each of these issues.

The current last sentence is grammatically incorrect and cannot be enforced consistently. The “full range of human skin tones” is quite broad and unless one is expert, is subject to interpretation (see picture in Supporting Information below). In addition, the extent of contrast is not specified. I’ve proposed a color in the bright green or blue range. This is based on the need for a background at the seating area and in view of a video camera that provides a contrast from a broad range of human skin tones to provide a background for signing. Bright green or blue are specifically used in the film industry (see Supporting Information below) as mattes because they are seldom within the human skin color spectrum and so enable the human to stand out. There may be other colors that work but this provision should include the degree of contrast and point to the contrast provisions proposed for A117.1. In addition, the current language appears to require the entire privacy screen to require contrasting color, not addressing the specific need of a background to the video area.

I’ve added a video camera device to the laundry list of requirements for this facility (see FCC quote in Supporting Information below) and clarified (what I think was intended) that the privacy enclosure is for the seating area and not just the monitor.

I’ve omitted “be accessible” as scoping. Where accessibility is required by the scoping document, the current language provides no guidance. By accessible, is it intended that a wheelchair space be provided in addition to the seating, etc.

The result of this Public Comment is not perfect, but maintains the intent of the proposed provision while clarifying much of what is intended.

A description of visual relay service by the Federal Communications Commission (<http://www.fcc.gov/guides/video-relay-services>):

How VRS Works

VRS, like other forms of TRS, allows persons who are deaf or hard-of-hearing to communicate through the telephone system with hearing persons. The VRS caller, using a television or a computer with a video camera device and a broadband (high speed) Internet connection, contacts a VRS CA, who is a qualified sign language interpreter. They communicate with each other in sign language through a video link. The VRS CA then places a telephone call to the party the VRS user wishes to call. The VRS CA relays the conversation back and forth between the parties -- in sign language with the VRS user, and by voice with the called party. No typing or text is involved. A voice telephone user can also initiate a VRS call by calling a VRS center, usually through a toll-free number.

- From an article on photography and green screens, Creating Realistic Composites, Part 1: Shooting on a Green Screen by Rob Taylor (<http://photography.tutsplus.com/tutorials/creating-realistic-composites-part-1-shooting-on-green-screen--photo-14288>)

"Why am I choosing green? Well, chroma green is a color rarely found in nature, particularly human skin tones, so people stand out nicely in front of it."

A Color Wheel Based On The Range Of Human Skin Tones (<http://www.fastcodesign.com/1669972/a-color-wheel-based-on-the-range-of-human-skin-tones#5>)

Committee action on 7-16-12 PC2

Approve Public Comment 7-16-12 PC2.

Reason: The comment provides some improvement to the text. By approving amendments to the provision, the issue will be in the next public review draft and available for additional comments to improve the standard.



Images courtesy of Superscript and Pierre David

Public Comment on Second Public Review Draft	
Agenda Item #38	
Comment No: 7-16-12 PC2.1	Submitted by: Kim Paarlberg – ICC
	<p>Further revise as follows:</p> <p>704.8 Visual Relay Service Booth. Each public Visual Relay Service Booth shall be accommodate one user with seating and privacy enclosure, a visual monitor, a video camera device, control device, <u>a two way communication system</u> for visual communication for persons with hearing impairments, diffuse lighting with a minimum lighting level of 20 foot candles (215 lux). The background of the seating area, and within range of the video camera device <u>two way communication system</u>, shall have a flat, non-textured surface and finish color in the bright green or blue range <u>that offers high contrast</u>.</p>
<p>Comment Reason by Kim Paarlberg: Technology is advancing so quickly, the language should be more generic. The current language could be interpreted to not allow for a computer link. The revision to the last sentence uses language that is similar to the signage requirements. There has to be some colors of 'bright' blue or green that would be to intense, or a color of green or blue that was not considered 'bright' by some people but would still be a contrast.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #38 – comment number 7-16-12 PC 2.1</p> <p>Approved as modified:</p> <p>Modification:</p> <p>704.7 Visual Relay Service Booth. Each public Visual Relay Service Booth shall be accommodate one user with seating and privacy enclosure, a visual monitor, a video camera device, control device, <u>a two-way video communication system</u>, diffuse lighting with a minimum lighting level of 20 foot candles (215 lux). The background of the seating area, and within range of the video camera device <u>two-way video communication system</u>, shall have a flat, non-textured surface and finish color in the bright green or blue range.</p> <p>Reason: The Committee spent considerable time refining the language of the proposal and the comment. The need is for a visual relay service booth which supports sign language communication. Details on equipment were simplified to just requiring two-way video communication. There may be FCC standards already established, but the committee concluded that the standard should provide at least a basic provision which can then be scoped by those who adopt and/or choose to implement.</p>	

Chapter 8

3-13E-12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

802.7.2 Companion Seat Alignment. In row seating, the companion seat shall be located to provide shoulder alignment with the wheelchair space occupant. The shoulder of the wheelchair space occupant is considered to be 36 inches (915 mm) from the front or ~~42~~ 16 inches (~~305~~ 405 mm) from the rear of the wheelchair space. The floor surface for the companion seat shall be at the same elevation as the wheelchair space floor surface.

3-13E-12 PC1

Gene Boecker, Code Consultants, Inc, representing National Association of Theatre Owners

Further revise as follows:

802.7.2 Companion Seat Alignment. In row seating, the companion seat shall be located to provide shoulder alignment with the wheelchair space occupant. The shoulder of the wheelchair space occupant is considered to be 36 inches (915 mm) from the front or 16 inches (405 mm) from the rear of the wheelchair space. The floor surface for the companion seat shall be at the same elevation as the wheelchair space floor surface.

EXCEPTION: In existing facilities, the companion seat shall be permitted to be positioned 12 inches (305 mm) from the rear of the wheelchair space.

Reason: Many of the existing theaters are designed for the existing 12 inch alignment. For example, where the wheelchair space is provided at the rear of the cross aisle, the wheelchair space will now project 4 inches further. While this is addressed by the proposal in 3-13D it does not address the adjoining companion seats. With the proposal, when seats are upgraded, they would need to be moved forward by 4 inches to provide shoulder alignment according to the new requirements. In many auditoriums, the cross aisle width is already the minimum allowed. While the seat typically retracts, the arms of the seat do not and may end up projecting into the aisle. The result would be that the seats in that part of the theater may need to be changed to be something smaller than the rest of the auditorium since moving the entire seating in front of the aisle is cost prohibitive. Providing different chairs for the cross aisle seats would result in an unequal experience for the companion; not in keeping with the spirit of the standard.

Committee action on 3-13E-12 PC1

Approve Public Comment 3-13E-12 PC1.

Reason: For consistency with the action taken to approve 3-6-12 PC 2.

Public Comment on Second Public Review Draft

Agenda Item #39

Comment No: 3-13E-12 PC1.1	Submitted by: Kim Paarlberg – ICC
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	Revise as follows:
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	<p>802.7.2 Companion Seat Alignment. In row seating, the companion seat shall be located to provide shoulder alignment with the wheelchair space occupant. The shoulder of the wheelchair space occupant is considered to be 36 inches (915 mm) from the front or 16 inches (405 mm) from the rear of the wheelchair space. The floor surface for the companion seat shall be at the same elevation as the wheelchair space floor surface.</p> <p>EXCEPTION: In existing facilities, the companion seat shall be permitted to be positioned 12 inches (305 mm) from the rear of the wheelchair space.</p>
<p>Comment Reason by Kim Paarlberg: This is coordination with PC3 – with the new size of clear floor space the shoulder alignment with companion seats will be more than must in existing facilities. The exceptions should be applicable for new and altered facilities.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #39 – comment number 3-13E-12 PC 1.1</p> <p>Approved:</p> <p>Reason: The committee took prior action on Agenda Item 41 which adequately addresses this issue. This exception is not needed.</p>	

3-13E-12 PC3

Kimberly Paarlberg, representing ICC

Further revise as follows:

802.7.2 Companion Seat Alignment. In row seating, the companion seat shall be located to provide shoulder alignment with the wheelchair space occupant. The shoulder of the wheelchair space occupant is considered to be 36 inches (915 mm) from the front or 16 inches (405 mm) from the rear of the wheelchair space. The floor surface for the companion seat shall be at the same elevation as the wheelchair space floor surface.

EXCEPTIONS:

1. Companion seat alignment is not required in tiered seating that includes dining surfaces or work surfaces.
2. For wheelchair spaces with front access, the shoulder alignment shall be permitted to be measures 12 inches (305 mm) from the rear of the space.
3. For wheelchair spaces with side access, the should alignment shall be permitted to be measured 12 inches (305 mm) from the rear of the space.

Reason: While the committee made concessions for the overlap (802.5.1) and the shoulder alignments (802.7.2) in consideration of line of site and to maintain current studies on assembly seating, this solution only totally works for rear approach seats off the cross aisle. It definitely does not work for when a space is located at the rear of a cross aisle since it will force the companion seat an additional 4" forward.

Neither concession leaves the side access seat the same since the wheelchair space now needs additional room.

Committee action on 3-13E-12 PC3

Approve Public Comment 3-13E-12 PC3.

Reason: The changes are needed to correlated the new Wheeled Mobility Study based standards with the placement of companion seating. Members of the committee expressed concerns regarding potential line of site impacts and that the language may be too broad.

Public Comment on Second Public Review Draft

Agenda Item #41

Comment No:
3-13E-12 PC3.2

Submitted by:
Kim Paarlberg – ICC

Revise as follows:

802.7.2 Companion Seat Alignment. In row seating, the companion seat shall be located to provide shoulder alignment with the wheelchair space occupant. The shoulder of the wheelchair space occupant is considered to be 36 inches (915 mm) from the front or 16 inches (405 mm) from the rear of the wheelchair space. The floor surface for the companion seat shall be at the same elevation as the wheelchair space floor surface.

EXCEPTIONS:

1. Companion seat alignment is not required in tiered seating that includes dining surfaces or work surfaces.
2. For wheelchair spaces with front access, the shoulder alignment shall be permitted to be measures 12 inches (305 mm) from the rear of the space.
3. For wheelchair spaces with side access, the should alignment shall be permitted to be measured 12 inches (305 mm) from the rear of the space.
4. For wheelchair spaces with rear access, the shoulder alignment shall be permitted to be measured 40 inches (?? mm) from the rear of the space.

Comment Reason by Kim Paarlberg:

Three exceptions were added for the shoulder alignment to allow coordination with the new size for clear floor space. One option that was missed is when someone pulls forward into a space. This would be consistent with the exceptions already permitted by the committee.

**Committee Action of February 2015 regarding Agenda Item #41
– comment number 3-13E-12 PC 3.2**

Approved as modified:

Modification:

4. For wheelchair spaces with rear access, the shoulder alignment shall be permitted to be measured ~~40~~12 inches (305 mm) from the rear of the space.

Reason:

The committee agreed with Ms. Paarlberg that all approaches need to be addressed. The comment was amended to provide the same measurement for each. This is consistent with the Committee's action to approve the new building block provision regarding seat back location.

8-6– 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

802.11 Stage Lighting for Sign Language Interpreters. Lighting shall be provided at each side of a stage for the purposes of illuminating a Sign Language Interpreter. The illuminated presentation area shall be 25 square feet (2.3 m²) minimum measured in a vertical plane with the bottom edge at 48 inches (1220 mm) above the finished floor and a minimum of 36 inches (915 mm) measured from the presentation wall. The illumination shall be provided by directional light fixtures controlled independently from the general room lighting. The fixtures shall be located as necessary to provide a diagonal cast of light for facial illumination at no less than 15 degrees from the vertical plane. The illumination shall be 10 foot candles (108 lux) minimum greater than the least light level.

8-6-12 PC1

Hansel Bauman representing National Association of the Deaf

Further revise as follows:

~~**802.11 Stage Lighting for Sign Language Interpreters.** Lighting shall be provided at each side of a stage for the purposes of illuminating a Sign Language Interpreter. The illuminated presentation area shall be 25 square feet (2.3 m²) minimum measured in a vertical plane with the bottom edge at 48 inches (1220 mm) above the finished floor and a minimum of 36 inches (915 mm) measured from the presentation wall. The illumination shall be provided by directional light fixtures controlled independently from the general room lighting. The fixtures shall be located as necessary to provide a diagonal cast of light for facial illumination at no less than 15 degrees from the vertical plane. The illumination shall be 10 foot candles (108 lux) minimum greater than the least light level.~~

802.11 General. Sign language interpreter stations shall comply with 802.11.

802.11.1 Area. A sign language interpreter station shall provide a level and clear floor of sufficient floor area necessary to enable a sign language interpreter to produce sign language legible from the seating area identified in 802.11.2 and allow periodic interpreter shift changes to take place.

802.11.2 Location. Sign language interpreter stations shall be located so that seating within an arc centered on the station and subtending 120 degrees maximum and not more than 65 feet from the station is provided with sightlines providing unobstructed view of the signers from top of their heads to their waists and to an arm's length to both sides of the signer, all as measured to the center of the station. The vertical viewing angle to the interpreter station shall not exceed 30 degrees.

802.11.4 Illumination: The sign language interpreter station shall be illuminated in compliance with 802.11.2 while signing is underway. Illumination of the sign language interpreter station shall comply with the Recommended Maintained Illuminance Targets established for a "Transitional Sermon" by IES Handbook 10th Edition, Table 37.2.

802.11.5 Backdrop. When a sign language interpreter station is located no greater than 10 feet in front of a permanent wall as measured tangent to the centerline of the arc described in 802.11.2 a portion of the wall measuring 69 inches wide centered on the sign language interpreter station and 96 inches high from the finish floor shall be considered as a backdrop. *The surface treatment of the backdrop shall comply*

with 802.11.5 while sign language interpretation is being provided. The backdrop shall provide a flat, smooth surface with a monochromatic, low-luster finish treatment.

Reason: The proposed revision to **802.11 Stage Lighting for Sign Language Interpreters** is a complete replacement of the text provided in the Public Review Draft dated October 25, 2013. The revised proposal provides a performance standard for **Sign Language Interpreter Stations** to accommodate a reasonable range of possible performance venues where sign language interpreting would likely be provided rather than providing targeted guidance for a specific location. The revision provides measurable lighting conditions, spatial relationships and adds guidance for the surface treatment for a backdrop which could greatly enhance ones acuity of reading sign language from a prescribed area within audience seating.

In the revised text the sign language interpreter station (the station) is defined in terms of its performance as an area that enables an interpreter to perform visual communication. The station is located in relation to a seating area within the audience that would have reasonable visual access to the station. The dimensions and geometry used to describe the Location / seating area derived from information on acceptable theater viewing angles published in Time Saver Standards for Building Types by De Chiara and Callender.

Measures for lighting are provided by way of reference to the Illuminating Engineering Society (IES) Handbook. The proposed lighting levels and methods for measuring the lighting levels at the station are consistent with lighting levels determined as beneficial for viewing sign language in similar conditions observed over time at public forums held at Gallaudet University where sign-language interpreting is used in public forums on a daily basis. The IES standard substantiates the lighting levels for viewing gestures in sermons that are video recorded. Until further detailed research is provided this the IES standard provides a reasonable measure of light levels in both the vertical and horizontal directions in which sign language is viewed.

Finally the proposal provides guidance for surface treatment for a permanent wall that, because of its proximity to the area identified as the station would serve as a backdrop to the sign language produced by the interpreter. The proposed language seeks to provide a reasonable requirement for an architectural backdrop that would not interfere or be a part of the stage set of the performance being interpreted. Furthermore, the standard for the backdrop intends to allow reasonable flexibility to the wall surface treatment while controlling glare and visual vibrations caused by shadows produced by heavy wall texture and or surface patterns. Controlling these adverse conditions greatly reduces eye strain and enhances acuity.

Committee action on 8-6-12 PC1

Approve Public Comment 8-6-12 PC1

Reason: The public comment is a significant improvement over that previously approved, providing clear design parameters for sign language interpreter stations. The committee hopes including this in the next public review draft will promote comments to improve it further..

Public Comment on Second Public Review Draft

Agenda Item #42

Comment No:
8-6-12 PC1.1

Submitted by:
Kim Paarlberg - ICC

Revise as follows:

~~405.2.XX IES Handbook 10th Edition, (Illuminating Engineering Society, 120 Wall Street, Floor 17, New York, NY 10005-4001).~~

802.11 General. Sign language interpreter stations shall comply with Section 802.11.

802.11.1 Area. A sign language interpreter station shall provide a level and clear floor of sufficient floor area necessary to enable a sign language interpreter with a minimum size of 24 inches (? mm) deep and 36 inches (? mm) wide that is located to providing a direct line of sight from to produce sign language legible from the seating area identified in Section 802.11.2 ~~and allow periodic interpreter shift changes to take place.~~

802.11.2 Location. Sign language interpreter stations shall be located so that seating within an arc ~~centered on from~~ the station and ~~subtending 120~~ measured to the left and right a minimum of 60 degrees maximum and not more than within 65 feet (19.8 m) horizontal distance from the station is provided with sightlines providing ~~unobstructed a~~

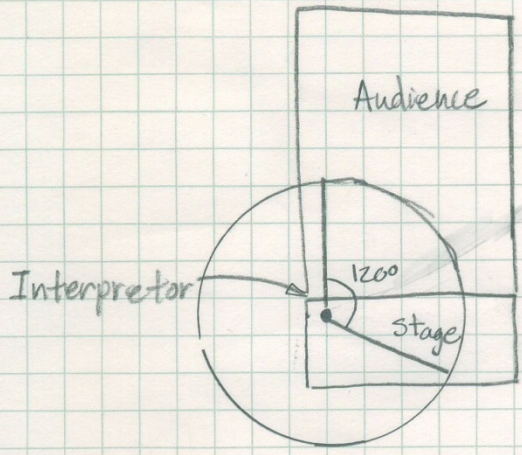
	<p>view of the signers from top of their heads to their waists and to an arm's length to both sides of the signer sign language station from a height 36 inches (914 mm) to 72 inches (1829 mm) above the floor of the station, all as measured to the center of the station. The vertical viewing angle from the person in the seat to the interpreter station shall not exceed 30 degrees measures to the front and center of the floor of the sign language station.</p> <p>802.11.3 Illumination: The sign language interpreter station shall have lighting facilities capable of providing 10 foot-candles (108 lux) of illuminance while signing is underway be illuminated in compliance with 802.11.2 measured at the center of the floor of the sign language station at a height of 48 inches (1219 mm) above the floor. Illumination of the sign language interpreter station shall comply with the Recommended Maintained Illuminance Targets established for a "Transitional Sermon" by IES Handbook 10th Edition, Table 37.2.</p> <p>802.11.4 Backdrop. When a sign language interpreter station is located no greater less than 10 feet (3050 mm) in front of a permanent wall as measured tangent to the centerline of the arc described in Section 802.11.2 a portion of the wall measuring 69 inches (1755 mm) wide centered on behind the sign language interpreter station and to a height of 96 inches (2440 mm) high from the finish floor shall be considered as a backdrop. The surface treatment of the backdrop shall comply with Section 802.11.5 while sign language interpretation is being provided. The backdrop shall provide a flat, smooth surface with a monochromatic, low-luster finish treatment.</p> <p>Exception: The wall is not required to comply with Section 802.11.4 where a backdrop with a monochromatic, low-luster finish treatment is provided.</p>
<p>Comment Reason by Kim Paarlberg: 105.2.xx, and 802.11.3 - A handbook that includes recommendations should never be references in a standard that relies on mandatory requirements. This goes against all policies followed by the A117.1 for all other referenced standards.</p> <p>802.11.1 – The phrase “to produce sign language legible from the seating area identified” is replaced by “providing a direct line of sight from”. Whether or not sign language is legible is dependent on the eyesight of the viewer. This language is not clear or uniformly enforceable. The proposed language is consistent with language used in the assembly seating criteria and is more clearly understood.</p> <p>The phrase “and allow periodic interpreter shift changes to take place” is proposed to be struck because this is an operational issue and not clear. Does this mean that there has to be space for two people to exchange, or that there needs to be a place for the 2nd person to stand or sit out of the way? I have seen the 2nd interpreter sit next to the 1st interpreter or come from somewhere else – both options should be permissible.</p> <p>802.11.2 - The word subtend is defined in the dictionary as follows: In geometry, an angle subtended by an arc, line, or other curve is one whose two rays pass through the endpoints of the arc. The precise meaning varies with the context. For example, one may speak of the angle subtended by an arc of a circumference when the angle's vertex is a point on the circumference. A simple theorem of plane geometry states that arcs of equal lengths subtend equal angles in such a situation.</p> <p>Assuming this is the range for where the seats that have a good view of the interpreter are required, if an interpreter was standing in the middle of the stage, this might be doable. However, the most common place for an interpreter is at the side of the stage. This literally would require the viewing area to be behind them. See Figures. The maximum” could be read to indicate that the angle could be anything up to that range in width – including 0 degrees – which I don't think was the intent. ‘Unobstructed’ to 65 feet could be interpreted to not allow any columns in the room in that area. Thus the room we have our A117.1 meetings in would be in violation. Since an interpreter could be of any height, using the size of the interpreter for the viewing range is not consistent.</p>	

The intent of the revisions to the last sentence is intended to provide more precise information of measurement. However, this requirement should probably be deleted because it could prohibit seating immediately in front of the interpreter when the interpreter is on any type of raised platform or stage.

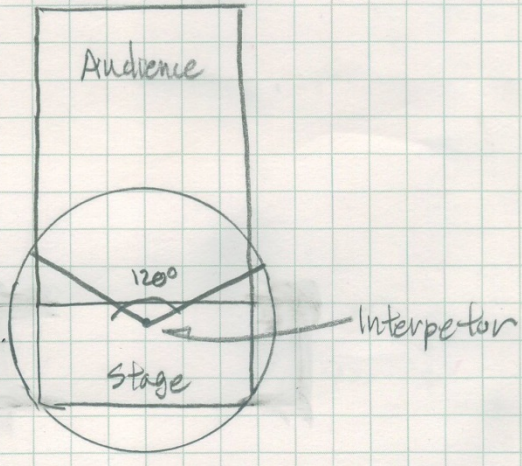
802.11.3 – 10 footcandles is the lighting required for work. The measurement it take at the approximate height of the signers between their hands and face.

802.11.4 – The phrase “as measured tangent to the centerline of the arc described in Section 802.11.2” does not seem to have any purpose and is confusing. Why set a width of 69” if the station is wider? The backdrop is the full width of the station. The sentence “The surface treatment of the backdrop shall comply with Section 802.11.5 while sign language interpretation is being provided.” Is struck because you do not change the surface of a permanent wall. An exception that would allow for good contrast is a better solution. “Smooth” is left out of the exception because the temporary backdrop may be a curtain.

If the committee agrees with the problems raised, but do not think that these corrections go far enough, the alternative would be to vote to delete the original proposal.



Interpreter at side of stage



Interpreter at center of stage



BARTON CREEK
CONFERENCE RESORT

8212 Barton Club Drive • Austin, Texas 78735 • 512/329-4000 • 800/527-3220

**Committee Action of February 2015 regarding Agenda Item #42
– comment number 8-6-12 PC 1.1**

Approved:

Reason:

Please see Comment Reason provided by Ms. Paarlberg. The committee approved this public comment as a welcome improvement and refinement of these provisions which will be new to the A117.1 standard.

8-15– 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

Section 808 Acoustics

808.1 General. Classrooms not exceeding 20,000 cubic feet (565 m³) and required to provide enhanced acoustics shall comply with Section 808.

808.2 Reverberation Time. Classrooms shall provide reverberation times complying with Sections 808.2.1 or 808.2.2. Reverberation times shall apply to fully furnished classrooms while not in use.

808.2.1 Compliance Method A. In each of the octave frequency bands of 500, 1000, and 2000 Hz, reverberation times for sound to decay by 60 dB (T60) shall not exceed the times specified below:

1. 0.6 seconds in classrooms 10,000 cubic feet (285 m³) maximum.
2. 0.7 seconds in classrooms more than 10,000 cubic feet (285 m³) but not exceeding 20,000 cubic feet (565 m³).

Reverberation times shall be field verified and shall be measured over a minimum level decay of 20 dB for which the maximum time shall not exceed 0.2 seconds for classrooms listed in item #1 and 0.23 seconds for classrooms listed in item #2 .

808.2.2 Compliance Method B. Small classrooms 10,000 cubic feet (285 m³) maximum complying with Table 808.2.2(a) for T60 of 0.6 s., and large classrooms more than 10,000 cubic feet (285 m³) but not exceeding 20,000 cubic feet (565 m³) complying with Table 808.2.2(b) for T60 of 0.7s., shall be deemed to comply with Section 808.2.

Table 808.2.2(a) — Minimum surface area of acoustical treatment for small classrooms.

Sound absorption coefficient, α_1	Ceiling height, H, ft.								
	8	9	10	11	12	13	14	15	16
	Ceiling height, H, m.								
	2.44	2.74	3.05	3.35	3.66	3.96	4.27	4.57	4.88
	Minimum combined area of wall and ceiling sound-absorbing material as a percentage of the floor area								
0.45	112	130	148	167	185	203	221	239	257
0.50	101	117	134	150	166	183	199	215	232
0.55	92	107	121	136	151	166	181	196	211
0.60	84	98	111	125	139	152	166	179	193
0.65	78	90	103	115	128	141	153	166	178
0.70	72	84	95	107	119	130	142	154	166
0.75	67	78	89	100	111	122	133	144	154
0.80	63	73	83	94	104	114	124	135	145
0.85	59	69	79	88	98	107	117	127	136
0.90	56	65	74	83	92	101	111	120	129
0.95	53	62	70	79	88	98	105	113	116
1.00	50	59	67	75	83	91	100	108	116

Table 808.2.2(b) — Minimum surface area of acoustical treatment for large classrooms.

Sound absorption coefficient, α_1	Ceiling height, H, ft.								
	8	9	10	11	12	13	14	15	16
	Ceiling height, H, m.								
	2.44	2.74	3.05	3.35	3.66	3.96	4.27	4.57	4.88
Minimum combined area of wall and ceiling sound-absorbing material as a percentage of the floor area									
0.45	91	107	122	138	154	169	185	200	216
0.50	82	96	110	124	138	152	166	180	194
0.55	75	87	100	113	126	138	151	164	177
0.60	68	80	92	104	115	127	139	150	162
0.65	63	74	85	96	106	117	128	139	149
0.70	59	69	79	89	99	109	119	129	139
0.75	55	64	73	83	92	102	111	120	130
0.80	51	60	69	78	86	95	104	113	121
0.85	48	57	65	73	81	90	98	106	114
0.90	46	53	61	69	77	85	92	100	108
0.95	43	51	58	65	73	80	88	95	102
1.00	41	48	55	62	69	76	83	90	97

808.3 Ambient Sound Level. Ambient sound levels within a classroom shall comply with Section 808.3. Ambient sound levels from exterior and interior sound sources shall be evaluated individually. The greatest one-hour averaged sound levels shall be evaluated at a height of 36 inches (915 mm) above the floor and no closer than 36 inches (915 mm) from any wall, window, or fixed object. Ambient sound levels shall apply to fully furnished classrooms while not in use.

808.3.1 Exterior Sound Sources. Ambient sound levels within a classroom 20,000 cubic feet (565 m³) maximum shall not exceed 35 dBA and 55 dBC for noise intrusion from exterior sound sources.

808.3.2 Interior Sound Sources. Ambient sound levels within a classroom not larger than 20,000 cubic feet (565 m³) shall not exceed 35 dBA and 55 dBC, for noise from interior sound sources.

8-15-12 PC5

Mark Schaffer, representing self

Delete and replace as follows:

Section 808 Acoustics

808.1 General. Classrooms not exceeding 20,000 cubic feet (565 m³) and required to provide enhanced acoustics shall comply with Section 808.

808.2 Reverberation Time. Classrooms shall provide reverberation times complying with Sections 808.2.1 or 808.2.2. Reverberation times shall apply to fully furnished classrooms while not in use.

808.2.1 Compliance Method A. In each of the octave frequency bands of 500, 1000, and 2000 Hz, reverberation times for sound to decay by 60 dB (T60) shall not exceed the times specified below:

1. 0.6 seconds in classrooms 10,000 cubic feet (285 m³) maximum.

2. 0.7 seconds in classrooms more than 10,000 cubic feet (285 m³) but not exceeding 20,000 cubic feet (565 m³).

Reverberation times shall be field verified and shall be measured over a minimum level decay of 20 dB for which the maximum time shall not exceed 0.2 seconds for classrooms listed in item #1 and 0.23 seconds for classrooms listed in item #2.

808.2.2 Compliance Method B. Small classrooms 10,000 cubic feet (285 m³) maximum complying with Table 808.2.2(a) for T60 of 0.6 s., and large classrooms more than 10,000 cubic feet (285 m³) but not exceeding 20,000 cubic feet (565 m³) complying with Table 808.2.2(b) for T60 of 0.7s., shall be deemed to comply with Section 808.2.

Table 808.2.2(a) — Minimum surface area of acoustical treatment for small classrooms.

Sound absorption coefficient, α_t	Ceiling height, H, ft.								
	8	9	10	11	12	13	14	15	16
	Ceiling height, H, m.								
	2.44	2.74	3.05	3.35	3.66	3.96	4.27	4.57	4.88
Minimum combined area of wall and ceiling sound-absorbing material as a percentage of the floor area									
0.45	112	130	148	167	185	203	221	239	257
0.50	101	117	134	150	166	183	199	215	232
0.55	92	107	121	136	151	166	181	196	211
0.60	84	98	111	125	139	152	166	179	193
0.65	78	90	103	115	128	141	153	166	178
0.70	72	84	95	107	119	130	142	154	166
0.75	67	78	89	100	111	122	133	144	154
0.80	63	73	83	94	104	114	124	135	145
0.85	59	69	79	88	98	107	117	127	136
0.90	56	65	74	83	92	101	111	120	129
0.95	53	62	70	79	88	98	105	113	116
1.00	50	59	67	75	83	91	100	108	116

Table 808.2.2(b) — Minimum surface area of acoustical treatment for large classrooms.

Sound absorption coefficient, α_t	Ceiling height, H, ft.								
	8	9	10	11	12	13	14	15	16
	Ceiling height, H, m.								
	2.44	2.74	3.05	3.35	3.66	3.96	4.27	4.57	4.88
Minimum combined area of wall and ceiling sound-absorbing material as a percentage of the floor area									
0.45	91	107	122	138	154	169	185	200	216
0.50	82	96	110	124	138	152	166	180	194
0.55	75	87	100	113	126	138	151	164	177
0.60	68	80	92	104	115	127	139	150	162
0.65	63	74	85	96	106	117	128	139	149
0.70	59	69	79	89	99	109	119	129	139
0.75	55	64	73	83	92	102	111	120	130
0.80	51	60	69	78	86	95	104	113	121
0.85	48	57	65	73	81	90	98	106	114
0.90	46	53	61	69	77	85	92	100	108

0.95	43	51	58	65	73	80	88	95	102
1.00	41	48	55	62	69	76	83	90	97

808.3 Ambient Sound Level. Ambient sound levels within a classroom shall comply with Section 808.3. Ambient sound levels from exterior and interior sound sources shall be evaluated individually. The greatest one-hour averaged sound levels shall be evaluated at a height of 36 inches (915 mm) above the floor and no closer than 36 inches (915 mm) from any wall, window, or fixed object. Ambient sound levels shall apply to fully furnished classrooms while not in use.

808.3.1 Exterior Sound Sources. Ambient sound levels within a classroom 20,000 cubic feet (565 m³) maximum shall not exceed 35 dBA and 55 dBC for noise intrusion from exterior sound sources.

808.3.2 Interior Sound Sources. Ambient sound levels within a classroom not larger than 20,000 cubic feet (565 m³) shall not exceed 35 dBA and 55 dBC, for noise from interior sound sources.

Section 808 **Acoustics**

808.1 General. This section applies to classrooms with volumes up to 20,000 cubic feet (565 m³)

808.2 Reverberation Time. Classroom Reverberation Times shall comply with either section 808.2.1 or section 808.2.2, depending on the size of the room. Reverberation times shall apply to fully-furnished, unoccupied classrooms.

808.2.1 Performance Method. For each of the octave frequency bands with center frequencies of 500, 1000, and 2000 Hz, the Reverberation Time (T60) shall not exceed the times specified below:

1. 0.6 seconds in classrooms with volumes up to and including 10,000 cubic feet (285 m³).
2. 0.7 seconds in classrooms with volumes of more than 10,000 cubic feet (285 m³), but less than 20,000 cubic feet (566 m³).

Reverberation times shall be field-verified via measurements made in accordance with ASTM E2235-04(2012) "Standard Test Method for Determination of Decay Rates for Use in Sound Insulation Test Methods" over a minimum 20 dB decay in each octave frequency band.

808.2.2 Prescriptive Method. The Noise Reduction Coefficient (NRC) ratings for floor, wall and ceiling surface finishes shall conform to the following equations:

For a classroom with a volume less than or equal to 10,000 cubic feet (285 cubic meters):

$$(NRC_{\text{Floor}} \times S_{\text{Floor}}) + (NRC_{\text{Ceiling}} \times S_{\text{Ceiling}}) + (NRC_{\text{Wall}} \times S_{\text{Wall}}) \geq \text{Volume}/12$$

For a classroom with a volume between 10,000 cubic feet (285 cubic meters) and 20,000 cubic feet (565 cubic meters):

$$(NRC_{\text{Floor}} \times S_{\text{Floor}}) + (NRC_{\text{Ceiling}} \times S_{\text{Ceiling}}) + (NRC_{\text{Wall}} \times S_{\text{Wall}}) \geq \text{Volume}/14$$

where NRC_{Floor} = NRC rating of the floor finish material
 S_{Floor} = floor area in square feet
 NRC_{Ceiling} = NRC rating of the ceiling finish material
 S_{Ceiling} = ceiling area in square feet

NRC_{Wall} = NRC rating of the wall acoustical treatment

S_{Wall} = wall treatment area in square feet

Volume = room volume in cubic feet

Where a floor, ceiling or wall has multiple surface finishes, the NRC x S product for each surface finish shall be added to the left side of the equation.

808.3 Ambient Sound Level. Classroom ambient sound levels shall comply with Sections 808.3.1 and 808.3.2. Ambient sound levels from sound sources outside and inside the classroom shall be evaluated individually. The greatest one-hour averaged sound levels shall be evaluated at the loudest usable location in the room at a height of 36 inches (915 mm) to 42 inches (1065 mm) above the floor and no closer than 36 inches (915 mm) from any wall, window, or object. The ambient sound level limits shall apply to fully-furnished, unoccupied classrooms, and with only permanent HVAC, electrical and plumbing systems functioning. Classroom equipment, including, but not limited to, computers, printers, fish tank pumps shall be turned off during these measurements.

808.3.1 Sound Sources Outside of the Classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC due to intruding noise from sound sources outside of the classroom, whether from the exterior or from other interior spaces.

808.3.2 Sound Sources Inside the Classroom. Classroom ambient sound levels shall not exceed 35 dBA and 55 dBC for noise from sound sources inside the classroom.

Reason: Includes edits from Mark Schaffer. I'm sorry to not have followed the specified review protocol, but I found that the number of suggested changes made my "Track Changes" document very difficult to read. I offer the wording below with the knowledge that the vast majority of this section's users will not be familiar with acoustical terminology and calculation methods. For example, the tables in paragraph 808.2.2. assume that the reader knows how to calculate an average sound absorption coefficient; I doubt that this is the case. I know that the NRC method that I suggest below is not as accurate as a calculation method that uses octave band absorption coefficients, but I believe that in the overall scheme of things it is accurate enough, while being more accessible to non-acoustical people.

Committee action on 8-15-12 PC5

Approve Public Comment 8-15-12 PC5.

Reason: The public comment provides an improved organization for this provision. It will prove easier for understandability and compliance.

Staff note: As both PC4 and PC5 to 8-15-12 were approved, they will both be included in the Second Public Review draft. A merged version of the two will be included.

Public Comment on Second Public Review Draft

Agenda Item #45

Comment No: 8-15-12 PC5.1	Submitted by: Kim Paarlberg - ICC
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Revise as follows:

808.1 General. ~~This section applies to classrooms with volumes up to 20,000 cubic feet (565 m³).~~ Classrooms not exceeding 20,000 cubic feet (565 m³) and required to provide enhanced acoustics shall comply with Section 808.

	<i>(Portions not shown remain unchanged)</i>
Comment Reason by Kim Paarlberg: The starting paragraph that was in the last proposal is better code language and provides better information about the purpose of the section.	
Committee Action of February 2015 regarding Agenda Item #45 – comment number 8-15-12 PC 5.1 Approved: Reason: The revised sentence provided by the public comment provides better introduction to the section. It also provides language which clarifies that it only applies to those classrooms required by the scoping authority to meet the standard.	

Chapter 9

9-10– 12

(This represents the language approved by the committee for the First Public Review Draft)

Revise as follows:

904.3 Sales and Service Counters. Sales and service counters and windows shall comply with Sections 904.3.1 ~~or~~ and 904.3.2 or 904.3.3. Where a counter is provided, the accessible portion of the countertop shall extend the same depth as the sales and service countertop provided for standing customers.

904.3.1 Vertical separation. At service windows or service counters, any vertical separation shall be at a height of 43 inches (1090 mm) maximum above the floor.

Exception: Transparent security glazing is permitted above the 43 inches (1090 mm) maximum height.

904.3.1 904.3.2 Parallel Approach. A portion of the counter surface 36 inches (915 mm) minimum in length and 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor shall be provided. Where the counter surface is less than 36 inches (915 mm) in length, the entire counter surface shall be 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor. A clear floor space complying with Section 305, positioned for a parallel approach adjacent to the accessible counter, shall be provided. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

904.3.2 904.3.3 Forward Approach. A portion of the counter surface 30 inches (760 mm) minimum in length and 36 inches (915 mm) maximum in height above the floor shall be provided. A clear floor space complying with Section 305, positioned for a forward approach to the accessible counter, shall be provided. Knee and toe clearance complying with Section 306 shall be provided under the accessible counter. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

9-10-12 PC2

Karen Gridley, representing Target Corporation

Further revise as follow:

904.3.2 Parallel Approach. A portion of the public side of the counter surface 36 inches (915 mm) minimum in length and 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor shall be provided. At pass-through or hand-off portions of counters, the counter surface shall be 12 inches minimum in length. Where the counter surface at pass-through or hand-off elements of a counter is less than 36 inches (915 mm) in length, the entire pass-through or hand-off element of the counter surface shall be 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor. A clear floor space complying with Section 305, positioned for a parallel approach adjacent to the accessible counter, shall be provided. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

904.3.3 Forward Approach. A portion of the public side of the counter surface 30 inches (760 mm) minimum in length and 36 inches (915 mm) maximum in height above the floor shall be provided. A clear floor space complying with Section 305, positioned for a forward approach to the accessible counter, shall

be provided. Knee and toe clearance complying with Section 306 shall be provided under the accessible counter. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

Balance of 9-10-12 remains unchanged

Reason: For reference, we have submitted an additional and separate comment with alternate language changes for consideration on this item.

This code change proposal is the second of two comments we have submitted for this item. It is an attempt to remove the ambiguous language over the 36 inch length provided for public use. In one sentence the requirement states the counter *shall* be 36 inches in length. But in a following sentence it states “...where the counter surface is less than 36 inches...”, which implies it is OK to have a length less than 36, and seems to provide an allowance or exception to the length. The language in the two sentences conflict with each other and are confusing because there is no clear exception stated.

Considering the implication is that it is ok to have a length less than 36 inches, this proposal provides clear criteria on the dimension allowance for a shorter length of 12 inches at pass-through or hand-off elements of counters. Effective lengths could vary depending on the purpose for which a counter is in place.

For example:

In current real world applications we see a variety of existing counters where the pass-through portion of the counter is clearly less than 36 inches in length; some as narrow as 12 inches, and they work extremely well in their intended application. Counters where this would be beneficial are food & beverage hand-off counters, pass-through windows, quick service style counters, teller windows and ticket windows, to name a few, where the only action occurring is to hand off or pass through small items such as food or beverages, tickets, or payment.

This comment also introduces the idea of identifying different elements of counters that might have different length requirements, such as the pass-through portion of the counter versus the front public side, and which widths are appropriate at those different counter elements.

Committee action on 9-10-12 PC2

Approve Public Comment with modifications – 9-10-12 PC2.

Modified as follows:

904.3.2 Parallel Approach. A portion of the public use side of the counter surface 36 inches (915 mm) minimum in length and 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor shall be provided. ~~At pass-through or hand-off portions of counters, the counter surface shall be 12 inches minimum in length. Where the counter surface at pass-through or hand-off elements of a counter is less than 36 inches (915 mm) in length, the entire pass-through or hand-off element of the counter surface shall be 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor.~~ A clear floor space complying with Section 305, positioned for a parallel approach adjacent to the accessible counter, shall be provided. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

Exception: At pass-through or hand-off portions of counters, the counter surface shall be 12 inches minimum in length. Where the counter surface at pass-through or hand-off elements of a counter is less than 36 inches (915 mm) in length, the entire pass-through or hand-off element of the counter surface shall be 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor

904.3.3 Forward Approach. A portion of the public use side of the counter surface 30 inches (760 mm) minimum in length and 36 inches (915 mm) maximum in height above the floor shall be provided. A clear floor space complying with Section 305, positioned for a forward approach to the accessible counter, shall be provided. Knee and toe clearance complying with Section 306 shall be provided under the accessible counter. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.

Reason: The committee clarified the proposal by adding ‘use’ so that the phrasing was ‘public use side of the counter’, therefore making the application of the section clear. Through the discussion, the Committee realized that middle third of Section 904.3.2 was essentially an exception; and, therefore voted to amend the proposal to pull it out of the paragraph and make it an overt exception.

Public Comment on Second Public Review Draft	
Agenda Item #49	
Comment No: 5-22-12 PC2.3 9-10-12 PC2.3	Submitted by: Karen Gridley – Target Corporation
	<p>Revise as follows:</p> <p>904.3.2 Parallel Approach. A portion of the public use side of the counter surface 36 inches (915 mm) minimum in length and 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor shall be provided. A clear floor space complying with Section 305, positioned for a parallel approach adjacent to the accessible counter, shall be provided. The space between the accessible counter surface and any projecting objects above the accessible counter shall be 12 inches (305 mm) minimum.</p> <p style="text-align: center;">Exception: At pass-through or hand-off portions of counters, the counter surface shall be 12 inches minimum in length. Where the counter surface at pass-through or hand-off elements of a counter is less than 36 inches (915 mm) in length, the entire pass-through or hand-off element of the counter surface shall be 26 inches (660 mm) minimum to 36 inches (915 mm) maximum in height above the floor.</p>
<p>Comment Reason by Karen Gridley:</p> <p>I believe some of the previously proposed language was inadvertently left in place that was intended to be struck out during the last committee meeting when the language for the exception was being edited.</p> <p>If I’m remembering correctly, instead of the Exception language shown in the Second Public Review Draft, I believe the committee took action to disapprove portions of the new language shown in strike out above, which restores the original language of the exception but just pulls it out of the existing Section 904.3.2 main paragraph and makes it an overt exception.</p> <p>The proposed change in the Second Public Review Draft does not correctly reflect the committee’s action for reworking the exception.</p> <p>The committee expressed concern over introducing the terms “element” and “pass-through” or “hand-off”, as well as concern over setting new length limits without having some data for defining what those lengths should be. Target agrees with these concerns and believes the original language works well once it is pulled out into its own overt exception.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #49 – comment number 9-10-12 PC 2.3 <i>(This was mislabeled in the Public Comment report as 5-22-12 PC2.3)</i></p> <p>Approved:</p> <p>Reason: The committee agreed with Ms. Gridley that her public comment accurately reflected the intent of the committee in its actions prior to the Second Public Review Draft.</p>	

Chapter 10

10-10– 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

1002.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Sections 1002.9 and 309.

EXCEPTIONS: *(remain unchanged)*

1002.9.1 Wheelchair Charging Area. A wheelchair charging area shall be adjacent to one bed. A clear floor space complying with Section 305 shall be located between the bedside and a parallel wall. The parallel wall shall be 36 inches (915 mm) minimum to 48 inches (1220 mm) maximum from the bed and provide a 110V duplex receptacle outlet located 24 inches (610 mm) minimum and 48 inches (1220 mm) maximum from the head wall of the bed and complying with Section 1002.9.

Exception: Where there is no parallel wall within 36 inches (915 mm) minimum to 48 inches (1220 mm) maximum of the bedside, a clear floor space complying with Section 305 shall be along the wall at the head of one bed. A 110V duplex receptacle outlet complying with Section 1002.9 shall be located along the wall at the bed head and within 24 inches (610 mm) minimum and 48 inches (1220 mm) maximum of the bedside.

106 Definitions

wheelchair charging area: A clear floor area where people with disabilities can recharge their wheelchair batteries.

10-10-12 PC1

Kimberly Paarlberg, – representing International Code Council

Further revise as follows:

1002.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Sections 1002.9 and 309.

EXCEPTIONS: *(remain unchanged)*

1002.9.1 Wheelchair Charging Area. A wheelchair charging area shall be located adjacent to one bed. A clear floor space complying with Section 305 shall be ~~located between the bedside and a parallel wall.~~ The parallel wall shall be 36 inches (915 mm) minimum to 48 inches (1220 mm) maximum from the bed and provide a 110V duplex receptacle outlet located 24 inches (610 mm) minimum and 48 inches (1220

mm) maximum from the head wall of the bed and complying with Section 1002.9 positioned for parallel approach to the side of the bed.

Exception: Where there is no parallel wall within 36 inches (915 mm) minimum to 48 inches (1220 mm) maximum of the bedside, a clear floor space complying with Section 305 shall be along the wall at the head of one bed. A 110V duplex receptacle outlet complying with Section 1002.9 shall be located along the wall at the bed head and within 24 inches (610 mm) minimum and 48 inches (1220 mm) maximum of the bedside.

106 Definitions

wheelchair charging area: A clear floor area where people with disabilities can recharge their wheelchair batteries.

Reason: I understand the reasoning for the charging station in Accessible rooms. However, I think the wording could be a little cleaner and use the building blocks for sizes and heights.

Committee action on 10-10-12 PC1

Approved Public Comment 10-10-12 PC1.

Reason: The public comment simplifies the proposal and the Committee concluded that it provided a better set of provisions. The Committee hopes a further comment on the next Public Review Draft will address the reach range to the outlet.

Public Comment on Second Public Review Draft

Agenda Item #50

**Comment No:
10-10-12 PC1.1**

**Submitted by:
Gene Boecker – Code Consultants, Inc. on behalf of NATO**

Revise as follows:

1002.9 Operable Parts. Lighting controls, electrical panelboards, electrical switches and receptacle outlets, environmental controls, appliance controls, operating hardware for operable windows, plumbing fixture controls, and user controls for security or intercom systems shall comply with Sections 1002.9 and 309.

EXCEPTIONS: *(text remains unchanged)*

1002.9.1 Wheelchair Charging Area. A wheelchair charging area complying with Section 906 shall be located adjacent to one bed. ~~A-~~ The clear floor space complying with Section ~~305~~ 906.2 shall be positioned for parallel approach to the side of the bed.

Comment Reason by Gene Boecker:

One of the items missing from the final version of this proposal is the electrical outlet for charging the wheelchair. With the added text in new Section 906 provided in proposal 8-5-12 for charging stations, the reference can be made to that section for the electrical needs and reach range requirements. The combination of requirements still allows design flexibility by allowing the electrical outlets to be placed anywhere that Section 308 would allow.

**Committee Action of February 2015 regarding Agenda Item #50
– comment number 10-10-12 PC 1.1**

Approved as modified:

Modification:

~~**1002.9.4 1002.15.3 Wheelchair Charging Area.** The clear floor space complying with Section 1002.15.1 shall also serve as a wheelchair charging area complying with Section 906 shall be located adjacent to one bed. The clear floor space complying with Section 906.2 shall be positioned for parallel approach to the side of the bed.~~

Reason:

The committee approved a revised version of the proposal presented at the meeting. It is consistent with the intent of the original comment by reducing these provisions to a reference to the general provisions for charging areas provided in Section 906. Information was provided during the discussion that this requirement may be redundant with revisions being considered for National Electrical Code. If not redundant, certainly complementary.

3-13L – 12

(This represents the language approved by the committee for the First Public Review Draft)

Add new text as follows:

1004.3.3 Clear Floor Space. For the purposes of Type B units, the clear floor space shall be 48 inches (1220mm) minimum in length and 30 inches (760 mm) minimum in width.

Revise as follows:

1004.9 Operable Parts. Lighting controls, electrical switches and receptacle outlets, environmental controls, electrical panelboards, and user controls for security or intercom systems shall comply with Sections ~~309.2 and 309.3~~ and 1004.3.3.

EXCEPTIONS:

(No change to the exceptions)

1004.10.1 Clear Floor Space. A clear floor space complying with Section ~~305.3-1004.3.3~~ shall be provided. A parallel approach shall be provided for a top loading machine. A forward or parallel approach shall be provided for a front loading machine.

1004.11.2 Clear Floor Space. Clear floor spaces required by Section 1004.11.3.1 (Option A) or 1004.11.3.2 (Option B) shall comply with Sections 1004.11.2 and ~~305.3-1004.3.3~~.

1004.11.2.1 Doors. Doors shall not swing into the clear floor space or clearance for any fixture.

EXCEPTION: Where a clear floor space complying with Section ~~305.3-1004.3.3~~, excluding knee and toe clearances under elements, is provided within the room beyond the arc of the door swing.

1004.11.3.1.1 Lavatory. A clear floor space complying with Section ~~305.3-1004.3.3~~, positioned for a parallel approach, shall be provided at a lavatory. The clear floor space shall be centered on the lavatory.

EXCEPTION:

A lavatory complying with Section 606 and 1004.3.3 shall be permitted. Cabinetry shall be permitted under the lavatory provided the following criteria are met:

- (a) The cabinetry can be removed without removal or replacement of the lavatory; and
- (b) The floor finish extends under the cabinetry; and
- (c) The walls behind and surrounding the cabinetry are finished.

1004.12.2 Clear Floor Space. Clear floor space at appliances shall comply with Sections 1004.12.2 and ~~305.3-1004.3.3~~.

3-13L-12 PC9

Ron Nickson, – representing National Multi Housing Council

Further revise as follows – Please note this is Section 1004 in the current standard. The numbering below reflects committee action to exchange Chapters 10 and 11.

1104 Type B Units

1104.1 General. Type B units shall comply with Section 1104.

1104.1.1. Clear Floor Space. The clear floor space shall be 48 inches (1220 mm) minimum in length and 30 inches (760 mm) minimum in width.

1104.1.2 Alcoves. Where the clear floor space is positioned for a forward approach, the alcove shall be 36 inches (915 mm) minimum in width where the depth exceeds 24 inches (610 mm).

1104.1.3 Forward reach unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.

1104.1.4. Mailboxes. Mailboxes serving Type B dwelling units and complying with Section 1101.2 shall be permitted an unobstructed side reach range at 54 inches (1370 mm) maximum above the floor.

1104.1.5. Parking Space Width. Access aisles serving Type B units and adjacent to accessible and van accessible parking spaces shall be 60 inches (1525 mm) minimum in width.

1104.2 Primary Entrance. The accessible primary entrance shall be on an accessible route from public and common areas. The primary entrance shall not be to a bedroom unless it is the only entrance.

1104.3 Accessible Route. Accessible routes within Type B units shall comply with Section 1104.3.

1104.3.1 Location. At least one accessible route shall connect all spaces and elements that are a part of the unit. Accessible routes shall coincide with or be located in the same area as a general circulation path.

EXCEPTIONS:

1. An accessible route is not required to unfinished attics and unfinished basements that are part of the unit.
2. One of the following is not required to be on an accessible route:
 - 2.1 A raised floor area in a portion of a living, dining, or sleeping room; or
 - 2.2 A sunken floor area in a portion of a living, dining, or sleeping room; or
 - 2.3 A mezzanine that does not have plumbing fixtures or an enclosed habitable space.

1104.3.2 Components. Accessible routes shall consist of one or more of the following elements: walking surfaces with a slope not steeper than 1:20, doors and doorways, ramps, elevators, and platform lifts.

~~**1104.3.3 Clear Floor Space.** For the purposes of Type B units, the clear floor space shall be 48 inches (1220mm) minimum in length and 30 inches (760 mm) minimum in width.~~

1104.4 Walking Surfaces. Walking surfaces that are part of an accessible route shall comply with Section 1104.4.

1104.4.1 Clear Width. Clear width of an accessible route shall comply with Section 403.5.

EXCEPTIONS:

1. **180 Degree Turn.** Where an accessible route makes a 180 degree turn around an object that is less than 48 inches (1220 mm) in width, clear widths shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum during the turn and 42 (1065 mm) inches minimum leaving the turn.
2. **Turn Around an Object.** Where an accessible route makes a 180 degree turn around an object that is less than 48 inches (1220 mm) in width, the clear width approaching the turn and leaving the turn shall be 36 inches (915 mm) minimum. Where the clear width during the turn is 60 inches (1525 mm) minimum.
3. **90 Degree Turn.** Where an accessible route makes a 90 degree turn the clear widths approaching the turn and leaving the turn shall be 36 inches (915 mm) minimum.
4. **Clear Width.** The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided the reduced width segments are separated by segments that are 48 inches (1220 mm) minimum in length and 36 inches (915 mm) minimum in width.

1104.4.2 Changes in Level. Changes in level shall comply with Section 303.

EXCEPTION: Where exterior deck, patio or balcony surface materials are impervious, the finished exterior impervious surface shall be 4 inches (100 mm) maximum below the floor level of the adjacent interior spaces of the unit.

1104.5 Doors and Doorways. Doors and doorways shall comply with Section 1104.5.

1104.5.1 Primary Entrance Door. The primary entrance door to the unit shall comply with Section 404.

EXCEPTION:

1. **Storm and Screen Doors.** Storm and screen doors serving individual dwelling or sleeping units are not required to comply with Section 404.2.5.
2. **Maneuvering Clearance.** For the maneuvering clearance at swinging doors, for the front approach direction on the push side the dimension perpendicular to the door shall be 48 inches (122 mm) minimum.
3. **Clearance at Sliding and Folding Doors.** For the maneuvering clearance at sliding and folding doors, for the front approach direction the dimension perpendicular to the door shall be 48 inches (122 mm) minimum.

1104.5.2 User Passage Doorways. Doorways intended for user passage shall comply with Section 1104.5.2.

1104.5.2.1 Clear Width. Doorways shall have a clear opening of 31³/₄ inches (810 mm) minimum. Clear opening of swinging doors shall be measured between the face of the door and stop, with the door open 90 degrees.

1104.5.2.1.1 Double Leaf Doorways. Where the operable parts on an inactive leaf of a double leaf doorway are located more than 48 inches (1220 mm) or less than 15 inches (380 mm) above the floor, the active leaf shall provide the clearance required by Section 1004.5.2.1.

1104.5.2.2 Thresholds. Thresholds shall comply with Section 303.

EXCEPTION: Thresholds at exterior sliding doors shall be permitted to be $\frac{3}{4}$ inch (19 mm) maximum in height, provided they are beveled with a slope not steeper than 1:2.

1104.5.2.3 Automatic Doors. Automatic doors shall comply with Section 404.3.

EXCEPTION: Unobstructed Reach. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor

1104.6 Ramps. Ramps shall comply with Section 405.

1104.7 Elevators. Elevators within the unit shall comply with Section 407, 408, or 409.

EXCEPTION:

1. **In a Private Residential Elevators,** the inside dimensions of elevator cars shall provide a clear floor space in accordance with Section 1104.1.1.
2. **Controls.** Unobstructed forward reach for controls shall be permitted to comply with Section 1004.1.3.
3. **Unobstructed Reach.** Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor

1104.8 Platform Lifts. Platform lifts within the unit shall comply with Section 410.

EXCEPTION:

1. **Doors.** Platform lifts with a single door or doors on opposite ends shall provide a clear floor width of 36 inches (915 mm) minimum and a clear floor space complying with Section 1104.1.1.
2. **Unobstructed forward reach for controls** shall be permitted to comply with Section 1004.1.3.
3. **Controls.** Unobstructed forward reach for controls shall be permitted to comply with Section 1004.1.3.
4. **Unobstructed Reach.** Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.

1004.9 Operable Parts. Lighting controls, electrical switches and receptacle outlets, environmental controls, electrical panelboards, and user controls for security or intercom systems shall comply with Sections ~~309.2~~ 1104.1.1 and 309.3.

EXCEPTIONS:

1. **Unobstructed forward reach for operable parts** shall be permitted to comply with Section 1004.1.3
2. **Receptacle outlets serving a dedicated use.**
3. **In a kitchen,** where two or more receptacle outlets are provided above a length of counter top that is uninterrupted by a sink or appliance, only one receptacle outlet shall ~~not~~ be required to comply with Sections ~~309.2~~ 1104.1.1 and 309.3.
4. **In a kitchen,** where a clear floor space for a parallel approach cannot be located at a counter top in a corner between appliances, receptacle outlets over the counter top shall not be required to comply with Sections ~~309.2~~ 1104.1.1 and 309.3 provided that the counter top is 7 square feet (0.65 m²) maximum.
5. **Floor receptacle outlets.**

6. HVAC diffusers.
7. Controls mounted on ceiling fans.
8. Controls or switches mounted on appliances.
9. Plumbing fixture controls.
10. Reset buttons and shut-offs serving appliances, piping and plumbing fixtures.
11. Where redundant controls other than light switches are provided for a single element, one control in each space shall not be required to be accessible.
12. Within kitchens and bathrooms, lighting controls, electrical switches and receptacle outlets are permitted to be located over cabinets with counter tops 36 inches (915 mm) maximum in height and 25-1/2 inches (650 mm) maximum in depth.

1104.10 Laundry Equipment. Washing machines and clothes dryers shall comply with Section 1104.10.

1104.10.1 Clear Floor Space. A clear floor space complying with Section ~~305.3~~ 1104.1.1 shall be provided for each washing machine and clothes dryer. A parallel approach shall be provided for a top loading machine. A forward or parallel approach shall be provided for a front loading machine.

1104.11 Toilet and Bathing Facilities. Toilet and bathing fixtures shall comply with Section 1104.11.

EXCEPTION: Fixtures on levels not required to be accessible.

1104.11.1 Grab Bar and Shower Seat Reinforcement. Reinforcement shall be provided for the future installation of grab bars and shower seats at water closets, bathtubs, and shower compartments. Where walls are located to permit the installation of grab bars and seats complying with Section 604.5 at water closets; grab bars complying with Section 607.4 at bathtubs; and for grab bars and shower seats complying with Sections, 608.3, 608.2.1.3, 608.2.2.3 and 608.2.3.2 at shower compartments; reinforcement shall be provided for the future installation of grab bars and seats complying with those requirements.

EXCEPTIONS:

1. In a room containing only a lavatory and a water closet, reinforcement is not required provided the room does not contain the only lavatory or water closet on the accessible level of the unit.
2. At water closets reinforcement for the side wall vertical grab bar component required by Section 604.5 is not required.
3. At water closets where wall space will not permit a grab bar complying with Section 604.5.2, reinforcement for a rear wall grab bar 24 inches (610 mm) minimum in length centered on the water closet shall be provided.
4. At water closets where a side wall is not available for a 42-inch (1065 mm) grab bar complying with 604.5.1, reinforcement for a sidewall grab bar, 24 inches (610 mm) minimum in length, located 12 inches (305 mm) maximum from the rear wall, shall be provided.
5. At water closets where a side wall is not available for a 42- inch (1065 mm) grab bar complying with Section 604.5.1 reinforcement for a swing-up grab bar complying with Section 1104.11.1.1 shall be permitted.
6. At water closets where a side wall is not available for a 42-inch (1065 mm) grab bar complying with 604.5.1 reinforcement for two swing-up grab bars complying with Section 1104.11.1.1 shall be permitted to be installed in lieu of reinforcement for rear wall and side wall grab bars.

7. In shower compartments larger than 36 inches (915 mm) in width and 36 inches (915 mm) in depth reinforcement for a shower seat is not required

1104.11.1.1 Swing-up Grab Bars. A clearance of 18 inches (455 mm) minimum from the centerline of the water closet to any side wall or obstruction shall be provided where reinforcement for swing-up grab bars is provided. When the approach to the water closet is from the side, the 18 inches (455 mm) minimum shall be on the side opposite the direction of approach. Reinforcement shall accommodate a swing-up grab bar centered 15-3/4 inches (400 mm) from the centerline of the water closet and 28 inches (710 mm) minimum in length, measured from the wall to the end of the horizontal portion of the grab bar. Reinforcement shall accommodate a swing-up grab bar with a height in the down position of 33 inches (840 mm) minimum and 36 inches (915 mm) maximum. Reinforcement shall be adequate to resist forces in accordance with Section 609.8.

EXCEPTION: Where a water closet is positioned with a wall to the rear and to one side, the centerline of the water closet shall be 16 inches (405 mm) minimum and 18 inches (455 mm) maximum from the sidewall.

1104.11.2 Clear Floor Space. Clear floor spaces required by Section 1104.11.3.1 (Option A) or 1104.11.3.2 (Option B) shall comply with Sections 1104.11.2 and ~~305.3~~ 1104.1.1.

1104.11.2.1 Doors. Doors shall not swing into the clear floor space or clearance for any fixture.

EXCEPTION: Where a clear floor space complying with Section 1104.1.1, excluding knee and toe clearances under elements, is provided within the room beyond the arc of the door swing.

1104.11.2.2 Knee and Toe Clearance. Clear floor space complying with Section 1104.1.1, at fixtures shall be permitted to include knee and toe clearances complying with Section 306.

1104.11.3 Toilet and Bathing Areas. Either all toilet and bathing areas provided shall comply with Section 1104.11.3.1 (Option A), or one toilet and bathing area shall comply with Section 1104.11.3.2 (Option B).

1104.11.3.1 Option A. Each fixture provided shall comply with Section 1104.11.3.1.

EXCEPTIONS:

1. Where multiple lavatories are provided in a single toilet and bathing area such that travel between fixtures does not require travel through other parts of the unit, not more than one lavatory is required to comply with Section 1104.11.3.1.
2. A lavatory and a water closet in a room containing only a lavatory and water closet, provided the room does not contain the only lavatory or water closet on the accessible level of the unit.

1104.11.3.1.1 Lavatory. A clear floor space complying with Section ~~305.3~~ 1104.1.1, positioned for a parallel approach, shall be provided at a lavatory. The clear floor space shall be centered on the lavatory.

EXCEPTION: A lavatory complying with Section 606 shall be permitted. Cabinetry shall be permitted under the lavatory provided the following criteria are met.

- (a) The cabinetry can be removed without removal or replacement of the lavatory; and

- (b) The floor finish extends under the cabinetry; and
- (c) The walls behind and surrounding the cabinetry are finished.

1104.11.3.1.2 Water Closet. The water closet shall comply with Section 1104.11.3.1.2.

1104.11.3.1.2.1 Location. The centerline of the water closet shall be 16 inches (405 mm) minimum and 18 inches (455 mm) maximum from one side of the required clearance.

1104.11.3.1.2.2 Clearance. Clearance around the water closet shall comply with Sections 1104.11.3.1.2.2.1 through 1104.11.3.1.2.2.3.

EXCEPTION: Clearance complying with Sections 1103.11.2.4.2 through 1103.11.2.4.4.

1104.11.3.1.2.2.1 Clearance Width. Clearance around the water closet shall be 48 inches (1220 mm) minimum in width, measured perpendicular from the side of the clearance that is 16 inches (405 mm) minimum and 18 inches (455 mm) maximum from the water closet centerline.

1104.11.3.1.2.2.2 Clearance Depth. Clearance around the water closet shall be 56 inches (1420 mm) minimum in depth, measured perpendicular from the rear wall.

1104.11.3.1.2.2.3 Increased Clearance Depth at Forward Approach. Where a forward approach is provided, the clearance shall be 66 inches (1675 mm) minimum in depth, measured perpendicular from the rear wall.

1104.11.3.1.2.2.4 Clearance Overlap. A vanity or other obstruction 24 inches (610 mm) maximum in depth, measured perpendicular from the rear wall, shall be permitted to overlap the required clearance, provided the width of the remaining clearance at the water closet is 33 inches (840 mm) minimum.

1104.11.3.1.3 Bathing Fixtures. Where provided, a bathtub shall comply with Section 1104.11.3.1.3.1 or 1104.11.3.1.3.2 and a shower compartment shall comply with Section 1104.11.3.1.3.3.

1104.11.3.1.3.1 Parallel Approach Bathtubs. A clearance 60 inches (1525 mm) minimum in length and 30 inches (760 mm) minimum in width shall be provided in front of bathtubs with a parallel approach. Lavatories complying with Section 606 shall be permitted in the clearance. A lavatory complying with Section 1104.11.3.1.1 shall be permitted at one end of the bathtub if a clearance 48 inches (1220 mm) minimum in length and 30 inches (760 mm) minimum in width is provided in front of the bathtub.

1104.11.3.1.3.2 Forward Approach Bathtubs. A clearance 60 inches (1525 mm) minimum in length and 48 inches (1220 mm) minimum in width shall be provided in front of bathtubs with a forward approach. A water closet and a lavatory shall be permitted in the clearance at one end of the bathtub.

1104.11.3.1.3.3 Shower Compartment. If a shower compartment is the only bathing facility, the shower compartment shall have dimensions of 36 inches (915 mm) minimum in width and 36 inches (915 mm) minimum in depth. A clearance of 48 inches (1220 mm) minimum in length, measured perpendicular from the shower head wall, and 30 inches (760 mm) minimum in depth, measured from the face of the shower compartment, shall be provided.

EXCEPTION: A shower compartment with dimensions of 30 inches (760 mm) minimum in depth and 44 inches (1120 mm) minimum in width shall be permitted.

1104.11.3.2 Option B. One of each type of fixture provided shall comply with Section 1104.11.3.2. The accessible fixtures shall be in a single toilet/bathing area, such that travel between fixtures does not require travel through other parts of the unit.

1104.11.3.2.1 Lavatory. Lavatories shall comply with Sections 1104.11.3.1.1 and 1104.11.3.2.1.

1104.11.3.2.1.1 Height. The front of the lavatory shall be 34 inches (865 mm) maximum above the floor, measured to the higher of the rim or counter surface.

1104.11.3.2.2 Water Closet. The water closet shall comply with Section 1104.11.3.1.2.

1104.11.3.2.3 Bathing Fixtures. The accessible bathing fixture shall be a bathtub complying with Section 1104.11.3.2.3.1 or a shower compartment complying with Section 1104.11.3.2.3.2

1104.11.3.2.3.1 Bathtub. A clearance 48 inches (1220 mm) minimum in length measured perpendicular from the control end of the bathtub, and 30 inches (760 mm) minimum in width shall be provided in front of bathtubs.

1104.11.3.2.3.2 Shower Compartment. A shower compartment shall comply with Section 1104.11.3.1.3.3.

1104.12 Kitchens. Kitchens and kitchenettes shall comply with Section 1104.12.

1104.12.1 Clearance. Clearance complying with Section 1104.12.1 shall be provided.

1104.12.1.1 Minimum Clearance. Clearance between all opposing base cabinets, counter tops, appliances, or walls within kitchen work areas shall be 40 inches (1015mm) minimum.

1104.12.1.2 U-Shaped Kitchens. In kitchens with counters, appliances, or cabinets on three contiguous sides, clearance between all opposing base cabinets, countertops, appliances, or walls within kitchen work areas shall be 60 inches (1525 mm) minimum.

EXCEPTION: U-shaped kitchens with an island shall be permitted to comply with Section 1104.12.1.1.

1104.12.2 Clear Floor Space. Clear floor space at appliances shall comply with Sections 1104.12.2 and ~~305.3-1104.1.1~~.

EXCEPTION: Where the clear floor space complying with Section 1104.1.1 is positioned for a forward approach, the alcove shall comply with Section 1104.1.2.

1104.12.2.1 Sink. A clear floor space complying with Section 1104.1.1 positioned for a parallel approach to the sink, shall be provided. The clear floor space shall be centered on the sink bowl.

EXCEPTION: A sink with a forward approach complying with Section 1103.12.4.1, except the clear floor space shall be permitted to comply with Section 1104.1.1 and the alcove with Section 1104.1.2.

1104.12.2.2 Dishwasher. A clear floor space positioned for a parallel or forward approach to the dishwasher, shall be provided. The dishwasher door in the open position shall not obstruct the clear floor space for the dishwasher.

1104.12.2.3 Cooktop. Cooktops shall comply with Section 1104.12.2.3.

1104.12.2.3.1 Approach. A clear floor space positioned for a parallel or forward approach to the cooktop, shall be provided.

1104.12.2.3.2 Forward approach. Where the clear floor space is positioned for a forward approach, knee and toe clearance complying with Section 1104.1.1 and 1104.1.2 shall be provided. The underside of the cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock.

1104.12.2.3.3 Parallel approach. Where the clear floor space is positioned for a parallel approach, the clear floor space shall be centered on the appliance.

1104.12.2.4 Oven. A clear floor space positioned for a parallel or forward approach adjacent to the oven shall be provided. The oven door in the open position shall not obstruct the clear floor space for the oven.

1104.12.2.5 Refrigerator/Freezer. The refrigerator/freezer shall comply with Section 1104.12.2.5.

1104.12.2.5.1 Approach. A clear floor space positioned for a parallel or forward approach to the refrigerator/freezer shall be provided.

1104.12.2.5.2 Forward Approach. Where the clear floor space is positioned for a forward approach, the centerline of the clear floor space shall be offset 15 inches (380 mm) maximum from the centerline of the appliance.

1104.12.2.5.3 Parallel Approach. Where the clear floor space is positioned for a parallel approach, the centerline of the clear floor space shall be offset 24 inches (610 mm) maximum from the centerline of the appliance.

1104.12.2.6 Trash Compactor. A clear floor space, positioned for a parallel or forward approach to the trash compactor, shall be provided.

Reason: The proposed modification addresses only the Type B dwellings unit. The proposal includes all of the changes approved for the Type B Dwelling Unit acted on during the committee process to develop the next version of the ANSI standard. The changes in the comment are intended to allow the Type B dwelling unit to remain technically as it was in the 2009 version of the standard by not incorporating the changes in the buildings blocks for clear floor space, turning circle and U-turn, etc. that were approved during the committee deliberations.

Committee action on 3-13L-12 PC9

Approve Public Comment 3-13L-12 PC9.

Reason: The public comment, as approved, allows Type B dwelling units/sleeping unit requirements to remain as currently found in the 2009 editions.

Public Comment on Second Public Review Draft	
Agenda Item #52	
Comment No: 3-13L-12 PC9.1	Submitted by: Kevin Brinkman – AEMA
	<p>Revise as follows:</p> <p>1104.7 Elevators. Elevators within the unit shall comply with Section 407, 408, or 409.</p> <p style="padding-left: 40px;">EXCEPTION:</p> <p style="padding-left: 80px;">4. In a Private Residential Residence Elevators, the inside dimensions of elevator cars shall provide a clear floor space in accordance with Section 4104.1.1. <u>409.4.1.2.</u></p> <p style="padding-left: 40px;">(Exceptions 2 and 3 are unchanged.)</p> <p>1104.8 Platform Lifts. Platform lifts within the unit shall comply with Section 410.</p> <p style="padding-left: 40px;">EXCEPTION:</p> <p style="padding-left: 80px;">5. Doors. Platform lifts with a single door or doors on opposite ends shall provide a clear floor width of 36 inches (915 mm) minimum and a clear floor space complying with Section 4104.1.1. <u>410.5.1.2.</u></p> <p style="padding-left: 40px;">(Exceptions 2 through 4 are unchanged.)</p>
<p>Comment Reason by Kevin Brinkman: Corrected name to Private Residence Elevator for consistency with 409 and ASME A17.1 The language in the draft would allow a minimum clear width of 30 inches for both products. The minimum clear width is currently 36 inches in 409 and 410. The requested change is to refer to those sections as modified by 3-6-12 PC2 for consistency.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #52 – comment number 3-13L-12 PC 9.1</p> <p>Approved as modified:</p> <p>Modification:</p> <p>1104.7 Elevators. Elevators within the unit shall comply with Section 407, 408, or 409.</p> <p style="padding-left: 40px;">EXCEPTIONS:</p> <p style="padding-left: 80px;">1. In a Private Residential Residence Elevators, the inside dimensions of elevator cars shall provide a clear floor space in accordance with Section 409.4.1.2 <u>of 48 inches (1220 mm) minimum in length and 36 inches (760 mm) minimum in width.</u></p> <p style="padding-left: 80px;">2. Controls. Unobstructed forward reach for controls shall be permitted to comply with Section 4104.1.3.</p>	

- 3. Unobstructed Reach.** ~~Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.~~

1104.8 Platform Lifts. Platform lifts within the unit shall comply with Section 410.

1. **Doors.** Platform lifts with a single door or doors on opposite ends shall provide a clear floor space ~~complying with Section 410.5.1.2 of 48 inches (1220 mm) minimum in length and 36 inches (760 mm) minimum in width.~~
2. ~~Unobstructed forward reach for controls shall be permitted to comply with Section 1104.1.3.~~
3. **Controls.** ~~Unobstructed forward reach for controls shall be permitted to comply with Section 1104.1.3.~~
4. **Unobstructed Reach.** ~~Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the floor.~~

Reason:

Earlier in the meeting, the Committee voted to remove the revisions based on 3-6-12 PC2. Therefore a revised version of this comment was presented and approved. Rather than send the users of the standard to earlier sections, the distinct standards applicable to residential installations are now here. The other provisions were eliminated as previous actions eliminated changes to those provisions.

10-19- 12

Kim Paarlberg, proponent, asked for further consideration of Proposal 10-19-12.

Split the question to address public showers and each type of unit separately.

Question 1:

607.7 Bathtub Enclosures. ~~Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the bathtub. Fixed panels, sliding panels and swinging panel assemblies for tub enclosure shall not be permitted on the access side of the bath tub.~~

608.7 Shower Enclosures. Fixed panels, sliding panels and swinging panel assemblies for shower enclosure shall not be permitted on the access side of the shower.

Exception: Panels for Shower compartment enclosures for shall be permitted where all of the following are met:

1. Panels shower compartments shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats.
2. At least one sliding or swinging panel shall provide a minimum clear width of 32"

Question 2:

1003.11.2.5.1 Bathtub. Bathtubs shall comply with Section 607.

EXCEPTIONS:

1. The removable in-tub seat required by Section 607.3 is not required.
2. Counter tops and cabinetry shall be permitted at one end of the clearance, provided the following criteria are met:
 - a) The countertop and cabinetry can be removed;
 - b) The floor finish extends under the countertop and cabinetry; and
 - c) The walls behind and surrounding the countertop and cabinetry are finished.
3. A panel assembly for tub enclosure shall be permitted at the bathtub entry where the panel assembly can be removed without removal or replacement of the surrounding walls and tub edge to which it is affixed.

1003.11.2.5.2 Shower. Showers shall comply with Section 608.

EXCEPTIONS:

1. At standard roll-in shower compartments complying with Section 608.2.2, lavatories, counter tops and cabinetry shall be permitted at one end of the clearance, provided the following criteria are met:
 - a) The countertop and cabinetry can be removed;
 - b) The floor finish extends under the countertop and cabinetry; and
 - c) The walls behind and surrounding the countertop and cabinetry are finished.
2. A panel assembly for shower enclosure shall be permitted at the shower entry where the panel assembly can be removed without removal or replacement of the surrounding walls and floor to which it is affixed.

Question 3:

1004.11.3.1.3 Bathing Fixtures. Where provided, a bathtub shall comply with Section 1004.11.3.1.3.1 or 1004.11.3.1.3.2 and a shower compartment shall comply with Section 1004.11.3.1.3.3. . A panel assembly for tub enclosure shall be permitted at the bathtub entry.

1004.11.3.1.3.3 Shower Compartment. If a shower compartment is the only bathing facility, the shower compartment shall have dimensions of 36 inches (915 mm) minimum in width and 36 inches (915 mm) minimum in depth. A clearance of 48 inches (1220 mm) minimum in length, measured perpendicular from the shower head wall, and 30 inches (760 mm) minimum in depth, measured from the face of the shower compartment, shall be provided. Reinforcing for a shower seat is not required in shower compartments larger than 36 inches (915 mm) in width and 36 inches (915 mm) in depth. A panel assembly for shower enclosure shall be permitted at the shower entry.

Reason: While enclosures are addressed for bathtubs and showers in the current text, the enclosures are not the same as the door to the shower. The enclosure can be all four walls. A shower stall enclosure on the approach side is not the same as a door addressed in Section 404 – therefore, this section should not be referenced for requirements. The desired requirements for access to a shower and tub needs to be clearly expressed in the standard.

I do not see how a sliding or swinging door on the front of a minimum size shower or a standard tub could meet the current limitations for not obstructing access to the controls or to transfer.

The two types of doors are swinging and sliding. The following is the best information I was able to find on a computer search. Better answers may come from the plumbing industry representatives.

Sliding move in two directions, so it can be shifted to either side to allow access to the controls or access to the seat . Can I assume that meets the current enclosure requirements? With a sliding door, the maximum overall width is 60" wide. Door width on a 36" stall is 16" maximum. Door width on a 60" stall size is 28" maximum.

Swinging shower doors still need space for hinges. In a 36" stall, the door width is 30" with the standard frame. The doors can come 22" to 36" wide with side panels for a 60" shower.

For public showers and Accessible units – With roll-in showers required to have a seat, the controls have moved to the back. With a minimum size stall, can a swinging door of 32" clear at the seat end provide adequate clearance? Would any sliding door work? I don't see how the minimum size shower would ever meet the enclosure requirements, so we might as well start out saying they are prohibited. If someone wants to provide a larger shower with a door, then they can use the exception, which includes the current text requiring access to controls and the seat.

For Type A dwelling units – a common complaint is the water from the shower going onto the floor of the bathroom. The ½" threshold is not adequate to hold the water in the pan. That is being addressed with the new style trench drains, but should we prohibit Type A units from having tub or shower enclosures? Since a Type A units is expected to have some features 'adaptable' the exception would allow for someone that did not need the full entry opening to have a shower door as long as it was removable. This would be consistent with the allowance for removable cabinetry in Type A units.

For Type B dwelling units – FHA allows for shower doors on their showers with no limitations. This should be permitted for consistency. Also, for showers, many renters and owners prefer a door to a shower curtain.

Committee action on 10-19-12 Unresolved Issue

Approve as modified 10-19-12

Modification:

The modification is a complete substitution. It replaces all parts of the original proposal as follows:

1004.11.3.1.3.3 Shower Compartment. If a shower compartment is the only bathing facility, the shower compartment shall have dimensions of 36 inches (915 mm) minimum in width and 36 inches (915 mm) minimum in depth. A clearance of 48 inches (1220 mm) minimum in length, measured perpendicular from the shower head wall, and 30 inches (760 mm) minimum in depth, measured from the face of the shower compartment, shall be provided. Reinforcing for a shower seat is not required in shower compartments larger than 36 inches (915 mm) in width and 36 inches (915 mm) in depth

Exception: A shower door assembly shall be permitted where the assembly can be removed without removal or replacement of the surrounding walls and floor to which it is affixed.

Reason: The Committee felt the issue of the installation of shower door assemblies needs to be addressed. Consensus has been difficult to achieve. The Committee approved this exception for Type B units, but not for Type A.

Public Comment on Second Public Review Draft	
Agenda Item #53	
Comment No: 10-19-12 PC1.1	Submitted by: Kim Paarlberg – ICC
	<p>Revise as follows:</p> <p>Type B units</p> <p>1004.11.3.1.3.3 Shower Compartment. If a shower compartment is the only bathing facility, the shower compartment shall have dimensions of 36 inches (915 mm) minimum in width and 36 inches (915 mm) minimum in depth. A clearance of 48 inches (1220 mm) minimum in length, measured perpendicular from the shower head wall, and 30 inches (760 mm) minimum in depth, measured from the face of the shower compartment, shall be provided. Reinforcing for a shower seat is not required in shower compartments larger than 36 inches (915 mm) in width and 36 inches (915 mm) in depth</p> <p style="padding-left: 40px;">Exception: A shower door assembly shall be permitted where the assembly can be removed without removal or replacement of the surrounding walls and floor to which it is affixed.</p> <p>1004.5 Doors and Doorways. Doors and doorways shall comply with Section 1004.5.</p> <p>1004.5.1 Primary Entrance Door. The primary entrance door to the unit shall comply with Section 404.</p> <p style="padding-left: 40px;">EXCEPTION: Storm and screen doors serving individual dwelling or sleeping units are not required to comply with Section 404.2.5.</p> <p>1004.5.2 User Passage Doorways. Doorways intended for user passage shall comply with Section 1004.5.2.</p> <p style="padding-left: 40px;">Exception: <u>Doors that are part of a shower door assembly are not required to comply with this section.</u></p> <p>1004.5.2.1 Clear Width. Doorways shall have a clear opening of 313/4 inches (805 mm) minimum. Clear opening of swinging doors shall be measured between the face of the door and stop, with the door open 90 degrees.</p> <p>1004.5.2.1.1 Double Leaf Doorways. Where the operable parts on an inactive leaf of a double leaf doorway are located more than 48 inches (1220 mm) or less than 15 inches (380 mm) above the floor, the active leaf shall provide the clearance required by Section 1004.5.2.1.</p> <p>1004.5.2.2 Thresholds. Thresholds shall comply with Section 303.</p>

	<p>EXCEPTION: Thresholds at exterior sliding doors shall be permitted to be 3/4 inch (19 mm) maximum in height, provided they are beveled with a slope not steeper than 1:2.</p> <p>1004.5.2.3 Automatic Doors. Automatic doors shall comply with Section 404.3.</p> <p>Type A units</p> <p>1003.11.2.5.2 Shower. Showers shall comply with Section 608.</p> <p>EXCEPTIONS:</p> <ol style="list-style-type: none"> 1. At standard roll-in shower compartments complying with Section 608.2.2, lavatories, counter tops and cabinetry shall be permitted at one end of the clearance, provided the following criteria are met: <ol style="list-style-type: none"> (a) The countertop and cabinetry can be removed; (b) The floor finish extends under the countertop and cabinetry; and (c) The walls behind and surrounding the countertop and cabinetry are finished. 2. <u>A shower door assembly shall be permitted where the assembly can be removed without removal or replacement of the surrounding walls and floor to which it is affixed.</u> <p>1003.5 Doors and Doorways. The primary entrance door to the unit, and all other doorways intended for user passage, shall comply with Section 404.</p> <p>EXCEPTIONS:</p> <ol style="list-style-type: none"> 1. Thresholds at exterior sliding doors shall be permitted to be 3/4 inch (19 mm) maximum in height, provided they are beveled with a slope not greater than 1:2. 2. In toilet rooms and bathrooms not required to comply with Section 1003.11.2, maneuvering clearances required by Section 404.2.3 are not required on the toilet room or bathroom side of the door. 3. <u>Doors that are part of a shower door assembly are not required to comply with this section.</u>
<p>Comment Reason by Kim Paarlberg:</p> <p>This approved exception to Section 1004.11.3.1.3.3 was intended to address shower stall doors and that they should be permitted when they are easily removable. A standard 36" stall with sliding doors has a clearance of only 16 inches. While it is in place, is cannot be considered a door intended for user passage, therefore the coordinating exception under doors is required.</p> <p>Type A units reference Section 608. The only think dealing with shower stall doors in this section is the following:</p> <p style="padding-left: 40px;">608.7 Shower Enclosures. Shower compartment enclosures for shower compartments shall not obstruct controls or obstruct transfer from wheelchairs onto shower seats.</p> <p>This section does not clearly address requirements doors in shower stalls. Type A units are also permitted to be adaptable to a certain extent. The same exceptions in Type B units shall be permitted in Type A units.</p>	
<p>Committee Action of February 2015 regarding Agenda Item #53 – comment number 10-19-12 PC 1.1</p> <p>Approved as modified:</p> <p>Modification:</p>	

Only the following portion of the comment was approved. The balance was either determined to be out of order and not approved.

1004.5.2 User Passage Doorways. Doorways intended for user passage shall comply with Section 1004.5.2.

Exception: Doors that are part of a shower door assembly are not required to comply with this section.

Reason:

The proposed revisions to the Type A unit provisions were not addressed in the original change, therefore they couldn't be included in the revision. The Committee approved the amendment to the Type B provisions (1004.5.2) as an improvement to the original concept.