4-1 – 12
402 (New), 402.1 (New)

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

402 Accessible means of egress

402.1 General. Means of egress shall comply with Section 1007 of the International Building Code.

EXCEPTIONS:

1. Where means of egress are permitted by local *building* or life safety codes to share a common path of egress travel, *accessible means of egress* shall be permitted to share a common path of egress travel.
2. Areas of refuge shall not be required in detention and correctional *facilities*.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

The committee often says that other codes than IBC adopt A117.1. The A117.1 should refer to IBC for means of egress to be consistent with ADA 207.1 and to include safe egress in the technical criteria in this standard. I do not want to reference the older editions of the IBC. The latest IBC exceeds the requirements in the editions references.

The proposed language matches ADA 207.1. However, in my opinion, the exceptions are not needed.

Committee Action: AS AM D

402.1 (New)(Revised)-PAARLBERG.doc

4-2 – 12
402.2

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

402.2 Components. Accessible routes shall consist of one or more of the following components: Walking surfaces with a running slope not steeper than 1:20, doors and doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable portions of this standard.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason: for 402.2. To provide consistent language with ADA Section 403.3.

Committee Action: AS AM D

402.2 ROETHER.doc

4-3– 12
402.2 (New)

Proponent: Melanie J. Hughes, VA Department for the Blind and Vision Impaired, representing Association for the Education and Rehabilitation of the Blind and Visually Impaired (AER)

Add new text as follows:

402.2. Conflict with Vehicular Routes. Accessible routes shall not overlap vehicular routes except at crossings.

Reason: Lack of protected accessible routes to shopping centers, malls and other public spaces separated from the roadway by large parking lots present a barrier to those who are dependent upon public transportation and pedestrian modes of travel. The need to walk through parking lots to get from public transportation stops, public streets, or sidewalks, makes it difficult and unsafe for persons who have visual impairments or mobility impairments and persons of short stature, including children, to access many facilities.

Committee Action: AS AM D

402.2 (New)-HUGHES.doc

4-4 – 12
402.4 (New)

Proponent: Carroll Lee Pruitt, FAIA, NCARB, APA, representing Accessibility Professionals Association

Add new text as follows:

402.4. Parking. Accessible routes shall be located so that users are not required to wheel or walk behind parked vehicles or in traffic lanes.

Exceptions:

1. Users are permitted to wheel or walk behind the vehicle from which they exited.

Reason: This code change provides a safer path of travel for wheelchair users access to the building entrance. Allowing the accessible route to be in the drive makes the route more susceptible to civil drainage control considerations. This is currently in the California Code and was in the Texas Code from 1994 to 2010. It is extremely difficult for drivers of SUV's and Pick-Up Trucks to see wheel chair users when backing out.

Committee Action: AS AM D

402.4 (New)-PRUITT.doc

4-5– 12
403.5

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

403.5 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of an accessible route shall be 36 inches (915 mm) minimum.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for 403.5. To provide consistent language with the ADA. This is a simple addition of text directing the users of the standard to provisions where the width is required to be other than 36 inches. A117.1 has the corresponding provisions, but not the text helping the users get to them..

Committee Action: AS AM D

403.5-ROETHER.doc

4-6 – 12
403.5, Figure 403.5, 403.5.1, Figure 403.5.1(c) (New), 403.5.2

Proponent: Edward Steinfeld, IDEA Center, School of Architecture and Planning, University at Buffalo, State University of New York

Revise as follows:

403.5 Clear Width. The clear width of an accessible route shall be 36 inches (915 mm) minimum.

EXCEPTION: The clear width shall be permitted to be reduced to ~~32~~ 34 inches (~~815~~ 860 mm) minimum for a length of 24 inches (610 mm) maximum provided the reduced width segments are separated by segments that are ~~48~~ 54 inches (~~1220~~ 1370 mm) minimum in length and 36 inches (915 mm) minimum in width.

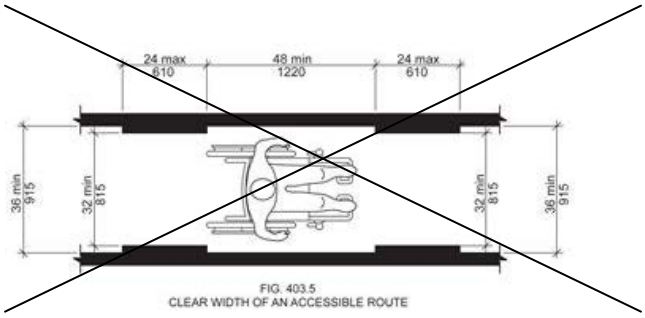


FIG. 403.5
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

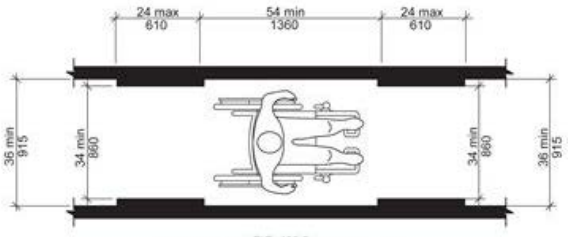


FIG. 403.5
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

403.5.1 Clear Width at 180 Degree Turn Around Object. 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 inches (1065 mm) minimum leaving the turn.

EXCEPTIONS:

1. Section 403.5.1 shall not apply where the clear width during the turn is 60 inches (1525 mm) minimum.

2. Section 403.5.1 shall not apply where a minimum clear width of 43 inches (1090 mm) is provided approaching, during, and leaving the turn.

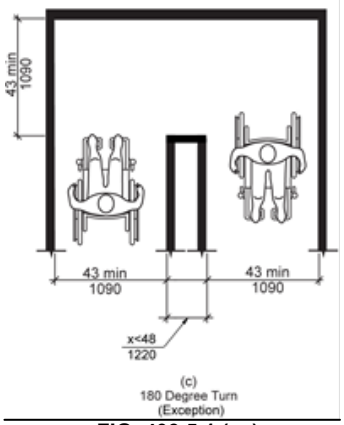


FIG. 403.5.1 (c)

403.5.2 Passing Space. An accessible route with a clear width less than ~~60~~ 64 inches (~~1525~~ 1625 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either a 60-inch (1525 mm) minimum by ~~60-inch~~ 64-inch (~~1525~~ 1625 mm) minimum space, or an intersection of two walking surfaces that provide a T-shaped turning space complying with Section 304.3.2, provided the base and arms of the T-shaped space extend ~~48~~ 54 inches (~~1220~~ 1360 mm) minimum beyond the intersection.

Reason: Many of the technical requirements of the ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities (ICC/ANSI) designed to accommodate wheeled mobility users are based on research completed from 1974 to 1978 using a research sample that included about 60 individuals who used manual wheelchairs (Steinfeld et al., 1979).

The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users (Steinfeld, et al., 2010). Measurements of body and device size were captured in three dimensions. The functional anthropometric measurements required measuring reaching ability, grip strength and the minimum space needed for turning. It is the most extensive anthropometric study of wheeled mobility device users in the United States. Additional information about the study can be found at http://www.udeworld.com/ansi-standards-review. The proposed revisions are based on new anthropometric information that was generated from the database of anthropometric measurements developed as part of the study.

Analysis

Clear floor space represents the space required for a stationary wheeled mobility device. This area is typically depicted as a rectangular space the dimensions of which are based on measurements of occupied length and occupied breadth of wheeled mobility devices, which are defined as follows:

- Occupied length: measured as the horizontal distance between the forward-most point and the rear-most point on the wheelchair or occupant.
- Occupied width: measured as the horizontal distance between the side-most points of the wheelchair or participant on the right and left sides.

The results of our analysis suggest that the existing standard on clear floor space (48” length, 30” width) does not accommodate the occupied lengths and widths of the wheeled mobility user population and excludes powered wheeled mobility device users disproportionately as compared to manual device users. A length of 48” accommodates the occupied length of 75% of manual wheelchair users and only about 50% of powered chair and scooter users. A width of 30” accommodates the occupied width of 90% of manual wheeled mobility device users and only 75% of powered chair users.

We have taken the position that the clear floor space standards should accommodate the occupied lengths and widths of at least 90% of manual and powered wheeled mobility device users. A length of 54” accommodates the occupied lengths of 95% of manual chair users, and 90% of the powered chair users. A width of 32” accommodates the occupied widths of over 95% of manual wheeled mobility device users and 90% of the powered wheelchair users. **Proposed changes to subsections 403 (Walking Surfaces) would accommodate an occupied length of 54 inches and occupied width of 32 inches (adjusted to 34 inches to be consistent with the 2 inch increase in the standard to accommodate width changes related to movement) for those parts of the standard based on occupied length and width.**

A new exception is proposed for the 180-degree turns, based on an analysis also completed for the Anthropometry of Wheeled Mobility report. The analysis suggested that 95% of manual wheelchair users, as well as 95% of power chair and scooter users could accomplish a turn around a barrier when all three sides of the turn were 43 inches (Steinfeld, et al., 2010, pg. 166).

The analysis was summarized in the Final Project Report to the U.S. Access Board and in a memorandum entitled “Evaluation of Clear Floor Space Requirements,” that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

References (See http://www.udeworld.com/ansi-standards-review)

Paquet, V. (2012). *Evaluation of Clear Floor Space Requirements*. A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

Steinfeld, E., Paquet, V., D’Souza, C., Joseph, C, and Maisel, J. (2010). *Final Report: Anthropometry of Wheeled Mobility Project*. Washington, DC: U.S. Access Board.

Steinfeld, E. Schroeder, S. and Bishop, M. (1979). *Accessible buildings for people with walking and reaching limitations.* Washington, DC: U.S. Department of Housing and Urban Development.

Committee Action: AS AM D

403.5-STEINFELD.doc

4-7 – 12
403.5, 406.1, 406.4, 406.7, 406.10, 705.5.4

Proponent: Gina Hilberry, United Cerebral Palsy Association

Revise as follows:

403.5 Clear Width. The clear width of an interior accessible route shall be 36 inches (915 mm) minimum. The clear width of an exterior accessible route shall be 48 inches (1220 mm) minimum.

EXCEPTIONS:

1. 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.

2. The clear width of an exterior ramp shall be permitted to be reduced to 36 inches (915 mm) minimum.

406.1 General. Curb ramps on accessible routes shall comply with Sections 406, 405.2, 405.3, and 405.10.

EXCEPTIONS:

1. The curb ramp running slope shall not exceed 8.3 percent maximum but shall not required the ramp length to exceed 15.0 feet (4.5 m).

2. The running slope of blended transitions shall be 5 percent maximum.

406.4 Width. Curb ramps shall be ~~36 inches (915 mm)~~ 48 inches (1220 mm) minimum in width, exclusive of flared sides.

406.7 Landings. Landings shall be provided at the tops of curb ramps. The clear length of the landing shall be ~~36 inches (915 mm)~~ 48 inches (1220 mm) minimum. The clear width of the landing shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing. Where the turning space or landing is constrained at the back-of-sidewalk, the landing shall be 48 inches (1220 mm) wide minimum and 60 inches (1550 mm) deep minimum.

EXCEPTION: In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

406.10 ~~Diagonal~~ Curb Ramps ~~Diagonal or corner-type~~ Curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. ~~The bottom of diagonal curb ramps shall have 48 inches (1220 mm) minimum clear space outside active traffic lanes of the roadway. Diagonal~~ Curb ramps provided at marked crossings shall provide ~~the~~ 48 inches (1220 mm) minimum clear space within the markings. ~~Diagonal~~ ~~Curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) minimum in length on each side of the curb ramp and within the marked crossing.~~

705.5.4 Alignment. Truncated domes shall be aligned in a square or radial grid pattern.

Reason: These proposals all relate to current best practices in the Public Right-of-Way and exterior environments.

Section 403.5 Width of exterior accessible route: this change matches the current language in the PROW guidelines. The edges of sidewalks and other accessible routes are clearly different from the edges of hallways and corridors and similar interior surfaces. Dropping off the edge of a sidewalk can have serious consequences. Passing oncoming pedestrians on 36 inch wide is impossible.

Section 406.4 Width of curb ramps and Section 406.7 Landings. These changes bring A117.1 into harmony with the current PROW guidelines.

Section 406.10 Diagonal ramps are no longer recommended design layouts. Deletion of the word diagonal allows the requirements to remain largely in place but to be applied to other curb ramps plan types.

Section 705.5.4 At blended transitions where the slope of the surface is at 5% maximum, it is important that the truncated domes align with the path of travel. Adding "or radial" permits the installation of domes aligned with the path of travel.

Committee Action: AS AM D

403.5-HILBERRY.doc

4-8 – 12
403.5.1

Proponent: Gina Hilberry and David Collins, Co-Chairs Wheeled Mobility Task Group

Revise as follows:

403.5.1 Clear Width at 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 52 inches (1320 mm) in width minimum, clear widths shall be as permitted for turn complying with 405.5.1. Where an accessible route makes a 180 degree turn around an object that is less than 52 inches (1320 mm) inches, the clear widths approaching the turn, during the turn and leaving the turn, shall be one of the following sets of dimensions:

1. Approaching 36 inches (915 mm) minimum, during 60 inches (1525 mm) minimum, and leaving 36 inches (915 mm) minimum.
2. Approaching 42 (1065 mm) inches minimum, during 48 inches (1220 mm) minimum, and leaving 42 (1065 mm) inches minimum.
3. Approaching 43 inches (1090 mm) minimum, during 43 inches (1090 mm) minimum, and leaving 43 inches (1090 mm) minimum.

Reason: The Wheeled Mobility Task Group (WMTG) was created as a task group of the A117.1 Committee to analyze the results of the anthropometric study of a variety of mobility device users conducted by The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users. The study indicates that the technical provisions contained in the A117.1 standard do not address the needs of the full range of users of mobility devices. The work of the WMTG is ongoing, but it has submitted a series of proposed changes to the base building blocks of the A117.1 standard. If the changes to the building blocks are adopted by the Committee, then additional changes will need to be made in other portions of the standard.

Committee Action: AS AM D

403.5.1-HILBERRY.doc

4-9 – 12
403.5.2 (NEW)

Proponent: Gina Hilberry and David Collins, Co-Chairs Wheeled Mobility Task Group

Revise as follows:

403.5.2 Clear Width at 90 Degree Turn. Where an accessible route makes a 90 degree turn the clear widths approaching the turn and leaving the turn shall be one of the following sets of dimensions:

1. Both legs of the turn shall be 40 inches (1016 mm) minimum.
2. Where one leg of the turn is 40 inches (1016 mm) minimum for a distance of 68 inches (1727 mm) from the interior corner of the turn, the other leg shall be 36 inches (915 mm) minimum.
3. Where the interior corners of the turn are chamfered for 8 inches minimum along both walls, both legs of the turn shall be 36 inches (915 mm) minimum.

Reason: The Wheeled Mobility Task Group (WMTG) was created as a task group of the A117.1 Committee to analyze the results of the anthropometric study of a variety of mobility device users conducted by The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users. The study indicates that the technical provisions contained in the A117.1 standard do not address the needs of the full range of users of mobility devices. The work of the WMTG is ongoing, but it has submitted a series of proposed changes to the base building blocks of the A117.1 standard. If the changes to the building blocks are adopted by the Committee, then additional changes will need to be made in other portions of the standard.

Committee Action: AS AM D

403.5.2 (NEW)-HILBERRY.doc

4-10 – 12
403.5.3 (New)

Proponent: Jonathan White, representing himself

Add new text as follows:

403.5.3 Clear Width at 90 Degree Turn. Where an accessible route makes a 90 degree turn, the clear width shall be 40 inches (1015 mm) minimum. At least one leg of the turn shall be clear of obstructions for a length of 14 inches (355 mm) minimum with the other leg clear of obstructions for at least 28 inches (710 mm) minimum.

EXCEPTIONS:

1. Where one leg of the turn is 42 inches (1065 mm) minimum in width, the other shall be permitted to be 38 inches (965 mm) minimum in width, with the narrower leg being clear of obstructions for a length of 26 inches (660 mm) minimum, and the other leg being clear of obstructions for a length of 15 inches (380 mm) minimum.

2. Where one leg of the turn is 44 inches (1115 mm) minimum in width, the other shall be permitted to be 36 inches (915 mm) minimum in width, with the narrower leg being clear of obstructions for a length of 24 inches (610 mm) minimum, and the other leg being clear of obstructions for a length of 16 inches (405 mm) minimum.

Reason: Many of the technical requirements of the ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities (ICC/ANSI) designed to accommodate wheeled mobility users are based on research completed from 1974 to 1978 using a research sample that included about 60 individuals who used manual wheelchairs (Steinfeld et al., 1979).

The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users (Steinfeld, et al., 2010). Measurements of body and device size were captured in three dimensions. The functional anthropometric measurements required measuring reaching ability, grip strength and the minimum space needed for turning. It is the most extensive anthropometric study of wheeled mobility device users in the United States. Additional information about the study can be found at http://www.udeworld.com/ansi-standards-review. The proposed revisions are based on new anthropometric information that was generated from the database of anthropometric measurements developed as part of the study.

Analysis

The results of our analysis suggest that the existing standard on a 90-degree turn does not accommodate the occupied lengths and widths of the wheeled mobility user population and excludes powered wheeled mobility device users disproportionately as compared to manual device users. This is based on the IDEA center's 90-degree turn data in *Final Report: Anthropometry of Wheeled Mobility Project.* Fewer than 75% of manual and power wheelchair users could negotiate a L-turn that was 36 inches width (pg. 154). **A width of 40 inches would accommodate 94% of manual wheelchair users, 99% of power wheelchair users, and 92% of scooter users.**

The exceptions are the results of estimated percentages by the IDEA center in a memorandum by Edward Steinfeld, to the ANSI subcommittee on Turning. The estimated percentages for Option B, C and D are the actual percentages for the narrower 90 degree turns. In other words, we tested a 90 degree turn of 38 x 38 without a chamfer. We are using that data to estimate the minimum percentage accommodated by the chamfered version. Thus, this is a conservative estimate because widening one side and adding the chamfer would clearly increase the percentage accommodated.

The table in the memorandum is below:

Proportion of the sample accommodated in each of the four alternatives for a L-turn

% Accommodated	Data Source	Manual (n=208)	Power (n=150)	Scooter (n=23)
Option A (40"x40")	Measured data for 40" x 40"	94%	99%	92%
Option B (42"x38")	Estimate based on data for 38"x38"	Min. 85%	Min. 87%	Min. 67%
Option C (44"x36")	Estimate based on data for 36"x36"	Min. 71%	Min. 71%	Min. 46%
Option D (36"x36" w/chamfer)	Estimate based on data for 36"x36"	Min. 71%	Min. 71%	Min. 46%

The analysis was summarized in the Final Project Report to the U.S. Access Board and in a memorandum entitled "Evaluation of Clear Floor Space Requirements," that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

References (See http://www.udeworld.com/ansi-standards-review)

Steinfeld, E. (2012). *Summary of Turning Discussion and Responses and Recommended Dimensions for Turning Spaces.* A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Turning Spaces.

Steinfeld, E., Paquet, V., D'Souza, C., Joseph, C, and Maisel, J. (2010). *Final Report: Anthropometry of Wheeled Mobility Project*. Washington, DC: U.S. Access Board.

Steinfeld, E. Schroeder, S. and Bishop, M. (1979). *Accessible buildings for people with walking and reaching limitations.* Washington, DC: U.S. Department of Housing and Urban Development.

Committee Action: AS AM D

403.5.3 (New)-WHITE.doc

4-11 – 12

404, 404.1, 404.2, 404.2.3, 404.2.3.2, 404.2.3.4, 404.2.3.5, 404.2.4.1, 404.2.5, 404.2.6, 404.2.7, 404.2.8, 404.2.9, 404.2.10, 404.3, 404.3.2, 404.3.4

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

404 Doors, ~~and~~ Doorways and Gates

404.1 General. Doors, ~~and~~ doorways and gates that are part of an accessible route shall comply with Section 404.

> **EXCEPTION:** Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.3, 404.2.6, 404.2.7, 404.2.8, 404.3.2 and 404.3.4 through 404.3.6.

404.2 Manual Doors, Doorways and Manual Gates. Manual doors and doorways, and manual gates, intended for user passage ~~including ticket gates~~, shall comply with Section 404.2.

> ~~**EXCEPTION:** Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with Sections 404.2.6, 404.2.7, and 404.2.8.~~

404.2.3 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with Section 404.2.3.and shall include the full clear opening width of the doorway and the required latch side or hinge side clearance~~. Required door maneuvering clearances shall not include knee and toe clearance.~~

404.2.3.2 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.3.2.

Fig. 404.2.3.2
Maneuvering Clearance at Manual Swinging Doors and Gates

Table 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

Table 404.2.3.2—Maneuvering Clearances at Manual Swinging Doors and Gates

TYPE OF USE		MINIMUM MANEUVERING CLEARANCES	
Approach Direction	Door or Gate Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)

(*Balance of table is not changes)*

404.2.3.4 Doorways without Doors or Gates. Doorways without doors or gates that are less than 36 inches (915 mm) in width shall have maneuvering clearances complying with Table 404.2.3.3

Fig. 404.2.3.4
Maneuvering Clearance at Doorways without Doors or Gates

Table 404.2.3.4—Maneuvering Clearances for Doorways without Doors or Gates

Approach Direction	MINIMUM MANEUVERING CLEARANCES Perpendicular to Doorway

From front	48 inches (1220 mm)

404.2.3.5 Recessed Doors and Gates. Where any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door or gate, measured perpendicular to the face of the door, maneuvering clearances for a forward approach shall be provided.

Fig. 404.2.3.5
Maneuvering Clearance at Recessed Doors and Gates

404.2.5 Two Doors and Gates in Series. Distance between two hinged or pivoted doors or gates in series shall be 48 inches (1220 mm) minimum plus the width of any door or gate swinging into the space. The space between the doors shall provide a turning space complying with Section 304

Fig. 404.2.5
Two Doors or Gates in a Series

404.2.6 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on accessible doors and gates 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. 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 shall not be required to comply with Section 404.2.6.~~

404.2.7 Closing Speed. Door and gate closing speed shall comply with 404.2.8.

404.2.7.1 Door Closers and Gate Closers. Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.

404.2.7.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that from an open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

404.2.8 Door and Gate Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. The force for pushing or pulling open doors or gates other than fire doors shall be as follows:

1. Interior hinged doors and gates: 5.0 pounds (22.2 N) maximum

2. Sliding or folding doors: 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 or gate in a closed position.

404.2.9 Door and Gate Surface. Door and gate surfaces within 10 inches (255 mm) of the floor, measured vertically, shall be a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in such surface shall be within $^{1}/_{16}$ inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS:

(Exceptions 1 and 2 are not changed)

3. Doors and gates that do not extend to within 10 inches (255 mm) of the floor shall not be required to comply with Section 404.2.9.

404.2.10 Vision Lites. Doors, gates and sidelites adjacent to doors or gates containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one panel on either the door or an adjacent sidelite 43 inches (1090 mm) maximum above the floor.

(Exception is not changed)

404.3 Automatic Doors and Power-Assisted Doors and Gates. 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.~~

404.3.2 Maneuvering Clearances. Maneuvering clearances at power–assisted doors and gates shall comply with Section 404.2.3.

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

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for 404 To provide consistent language with the ADA. ADA consistently uses gates when discussing doors. The amendments through this section are simply providing consistent coverage. The exception to Section 404.1 is relocating an existing exception found in A117.1 Section 404.2 and others to a location similar to ADA.

Committee Action: AS AM D

404 ROETHER.doc

4-12 – 12
404.2.2, Figure 404.2.2

Proponent: Edward Steinfeld, IDEA Center, School of Architecture and Planning, University at Buffalo, State University of New York

Revise as follows:

404.2.2 Clear Width. Doorways shall have a clear opening width of ~~32~~ 34 inches (~~815~~ 865 mm) minimum. Clear opening width of doorways with swinging doors shall be measured between the face of door and stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) in depth at doors and doorways without doors shall provide a clear opening width of 36 inches (915 mm) minimum. There shall be no projections into the clear opening width lower than 34 inches (865 mm) above the floor. Projections into the clear opening width between 34 inches (865mm) and 80 inches (2030 mm) above the floor shall not exceed 4 inches (100 mm).

EXCEPTIONS:

1. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the floor.

2. In alterations, a projection of 5/8 inch (16 mm) maximum into the required clear opening width shall be permitted for the latch side stop.

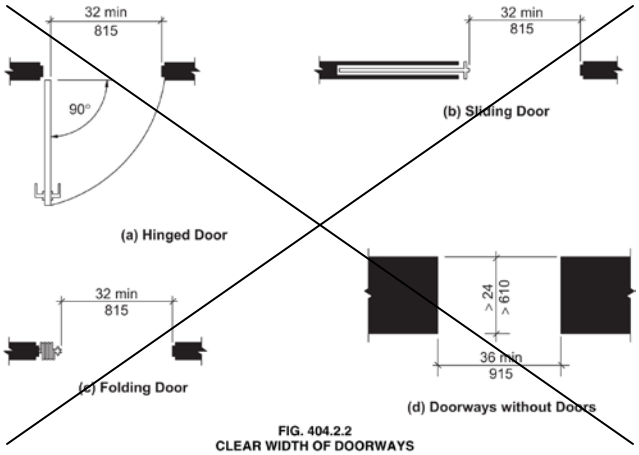


FIG. 404.2.2
CLEAR WIDTH OF DOORWAYS

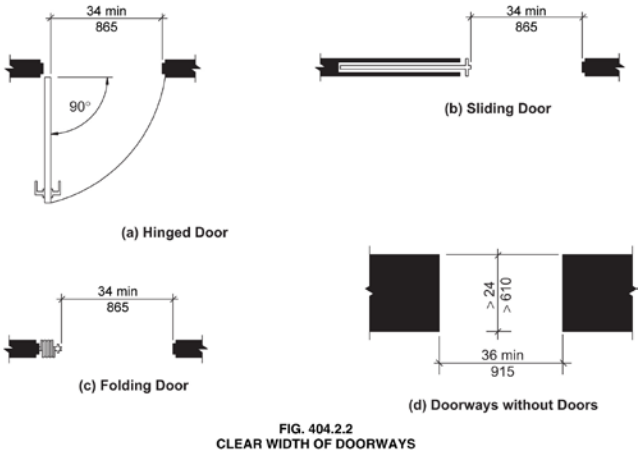


FIG. 404.2.2
CLEAR WIDTH OF DOORWAYS

Reason: Many of the technical requirements of the ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities (ICC/ANSI) designed to accommodate wheeled mobility users are based on research completed from 1974 to 1978 using a research sample that included about 60 individuals who used manual wheelchairs (Steinfeld et al., 1979).

The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users (Steinfeld, et al., 2010). Measurements of body and device size were captured in three dimensions. The functional anthropometric measurements required measuring reaching ability, grip strength and the minimum space needed for turning. It is the most extensive anthropometric study of wheeled mobility device users in the United States. Additional information about the study can be found at http://www.udeworld.com/ansi-standards-review. The proposed revisions are based on new anthropometric information that was generated from the database of anthropometric measurements developed as part of the study.

Analysis

Clear floor space represents the space required for a stationary wheeled mobility device. This area is typically depicted as a rectangular space the dimensions of which are based on measurements of occupied length and occupied breadth of wheeled mobility devices, which are defined as follows:

- Occupied length: measured as the horizontal distance between the forward-most point and the rear-most point on the wheelchair or occupant.
- Occupied width: measured as the horizontal distance between the side-most points of the wheelchair or participant on the right and left sides.

The results of our analysis suggest that the existing standard on clear floor space (48" length, 30" width) does not accommodate the occupied lengths and widths of the wheeled mobility user population and excludes powered wheeled mobility device users disproportionately as compared to manual device users. A length of 48" accommodates the occupied length of 75% of manual wheelchair users and only about 50% of powered chair and scooter users. A width of 30" accommodates the occupied width of 90% of manual wheeled mobility device users and only 75% of powered chair users.

We have taken the position that the clear floor space standards should accommodate the occupied lengths and widths of at least 90% of manual and powered wheeled mobility device users. A length of 54" accommodates the occupied lengths of 95% of manual chair users, and 90% of the powered chair users. A width of 32" accommodates the occupied widths of over 95% of manual wheeled mobility device users and 90% of the powered wheelchair users. **Proposed changes to subsection 404 (Doors and Doorways) would accommodate an occupied length of 54 inches and occupied width of 32 inches (adjusted to 34 inches to be consistent with the 2 inch increase in the standard to accommodate width changes related to movement) for those parts of the standard based on occupied length and width**.

The analysis was summarized in the Final Project Report to the U.S. Access Board and in a memorandum entitled "Evaluation of Clear Floor Space Requirements," that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

References (See http://www.udeworld.com/ansi-standards-review)

Paquet, V. (2012). *Evaluation of Clear Floor Space Requirements*. A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

Steinfeld, E., Paquet, V., D'Souza, C., Joseph, C, and Maisel, J. (2010). *Final Report: Anthropometry of Wheeled Mobility Project*. Washington, DC: U.S. Access Board.

Steinfeld, E. Schroeder, S. and Bishop, M. (1979). *Accessible buildings for people with walking and reaching limitations.* Washington, DC: U.S. Department of Housing and Urban Development.

Committee Action: AS AM D

404.2.2-STEINFELD.doc

4-13 – 12
404.2.3

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

404.2.3 Maneuvering Clearances. Minimum maneuvering clearances at doors shall comply with Section 404.2.3. Maneuvering clearances ~~and~~ shall include the full clear opening width of the doorway and the required latch side or hinge side clearance. ~~Required door maneuvering clearances shall not include knee and toe clearance~~.

> **EXCEPTION:** Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for 404.2.3: The added text is ADA language not currently in A117.1. The text that is being struck out was an attempt in the standard to allow maneuvering clearances to go under some objects where the knees/toes of a wheelchair user would still have adequate space to operate the door. However, the text is unclear. Further, current interpretation of the ADA is that maneuvering spaces must be clear for the full height of 80 inches. The exception is also found in the IBC, but adding it here provides clarity as well as consistency with the ADA.

Committee Action: AS AM D

404.2.3-ROETHER.doc

4-14 – 12
Table 404.2.3.2

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

TABLE 404.2.3.2—MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS

TYPE OF USE		MANEUVERING CLEARANCES AT MANUAL	
Approach Direction	**Door Side**	**Perpendicular to Doorway**	**Parallel to Doorway (beyond latch unless noted)**
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	48 inches (1220 mm)	0 inches (0 mm)[3]
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)[1]	22 inches (560 mm)[~~3 & 4~~]
From latch side	Pull	48 inches (1220 mm)[1]	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)[2]	24 inches (610 mm)

[1]Add 6 inches (150 mm) if closer and latch provided.
[2]Add 6 inches (150 mm) if closer provided.
[3]Add 12 inches (305 mm) beyond latch if closer and latch provided.
[4]Beyond hinge side.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

Coordination with the 2012 ADA Standards for Accessible Design.

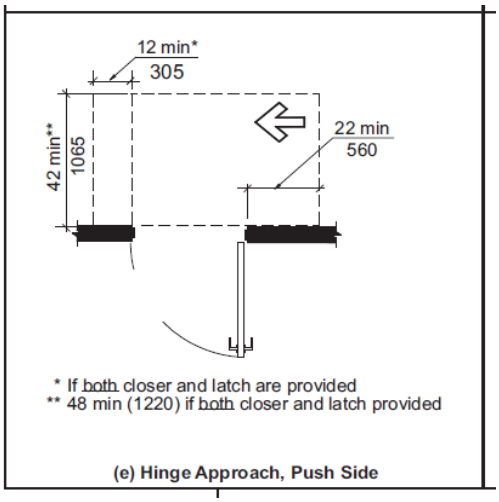
The A117.1 requires there 12 inches beyond the latch side on this door if both a closer and a latch are provided on the door. The ADA does not have this 12 inch requirement.

This requirement was added to the A117.1 standard between the 1998 and 2003 editions by proposal 4-015 and was modified by public comment that cleaned up the footnote reference for it. The proponent's reason statement said that figure (b) the front approach push side and figure (e) the hinge approach push side are similar situations and that having the 12 inches on the forward approach should also be provided on the hinge approach.

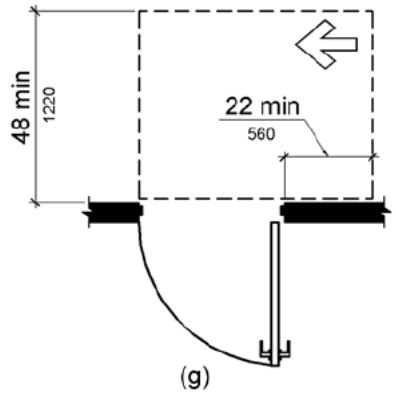
Because this extra requirement creates a discrepancy between the A117.1 and ADA which is not readily apparent and well known, the elimination of the footnote reference would help to coordinate the two standards and make this basic issue of door maneuvering clearances consistent. It seems that the addition of this requirement was probably not well justified when it was added into the 2003 A117.1 standard and with the change made in Section 404.2.3 of the 2009 edition which prevented door maneuvering clearances from including knee and toe clearance it made the difference between the A117.1 and the federal requirements that much greater. With some of the task groups looking at changing the 'building blocks' which could further affect maneuvering clearances, it would seem that this difference between the two standards should be eliminated or better justification should be provided so that it could be added into the federal requirements and coordinated that way.

The graphic representations of the various layouts are provided to better illustrate the differences. In the 2009 standard it is Fig 404.2.3.2(e) and in the 2010 ADA it is Figure 404.2.4.1(g). See ADA figure 404.2.4.1(f) for base condition.

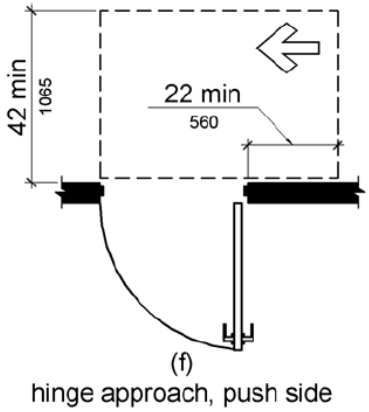
The following is Figure 404.2.3.2(e) from the A117.1-2009 standard.



The following is Figure 404.2.4.1(g) from the 2010 ADA Standards for Accessible Design. This is the comparable requirement for the door shown in Figure 404.2.3.2(e) from the A117.1-2009 standard.



The following is Figure 404.2.4.1(f) from the 2010 ADA Standards for Accessible Design. This is the comparable base requirement for the door shown in Figure 404.2.3.2(e) from the A117.1-2009 standard (hinge approach/push side of door which does not have BOTH a closer and a latch).



Committee Action: AS AM D

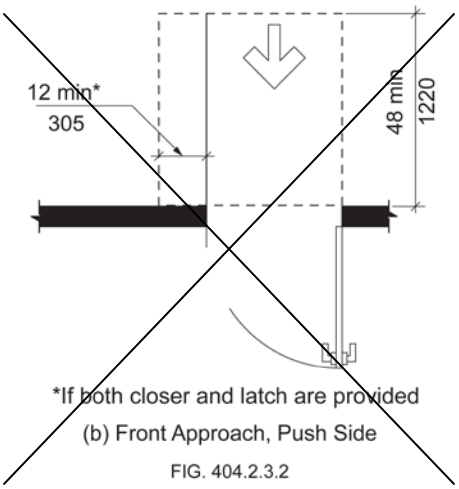
404.2.3.2(TABLE)-PAARLBERG.doc

4-15 – 12

Figure 404.2.3.2, Table 404.2.3.2, Figure 404.2.3.3(a), Table 404.2.3.3, Table 404.2.3.4, Figure 404.2.3.4, Figure 404.2.3.5 (b), (c)

Proponent: Edward Steinfeld, IDEA Center, School of Architecture and Planning, University at Buffalo, State University of New York

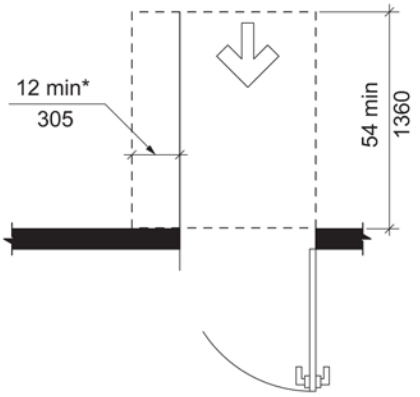
Delete and substitute as follows:



*If both closer and latch are provided

(b) Front Approach, Push Side

FIG. 404.2.3.2



*If both closer and latch are provided

(b) Front Approach, Push Side

FIG. 404.2.3.2

Table 404.2.3.2 – Maneuvering Clearances at Swinging Doors

TYPE OF USE		MINIMUM MANEUVERING CLEARANCES	
Approach Direction	Door Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	~~48~~ inches (1220 mm)	0 inches (0 mm)[3]
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)[1]	22 inches (560 mm)[3&4]
From latch side	Pull	~~48~~ inches (1220 mm)[2]	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)[2]	24 inches (610 mm)

Table 404.2.3.2 – Maneuvering Clearances at Swinging Doors

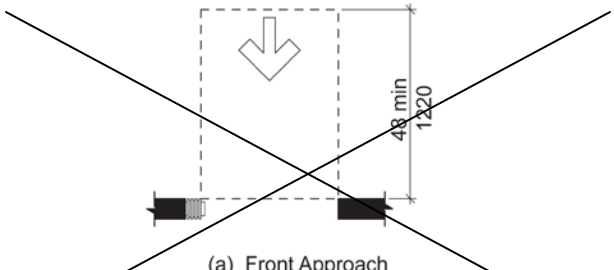
TYPE OF USE		MINIMUM MANEUVERING CLEARANCES	
Approach Direction	Door Side	Perpendicular to Doorway	Parallel to Doorway (beyond latch unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm)
From front	Push	<u>54</u> inches (1220 mm)	0 inches (0 mm)[3]
From hinge side	Pull	60 inches (1525 mm)	36 inches (915 mm)
From hinge side	Pull	54 inches (1370 mm)	42 inches (1065 mm)
From hinge side	Push	42 inches (1065 mm)[1]	22 inches (560 mm)[3&4]
From latch side	Pull	<u>54</u> inches (1220 mm)[2]	24 inches (610 mm)
From latch side	Push	42 inches (1065 mm)[2]	24 inches (610 mm)

Table 404.2.3.2—Maneuvering Clearances at Sliding and Folding Doors

	MINIMUM MANEUVERING CLEARANCES	
Approach Direction	Perpendicular to Doorway	Parallel to Doorway (beyond stop or latch side unless noted)
From front	~~48~~ inches (1220 mm)	0 inches (0 mm)
From nonlatch side	42 inches (1065 mm)	22 inches (560 mm)[1]
From latch side	42 inches (1065 mm)	24 inches (610 mm)

Table 404.2.3.2—Maneuvering Clearances at Sliding and Folding Doors

	MINIMUM MANEUVERING CLEARANCES	
Approach Direction	Perpendicular to Doorway	Parallel to Doorway (beyond stop or latch side unless noted)
From front	<u>54</u> inches (1220 mm)	0 inches (0 mm)
From nonlatch side	42 inches (1065 mm)	22 inches (560 mm)[1]
From latch side	42 inches (1065 mm)	24 inches (610 mm)



(a) Front Approach

FIG. 404.2.3.3
MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS

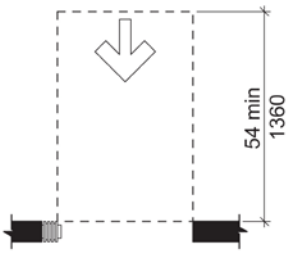


FIG. 404.2.3.3
MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS

Revise Table as follows:

TABLE 404.2.3.4 - MANEUVERING CLEARANCES FOR DOORWAYS WITHOUT DOORS

Approach direction	MINIMUM MANEUVERING CLEARANCES Perpendicular to Doorway
From front	~~48~~ 54 inches (~~1220~~ 1370 mm)
From side	42 inches (1065 mm)

Delete and substitute Figure as follows:

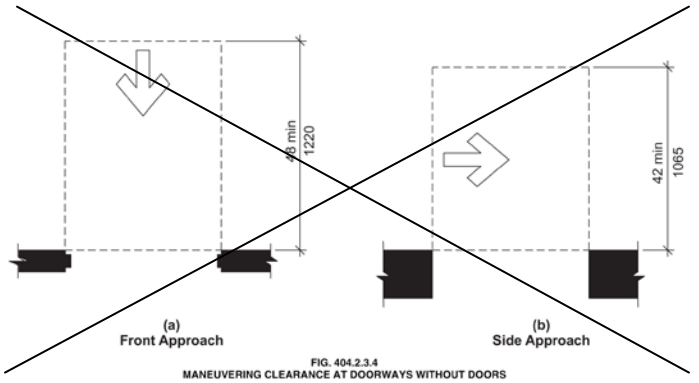


FIG. 404.2.3.4
MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS

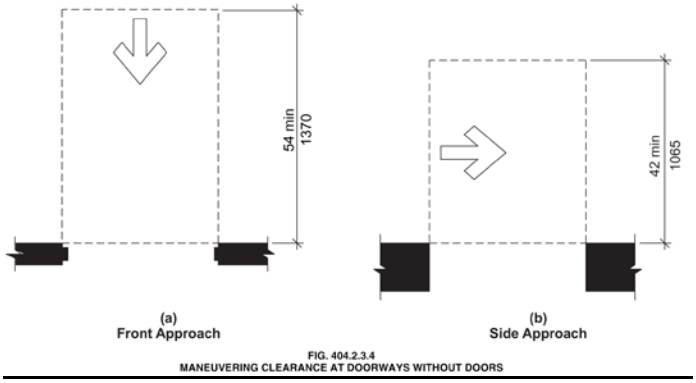


FIG. 404.2.3.4
MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS

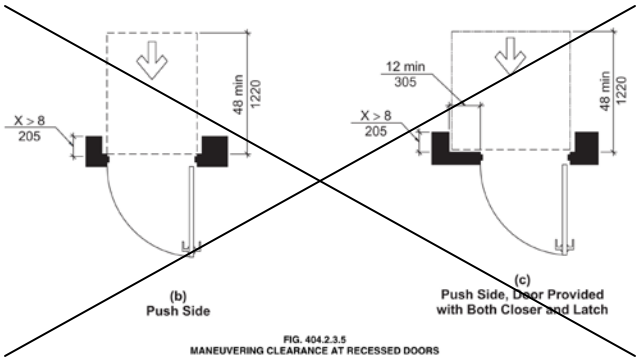


FIG. 404.2.3.5
MANEUVERING CLEARANCE AT RECESSED DOORS

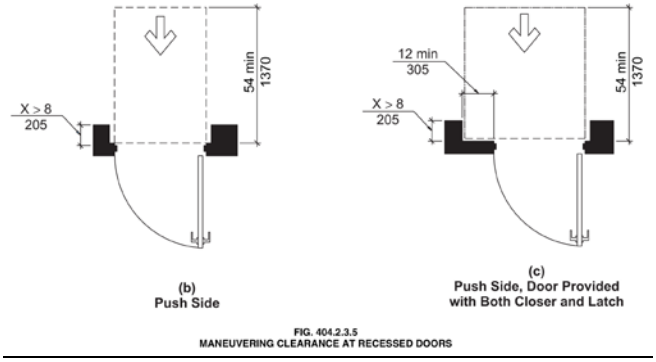


FIG. 404.2.3.5
MANEUVERING CLEARANCE AT RECESSED DOORS

Reason: Many of the technical requirements of the ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities (ICC/ANSI) designed to accommodate wheeled mobility users are based on research completed from 1974 to 1978 using a research sample that included about 60 individuals who used manual wheelchairs (Steinfeld et al., 1979).

The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users (Steinfeld, et al., 2010). Measurements of body and device size were captured in three dimensions. The functional anthropometric measurements required measuring reaching ability, grip strength and the minimum space needed for turning. It is the most extensive anthropometric study of wheeled mobility device users in the United States. Additional information about the study can be found at http://www.udeworld.com/ansi-standards-review. The proposed revisions are based on new anthropometric information that was generated from the database of anthropometric measurements developed as part of the study.

Analysis

Clear floor space represents the space required for a stationary wheeled mobility device. This area is typically depicted as a rectangular space the dimensions of which are based on measurements of occupied length and occupied breadth of wheeled mobility devices, which are defined as follows:

- Occupied length: measured as the horizontal distance between the forward-most point and the rear-most point on the wheelchair or occupant.
- Occupied width: measured as the horizontal distance between the side-most points of the wheelchair or participant on the right and left sides.

The results of our analysis suggest that the existing standard on clear floor space (48” length, 30” width) does not accommodate the occupied lengths and widths of the wheeled mobility user population and excludes powered wheeled mobility device users disproportionately as compared to manual device users. A length of 48” accommodates the occupied length of 75% of manual wheelchair users and only about 50% of powered chair and scooter users. A width of 30” accommodates the occupied width of 90% of manual wheeled mobility device users and only 75% of powered chair users.

We have taken the position that the clear floor space standards should accommodate the occupied lengths and widths of at least 90% of manual and powered wheeled mobility device users. A length of 54” accommodates the occupied lengths of 95% of manual chair users, and 90% of the powered chair users. A width of 32” accommodates the occupied widths of over 95% of manual wheeled mobility device users and 90% of the powered wheelchair users. **Proposed changes to subsection 404 (Doors and Doorways) would accommodate an occupied length of 54 inches and occupied width of 32 inches for those parts of the standard based on occupied length and width**.

The calculation used to determine the appropriate clearances are based on the three-dimensional database of wheeled mobility device user dimensions developed by the IDEA Center for the Anthropometry of Wheeled Mobility Project. The analysis was summarized in the Final Project Report to the U.S. Access Board and in a memorandum entitled “Evaluation of Clear Floor Space Requirements,” that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

References (See http://www.udeworld.com/ansi-standards-review)

Paquet, V. (2012). *Evaluation of Clear Floor Space Requirements*. A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

Steinfeld, E., Paquet, V., D'Souza, C., Joseph, C, and Maisel, J. (2010). *Final Report: Anthropometry of Wheeled Mobility Project*. Washington, DC: U.S. Access Board.

Steinfeld, E. Schroeder, S. and Bishop, M. (1979). *Accessible buildings for people with walking and reaching limitations.* Washington, DC: U.S. Department of Housing and Urban Development.

Committee Action: AS AM D

F404.2.3.2-STEINFELD.doc

4-16 – 12
Figure 404.2.3.5

Proponent: Gene Boecker, Code Consultants, Inc

Revise as follows:

Door recess drawings are not correct. The text indicates that the recess is to be measured from the face of the door but the figures show in two cases the recess measured from the face of the frame.

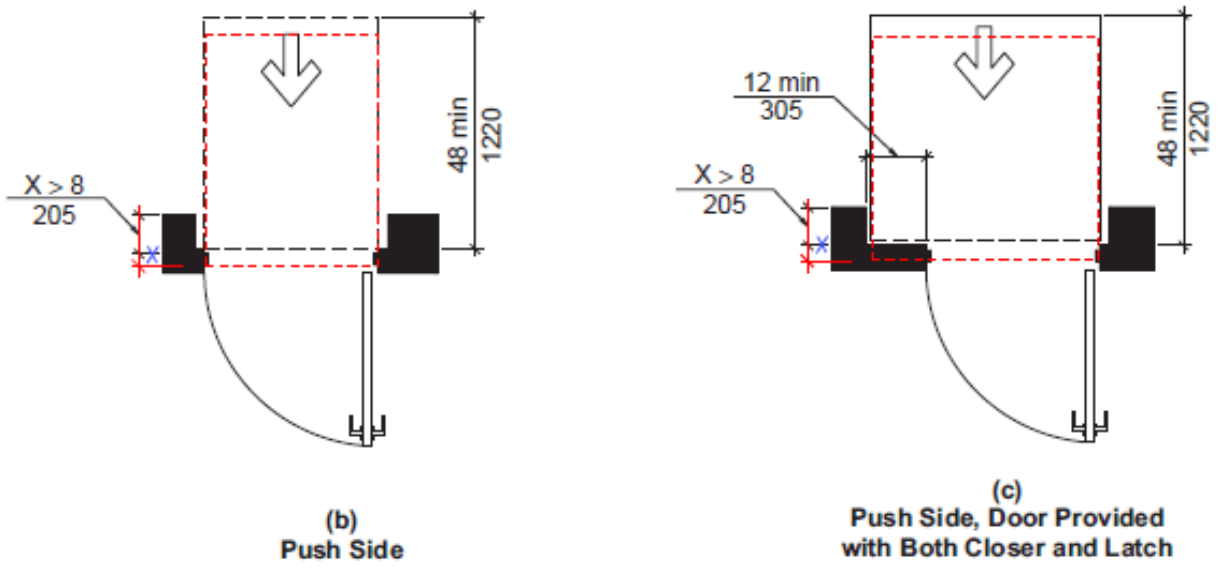


FIG. 404.2.3.5
MANEUVERING CLEARANCE AT RECESSED DOORS

Reason: When the door is in a frame and the door swings toward you, the face of the door is typically the same as the closest edge of the frame. However, when the door swings away from you, it is on the far side of the frame and the nearest face of the door is already recessed from the edge of the frame. The modified Figure shows the proper method. Although not shown, obviously the 48 inch dimension would need to be revised to show the distance from the face of the maneuvering space to its perpendicular extent.

The illustration shows the clear floor space in front of the door to be measured from the nearest side of the frame - not the door face as the standard states in Section 404.2.3.5:

> **"404.2.3.5 Recessed Doors.** Where any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door, maneuvering clearances for a forward approach shall be provided."

The revision would show the correct method for assessing recess. This has caused a number of incorrect applications and resulted in doors often being located too far from the face of the adjoining wall.

Committee Action: AS AM D

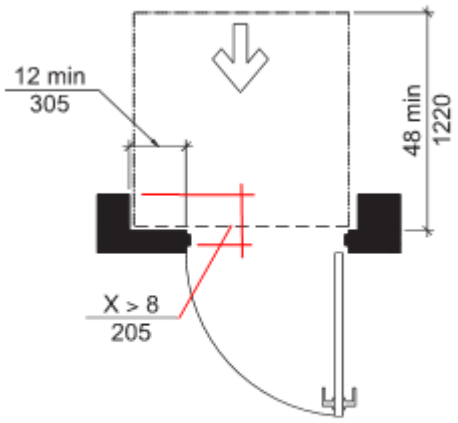
404.2.3.5(FIGURE)-BOECKER.doc

4-17 – 12
Figure 404.2.3.5

Proponent: Carroll Lee Pruitt, FAIA, APA, representing Accessibility Professionals Association

Revise as the Figure 404.2.3.5 (c) as follows:

Relocate the arrows and call dimension for the 8 inch depth from the left side of the figure to the location shown below.



(c)
Push Side, Door Provided with Both Closer and Latch

Reason: The text for this section states that the dimension is to the “face of the door” measured perpendicular to the “face of the door”. The Figure shows the 8” recess from the face of the wall of the door.

Committee Action: AS AM D

404.2.3.5(FIGURE)-PRUITT.doc

4-18 – 12
404.2.5, Figure 404.2.5

Proponent: Edward Steinfeld, IDEA Center, School of Architecture and Planning, University at Buffalo, State University of New York

Revise as follows:

404.2.5 Two Doors in a Series. Distance between two hinged or pivoted doors in series shall be ~~48~~ 54 inches (~~1220~~ 1370 mm) minimum plus the width of any door swinging into the space. The space between the doors shall provide a turning space complying with Section 304.

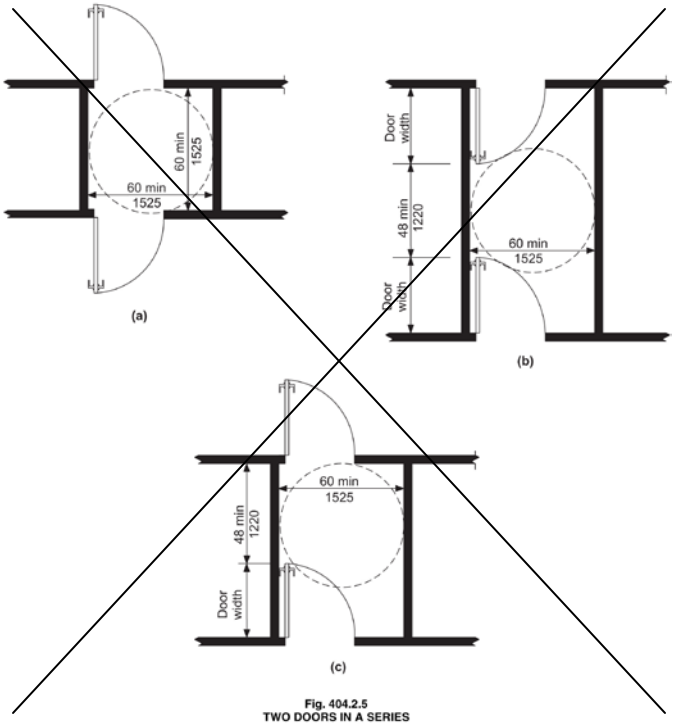


Fig. 404.2.5
TWO DOORS IN A SERIES

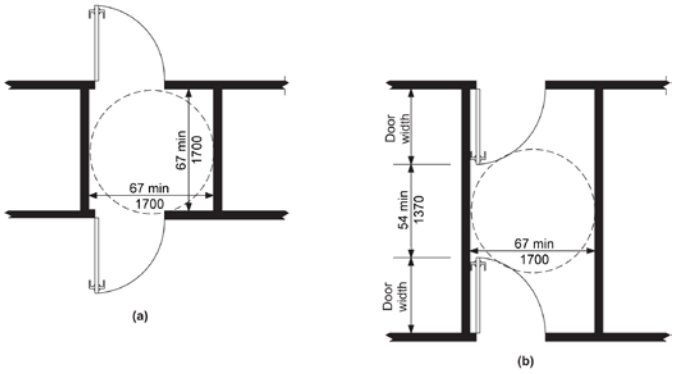


Fig. 404.2.5
TWO DOORS IN A SERIES

Reason: Many of the technical requirements of the ICC/ANSI A117.1 (2009) Accessible and Usable Buildings and Facilities (ICC/ANSI) designed to accommodate wheeled mobility users are based on research completed from 1974 to 1978 using a research sample that included about 60 individuals who used manual wheelchairs (Steinfeld et al., 1979).

The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY recently completed an anthropometric study of 500 wheeled manual and powered mobility device users (Steinfeld, et al., 2010). Measurements of body and device size were captured in three dimensions. The functional anthropometric measurements required measuring reaching ability, grip strength and the minimum space needed for turning. It is the most extensive anthropometric study of wheeled mobility device users in the United States. Additional information about the study can be found at http://www.udeworld.com/ansi-standards-review. The proposed revisions are based on new anthropometric information that was generated from the database of anthropometric measurements developed as part of the study.

Analysis

Clear floor space represents the space required for a stationary wheeled mobility device. This area is typically depicted as a rectangular space the dimensions of which are based on measurements of occupied length and occupied breadth of wheeled mobility devices, which are defined as follows:

- Occupied length: measured as the horizontal distance between the forward-most point and the rear-most point on the wheelchair or occupant.
- Occupied width: measured as the horizontal distance between the side-most points of the wheelchair or participant on the right and left sides.

The results of our analysis suggest that the existing standard on clear floor space (48” length, 30” width) does not accommodate the occupied lengths and widths of the wheeled mobility user population and excludes powered wheeled mobility device users disproportionately as compared to manual device users. A length of 48” accommodates the occupied length of 75% of manual wheelchair users and only about 50% of powered chair and scooter users. A width of 30” accommodates the occupied width of 90% of manual wheeled mobility device users and only 75% of powered chair users. The 180-degree turning diameter accommodates only 75% of manual and power wheelchair users.

We have taken the position that the clear floor space standards should accommodate the occupied lengths and widths of at least 90% of manual and powered wheeled mobility device users. A length of 54” accommodates the occupied lengths of 95% of manual chair users, and 90% of the powered chair users. A width of 32” accommodates the occupied widths of over 95% of manual wheeled mobility device users and 90% of the powered wheelchair users. A 180-degree turn diameter of 67 inches would accommodate 95% of manual and power wheelchair users. **Proposed changes to subsection 404 (Doors and Doorways) would accommodate an occupied length of 54 inches and occupied width of 32 inches for those parts of the standard based on occupied length and width. It would also allow for a 180-degree turn at two-doors in a series.**

The analysis was summarized in the Final Project Report to the U.S. Access Board and in a memorandum entitled “Evaluation of Clear Floor Space Requirements,” that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances and in a memorandum entitled “Summary of Turning Discussion and Responses and Recommended Dimensions for Turning Spaces” that was submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Turning Spaces.

References (See http://www.udeworld.com/ansi-standards-review)

Paquet, V. (2012). *Evaluation of Clear Floor Space Requirements*. A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Clear Floor Space Clearances.

Steinfeld, E. (2012). *Summary of Turning Discussion and Responses and Recommended Dimensions for Turning Spaces.* A memorandum submitted to the ICC/ANSI A117 Task Force on Anthropometry of Wheeled Mobility Subcommittee on Turning Spaces.

Steinfeld, E., Paquet, V., D'Souza, C., Joseph, C, and Maisel, J. (2010). *Final Report: Anthropometry of Wheeled Mobility Project*. Washington, DC: U.S. Access Board.

Steinfeld, E. Schroeder, S. and Bishop, M. (1979). *Accessible buildings for people with walking and reaching limitations.* Washington, DC: U.S. Department of Housing and Urban Development.

Committee Action: AS AM D

404.2.5-STEINFELD.doc

4-19 – 12
404.2.5

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

404.2.5 Two Doors in Series. Distance between two hinged or pivoted doors in series shall be 48 inches (1220 mm) minimum plus the width of any door swinging into the space. Where the doors in a series form a vestibule and where one of the doors is an exterior door, the space between the doors shall provide a turning space complying with Section 304.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

The original intent of the last sentence was to stop entrapment in vestibules where the exterior door may be locked or the force may be so great that a person with limited mobility could not open it. It was not anticipated that someone would believe that doors across the hall from one another would be considered doors in a series. This added language should limit this requirement to locations where it was intended.

Committee Action: AS AM D

404.2.5 (revised)-PAARLBERG.doc

4-20– 12
404.2.7.1

Proponent: Robert D. Feibleman, HAND Construction, representing self
Revise as follows:

404.2.7.1 Door Closers. Door closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to an open position of 12 degrees shall be 5 seconds minimum.

Exception: Closers on toilet compartment doors are not required to be adjustable .

Reason: Section 604.9.3 requires toilet compartment doors to comply with Section 404, and Section 404.2.7 closing speed defines for closers and springs. The speed of closing should not be relevant to a toilet partitions. Hydraulic closers aren't used. The hinges are designed to self-close, but the speed of this mechanism isn't adjustable enough to accomplish the requirements of Section 4042.7. I don't believe it's intended to be applicable to toilet partitions.

Committee Action: AS AM D

404.2.7.1-FEIBLEMAN.doc

4-21 – 12
404.2.7.2

Proponent: Robert D. Feibleman, HAND Construction, representing self

Revise as follows:

404.2.7.2 Spring Hinges. Door spring hinges shall be adjusted so that from an open position of 70 degrees, the door shall move to the closed position in 1.5 seconds minimum.

Exception: Spring hinges on toilet compartment doors are not required to be adjustable .

Reason: Section 604.9.3 requires toilet compartment doors to comply with Section 404, and Section 404.2.7 closing spded defines for closers and springs. The speed of closing should not be relevant to a toilet partitions. Hydraulic closers aren't used. The hinges are designed to self-close but the speed of this mechanism isn't adjustable enough to accomplish the requirements of Section 404.2.7. I don't believe it's intended to be applicable to toilet partitions.

Committee Action: AS AM D

404.2.7.2-FEIBLEMAN.doc

4-22 – 12
404.2.8

Proponent: Anthony Alarid, New Mexico Governor's Commission on Disability (NMGCD)

Revise as follows:

404.2.8 Door Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. 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
3. Exterior hinged door: 8.5 pounds (37.7 N) minimum to 10 (44.4 N) pounds maximum.

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

Reason: Exterior doors must be usable by individuals who are able-bodied, ambulatory, or disabled. Just as interior doors are, the opening force on exterior doors should also be regulated to make them usable. When elements within a facility are required to, and do comply with accessibility standards, it becomes irrelevant if an individual cannot get past the exterior entry door to access these elements.

Committee Action: AS AM D

404.2.8-ALARID.doc

4-23 – 12
404.2.8

Proponent: Gene Boecker, Code Consultants, Inc

Revise as follows:

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. 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~~ shall also apply to the force required to retract latch bolts or disengage other devices that hold the door in a closed position.

EXCEPTION: The 5.0 pounds force to retract latch bolts or disengage other devices that hold the door in a closed position shall not apply to panic hardware, delayed egress devices or fire-rated hardware.

Reason: The usability of doors depends on the functionality of all aspects of door usage including retracting the bolt. However, certain types of doors require additional force to open. These types of door hardware are those which the various building and fire codes prescribe for user safety. Panic hardware is used in higher occupancy locations to avoid occupant crush. Where a number of people could press on the door, a force parallel to the door may not be possible if there is sufficient force jamming the door against the frame. Panic devices require operation in the direction of travel, obviating the possible binding of the door hardware. Because if this single operation to open the door, it must be able to resist casual contact and therefore requires an operating force greater than 5.0 pounds

Delayed egress doors are provided where security or protection of the occupants is necessary. In Alzheimer's wings in the hospitals and nursing homes, delayed egress devices are often used to slow down the person's ability to walk out. This delay allows staff to intercept the individual and bring them back into the building, avoiding possible injury outside due to traffic or other potential hazards. These types of hardware also need to avoid casual contact, similar to that noted for panic hardware.

Committee Action: AS AM D

404.2.8-BOECKER.doc

4-24 – 12
404.2.8

Proponent: Gail Himes, City of Tacoma, Washington

Revise as follows:

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. 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 are static forces measured at the lever or handle. 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.

Door force shall be measured so that from a closed position of 12 degrees, the time required to move the door to an open position of 90 degrees shall be 5 seconds minimum

Reason: These changes are to standardize the location and method of measuring the door force. Currently there is no consistent way to measure the forces. The location at the lever or handle replicates the normal point of pushing or pulling on the door. The time is designated as 5 seconds minimum so that dynamic/impact forces are not added to the static force. Therefore, two or more people testing the force of a door should get the same readings.

Committee Action: AS AM D

404.2.8-HIMES.doc

4-25 – 12
404.2.8

Proponent: Joseph R. Hetzel, P.E., Thomas Associates, Inc, representing American Association of Automatic Door Manufacturers (AAADM)

Revise as follows:

404.2.8 Door Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. 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.

> **EXCEPTION:** Where 1 of every 8 door leafs at a single location is a full power automatic door, all doors at the same location, serving the same space, shall be permitted an opening force of 8.5 pounds (37.7 N) maximum.

Reason: Individuals needing accessibility normally seek an accessible route, and an automatic door is proposed to be the door closest to the accessible route. Thus, the minimum opening force for other manual doors at the single location can be increased to non-accessibility requirements without compromising accessibility. This proposal will assist some building owners who struggle with stack pressures by providing an alternative, superior means of providing accessibility.

Committee Action: AS AM D

404.2.8 #2-HETZEL.doc

4-26 – 12
404.2.8

Proponent: Joseph R. Hetzel, P.E., Thomas Associates, Inc., representing Door & Access Systems Manufacturers Association (DASMA)

Revise as follows:

404.2.8 Door-Opening Force. Fire doors shall have the minimum opening force allowable by the appropriate administrative authority. 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

For manually operated upward acting doors, the opening force for manual operation shall 15 pounds (66.6 N) maximum. During a loss of power, the opening force for manual operation of a motor operated upward acting door shall be 25 pounds (111 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.

Reason: Buildings such as those used for self-service storage often use upward acting doors as the sole means of accessing storage space. When a particular storage space is required to be accessible, in some cases another type of door meeting accessibility requirements cannot be practically provided. Currently, ICC/ANSI A117.1 does not address upward acting doors. The maximum force limitations for opening a door are based on operational characteristics inherent in upward acting doors. Manually opening a motorized upward acting door is typically performed only in a situation involving a loss of power.

Committee Action: AS AM D

404.2.8-HETZEL.doc

4-27 – 12
404.2.9

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

404.2.9 Door Surface. Door surfaces within 10 inches (255 mm) of the floor, measured vertically, shall be a smooth surface on the push side extending the full width of the door. Door hardware, or any other obstruction or protrusion shall not be mounted in nor extend into the area within 10 inches (255 mm) of the floor. Parts creating horizontal or vertical joints in ~~such~~ the smooth surface shall be within $^{1}/_{16}$ inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS:

1. Sliding doors shall not be required to comply with Section 404.2.9.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at no less than 60 degrees from the horizontal shall not be required to comply with the 10-inch (255 mm) bottom rail height requirement.

Doors that do not extend to within 10 inches (255 mm) of the floor shall not be required to comply with Section 404.2.9.

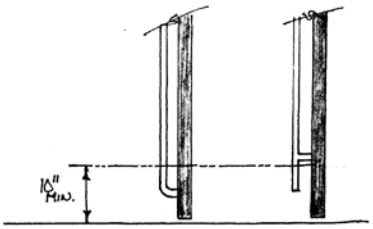
Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

This proposal is intended to address an issue that has come up on several interpretation requests. The added language should provide better clarity as to how the provision is to be applied and enforced. While the person raising the question knew the intent of the provision, they were being challenged on the issue because of a literal reading of what the standard says it is regulating.

As currently written, the provision regulates the "door surface" but does not indicate whether it also includes items like the door hardware or any other type of object that may not be on the "door surface". An example of the question I received dealt with a decorative door pull that went the full height of the door. The question was whether the "door surface" requirement only applied to the door itself or whether the hardware was also regulated.

Clearly the intent of the existing provision is to provide a minimum 10 inch smooth surface that would allow the footrest of a wheelchair or some other type of mobility device to slide along the door as the user opened it. A door pull or any other object which prevents this free movement along the lower 10 inches should be prohibited.

The attached figure illustrates the two door pulls that were being proposed. The first example shows the door hardware being attached within the 10 inch vertical distance. The second shows the hardware being attached above the 10 inch vertical height but with the door pull still extending to within 10 inches of the floor. Therefore, while the "door surface" is smooth the obstruction would prevent free movement along the bottom of the door.



Committee Action: AS AM D

404.2.9-Paarlberg.doc

4-28 – 12
404.2.9

Proponent: Joseph R. Hetzel, P.E., Thomas Associates, Inc, representing Door & Access Systems manufacturers Association (DASMA)

Revise as follows:

404.2.9 Door Surface. Door surfaces within 10 inches (255 mm) of the floor, measured vertically, shall be a smooth surface on the push side extending the full width of the door. Parts creating horizontal or vertical joints in such surface shall be within $^{1}/_{16}$ inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS:

1. Sliding doors and upward acting doors shall not be required to comply with Section 404.2.9.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at no less than 60 degrees from the horizontal shall not be required to comply with the 10-inch (255 mm) bottom rail height requirement.
3. Doors that do not extend to within 10 inches (255 mm) of the floor shall not be required to comply with Section 404.2.9.

Reason: Currently, ICC/ANSI A117.1 does not address upward acting doors. Such doors have inherent design features similar to those of sliding doors such that an exception to 404.2.9 is also warranted.

Committee Action: AS AM D

404.2.9-HETZEL.doc

4-29 – 12
404.2.9

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

404.2.9 Door Surface. Door surfaces within 10 inches (255 mm) of the floor, measured vertically, shall be a smooth surface on the push side extending the full width of the door . Parts creating horizontal or vertical joints in such surface shall be within $^{1}/_{16}$ inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS:

(Exceptions 1 through 3 are not changed)

4. Existing doors and gates without smooth surfaces within 10 inches (255 mm) of the finish floor or ground shall not be required to provide smooth surfaces complying with 404.2.9 provided that if added kick plates are installed, cavities created by such kick plates are capped.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for 404.2.9: Exception number 4 is new text in ADA not in the 2009 A117.1.

Committee Action: AS AM D

404.2.9-ROETHER.doc

4-30 – 12
404.3, 404.3.2, 404.3.5

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

404.3 Automatic Doors <u>and Power-Assisted Doors and Gates</u>. 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.

404.3.2 Maneuvering Clearances. Maneuvering clearances at power–assisted doors shall comply with Section 404.2.3. <u>Clearances at swinging automatic doors and gates without standby power and serving an *accessible means of egress* shall comply with Section 404.2.3.</u>

> <u>**EXCEPTION:** Where automatic doors and gates remain open in the power-off condition, compliance with Section 404.2.3 shall not be required.</u>

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

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason: for 404.3.2: ADA specifies that automatic doors without standby power need to provide maneuvering clearances. Such is not currently in A117. In Section 404.3.5, the controls are not limited to switchtes.

Committee Action: AS AM D

404.3-ROETHER.doc

4-31 – 12
404.3, 404.3.2, 404.3.4, 404.3.5, 404.3.6 (NEW)

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

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 doors and low-energy automatic doors shall comply with ANSI/BHMA A1 56.19 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.

404.3.2 Maneuvering Clearances. Maneuvering clearances at power-assisted doors shall comply with Section 404.2.3. Maneuvering clearances shall be provided on the egress side of low-energy automatic doors and full power automatic doors that serve as part of the accessible means of egress.

EXCEPTIONS:

1. Low-energy automatic doors and full power automatic doors that have standby power or battery back-up shall not be required to comply with this section.
2. Low-energy automatic doors and full power automatic doors that remain open in the power-off condition shall not be required to comply with this section.
3. Full power automatic sliding doors that include a break-away feature shall not be required to comply with this section.

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

EXCEPTION: Where both doors are power assist doors, low energy automatic doors or full power automatic doors, two doors in a series shall not be required to provide a turning space between the doors.

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

404.3.6 Break Out Opening. Where full power automatic sliding doors and gates are equipped with a break out feature, the clear break out opening shall be 32 inches (815 mm) minimum when operated in emergency mode.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

The purpose for the change is to align the standard content with terminology common to the automatic door industry, its products, and the standards that govern them.

There is confusion in the requirements for doors addressed by BHMA A156.10 and A156.19. The following information was provided by Joe Hetzel representing the American Association of Automatic Door Manufacturers (AAADM).

* A low energy automatic door is different from a power assist door
* A power assist door is more like a manual door that employs power to assist the user in manually operating the door
* An automatic door can be either a full power door or a low energy door
* Full power doors are addressed in BHMA A156.10
* Low energy doors are addressed in BHMA A156.19
* Power assist doors are also addressed in BHMA A156.19, but they are separate from low energy

Definitions from A156.19:

Low Energy Power Operated Door: A door with (a) power mechanism(s) that opens and closes the door upon receipt of an actuating signal and does not generate more kinetic energy than specified in this Standard.

Power Assist Door: A door with a power mechanism that reduces the opening resistance of a self closing door.

The reasons for the changes are as follows:

- 404.3 – this clarifies what is an automatic door and what is power assist regardless of the referenced standard
- 404.3.2 – clarify that means of egress is only maneuvering clearance is only on one side; exceptions are for when there is there is power or options that swing free
- 404.3.4 – Automatic doors do not need the extra turning space that is required in A117.1.
- 404.3.5 – controls can be other than switches
- 404.3.6 – trying to address ADA 404.3.6 where break out options are actually used, but not sure this is not addressed already in 404.3.1.

Committee Action: AS AM D

404.3-PAARLBERG.doc

4-32 – 12
404.3

Proponent: Joseph R. Hetzel, P.E., Thomas Associates Inc, Door & Access Systems Manufacturers Association (DASMA)

Revise as follows:

404.3 Automatic Doors. ~~Automatic doors and automatic gates shall comply with Section 404.3.~~ Full powered automatic doors, other than upward acting doors, shall comply with ANSI/BHMA A156.10 listed in Section 105.2.4. Power-assist and low-energy doors, other than upward acting 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.

Reason: ANSI/BHMA A156 is not applicable to upward acting doors. The sentence on automatic doors and automatic gates is repetitive and unnecessary.

Committee Action: AS AM D

404.3-HETZEL.doc

4-33 – 12
404.3

Proponent: Joseph R. Hetzel, P.E., Thomas Associates, Inc., representing American Association of Automatic Door Manufacturers (AAADM)

Revise as follows:

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.

A door that provides a barrier-free path of travel through a pedestrian entrance, and a door in a pedestrian entrance leading from a vestibule into the floor area, shall be a full power automatic door where the entrance serves a hotel, a government building, a building containing a care or detention occupancy, or a building more than 3225 square feet (300 m^2) containing an assembly occupancy, a business occupancy or a mercantile occupancy.

EXCEPTIONS:

1. These requirements shall not apply to an individual suite having an area of less than 3225 square feet (300 m^2) where located within a building classified as an assembly occupancy, a business occupancy, or a mercantile occupancy, where such suite is completely separated from the remainder of the building.
2. A non-active door leaf in a multiple leaf door in a barrier-free path of travel shall not be required to comply with these requirements.

Reason: The proposed language is based on code language currently in existence, and successfully used, in the province of Ontario, Canada. The occupancies cited as requiring automatic doors are associated with locations where a high degree of public use would be anticipated, and would maximize accessibility in these locations.

Committee Action: AS AM D

404.3 #2-HETZEL.doc

4-34 – 12
404.3.4, 404.3.5, 404.3.6 (New)

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

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

EXCEPTION: 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 swing. Where automatic doors are doors in a series, the clear floor space for the control switches shall be located outside the arc of both doors.

404.3.6 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. 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 and control switches used only for security purposes and not used for normal operation are not required to comply with Section 404.3.6.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

There is not an entrapment issue in vestibules with automatic doors on both sides. Therefore the turning space in the vestibule is should not be required. This exception may be appropriate for both automatic and power assist door.
In a two doors in a series situation, if a 2nd button for the 2nd door is provided inside the vestibule, it should be outside the swing of the 1st door as well as the 2nd. If someone outside hits the button for the 1st door, you do not want it to swing open and hit the person trying to reach the 2nd button.

Power assisted doors should have the same hardware requirements as manual doors. Power doors have switched on top of the door that is used to turn the power operation and/or sensor on and off at the beginning and end of the business day. Therefore the exception is needed for automatic door.

Committee Action: AS AM D

404.3.4-PAARLBERG.doc

4-35 – 12
404.3.5

Proponent: Gail Himes, City of Tacoma, Washington

Revise as follows:

404.3.5 Control Switches. Manually operated control switches shall comply with Section 309. The control switch shall be along the path of travel and within of 10 feet of the door. The clear floor space shall be located adjacent to and centered on the control switch and shall be located beyond the arc of the door swing.

Reason: There is currently no requirement to have manually operated control switches along the path of travel or within a reasonable distance from the door. According to the Manual for Uniform Traffic Control Devices, the average walking speed of an individual is 3.5 feet per second. Once the average individual operates the control switch, it will take them nearly 3 seconds to reach the door threshold. People with more severe disabilities can take much longer to reach the door. Door timing can be adjusted; however, many building owners/managers are reluctant to let doors stay open very long due to energy loss, insects, etc.

Committee Action: AS AM D

404.3.5-HIMES.doc

4-36 – 12
404.3.6 (New)

Proponent: Joseph R. Hetzel, P.E., Thomas Associates, Inc., representing American Association of Automatic Door Manufacturers (AAADM)

Add new text as follows:

404.3.6 Multiple Exterior Doors At The Same Location. Where multiple exterior doors at the same location serve the same interior space, 1 of every 8 exterior door leafs shall be a full power automatic door, subject to the following

1. The automatic door shall be closest to the accessible route.
2. The automatic door shall be provided with back-up battery or generator for occupancies of 150 or more.

Reason: The proposal will provide true accessibility. Individuals needing accessibility normally seek an accessible route, and an automatic door is proposed to be the door closest to the accessible route. The proposed language is based on code language currently in existence, and successfully used, in the province of Ontario, Canada.

Committee Action: AS AM D

404.3.6-HETZEL.doc

4-37 – 12
405.1

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

405.1 General. Ramps along accessible routes shall comply with Section 405.

EXCEPTIONS:

1. In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with Section 405.
2. Exterior sidewalks that are a minimum of 48 inches wide and slope with grade are not required to comply with Section 405.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

In hilly sites, sidewalks that move up with the grade may be sloped enough to be considered a ramp. However, to put curb protection and handrails on these sidewalks will block access to street parking and adjacent building entrances. This exception is consistent with Access Board's proposal - Public Right-of-way.

Committee Action: AS AM D

405.1 (NEW)-PAARLBERG.doc

4-38 – 12
106.5, 405.5, 405.8

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

405.5 Clear Width. The clear width of a ramp run shall be 36 inches (915 mm) minimum. Handrails and handrail supports that are provided on the ramp run shall not project into the required clear width of the ramp run.

> **EXCEPTION:** Within employee work areas, the required clear width of ramps that are a part of common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with 505.

> **EXCEPTION:** Within employee work areas, handrails shall not be required where ramps that are part of common use circulation paths, and which are used for the movement of equipment, are designed to permit the installation of handrails complying with 505. Ramps not subject to the exception to 405.5 shall be designed to maintain a 36 inch (915 mm) minimum clear width when handrails are installed.

Add following new definitions.

106.5 Defined terms

circulation path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, hallways, courtyards, elevators, platform lifts, ramps, stairways, and landings.

common use. Interior or exterior circulation paths, rooms, spaces, or elements that are not for public use and are made available for the shared use of two or more people.

employee work area. All or any portion of a space used only by employees and used only for work. Corridors, toilet rooms, kitchenettes and break rooms are not employee work areas.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for Sections 405.5 and 405.8. These are two exceptions added to the ADA to address issues in facilities where ramps are frequently used for movement of goods and equipment. Often this is accomplished by motorized means such as forklifts as well as non-motorized devices. In order to incorporate the definitions in the A117.1 and make sure they are limited in application to employee work areas, the 3 definitions are needed.

Committee Action: AS AM D

405.5-ROETHER.doc

4-39 – 12
405.7.1

Proponent: Francine Wai, Executive Director, Disability & Communication Access Board

Revise as follows:

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302. Changes in level are not permitted.

Reason: As originally written it can be argued that changes in level if compliant with section 302 would be allowed at ramp landings. Adding the sentence would be consistent with the Department of Justice's 2010 ADA Standards which states:

405.7.1 Slope. Landings shall comply with 302. Changes in level are not permitted.

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

Committee Action: AS AM D

405.7.1-WAI.doc

4-40 – 12
405.7.4

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

405.7.4 Change in Direction. Ramps that change direction between runs at ~~ramp~~ landings ~~shall be sized to provide a turning space complying with Section 304.3~~ shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Reason for 405.7.4: ADA specifies a 60 by 60 space at ramp landings where a change of direction occurs. A117.1 language would allow a T-turn not allowed by ADA.

Committee Action: AS AM D

405.7.4-ROETHER.doc

4-41 – 12
Figure 405.9.2

Proponent: Ed Roether, representing the ADA/A117 Harmonization Task Group

Revise as follows:

Figure 405.9.2
Ramp Edge Protection
– revise graphic for bottom bars – harmonize graphics

Reason for Figure 405.9.2:
ADA and A117.1 figures show different sections but both illustrate the edge protection..

Reason: The ADA/A117 Harmonization Task Group (HTG) was created as a task group of the A117.1 Committee to compare the 2010 ADA with the 2009 A117.1 Standard. The HTG has recommend a series of changes through a set of change proposals. The HTG is recommending changes, for the most part, address where the ADA was viewed as more stringent than the A117. Where the A117 contained provisions not addressed in the ADA, these were not considered a conflict needing action to amend the A117. In addition there are a number of places where the ADA and A117.1 are different as a result of specific actions, by the A117.1 Committee during the development of the 2009 edition, to remain or create a difference where, in the judgment of the committee the ADA was deficient.

Committee Action: AS AM D

405.9.2 figure-ROETHER.doc

4-42 – 12
406, 406.1, 406.2, 406.3, 406.4, 406.5, 406.6, 406.7, 406.8, 406.9, 406.10, 406.11

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

~~**406 Curb Ramps**~~

~~**406.1 General.** Curb ramps on accessible routes shall comply with Sections 406, 405.2, 405.3, and 405.10.~~

~~**406.2 Counter Slope.** Counter slopes of adjoining gutters and road surfaces immediately adjacent to the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters and streets shall be at the same level.~~

~~**406.3 Sides of Curb Ramps.** Where provided, curb ramp flares shall comply with Section 406.3.~~

~~**406.3.1 Slope.** Flares shall not be steeper than 1:10.~~

~~**406.4 Width.** Curb ramps shall be 36 inches (915 mm) minimum in width, exclusive of flared sides.~~

~~**406.5 Floor Surface.** Floor surfaces of curb ramps shall comply with Section 302.~~

~~**406.7 Landings.** Landings shall be provided at the tops of curb ramps. The clear length of the landing shall be 36 inches (915 mm) minimum. The clear width of the landing shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.~~

~~**EXCEPTION:** In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.~~

~~**406.10 Diagonal Curb Ramps.** Diagonal or corner- type curb ramps with returned curbs or other well- defined edges shall have the edges parallel to the direction of pedestrian flow. The bottoms of diagonal curb ramps shall have 48 inches (1220 mm) minimum clear space outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1220 mm) minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) minimum in length on each side of the curb ramp and within the marked crossing.~~

~~**406.11 Islands.** Raised islands in crossings shall be a cut-through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches (1220 mm) minimum in length and 36 inches (915 mm) minimum in width at the top of the curb ramp in the part of the island intersected by the crossings. Each 48-inch (1220 mm) by 36-inch (915 mm) area shall be oriented so the 48-inch (1220 mm) length is in the direction of the running slope of the curb ramp it serves. The 48-inch (1220 mm) by 36-inch (915 mm) areas and the accessible route shall be permitted to overlap.~~

406 Curb Ramps and Blended Transitions

406.1 General. Curb ramps and blended transitions on accessible route shall comply with Section 406

406.2 Perpendicular Curb Ramps. Perpendicular curb ramps shall comply with Sections 406.2 and 406.5.

406.2.1 Turning Space. A turning space 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided at the top of the curb ramp and shall be permitted to overlap other turning spaces and clear spaces. Where the turning space is constrained at the back-of-sidewalk, the turning

space shall be 48 inches (1220 mm) minimum by 60 inches (1525 mm) minimum. The 60 inches (1525 mm) dimension shall be provided in the direction of the ramp run.

406.2.2 Running Slope. The running slope of the curb ramp shall cut through or shall be built up to the curb at right angles or shall meet the gutter grade break at right angles where the curb is curved. The running slope of the curb ramp shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15 feet (4573 mm). The running slope of the turning space shall be 2 percent maximum.

406.3 Parallel Curb Ramps. Parallel curb ramps shall comply with Sections 406.3 and 406.5.

406.3.1 Turning Space. A turning space 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided at the bottom of the curb ramp and shall be permitted to overlap other turning spaces and clear spaces. If the turning space is constrained on 2 or more sides, the turning space shall be 4 feet (1.2 m) minimum by 60 inches (1525 mm) . The 60 inches (1525 mm) dimension shall be provided in the direction of the pedestrian street crossing.

406.3.2 Running Slope. The running slope of the curb ramp shall be in-line with the direction of sidewalk travel. The running slope of the curb ramp shall be 5 percent minimum and 8.3 percent maximum but shall not require the ramp length to exceed 15 feet (4573 mm). minimum. The running slope of the turning space shall be 2 percent maximum.

406.4 Blended Transitions. Blended transitions shall comply with Sections 406.4 and 406.5.

406.4.1 Running Slope. The running slope of blended transitions shall be 5 percent maximum.

406.5 Common Requirements. Curb ramps and blended transitions shall comply with Section 406.5.

406.5.1 Width. The clear width of curb ramp runs (excluding any flared sides), blended transitions, and turning spaces shall be 48 inches (1220 mm) minimum.

406.5.2 Grade Breaks. Grade breaks at the top and bottom of curb ramp runs shall be perpendicular to the direction of the ramp run. Grade breaks shall not be permitted on the surface of ramp runs and turning spaces. Surface slopes that meet at grade breaks shall be flush.

406.5.3 Cross Slope. The cross slope of curb ramps, blended transitions, and turning spaces shall be 2 percent maximum. At pedestrian street crossings without yield or stop control and at midblock pedestrian street crossings, the cross slope shall be permitted to equal the street or highway grade.

406.5.4 Counter Slope. The counter slope of the gutter or street at the foot of curb ramp runs, blended transitions, and turning spaces shall be 5 percent maximum.

406.5.5 Clear Space. Beyond the bottom grade break, a clear space 48 inches (1220 mm) minimum by 48 inches (1220 mm) minimum shall be provided within the width of the pedestrian street crossing and wholly outside the parallel vehicle travel lane.

406.5.6 ~~406.3.2~~ Marking. If curbs adjacent to the ramp flares are painted, the painted surface shall extend along the flared portion of the curb.

406.5.7 ~~406.6~~ Location. Curb ramps and the flared sides of curb ramps shall be located so they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

406.5.9 ~~406.8~~ Obstructions. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.

406.5.10 ~~**406.9**~~ **Handrails.** Handrails shall not be required on curb ramps.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

This proposal is using the proposed regulations for curb cuts in Section R304 in the Access Board's proposal: Public right-or-way. Items currently in A117.1 that still seemed relevant are proposed to be maintained. The issue of detectable warnings is addressed in a separate proposal.

Committee Action: AS AM D

406 (New)-PAARLBERG.doc

4-43 – 12
406.5

Proponent: Gina Hilberry, United Cerebral Palsy Association and the City of St. Louis, Office on the Disabled Advisory Council

Revise as follows:

406.5 Floor Surface. Floor surfaces of curb ramps shall comply with 302. Surfaces shall not be constructed of semi-permeable or porous asphalt or concrete paving materials.

Reason: In the current edition of the Public Right-of-Way Guidelines, Advisory R302.7.1 includes the following statement: "Pedestrian access route surfaces must be generally planar and smooth. Surfaces should be chosen for easy rollability. Surfaces that are heavily textured, rough, or chamfered and paving systems consisting of individual units that cannot be laid in plane will greatly increase rolling resistance and subject pedestrians who use wheelchairs, scooters and rolling walkers to the stressful and often painful effects of vibration. Such materials should be reserved for borders and decorative accents located outside of or only occasionally crossing the pedestrian access route. Surfaces should be designed, constructed, and maintained according to appropriate industry standards, specifications, and recommendations for best practice."

The City of St. Louis has experimented with semi-permeable and porous asphalt and concrete paving materials in a variety of locations. In addition, a series of videos were taken with a group of people with disabilities using several surfaces that were installed using specifications and methods beyond industry standards. Current standards as applied to porous and semi-permeable asphalt and concrete paving do not result in surfaces with easy rollability. This is particularly problematic when applied to curb ramps where rolling resistance and changes in level are particularly difficult for people using wheelchairs or rolling walkers. It should be noted, that people with visual impairments using long canes commented repeatedly that the rough porous surfaces also caught their cane tips and decreased their ability to move quickly and smoothly.

Semi-permeable rubber surfaces are specifically excluded from these comments. These surfaces tested out to be smooth, planar and very useable by all user experts.

Committee Action: AS AM D

406.5-HILBERRY.doc

4-44 – 12
406.12, 406.13, 406.13.1, 406.13.2, 406.14, 705.6 (New), 705.7 (New), 805.10

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

~~**406.12 Detectable Warnings at Raised Marked Crossings.** Marked crossings that are raised to the same level as the adjoining sidewalk shall be preceded by a detectable warning 24 inches (610 mm) in depth complying with Section 705. The detectable warning shall extend the full width of the marked crossing.~~

406.12 Where detectable warnings are required. Detectable warning surfaces complying with Section 705 shall be provided at the following locations on pedestrian access routes and at transit stops:

1. Curb ramps and blended transitions at pedestrian street crossings;
2. Pedestrian refuge islands;
3. Pedestrian at-grade rail crossings not located within a street or highway;
4. Boarding platforms at transit stops for buses and rail vehicles where the edges of the boarding platform are not protected by screens or guards; and
5. Boarding and alighting areas at sidewalk or street level transit stops for rail vehicles where the side of the boarding and alighting areas facing the rail vehicles is not protected by screens or guards.

Exception: Detectable warning surfaces are not required at pedestrian refuge islands that are cut-through at street level and are less than 6 feet (1829 mm) in length in the direction of pedestrian travel.

~~**406.13 Detectable Warnings at Curb Ramps.** Where detectable warnings are provided on curb ramps, they shall comply with Sections 406.13 and 705.~~

~~**406.13.1 Area Covered.** Detectable warnings shall be 24 inches (610 mm) minimum in depth in the direction of travel. The detectable warning shall extend the full width of the curb ramp or flush surface.~~

~~**406.13.2 Location.** The detectable warning shall be located so the edge nearest the curb line is 6 inches (150 mm) minimum and 8 inches (205 mm) maximum from the curb line.~~

~~**406.14 Detectable Warnings at Islands or Cut-through Medians.** Where detectable warnings are provided on curb ramps or at raised marked crossings leading to islands or cut-through medians, the island or cut-through median shall be provided with detectable warnings complying with Section 705, that are 24 inches (610 mm) in depth, and extend the full width of the pedestrian route or cut-through. Where such island or cut-through median is less than 48 inches (1220 mm) in depth, the entire width and depth of the pedestrian route or cut-through shall have detectable warnings.~~

705.6 Size. Detectable warning surfaces shall extend 24 inches (610 mm) minimum in the direction of pedestrian travel. At curb ramps and blended transitions, detectable warning surfaces shall extend the full width of the curb ramp run excluding any flared sides or blended transition. At pedestrian at-grade rail crossings not located within a street or highway, detectable warnings shall extend the full width of the crossing. At boarding platforms for buses and rail vehicles, detectable warning surfaces shall extend the full length of the public use areas of the platform. At boarding and alighting areas at sidewalk or street level transit stops for rail vehicles, detectable warning surfaces shall extend the full length of the transit stop.

705.7 Placement. The placement of detectable warning surfaces shall comply with Section 705.7.

705.7.1 Perpendicular Curb Ramps. On perpendicular curb ramps, detectable warning surfaces shall be placed as follows:

1. Where the ends of the bottom grade break are in front of the back of curb, detectable warning surfaces shall be placed at the back of curb.
2. Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is 60 inches (1525 mm) or less, detectable warning surfaces shall be placed on the ramp run within one dome spacing of the bottom grade break.
3. Where the ends of the bottom grade break are behind the back of curb and the distance from either end of the bottom grade brake to the back of curb is more than 60 inches (1525 mm), detectable warning surfaces shall be placed on the lower landing at the back of curb.
4.

705.7.2 Parallel Curb Ramps. On parallel curb ramps, detectable warning surfaces shall be placed on the turning space at the flush transition between the street and sidewalk.

705.7.3 Blended Transitions. On blended transitions, detectable warning surfaces shall be placed at the back of curb. Where raised pedestrian street crossings, depressed corners, or other level pedestrian street crossings are provided, detectable warning surfaces shall be placed at the flush transition between the street and the sidewalk.

705.7.4 Pedestrian Refuge Islands. At cut-through pedestrian refuge islands, detectable warning surfaces shall be placed at the edges of the pedestrian island and shall be separated by a 24 inches (610 mm) minimum length of surface without detectable warnings.

705.7.5 Pedestrian At-Grade Rail Crossings. At pedestrian at-grade rail crossings not located within a street or highway, detectable warning surfaces shall be placed on each side of the rail crossing. The edge of the detectable warning surface nearest the rail crossing shall be 72 inches (1829) minimum and 15 feet (4679 mm) maximum from the centerline of the nearest rail. Where pedestrian gates are provided, detectable warning surfaces shall be placed on the side of the gates opposite the rail.

705.7.6 Boarding Platforms. At boarding platforms for buses and rail vehicles, detectable warning surfaces shall be placed at the boarding edge of the platform.

705.7.7 Boarding and Alighting Areas. At boarding and alighting areas at sidewalk or street level transit stops for rail vehicles, detectable warning surfaces shall be placed at the side of the boarding and alighting area facing the rail vehicles.

805.10 Track Crossings. Where a circulation path crosses tracks, it shall comply with Section 402 and shall have a detectable warning ~~24 inches (610 mm) in depth~~ complying with Section 705 ~~extending the full width of the circulation path. The detectable warning surface shall be located so that the edge nearest the rail crossing is 6 foot (1830 mm) minimum and 15 foot (4570 mm) maximum from the centerline of the nearest rail.~~

EXCEPTION: Openings for wheel flanges shall be permitted to be $2^1/_2$ inches (64 mm) maximum.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

This language for where detectable warnings are required and how to size and locate them is consistent with R208.1 and R305 of the Access Board's Proposal: Public Right-of-way. The location and size is not in 705 and more specifically addressed.

Committee Action: AS AM D

406.12 (new)-PAARLBERG.doc

4-45– 12
407.2.1.1, Figure 407.2.1.1

Proponent: Hale Zukas, representing World Institute on Disability

Revise as follows:

407.2.1.1 Height. Call buttons and keypads shall be located 42 inches (965 mm) above the floor ~~within one of the reach ranges specified in Section 308~~, measured to the centerline of the highest operable part.

EXCEPTION: Existing call buttons and existing keypads shall be permitted to be located 54 inches (1370 mm) maximum above the floor, measured to the centerline of the highest operable part.

Delete Figure 407.2.1.1

Reason:

1, This proposal merely reinstates a standard which had been in effect for decades and with which almost all existing call buttons comply.
2. By requiring call buttons to be at a single absolute height (rather than anywhere within one of the very wide reach ranges in Section 308), this proposal makes them easier to find for people with impaired or no vision.
3. Dr. Steinfeld has stated that, given his group's research findings, 42 inches is the optimum height for accommodating the needs both of standing adults and of wheeled mobility device users.
4. Specifying 42 inches as the height for call buttons eliminates need for a figure.

Committee Action: AS AM D

407.2.1.1-ZUKAS.doc

4-46 – 12
407.2.1.4.1 (New)

Proponent: Anthony Alarid, New Mexico Governor's Commission on Disability (NMGCD)

Revise as follows:

407.2.1.4.1 Distance from Elevator Door. Call buttons shall be located a distance of 36 inches (915 mm) maximum from the elevator door opening.

Reason: The height of the call button is currently regulated in 407.2.1.1. The standards do not address the distance that a call button can be mounted from the elevator door opening. If the mounting distance is too far removed from the elevator door, it can present a problem for individuals who are blind, for the elderly who may move slowly, or for individuals who use mobility aids. The call button may not be located if the user is blind or has low vision, or the door can open and close before a caller with limited mobility is able to respond to the door that opens, not having sufficient time to safely enter the elevator before the door closes. See photos on Page 2 of "before" and "after" relocated call buttons where the relocation created access issues due to the increased distance of travel.

BEFORE

AFTER

Committee Action: AS AM D

4-47 – 12
407.2.1.6

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Revise as follows:

407.2.1.6 Keypads. ~~Where keypads are~~ Keypads, where provided, ~~keypads shall be in a standard telephone keypad arrangement and~~ shall comply with Section 407.4.7.2.

Reason: This change correlates with the proposed change to 407.4.7.2 that places the standard telephone arrangement in that section to regulate keypads inside of elevator cars as well as those at hall call stations.

Committee Action: AS AM D

407.2.1.6-BLACK.doc

4-48 – 12
407.2.4

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Delete with substitution as follows:

~~**407.2.4 Destination Signs.** Where signs indicate that elevators do not serve all landings, signs in raised characters and braille complying with Sections 703.3 and 703.4 shall be provided above the hall call button or keypad.~~

~~**EXCEPTION:** Destination oriented elevator systems shall not be required to comply with Section 407.2.4.~~

Reason: ASME A17.1/CSA B44 includes *Nonmandatory Appendix E: Elevator Requirements for Persons with Physical Disabilities in Jurisdictions enforcing the National Building Code of Canada*. In 2011 the Appendix E Subcommittee of the Canadian Standards Association (CSA) B44 Technical Committee undertook an effort to harmonize its document with ICC/ANSI A117.1-2009. This item was identified as a requirement that should be removed to a building code (*e.g*, the ICC *International Building Code* or *National Building Code of Canada*).

Compliance with Section 407 is under the control of the elevator contractor installing the elevator system. Accessible building directional signs are the responsibility of a subcontractor that is providing signs for the building. Adding this requirement to the accessible sign requirements of the building code will ensure that the proper contractor will be responsible for these signs.

Committee Action: AS AM D

407.2.4-BLACK.doc

4-49 – 12
407.4.6.1

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

407.4.6.1 Location. Controls shall be located within one of the reach ranges specified in Section 308.

EXCEPTIONS:

1. Where the elevator panel complies with Section 407.4.8.
2. In existing elevators, where a parallel approach is provided to the controls, car control buttons with floor designations shall be permitted to be located 54 inches (1370 mm) maximum above the floor. Where the panel is changed, it shall comply with Section ~~407.4.6.1~~ 308.

Reason: The quantity of change proposals submitted by International Code Council is reflective of three elements of our work: 1. ICC is the Secretariat for the Standard and some changes reflect inconsistencies or improvements suggested by staff; 2. ICC develops and publishes a Commentary on the standard and writing the commentary illuminates issues of the text and figures; and 3. ICC provides an interpretation service for the standard which results in the observation of provisions the users find most confusing.

The current reference accomplishes nothing other than referring back to the base paragraph and therefore to Section 308. It seemingly will also create a circular reference because as you work through 407.4.6.1 you end up back at exception 2 and then get sent right back up to the beginning. Why not just reference 308 directly at this point?

This issue came up based upon a revision that was made in the exception to Section 308.3.1 in the 2009 code. The 2009's revised exception says "existing elements that are not altered shall be permitted at 54 inches (1370 mm) above the floor." It seems that with the "that are not altered" text being added in 2009 it will now allow a direct reference to Section 308 and it will still coordinate with the exception in 407.4.6.1 that says "where the panel is changed."

Committee Action: AS AM D

407.4.6.1-PAARLBERG.doc

4-50 – 12
407.4.6.2.2, 407.4.7.1.2 (New)

Proponent: Gene Boecker, Code Consultants, Inc.

Revise as follows:

407.4.6.2.2 Arrangement. Buttons shall be arranged with numbers in ascending order. ~~Floors shall be designated . . . -4, -3, -2, -1, 0, 1, 2, 3, 4, etcetera, with floors below the main entry floor designated with minus numbers. Numbers shall be permitted to be omitted, provided the remaining numbers are in sequence. Where a telephone keypad arrangement is used, the number key ("#") shall be utilized to enter the minus symbol ("-").~~ When two or more columns of buttons are provided they shall read from left to right.

407.4.7.1.2 Designation. Floors shall be designated . . . -4, -3, -2, -1, 0, 1, 2, 3, 4, etcetera, with floors below the main entry floor designated with minus numbers. Numbers shall be permitted to be omitted, provided the remaining numbers are in sequence. Where a telephone keypad arrangement is used, the number key ("#") shall be utilized to enter the minus symbol ("-"). Ancillary letters shall be permitted to be used in conjunction with the numbers provided the letters are located to the right of the numbers and not more than two letters are used for each floor designation.

(Renumber subsequent sections)

Reason: The intent is two-fold: first, to relocate the designation information to the section which requires car control designations; and second, to clarify the intent that numbers must be used but letters can accompany the numbers to assist in the designation.

Relocation. The current text is in the section of the standard which deals with the arrangement of the buttons on the car control panel. The text which addresses the numbers to be in ascending order is appropriate in here as is the text relating to left/right arrangement where there are columns. The rest of the information deals with the actual content of what is supposed to be designated. The proposal moves this text to a new section in the existing section titled "Designations. . . ." The title of the new section is "Designation" to make it clear that the intent is that the arrangement is addressed in the arrangement section and the designation on the car buttons is in the designation section of the standard.

Numbers/Letters. The text is copied from the prior location beginning with the phrase "Floors shall be. . ." and ending with "the minus symbol ("-")." An additional sentence is added to indicate that letters may be used in conjunction with the numbers but that the primary designation is numeric while letters can be used to help identify levels based on local culture. For example, the negative floors are known as basements in some parts of the country but referred to as cellars in other parts. This would allow the "-1" level to be designated "-1B" (first basement) or "-1C" (first cellar) as well as the "-1" intended by the original text. Alternately, two letters could be used in a manner such as "-1LL" to indicate the Lower Level - common language for conference centers. However, the proposal is specific in that not more than two letters can be used. Otherwise, the size of the designation text and Braille grows and the subsequent length becomes too great to be able to quickly identify the desired floor.

The section is intended to be inserted near the beginning of the section so the subsection "Location" should be renumbered as will subsequent subsections.

Committee Action: AS AM D

407.4.6.2.2-BOECKER.doc

4-51 – 12
407.4.6.4, 407.4.6.4.1, 407.4.6.4.2

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Revise as follows:

407.4.6.4 ~~Emergency~~ Control~~s~~ Buttons. ~~Emergency~~ ~~c~~Control~~s~~ buttons shall comply with Section 407.4.6.4.

407.4.6.4.1 Height. ~~Emergency control buttons~~ Where provided, door open, door close, alarm and emergency stop buttons shall have their centerlines 35 inches (890 mm) minimum above the floor.

407.4.6.4.2 Location. ~~Emergency controls, including the emergency alarm,~~ Where provided, door open, door close, alarm and emergency stop buttons shall be grouped at the bottom of the panel.

Reason: The term "emergency controls" has been in the standard since 1980 but has never been defined. In fact, there is no industry consensus on what constitutes an emergency control in a passenger elevator. The term was first used in the 1976 *NEII® Suggested Minimum Passenger Elevator Requirements for the Handicapped* and at that time it was understood to refer to the door open, door close, alarm and emergency stop buttons. (Note that the "phone" button is not listed as it is addressed separately in Section 407.4.10.)

The phrase "where provided" clarifies that some or all of these control buttons may not be provided in an elevator car operating panel. None of the listed buttons is required to be accessible to the public by ASME A17.1/CSA B44, and alarm and emergency stop switches are no longer required in passenger elevators by that code. None is necessary to make the elevator accessible to persons with disabilities.

Committee Action: AS AM D

407.4.6.4-BLACK.doc

4-52– 12

407.4.7.2, 407.4.7.2.1 (New), 407.4.7.2.2 (New), 407.4.7.2.3 (New), 407.4.7.2.4 (New), 407.4.7.2.5 (New)

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Revise as follows:

407.4.7.2 Keypads. Where provided, keypads shall comply with Section 407.4.7.2.

407.4.7.2.1 Arrangement. Key pads shall be in a standard telephone keypad arrangement, except that the bottom left key shall have a star complying with Table 407.4.7.1.3 and the bottom right key shall have a minus sign.

407.4.7.2.2 Size. Keypad keys shall be ¾ inch (19 mm) in the smallest dimension.

407.4.7.2.3 Identification. Keypad keys shall be identified by visual characters complying with Section 703.2 centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall have a base diameter of 0.118 inch (3 mm) minimum and 0.120 inch (3.05 mm) maximum, and a height of 0.025 inch (0.6 mm) minimum and 0.037 inch (0.9 mm) maximum.

407.4.7.2.4 Operation. Keypads shall be mechanical. The force required to activate the keys shall be 0.5 pounds (2.5 N) minimum and 1.25 pounds (5 N) maximum.

407.4.7.2.5 Touch screens. Touch screen input devices shall be permitted where a mechanical keypad is provided.

Reason: Proposed 407.4.7.2.1 moves the "standard telephone keypad" requirement found in Section 407.2.1.6 to the keypad section to have keypads both at the landings and in the cars comply with this arrangement. The star in the bottom left corner designated that key as the one to press to reach the main floor, and the minus sign in the bottom right corner replaces the telephone "#" symbol to allow the input of negative floor numbers. This is typical industry practice and is also codified in ISO 4190-5 (*Lift installation – Part 5: Control devices, signals and additional fittings*) and the San Francisco Building Code.

Proposed 407.4.7.2.2 is necessary because the size of the keys is regulated for hall call controls by Section 407.2.1.2 but is not regulated for keypads in cars. Section 407.4.6.2 regulates the size of car buttons "with floor designations", but keypad keys do not designate specific floors.

Proposed 407.4.7.2.3 is renumbered existing text.

Proposed 407.4.7.2.4 requires an accessible keypad to be mechanical and to provide feedback that a button has been activated. The force limits are consistent with ISO 4190-5.

Proposed 407.4.7.2.5 clarifies that touch screen technology is permitted where a mechanical, accessible keypad is provided.

Committee Action: AS AM D

407.4.7.2-BLACK.doc

4-53 – 12
407.4.9.1.1

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Revise as follows:

407.4.9.1.1 Size. Characters shall be ~~1/2~~ 5/8 inch (~~13~~ 16 mm) minimum in height.

Reason: ASME A17.1/CSA B44 includes *Nonmandatory Appendix E: Elevator Requirements for Persons with Physical Disabilities in Jurisdictions enforcing the National Building Code of Canada*. In 2011 the Appendix E Subcommittee of the Canadian Standards Association (CSA) B44 Technical Committee undertook an effort to harmonize its document with ICC/ANSI A117.1-2009. This item was identified as a Canadian requirement that the US standard should adopt. Note that it provides greater accessibility than the existing text.

Committee Action: AS AM D

407.4.9.1.1-BLACK.doc

4-54 – 12
407.4.10

Proponent: Hansel Bauman, Architect, representing National Association of the Deaf

Revise as follows:

407.4.10 Emergency Communications. Visual and audible emergency two-way communication systems between the elevator car and a point outside the hoistway shall comply with Section 407.4.10 and ASME A17.1/CSA B44 listed in Section 105.2.5.

Reason: The addition of the term visual and audible is recommended to stress the need for emergency visual communication in elevators for deaf and hard of hearing individuals. In order to provide deaf and hard of hearing individuals with clear and immediate communication during emergency situations in elevators a text screen pad is recommended to be included in public elevators and at a location outside the hoistway.

Committee Action: AS AM D

407.4.10-BAUMAN.doc

4-55 – 12
407.4.10.3 (New)

Proponent: Brian Black, BDBlack & Associates, representing National Elevator Industry Inc.

Add new text as follows:

407.4.10.3 Instructions. If instructions for use are provided, essential information shall be presented in both visual form and raised characters and braille complying with Sections 703.3 and 703.4.

Reason: ASME A17.1/CSA B44 includes *Nonmandatory Appendix E: Elevator Requirements for Persons with Physical Disabilities in Jurisdictions enforcing the National Building Code of Canada*. In 2011 the Appendix E Subcommittee of the Canadian Standards Association (CSA) B44 Technical Committee undertook an effort to harmonize its document with ICC/ANSI A117.1-2009. This item was identified as a Canadian requirement that should be added to the US standard.

This proposed change would ensure an equivalent level of accessibility for persons who are blind or visually impaired where visual instructions on the use of the emergency communications is provided.

Committee Action: AS AM D

407.4.10.3 (New)-BLACK.doc

4-56 – 12
408.4.1

Proponent: Kim Paarlberg, International Code Council

Revise as follows:

408.4.1 Inside Dimensions. Elevator cars shall provide a clear floor width of 42 inches (1065 mm) minimum. The clear floor area shall not be less than 15.75 square feet (1.46 m^2). The elevator car shall provide a clear floor space complying with Section 305.3.

> **EXCEPTION:** For installations in existing buildings, elevator cars that provide a clear floor area of 15 square feet (1.4 m^2) minimum, and provide a clear inside dimension of 36 inches (915 mm) minimum in width and 54 inches (1370 mm) minimum in depth, shall be permitted. This exception shall not apply to cars with doors on adjacent sides.

Reason: This proposal is intended to ensure that the depth of the elevator car can accommodate the 48 inch depth requirement for a clear floor space. It will really have a fairly limited application but will close a loophole that exists when the elevator car is built to the minimum area requirements.

As it is currently written a 47.62 inch by 47.62 inch car would meet the currently imposed 42 inch minimum width and 15.75 sq. ft. size. However, it would not accommodate the 48 inch depth required for a clear floor space. Once the "width" goes over 47.25 inches, they would no longer get the 48 inch depth unless the car does exceed the 15.75 sq. ft. minimum area.

The possibility of a 47.62 by 47.62 inch elevator car would represent the worst case scenario for the minimum depth. This new text would address the situation where the width is between 47.25 and 47.62 inches and the car is exactly 15.75 square feet in area. If the car gets "wider" and is not "deep" enough, the door location provisions of Section 408.3.3 will kick in and move the door to the "narrow end" of the car.

Because this proposal does have a very limited range of application (minimum area elevator car with width between 47.25 and 47.62 inches) it may not be worth making this change; but approving it does close an apparent loophole which could allow the LULA elevator to have a depth which could not accommodate the generally required 48 inch clear floor space.

Committee Action: AS AM D

408.4.1-PAARLBERG.doc

4-57 – 12
408.4.1

Proponent: Francine Wai, Executive Director, Disability & Communication Access Board

Revise as follows:

408.4.1 Inside Dimensions. Elevator cars shall provide a clear floor width of 42 inches (1065 mm) minimum and a clear depth 54 inches (1370 mm) minimum. The clear floor area shall not be less than 15.75 square feet (1.46 m2).

EXCEPTIONS:

1. For installations in existing buildings, elevator cars that provide a clear floor area of 15 square feet (1.4 m2) minimum, and provide a clear inside dimension of 36 inches (915 mm) minimum in width and 54 inches (1370 mm) minimum in depth, shall be permitted. This exception shall not apply to cars with doors on adjacent sides.

2. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (915 mm) wide minimum.

Reason: The Department of Justice's 2010 ADA Standards requires a minimum depth of 54 inches. As currently written it is possible to achieve a minimum clear floor area of 15.75 square feet with a depth that may be less than 54 inches if the width is greater than 42 inches, which would not be compliant with the 2010 ADA Standards.

In addition, the 2010 Standards allow an exception that existing cars are permitted to have a clear width of 51 inches minimum and a clear depth of 51 inches minimum if the doors provide a minimum clear opening of 36 inches. For consistency with the 2010 ADA Standards, it is proposed that an additional exception mirroring the 2010 Standards be added.

The 2010 ADA Standards states:

408.4.1 Car Dimensions and Doors. Elevator cars shall provide a clear width 42 inches (1065 mm) minimum and a clear depth 54 inches (1370 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (815 mm) minimum clear width.

EXCEPTIONS:

1. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (915 mm) wide minimum.
2. Existing elevator cars shall be permitted to provide a clear width 36 inches (915 mm) minimum, clear depth 54 inches (1370 mm) minimum, and a net clear platform area 15 square feet (1.4 m2) minimum.

Committee Action: AS AM D

408.4.1-WAI.doc

4-58 – 12
409.3.1

Proponent: Francine Wai, Executive Director, Disability & Communication Access Board

Revise as follows:

409.3.1 Power Operation. Elevator car doors and gates shall be power operated and shall comply with ANSI/BHMA A156.19 listed in Section 105.2.3. Elevator cars with a single opening shall have low energy power operated hoistway doors and gates.

EXCEPTION: Hoistway doors or gates shall be permitted to be of the self-closing, manual type, where ~~that door or gate provides access to a narrow end of the car that serves only one landing.~~ more than one opening is provided in the elevator car.

Reason: The 2010 ADA Standards only allow hoistway doors or gates to be self-closing, manual type where more than one opening is provided. As currently written, there may be only one opening that is a self-closing manual type, which would make the elevator non-compliant with the 2010 ADA Standards.

Most new construction and alterations must comply with the Department of Justice's 2010 ADA Standards or the Department of Transportation's ADA Standards. To ensure elevators comply with both Standards, it is recommended that the exception mirror the 2004 ADAAG that was adopted by both enforcing agencies. The 2004 ADAAG states:

409.3.1 Power Operation.

EXCEPTION: In elevator cars with more than one opening, hoistway doors and gates shall be permitted to be of the manual open, self-close type.

Committee Action: AS AM D

409.3.1-WAI.doc