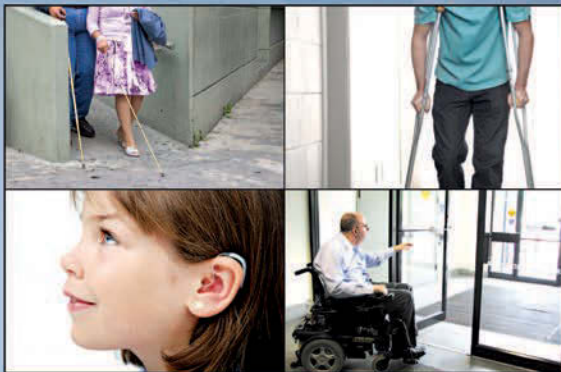




ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

ICC A117.1-2009

 American National Standard

ICC A117.1-2009



Document
Document Sharing



Provided by IHS under license with ICC

Licensee=University of Texas Revised Sub Account/56200011

No reproduction or networking permitted without license from IHS resale, 10/07/2014 02:10:50 MDT

Full document details: ICC A117.1 2009

ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES

ICC A117.1-2009



American National Standard

International Code Council
500 New Jersey Avenue, NW, 6th Floor
Washington, DC 20001

Approved October 20, 2010

American National Standard Institute
25 West 43rd Street
New York, NY 10036

Provided by IHS under license with ICC

No reproduction or networking permitted without license from IHS
Full document details: [ICC A117.1 2009](#)

Licensee=University of Texas Revised Sub Account/5620001114
Not for Resale, 10/07/2014 02:10:50 MDT



Accessible and Usable Buildings and Facilities
(ICC A117.1-2009)

First Printing: January 2011

ISBN: 978-158001-918-7

COPYRIGHT © 2010
By
INTERNATIONAL CODE COUNCIL, INC.

ALL RIGHTS RESERVED. This Accessible and Usable Buildings and Facilities (ICC A117.1-2009) is a copyrighted work owned by the International Code Council, Inc. Without advance written permission from the copyright owner, no part of this book may be reproduced, distributed, or transmitted in any form or by any means, including, without limitation, electronic, optical or mechanical means (by way of example, and not limitation, photocopying, or recording by or in an information storage retrieval system). For information on permission to copy material exceeding fair use, please contact: Publications, 4051 W. Flossmoor Road, Country Club Hills, IL 60478-5795. Phone 1-888-ICCSAFE (422-7233)

Trademarks: “ICC,” the International Code Council logo and “Accessible and Usable Buildings and Facilities (ICC A117.1-2009)” are trademarks of the International Code Council, Inc.

PRINTED IN THE U.S.A.

 **Documents**
Document Sharing Hub

AMERICAN NATIONAL STANDARD

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he or she has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

10/07/2014 02:10:50 MDT

FOREWORD

(The information contained in this foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.)

Development

The 1961 edition of ANSI Standard A117.1 presented the first criteria for accessibility to be approved as an American National Standard and was the result of research conducted by the University of Illinois under a grant from the Easter Seal Research Foundation. The National Easter Seal Society and the President's Committee on Employment of People with Disabilities became members of the Secretariat, and the 1961 edition was reaffirmed in 1971.

In 1974, the U.S. Department of Housing and Urban Development joined the Secretariat and sponsored needed research, which resulted in the 1980 edition. After further revision that included a special effort to remove application criteria (scoping requirements), the 1986 edition was published and, when requested in 1987, the Council of American Building Officials (CABO) assumed the Secretariat. Central to the intent of the change in the Secretariat was the development of a standard that, when adopted as part of a building code, would be compatible with the building code and its enforcement. The 1998 edition largely achieved that goal. The 2009 edition of the standard is the latest example of the A117.1 committee's effort to continue developing a standard that is compatible with the building code. (When CABO was consolidated into the International Code Council (ICC) in 1998, the Secretariat duties were assumed by ICC.)

2009 Edition

New to the 2009 edition are coordinated criteria for the various types of dwelling units that provide a step-down between the unit types; technical requirements for Type C (Visitable) Units; Variable Message Signs (i.e., signs that change the information they show such as gate information in train stations and airports); better consistency of sign requirements regarding when raised characters and braille are required; location of toilet paper dispenser (more design options, recessed fixtures addressed, single point of measurement, etc.); a new chapter for a variety of types of recreational facilities; an index and margin markings that will help users find requirements and identify changes from the 2003 edition. In addition, the new standard continued to provide a level of coordination between the accessible provisions of this standard and the Fair Housing Accessibility Guidelines (FHAG) and the newly released Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines (ADA & ABA AG).

ANSI Approval

This Standard was processed and approved for submittal to ANSI by the Accredited Standards Committee A117 on Architectural Features and Site Design of Public Buildings and Residential Structures for Persons with Disabilities. ANSI approved the 2009 edition on October 20, 2010. Committee approval of the Standard does not necessarily imply that all Committee members voted for its approval.

Adoption

ICC A117.1–2009 is available for adoption and use by jurisdictions internationally. Its use within a governmental jurisdiction is intended to be accomplished through adoption by reference in accordance with proceedings establishing the jurisdiction's laws.

Formal Interpretations

Requests for Formal Interpretations on the provisions of ICC A117.1–2009 should be addressed to: ICC, Chicago District Office, 4051 W. Flossmoor Road, Country Club Hills, IL 60478–5795.

Maintenance—Submittal of Proposals

All ICC standards are revised as required by ANSI. Proposals for revising this edition are welcome. Please visit the ICC website at www.iccsafe.org for the official “Call for proposals” announcement. A proposal form and instructions can also be downloaded from www.iccsafe.org.

ICC, its members and those participating in the development of ICC A117.1-2009 do not accept any liability resulting from compliance or noncompliance with the provisions of ICC A117.1-2009. ICC does not have the power or authority to police or enforce compliance with the contents of this standard. Only the governmental body that enacts this standard into law has such authority.

Marginal Markings

Solid vertical lines in the margins within the body of the code indicate a technical change from the requirements of the 2003 edition. Deletion indicators in the form of an arrow (➡) are provided in the margin where an entire section, paragraph, exception or table has been deleted or an item in a list of items or a table has been deleted.

ICC A117.1-2009

Accredited Standards Committee A117 on Architectural Features and Site Design of Public Buildings and Residential Structures for Persons with Disabilities

At the time of ANSI approval, the A117.1 Committee consisted of the following members:

Chair Kenneth M. Schoonover, PE
Vice Chair Vacant
A117 Committee Secretary Jay Woodward

Organizational Member	Representative
Accessibility Equipment Manufacturers Association (AEMA) (PD)	Kevin Brinkman Robert Murphy (Alt)
American Bankers Association (ABA) (BO)	Virginia E. O'Neil Nessa Feddis (Alt)
American Council of the Blind (ACB) (CU)	Patricia Beattie Eric Bridges (Alt)
American Hotel and Lodging Association (AHLA) (BO)	Gerald Gross, AIA, FARA Kevin Maher (Alt)
American Institute of Architects (AIA) (P)	David C. Collins, FAIA Larry M. Schneider, AIA (Alt)
American Occupational Therapy Association (AOTA) (P)	S. Shoshana Shamberg
American Society of Interior Designers (ASID) (P).	Samantha McAskill, ASID Barbara J. Huelat, ASID, IIDA (Alt)
American Society of Plumbing Engineers (ASPE) (P)	Robert H. Evans, Jr., CIPE/CPD Julius A. Ballanco, P.E. (Alt)
American Society of Safety Engineers (ASSE) (P)	Dr. William Marletta John B. Schroering, P.E. C.S.P. (Alt) Mary Winkler, CSP (Alt)
American Society of Theatre Consultants (ASTC) (P).	Scott Crossfield, ASTC William Conner, ASTC (Alt) R. Duane Wilson, ASTC (Alt)
Association for Education & Rehabilitation of the Blind & Visually Impaired (AERBVI) (P)	Billie Louise "Beezy" Bentzen, PhD Helen Elias (Alt)
Brain Injury Association of America (BIAA) (CU)	Robert Dale Lynch, FAIA Greg Ayotte (Alt)
Builders Hardware Manufacturers Association, Inc. (BHMA) (PD)	Michael Tierney Richard Hudnut (Alt)
Building Owners and Managers Association International (BOMA) (BO)	Lawrence G. Perry, AIA Ron Burton (Alt)
Disability Rights Education and Defense Fund (DREDF) (CU)	Marilyn Golden Logan Hopper (Alt)
Hearing Loss Association of America (HLAA) (CU)	Sharon Toji Brenda Battat (Alt)
International Association of Amusement Parks and Attractions (IAAPA) (BO)	John Paul Scott, AIA, NCARB Stephanine See (Alt)
International Code Council (ICC) (R)	Kimberly Paarlberg RA Phil Hahn, (Alt)

International Sign Association (ISA) **(PD)** Teresa Cox
 Bill Dundas (Alt)
 Mike Santos (Alt)
 John Souter, PhD. (Alt)

Little People of America, Inc. (LPA) **(CU)** Tricia Mason

Montgomery County Department of Permitting
 Services (MCDPS) **(R)** Thomas Heiderer

National Association of
 Home Builders (NAHB) **(BO)** Steve Orlowski
 Larry Brown (Alt)
 Don Surrena, CBO (Alt)

National Association of the Deaf (NAD) **(CU)** Neil McDevitt
 Rosaline Crawford (Alt)

National Conference of States on
 Building Codes and Standards (NCSBCS) **(R)** . . . Curt Wiehle

National Electrical Manufacturers
 Association (NEMA) **(PD)** Rodger Reiswig, SET
 Jack McNamara (Alt)

National Elevator Industry, Inc. (NEII) **(PD)** Brian D. Black
 Barry Blackaby (Alt)
 George A. Kappenhagen (Alt)

National Fire Protection Association (NFPA) **(R)** . . . Allan B. Fraser
 Ron Coté, PE (Alt)

National Multi Housing Council (NMHC) **(BO)** Ronald G. Nickson

New Mexico Governor's Commission on
 Disability (NMGCD) **(CU)** Hope Reed
 Anthony H. Alarid (Alt)

Paralyzed Veterans of America (PVA) **(CU)** Mark H. Lichter, AIA (Alt)
 Frank Menendez (Alt)

Plumbing Manufacturers Institute (PMI) **(PD)** Charles Hernandez
 David Hagopian (Alt)

Society for Environmental Graphic
 Design (SEGD) **(P)** Kenneth A. Ethridge, AIA, RIBA
 Craig Berger (Alt)
 Ann Makowski (Alt)
 Dave Miller (Alt)

Stairway Manufacturers Association (SMA) **(PD)** . . . David Cooper
 Paul Wishnoff (Alt)

United Cerebral Palsy
 Association, Inc. (UCPA) **(CU)** Gina Hilberry
 Maureen Fitzgerald (Alt)
 Janna Starr (Alt)

United Spinal Association **(CU)** Dominic Marinelli
 John Rooney (Alt)

U.S. Architectural & Transportation Barriers
 Compliance (Access) Board (ATBCB) **(R)** Marsha K. Mazz
 Jim Pecht (Alt)

U.S. Department of Agriculture (USDA) **(R)** William Downs
 Meghan Walsh (Alt)

U.S. Department of Housing and
 Urban Development (HUD) **(R)** Cheryl D. Kent
 Louis F. Borray (Alt)

World Institute on Disability (WID) **(CU)** Hale Zukas



Individual Members

Shahriar Amiri CBO (P)

Todd Andersen AIA (P)

George P. McAllister, Jr. (P)

Jake L. Pauls, CPE (P)

Ed Roether (P)

John P. S. Salmen, AIA (P)

Kenneth M. Schoonover, P.E. (P)

Acknowledgment

The updating of this standard over the past 6 years could only be accomplished by the hard work of not only the current committee members listed at the time of approval but also the many committee members who participated and contributed to the process over the course of development. ICC recognizes their contributions as well as those of the participants who, although not on the committee, provided valuable input during this update cycle.



INTEREST CATEGORIES

Builder/Owner/Operator (BO) – Members in this category include those in the private sector involved in the development, construction, ownership and operation of buildings or facilities; and their respective associations.

Consumer/User (CU) – Members in this category include those with disabilities, or others who require accessibility features in the built environment for access to buildings, facilities and sites; and their respective associations.

Producer/Distributor (PD) – Members in this category include those involved in manufacturing, distributing, or sales of products; and their respective associations.

Professional (P) – Members in this category include those qualified to engage in the development of the body of knowledge and policy relevant to their area of practice, such as research, testing, consulting, education, engineering or design; and their respective associations.

Regulatory (R) – Members in this category include federal agencies, representatives of regulatory agencies or organizations that promulgate or enforce codes or standards; and their respective associations.

Individual Expert (IE) (Nonvoting) – Members in this category are individual experts selected to assist the consensus body. Individual experts shall serve for a renewable term of one year and shall be subject to approval by vote of the consensus body. Individual experts shall have no vote.

Category	Number
Builder/Owner/Operator – (BO)	6
Consumer/User – (CU)	11
Professional – (P)	15
Producer/Distributor – (PD)	7
Regulatory – (R)	7
TOTAL	46



Contents

Chapter 1. Application and Administration	1
101 Purpose	1
102 Anthropometric Provisions	1
103 Compliance Alternatives	1
104 Conventions	1
105 Referenced Documents	1
106 Definitions	3
Chapter 2. Scoping	5
201 General	5
202 Dwelling and Sleeping Units	5
203 Administration	5
Chapter 3. Building Blocks	7
301 General	7
302 Floor Surfaces	7
303 Changes in Level	7
304 Turning Space	7
305 Clear Floor Space	8
306 Knee and Toe Clearance	9
307 Protruding Objects	9
308 Reach Ranges	11
309 Operable Parts	14
Chapter 4. Accessible Routes	15
401 General	15
402 Accessible Routes	15
403 Walking Surfaces	15
404 Doors and Doorways	15
405 Ramps	22
406 Curb Ramps	24
407 Elevators	26
408 Limited-use/Limited-application Elevators	32
409 Private Residence Elevators	34
410 Platform Lifts	37
Chapter 5. General Site and Building Elements	39
501 General	39
502 Parking Spaces	39
503 Passenger Loading Zones	40
504 Stairways	40
505 Handrails	41
506 Windows	44



Chapter 6. Plumbing Elements and Facilities	45
601 General	45
602 Drinking Fountains	45
603 Toilet and Bathing Rooms	46
604 Water Closets and Toilet Compartments	46
605 Urinals	53
606 Lavatories and Sinks	53
607 Bathtubs	54
608 Shower Compartments	56
609 Grab Bars	60
610 Seats	61
611 Washing Machines and Clothes Dryers	62
612 Saunas and Steam Rooms	62
Chapter 7. Communication Elements and Features	65
701 General	65
702 Alarms	65
703 Signs	65
704 Telephones	72
705 Detectable Warnings	73
706 Assistive Listening Systems	73
707 Automatic Teller Machines (ATMs) and Fare Machines	74
708 Two-way Communication Systems	75
Chapter 8. Special Rooms and Spaces	77
801 General	77
802 Assembly Areas	77
803 Dressing, Fitting, and Locker Rooms	81
804 Kitchens and Kitchenettes	81
805 Transportation Facilities	83
806 Holding Cells and Housing Cells	85
807 Courtrooms	85
Chapter 9. Built-In Furnishings and Equipment	87
901 General	87
902 Dining Surfaces and Work Surfaces	87
903 Benches	87
904 Sales and Service Counters	87
905 Storage Facilities	89
Chapter 10. Dwelling Units and Sleeping Units	91
1001 General	91
1002 Accessible Units	91
1003 Type A Units	92
1004 Type B Units	98

1005 Type C (Visitable) Units 105

1006 Units with Accessible Communication Features 106

Chapter 11. Recreational Facilities.....107

1101 General 107

1102 Amusement Rides 107

1103 Recreational Boating Facilities 108

1104 Exercise Machines and Equipment.....111

1105 Fishing Piers and Platforms 111

1106 Golf Facilities.....113

1107 Miniature Golf Facilities.....113

1108 Play Areas.....113

1109 Swimming Pools, Wading Pools, Hot Tubs and Spas.....117

1110 Shooting Facilities with Firing Positions 122

Index 123

List of Figures

Chapter 1. Application and Administration	1
Figure 104.3	Graphic Convention for Figures 2
Chapter 2. Scoping (No figures)	5
Chapter 3. Building Blocks	7
Figure 302.2	Carpet on Floor Surfaces 7
Figure 302.3	Openings in Floor Surfaces. 7
Figure 303.2	Carpet on Floor Surfaces 7
Figure 303.3	Beveled Changes in Level 7
Figure 304.3	Size of Turning Space. 8
Figure 305.3	Size of Clear Floor Space 8
Figure 305.5	Position of Clear Floor Space 9
Figure 305.7	Maneuvering Clearance in an Alcove 9
Figure 306.2	Toe Clearance. 10
Figure 306.3	Knee Clearance 10
Figure 307.2	Limits of Protruding Objects 11
Figure 307.3	Post-mounted Protruding Objects 12
Figure 307.4	Reduced Vertical Clearance 11
Figure 308.2.1	Unobstructed Forward Reach 11
Figure 308.2.2	Obstructed High Forward Reach. 13
Figure 308.3.1	Unobstructed Side Reach 13
Figure 308.3.2	Obstructed High Side Reach. 13
Chapter 4. Accessible Routes	15
Figure 403.5	Clear Width of an Accessible Route 15
Figure 403.5.1	Clear Width at 180° Turn. 16
Figure 404.2.2	Clear Width of Doorways 16
Table 404.2.3.2	Maneuvering Clearances at Manual Swinging Doors 17
Figure 404.2.3.2	Maneuvering Clearances at Manual Swinging Doors 18
Table 404.2.3.3	Maneuvering Clearances at Sliding and Folding Doors 17
Figure 404.2.3.3	Maneuvering Clearance at Sliding and Folding Doors 17
Table 404.2.3.4	Maneuvering Clearances for Doorways without Doors. 19
Figure 404.2.3.4	Maneuvering Clearance at Doorways without Doors 19
Figure 404.2.3.5	Maneuvering Clearance at Recessed Doors 20
Figure 404.2.5	Two Doors in a Series. 21
Table 405.2	Allowable Ramp Dimensions for Construction in Existing Sites, Buildings and Facilities 22
Figure 405.7	Ramp Landings. 22
Figure 405.9	Edge Protection—Limited Drop Off. 23
Figure 405.9.1	Extended Floor Surface 23

Figure 405.9.2	Ramp Edge Protection	24
Figure 406.2	Counter Slope of Surfaces Adjacent to Curb Ramps	24
Figure 406.3	Sides of Curb Ramps	24
Figure 406.7	Landings	25
Figure 406.10	Diagonal Curb Ramps	25
Figure 406.11	Islands	26
Figure 407.2.1.1	Height of Elevator Call Buttons	27
Figure 407.2.1.7	Destination-oriented Elevator Indication	27
Figure 407.2.2.2	Elevator Visible Signals	28
Figure 407.2.3.1	Floor Designation	29
Figure 407.2.3.2	Destination-oriented Elevator Car Identification	29
Table 407.4.1	Minimum Dimensions of Elevator Cars	30
Figure 407.4.1	Inside Dimensions of Elevator Cars	31
Figure 407.4.6.2	Elevator Car Control Buttons	30
Table 407.4.7.1.3	Control Button Identification	33
Figure 408.3.3	Door Location for Limited Use/Limited Application (LULA) Elevators	35
Figure 408.4.1	Inside Dimensions of Limited Use/Limited Application (LULA) Elevator Cars	36
Figure 409.4.6.3	Location of Controls in Private Residence Elevators	37
Figure 410.2.1	Platform Lift Doors and Gates	38
Chapter 5. General Site and Building Elements		39
Figure 502.2	Vehicle Parking Space Size	39
Figure 502.4	Parking Space Access Aisle	39
Figure 503.3	Passenger Loading Zone Access Aisle	40
Figure 504.2	Treads and Risers for Accessible Stairways	41
Figure 504.5	Stair Nosings	41
Figure 505.4	Handrail Height	42
Figure 505.5	Handrail Clearance	42
Figure 505.7	Handrail Cross Section	43
Figure 505.10.1	Top and Bottom Handrail Extensions at Ramps	43
Figure 505.10.2	Top Handrail Extensions at Stairs	43
Figure 505.10.3	Bottom Handrail Extensions at Stairs	44
Chapter 6. Plumbing Elements and Facilities		45
Figure 602.2	Parallel Approach at Drinking Fountains Primarily for Children's Use (Exception 2)	45
Figure 602.5	Drinking Fountain Spout Location	45
Table 603.6	Maximum Reach Depth and Height	46
Figure 604.2	Water Closet Location	46
Figure 604.3	Size of Clearance for Water Closet	47
Figure 604.4	Water Closet Seat Height	47

Figure 604.5.1	Side Wall Grab Bar for Water Closet	47
Figure 604.5.2	Rear Wall Grab Bar for Water Closet	48
Figure 604.7	Dispenser Outlet Location	49
Figure 604.9.2	Wheelchair Accessible Toilet Compartments	49
Table 604.9.3.1	Door Opening Location	50
Figure 604.9.3.1	Wheelchair Accessible Compartment Door Openings	50
Figure 604.9.3.1(C)	Wheelchair Accessible Compartment Door Openings—Alternate	51
Figure 604.9.5	Wheelchair Accessible Compartment Toe Clearance	51
Figure 604.10	Ambulatory Accessible Compartment	52
Figure 604.11.2	Children's Water Closet Location	52
Figure 604.11.4	Children's Water Closet Height	52
Figure 604.11.7	Children's Dispenser Outlet Location	53
Figure 605.2	Height of Urinals	53
Figure 606.3	Height of Lavatories and Sinks	54
Figure 607.2	Clearance for Bathtubs	54
Figure 607.4.1	Grab Bars for Bathtubs with Permanent Seats	55
Figure 607.4.2	Grab Bars for Bathtubs without Permanent Seats	55
Figure 607.5	Location of Bathtub Controls	56
Figure 608.2.1	Transfer-type Shower Compartment Size and Clearance	56
Figure 608.2.2	Standard Roll-in-type Shower Compartment Size and Clearance	57
Figure 608.2.3	Alternate Roll-in-type Shower Compartment Size and Clearance	57
Figure 608.3.1	Grab Bars in Transfer-type Showers	57
Figure 608.3.2	Grab Bars in Standard Roll-in-type Showers	58
Figure 608.3.3	Grab Bars in Alternate Roll-in-type Showers	58
Figure 608.4.1	Transfer-type Shower Controls and Handshower Location	58
Figure 608.4.2	Standard Roll-in-type Shower Control and Handshower Location	58
Figure 608.4.3	Alternate Roll-in-type Shower Control and Handshower Location	59
Figure 609.2	Size of Grab Bars	60
Figure 609.3	Spacing of Grab Bars	60
Figure 609.4.2	Position of Children's Grab Bars	61
Figure 610.2	Bathtub Seats	61
Figure 610.3.1	Rectangular Shower Compartment Seat	62
Figure 610.3.2	L-shaped Shower Compartment Seat	62
Figure 611.2	Clear Floor Space	63
Figure 611.4	Height of Laundry Equipment	63

Chapter 7. Communication Elements and Features	65
Table 703.2.4	Visual Character Height 65
Figure 703.3.5	Character Height 66
Figure 703.3.10	Height of Raised Characters above Floor 67
Figure 703.3.11	Location of Signs at Doors 67
Figure 703.4.3	Braille Measurement 68
Table 703.4.3	Braille Dimensions 68
Figure 703.4.4	Position of Braille 69
Figure 703.4.5	Height of Braille Characters Above Floor 69
Figure 703.5	Pictogram Field 69
Figure 703.6.3.1	International Symbol of Accessibility 70
Figure 703.6.3.2	International TTY Symbol 70
Figure 703.6.3.3	International Symbol of Access for Hearing Loss 70
Figure 703.6.3.4	Volume-controlled Telephone 70
Table 703.7.4	Low Resolution VMS Character Height 71
Table 703.7.5	Pixel Count for Low Resolution VMS Signage 71
Figure 703.7.5	Low Resolution VMS Signage Character 72
Figure 704.2.1	Clear Floor Space for Telephones 73
Figure 705.5	Truncated Dome Size and Spacing 74
Figure 707.5	Numeric Key Layout 74
Table 707.6.1	Raised Symbols 75
Chapter 8. Special Rooms and Spaces	77
Figure 802.3	Width of a Wheelchair Space in Assembly Areas 77
Figure 802.4	Depth of a Wheelchair Space in Assembly Areas 77
Figure 802.9.1.1	Lines of Sight over the Heads of Seated Spectators 78
Figure 802.9.1.2	Lines of Sight between the Heads of Seated Spectators 79
Figure 802.9.2	Line of Sight Over Standing Spectators 79
Table 802.9.2.2	Required Wheelchair Space Location Elevation Over Standing Spectators 80
Table 802.10	Wheelchair Space Location Dispersion 80
Figure 804.2.1	Pass-through Kitchen Clearance 81
Figure 804.2.2	U-shaped Kitchen Clearance 82
Figure 805.2.2	Size of Bus Boarding and Alighting Areas 83
Figure 805.3	Bus Shelters 84
Figure 805.10	Track Crossings 84
Chapter 9. Built-In Furnishings and Equipment	87
Figure 903	Benches 88
Figure 904.4.2	Height of Checkout Counters 88
Chapter 10. Dwelling Units and Sleeping Units	91
Figure 1003.11.2.4	Water Closets in Type A Units 94
Figure 1003.11.2.5.1	Clearance for Bathtubs in Type A Units 95

Figure 1003.11.2.5.2	Standard Roll-in-type Shower Compartment in Type A Units	95
Figure 1003.12.1.1	Minimum Kitchen Clearance in Type A Units	95
Figure 1003.12.1.2	U-shaped Kitchen Clearance in Type A Units.	97
Figure 1003.12.3	Work Surface in Kitchen for Type A Units.	97
Figure 1003.12.4	Kitchen Sink for Type A Units	97
Figure 1004.11.1.1	Swing-up Grab Bar for Water Closet.	100
Figure 1004.11.3.1.1	Lavatory in Type B Units – Option A Bathrooms.	101
Figure 1004.11.3.1.2	Clearance at Water Closets in Type B Units.	102
Figure 1004.11.3.1.3.1	Parallel Approach Bathtub in Type B Units– Option A Bathrooms	102
Figure 1004.11.3.1.3.2	Forward Approach Bathtub in Type B Units– Option A Bathrooms	103
Figure 1004.11.3.1.3.3	Transfer-type Shower Compartment in Type B Units	103
Figure 1004.11.3.2.1	Lavatory in Type B Units – Option B Bathrooms.	103
Figure 1004.11.3.2.3.1	Bathroom Clearance in Type B Units – Option B Bathrooms . . .	103
Figure 1004.12.1.1	Minimum Kitchen Clearance in Type B Units	104
Figure 1004.12.1.2	U-shaped Kitchen Clearance in Type B Units.	104
Chapter 11. Recreational Facilities.		107
Figure 1102.4.4.3	Protrusions in Wheelchair Spaces in Amusement Rides	108
Figure 1103.3.1(A)	Boat Slip Clearance	109
Figure 1103.3.1(B)	(Exception 1) Clear Pier Space Reduction at Boat Slips	109
Figure 1103.3.1(C)	(Exception 2) Edge Protection at Boat Slips	109
Figure 1103.3.2(A)	Boarding Pier Clearance	111
Figure 1103.3.2(B)	(Exception 1) Clear Pier Space Reduction at Boarding Piers . . .	111
Figure 1103.3.2(C)	(Exception 2) Edge Protection at Boarding Piers	112
Figure 1105.3.2	Extended Ground or Deck Surface at Fishing Piers and Platforms	112
Figure 1107.3.2	Golf Club Reach Range Area	114
Table 1108.3.2.1.2	Number and Types of Ground Level Play Components Required to be on Accessible Routes	115
Figure 1108.4.2.1	Transfer Platforms.	116
Figure 1108.4.2.2	Transfer Steps.	117
Figure 1109.2.2	Pool Lift Seat Location	118
Figure 1109.2.3	Clear Deck Space at Pool Lifts	118
Figure 1109.2.4	Pool Lift Seat Height	118
Figure 1109.2.8	Pool Lift Submerged Depth	119
Figure 1109.3.2	Sloped Entry Submerged Depth	119
Figure 1109.3.3	Handrails for Sloped Entry	119
Figure 1109.4.1	Clear Deck Space at Transfer Walls.	120
Figure 1109.4.2	Transfer Wall Height	120
Figure 1109.4.3	Depth and Length of Transfer Walls	120
Figure 1109.4.5	Grab Bars for Transfer Walls	120

Figure 1109.5.1

Figure 1109.5.2

Figure 1109.5.4

Figure 1109.5.6

Figure 110.5.7

Size of Transfer Platform

Clear Deck Space at Transfer Platform

Transfer Steps

Size of Transfer Steps

Grab Bars.

121

121

121

122

122

1109.5.1 Size of Transfer Platform

1109.5.2 Clear Deck Space at Transfer Platform

1109.5.4 Transfer Steps

1109.5.6 Size of Transfer Steps

110.5.7 Grab Bars

Chapter 1. Application and Administration

101 Purpose

The technical criteria in Chapters 3 through 9, Sections 1002, 1003 and 1006 and Chapter 11 of this standard make sites, facilities, buildings and elements accessible to and usable by people with such physical disabilities as the inability to walk, difficulty walking, reliance on walking aids, blindness and visual impairment, deafness and hearing impairment, incoordination, reaching and manipulation disabilities, lack of stamina, difficulty interpreting and reacting to sensory information, and extremes of physical size. The intent of these sections is to allow a person with a physical disability to independently get to, enter, and use a site, facility, building, or element.

Section 1004 of this standard provides criteria for Type B units. These criteria are intended to be consistent with the intent of the criteria of the U.S. Department of Housing and Urban Development (HUD) Fair Housing Accessibility Guidelines. The Type B units are intended to supplement, not replace, Accessible units or Type A units as specified in this standard.

Section 1005 of this standard provides criteria for minimal accessibility features for one and two family dwelling units and townhouses which are not covered by the U.S. Department of Housing and Urban Development (HUD) Fair Housing Accessibility Guidelines.

This standard is intended for adoption by government agencies and by organizations setting model codes to achieve uniformity in the technical design criteria in building codes and other regulations.

101.1 Applicability. Sites, facilities, buildings, and elements required to be accessible shall comply with the applicable provisions of Chapters 3 through 9 and Chapter 11. Dwelling units and sleeping units shall comply with the applicable provisions of Chapter 10.

102 Anthropometric Provisions

The technical criteria in this standard are based on adult dimensions and anthropometrics. This standard also contains technical criteria based on children's dimensions and anthropometrics for drinking fountains, water closets, toilet compartments, lavatories and sinks, dining surfaces, work surfaces and benches.

103 Compliance Alternatives

Nothing in this standard is intended to prevent the use of designs, products, or technologies as alternatives to those prescribed by this standard, provided they result in equivalent or greater accessibility and such equivalency is approved by the administrative authority adopting this standard.

104 Conventions

104.1 General. Where specific criteria of this standard differ from the general criteria of this standard, the specific criteria shall apply.

104.2 Dimensions. Dimensions that are not stated as "maximum" or "minimum" are absolute. All dimensions are subject to conventional industry tolerances.

104.3 Figures. Unless specifically stated, figures included herein are provided for informational purposes only and are not considered part of the standard.

104.4 Floor or Floor Surface. The terms floor or floor surface refer to the finish floor surface or ground surface, as applicable.

104.5 Referenced Sections. Unless specifically stated otherwise, a reference to another section or subsection within this standard includes all subsections of the referenced section or subsection.

105 Referenced Documents

105.1 General. The documents listed in Section 105.2 shall be considered part of this standard to the prescribed extent of each such reference. Where criteria in this standard differ from those of these referenced documents, the criteria of this standard shall apply.

105.2 Documents.

105.2.1 Manual on Uniform Traffic Control Devices: MUTCD-2003 (The Federal Highway Administration, Office of Transportation Operations, Room 3408, 400 7th Street, S.W., Washington, DC 20590).

105.2.2 National Fire Alarm Code: NFPA 72-2007 (National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02269-9101).

105.2.3 Power Assist and Low Energy Power Operated Doors: ANSI/BHMA A156.19-2007. (Builders Hardware Manufacturers' Association, 355 Lexington Avenue, 15th Floor, New York, NY 10017).

105.2.4 Power Operated Pedestrian Doors: ANSI/BHMA A156.10-2005 (Builders Hardware Manufacturers' Association, 355 Lexington Avenue, 15th Floor, New York, NY 10017).

105.2.5 Safety Code for Elevators and Escalators: ASME A17.1-2007/CSA B44-07 (American Society of Mechanical Engineers International, Three Park Avenue, New York, NY 10016-5990).

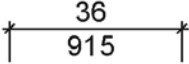
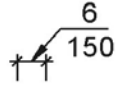
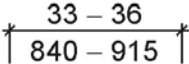
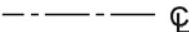
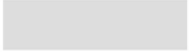
Convention	Description
	dimension showing English units (in inches unless otherwise specified) above the line and SI units (in millimeters unless otherwise specified) below the line
	dimension for small measurements
	dimension showing a range with minimum – maximum
min	minimum
max	maximum
>	greater than
≥	greater than or equal to
<	less than
≤	less than or equal to
	boundary of clear floor space or maneuvering clearance
	centerline
	a permitted element or its extension
	direction of travel or approach
	a wall, floor, ceiling or other element cut in section or plan
	a highlighted element in elevation or plan
	location zone of element, control or feature

FIG. 104.3
GRAPHIC CONVENTION FOR FIGURES

105.2.6 Safety Standard for Platform Lifts and Stairway Chairlifts: ASME A18.1-2005 (American Society of Mechanical Engineers International, Three Park Avenue, New York, NY 10016-5990).

105.2.7 Performance Criteria for Accessible Communications Entry Systems. ANSI/DASMA 303-2006. (Door and Access Systems Manufacturers Association, 1300 Sumner Avenue, Cleveland, OH 44115-2851).

105.2.8 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment ASTM F 1292-99. (ASTM

International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959).

105.2.9 Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment ASTM F 1292-04 (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959).

105.2.10 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use ASTM F 1487-01 (ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428-2959).

105.2.11 Americans with Disabilities Act (ADA) Accessibility Guidelines for Transportation Vehicles 36 CFR 1192 published in 56 Federal Register 45558, September 6, 1991 (United States Access Board, 1331 F Street, NW, Suite 1000, Washington, DC 20004-1111).

106 Definitions

106.1 General. For the purpose of this standard, the terms listed in Section 106.5 have the indicated meaning.

106.2 Terms Defined in Referenced Documents. Terms specifically defined in a referenced document, and not defined in this section, shall have the specified meaning from the referenced document.

106.3 Undefined Terms. The meaning of terms not specifically defined in this standard or in a referenced document shall be as defined by collegiate dictionaries in the sense that the context implies.

106.4 Interchangeability. Words, terms, and phrases used in the singular include the plural, and those used in the plural include the singular.

106.5 Defined Terms.

accessible: Describes a site, building, facility, or portion thereof that complies with this standard.

administrative authority: A jurisdictional body that adopts or enforces regulations and standards for the design, construction, or operation of buildings and facilities.

amusement attraction: Any facility, or portion of a facility, located within an amusement park or theme park which provides amusement without the use of an amusement device. Amusement attractions include, but are not limited to, fun houses, barrels, and other attractions without seats.

amusement ride: A system that moves persons through a fixed course within a defined area for the purpose of amusement.

amusement ride seat: A seat that is built-in or mechanically fastened to an amusement ride intended to be occupied by one or more passengers.

area of sport activity: That portion of a room or space where the play or practice of a sport occurs.

boarding pier: A portion of a pier where a boat is temporarily secured for the purpose of embarking or disembarking.

boat launch ramp: A sloped surface designed for launching and retrieving trailered boats and other water craft to and from a body of water.

boat slip: That portion of a pier, main pier, finger pier, or float where a boat is moored for the purpose of berthing, embarking, or disembarking.

catch pool: A pool or designated section of a pool used as a terminus for water slide flumes.

characters: Letters, numbers, punctuation marks, and typographic symbols.

children's use: Spaces and elements specifically designed for use primarily by people 12 years old and younger.

circulation path: An exterior or interior way of passage from one place to another for pedestrians.

counter slope: Any slope opposing the running slope of a curb ramp.

cross slope: The slope that is perpendicular to the direction of travel (see running slope).

curb ramp: A short ramp cutting through a curb or built up to it.

destination-oriented elevator system: An elevator system that provides lobby controls for the selection of destination floors, lobby indicators designating which elevator to board, and a car indicator designating the floors at which the car will stop.

detectable warning: A standardized surface feature built in or applied to floor surfaces to warn of hazards on a circulation path.

dwelling unit: A single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

element: An architectural or mechanical component of a building, facility, space, or site.

elevated play component: A play component that is approached above or below grade and that is part of a composite play structure consisting of two or more play components attached or functionally linked to create an integrated unit providing more than one play activity.

elevator car call sequential step scanning: A technology used to enter a car call by means of an up or down floor selection button.

facility: All or any portion of a building, structure, site improvements, elements, and pedestrian routes or vehicular ways located on a site.

gangway: A variable-sloped pedestrian walkway that links a fixed structure or land with a floating structure. Gangways that connect to vessels are not addressed by this document.

golf car passage: A continuous passage on which a motorized golf car can operate.

ground level play component: A play component that is approached and exited at the ground level.

habitable: A space in a building for living, sleeping, eating or cooking. Bathrooms, toilet rooms, closets, halls, storage or utility spaces and similar areas are not considered habitable spaces.

key surface: The surface or plane of any key or button that must be touched to activate or deactivate an operable part or a machine function or enable a feature.

marked crossing: A crosswalk or other identified path intended for pedestrian use in crossing a vehicular way.

operable part: A component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element.

pictogram: A pictorial symbol that represents activities, facilities, or concepts.

play area: A portion of a site containing play components designed and constructed for children.

play component: An element intended to generate specific opportunities for play, socialization, or learning. Play components are manufactured or natural; and are stand-alone or part of a composite play structure.

ramp: A walking surface that has a running slope steeper than 1:20.

running slope: The slope that is parallel to the direction of travel (see cross slope).

sign: An architectural element composed of displayed textual, symbolic, tactile, or pictorial information.

site: A parcel of land bounded by a property line or a designated portion of a public right-of-way.

sleeping unit: A room or space in which people sleep that can also include permanent provisions for living, sleeping, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.

soft contained play structure: A play structure made up of one or more play components where the user enters a fully enclosed play environment that utilizes pliable materials, such as plastic, netting, or fabric.

teeing ground: In golf, the starting place for the hole to be played.

transfer device: Equipment designed to facilitate the transfer of a person from a wheelchair or other mobility aide to and from an amusement ride seat.

TTY: An abbreviation for teletypewriter. Equipment that employs interactive, text-based communications through the transmission of coded signals across the standard telephone network. The term TTY also refers to devices known as text telephones and TDDs.

use zone: The ground level area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F 1487 listed in Section 105.2.10, for unrestricted circulation around the play equipment and where it is predicted that a user would land when falling from or exiting the play equipment.

variable message signs (VMS): Electronic signs that have a message with the capacity to change by means of scrolling, streaming, or paging across a background.

variable message sign (VMS) characters: Characters of an electronic sign are composed of pixels in an array. High resolution VMS characters have vertical pixel counts of 16 rows or greater. Low resolution VMS characters have vertical pixel counts of 7 to 15 rows.

vehicular way: A route provided for vehicular traffic.

walk: An exterior pathway with a prepared surface for pedestrian use.

wheelchair space: A space for a single wheelchair and its occupant.

wheelchair space locations: A space for a minimum of a single wheelchair and the associated companion seating. Wheelchair space locations can contain multiple wheelchair spaces and associated companion seating.

Chapter 2. Scoping

201 General

This standard provides technical criteria for making sites, facilities, buildings, and elements accessible. The administrative authority shall provide scoping provisions to specify the extent to which these technical criteria apply. These scoping provisions shall address the application of this standard to: each building and occupancy type; new construction, alterations, temporary facilities, and existing buildings; specific site and building elements; and to multiple elements or spaces provided within a site or building.

202 Dwelling and Sleeping Units

Chapter 10 of this standard contains dwelling unit and sleeping unit criteria for Accessible units, Type A units, Type B units, Type C (Visitable) dwelling units and units with accessible communication features. The administrative authority shall specify, in separate scoping provisions, the extent to which these technical criteria apply. These scoping provisions shall address the types and numbers of units required to comply with each set of unit criteria.

203 Administration

The administrative authority shall provide an appropriate review and approval process to ensure compliance with this standard.

ICC A117.1-2009

Chapter 3. Building Blocks

301 General

301.1 Scope. The provisions of Chapter 3 shall apply where required by the scoping provisions adopted by the administrative authority or by Chapters 4 through 11.

301.2 Overlap. Unless otherwise specified, clear floor spaces, clearances at fixtures, maneuvering clearances at doors, and turning spaces shall be permitted to overlap.

302 Floor Surfaces

302.1 General. Floor surfaces shall be stable, firm, and slip resistant, and shall comply with Section 302. Changes in level in floor surfaces shall comply with Section 303.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The pile shall be $\frac{1}{2}$ inch (13 mm) maximum in height. Exposed edges of carpet shall be fastened to the floor and shall have trim along the entire length of the exposed edge. Carpet edge trim shall comply with Section 303.

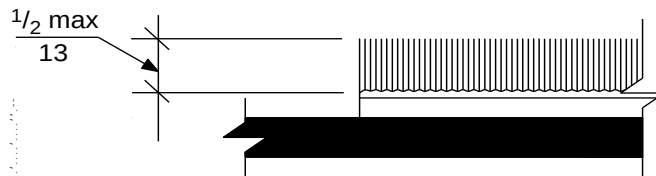


FIG. 302.2
CARPET ON FLOOR SURFACES

302.3 Openings. Openings in floor surfaces shall be of a size that does not permit the passage of a $\frac{1}{2}$ inch (13 mm) diameter sphere, except as allowed in Sections 407.4.3, 408.4.3, 409.4.3, 410.4, and 805.10. Elongated openings shall be placed so that the long dimension is perpendicular to the predominant direction of travel.

303 Changes in Level

303.1 General. Changes in level in floor surfaces shall comply with Section 303.

303.2 Vertical. Changes in level of $\frac{1}{4}$ inch (6.4 mm) maximum in height shall be permitted to be vertical.

303.3 Beveled. Changes in level greater than $\frac{1}{4}$ inch (6.4 mm) in height and not more than $\frac{1}{2}$ inch (13 mm) maximum in height shall be beveled with a slope not steeper than 1:2.

303.4 Ramps. Changes in level greater than $\frac{1}{2}$ inch (13 mm) in height shall be ramped and shall comply with Section 405 or 406.

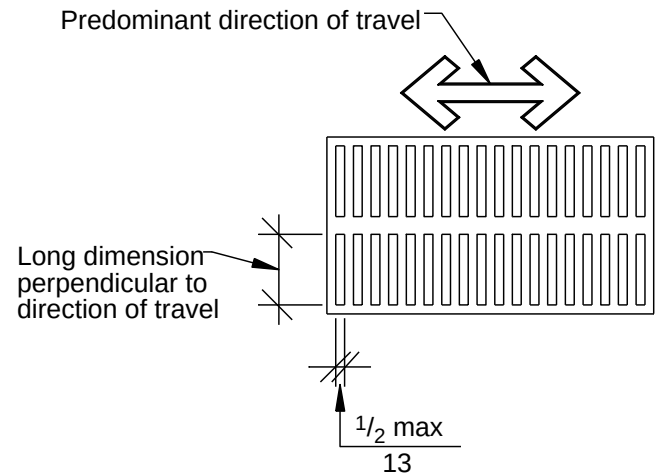


FIG. 302.3
OPENINGS IN FLOOR SURFACES

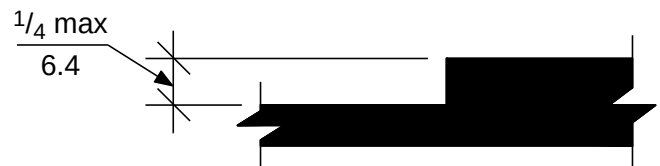
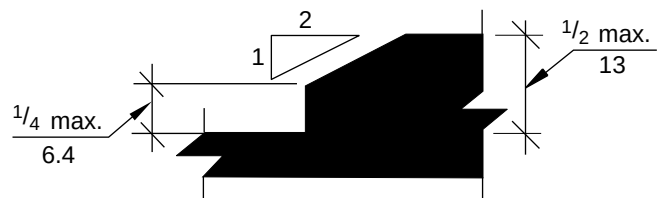
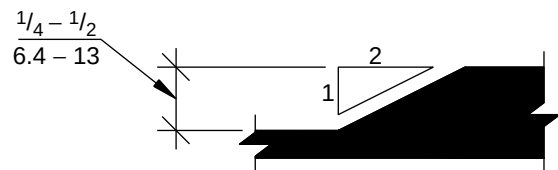


FIG. 303.2
CARPET ON FLOOR SURFACES



(a)



(b)

FIG. 303.3
BEVELED CHANGES IN LEVEL

304 Turning Space

304.1 General. A turning space shall comply with Section 304.



Documents

Document Sharing Hub

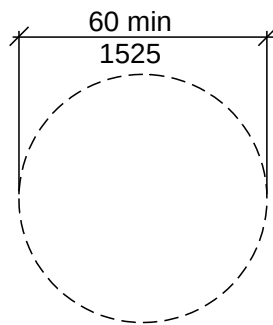
304.2 Floor Surface. Floor surfaces of a turning space shall comply with Section 302. Changes in level are not permitted within the turning space.

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

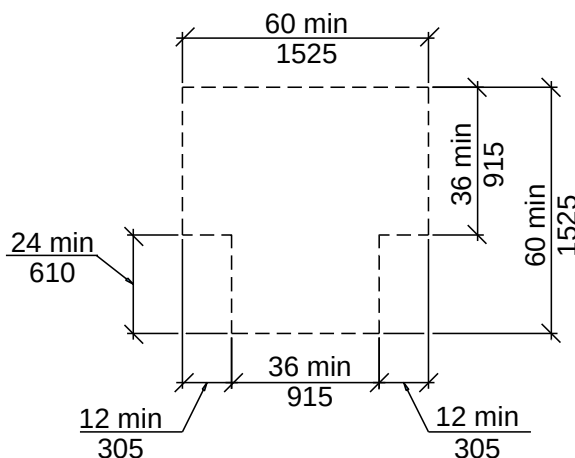
304.3 Size. Turning spaces shall comply with Section 304.3.1 or 304.3.2.

304.3.1 Circular Space. The turning space shall be a circular space with a 60-inch (1525 mm) minimum diameter. The turning space shall be permitted to include knee and toe clearance complying with Section 306.

304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60-inch (1525 mm) minimum square, with arms and base 36 inches (915 mm) minimum in width. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction, and the base shall be clear of obstructions 24 inches (610 mm) minimum. The turning space shall be permitted to include knee and toe clearance complying with Section 306 only at the end of either the base or one arm.



(a) Circular



(b) T-shaped

FIG. 304.3
SIZE OF TURNING SPACE

304.4 Door Swing. Unless otherwise specified, doors shall be permitted to swing into turning spaces.

305 Clear Floor Space

305.1 General. A clear floor space shall comply with Section 305.

305.2 Floor Surfaces. Floor surfaces of a clear floor space shall comply with Section 302. Changes in level are not permitted within the clear floor space.

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

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

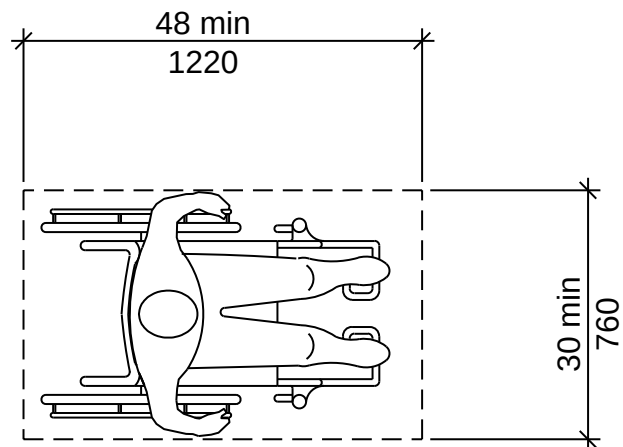


FIG. 305.3
SIZE OF CLEAR FLOOR SPACE

305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor space shall be permitted to include knee and toe clearance complying with Section 306.

305.5 Position. Unless otherwise specified, the clear floor space shall be positioned for either forward or parallel approach to an element.

305.6 Approach. One full, unobstructed side of the clear floor space shall adjoin or overlap an accessible route or adjoin another clear floor space.

305.7 Alcoves. If a clear floor space is in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearances complying with Sections 305.7.1 and 305.7.2 shall be provided, as applicable.

305.7.1 Parallel Approach. Where the clear floor space is positioned for a parallel approach, the alcove shall be 60 inches (1525 mm) minimum in width where the depth exceeds 15 inches (380 mm).

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



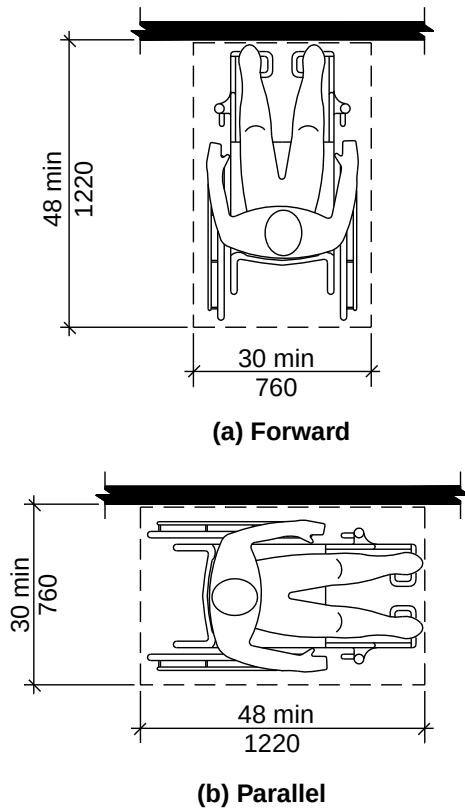


FIG. 305.5
POSITION OF CLEAR FLOOR SPACE

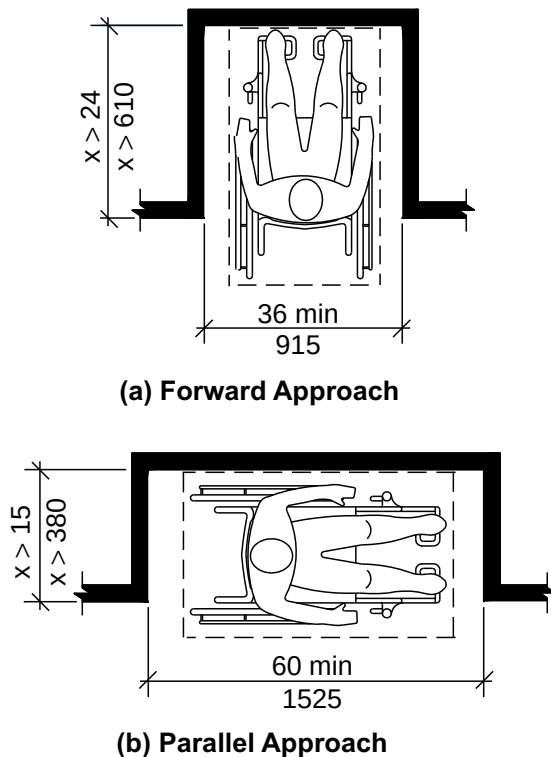


FIG. 305.7
MANEUVERING CLEARANCE IN AN ALCOVE

306 Knee and Toe Clearance

306.1 General. Where space beneath an element is included as part of clear floor space at an element, clearance at an element, or a turning space, the space shall comply with Section 306. Additional space shall not be prohibited beneath an element, but shall not be considered as part of the clear floor space or turning space.

306.2 Toe Clearance.

306.2.1 General. Space beneath an element between the floor and 9 inches (230 mm) above the floor shall be considered toe clearance and shall comply with Section 306.2.

306.2.2 Maximum Depth. Toe clearance shall be permitted to extend 25 inches (635 mm) maximum under an element.

306.2.3 Minimum Depth. Where toe clearance is required at an element as part of a clear floor space complying with Section 305, the toe clearance shall extend 17 inches (430 mm) minimum beneath the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the floor shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) minimum in width.

306.3 Knee Clearance.

306.3.1 General. Space beneath an element between 9 inches (230 mm) and 27 inches (685 mm) above the floor shall be considered knee clearance and shall comply with Section 306.3.

306.3.2 Maximum Depth. Knee clearance shall be permitted to extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the floor.

306.3.3 Minimum Depth. Where knee clearance is required beneath an element as part of a clear floor space complying with Section 305, the knee clearance shall be 11 inches (280 mm) minimum in depth at 9 inches (230 mm) above the floor, and 8 inches (205 mm) minimum in depth at 27 inches (685 mm) above the floor.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the floor, the knee clearance shall be permitted to be reduced at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) minimum in width.

307 Protruding Objects

307.1 General. Protruding objects on circulation paths shall comply with Section 307.

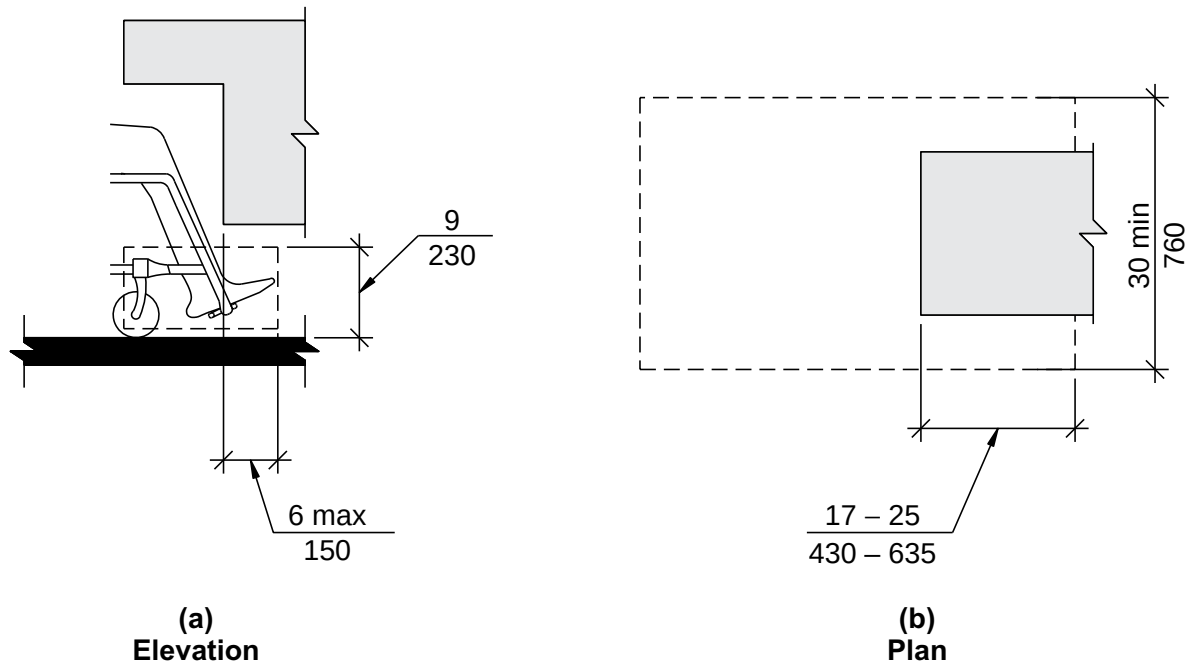


FIG. 306.2
TOE CLEARANCE

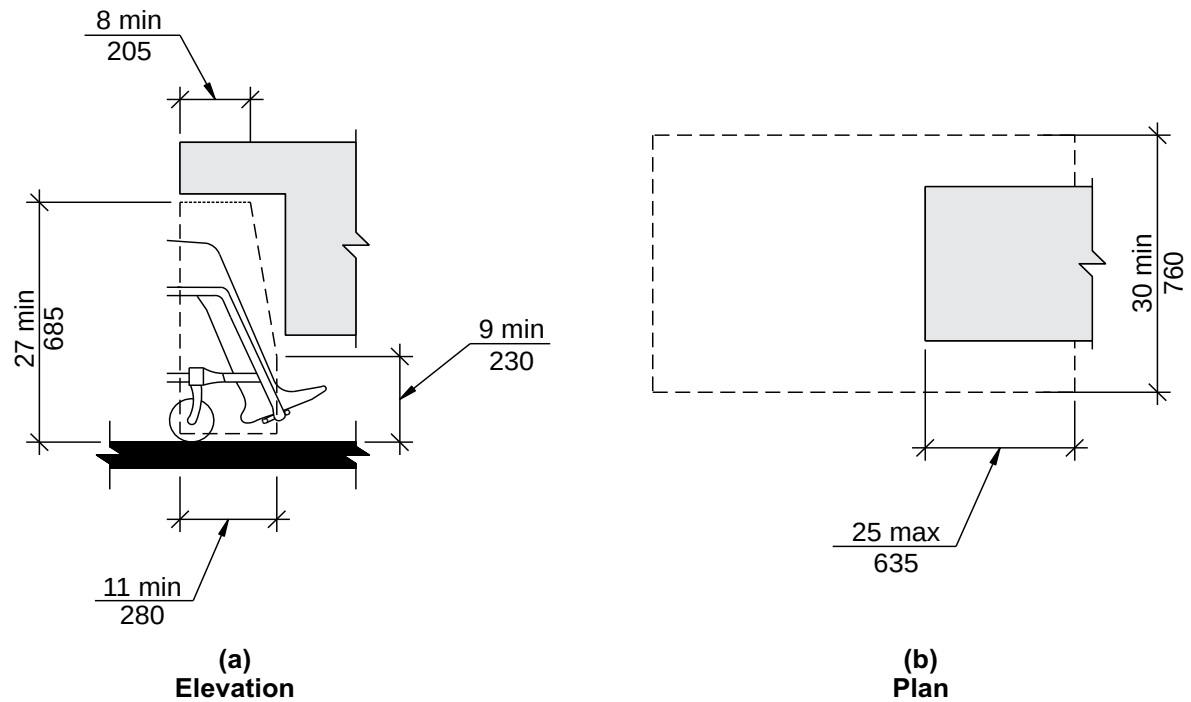


FIG. 306.3
KNEE CLEARANCE

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the floor shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

EXCEPTION: Handrails shall be permitted to protrude 4½ inches (115 mm) maximum.

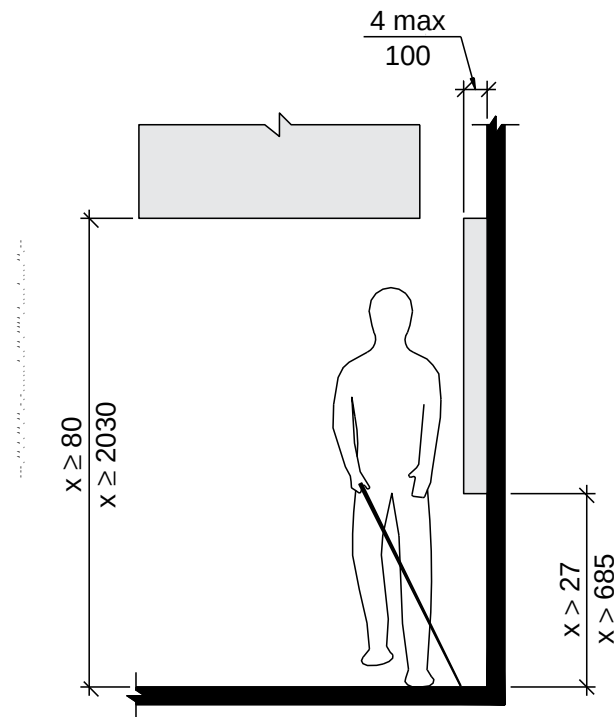


FIG. 307.2
LIMITS OF PROTRUDING OBJECTS

307.3 Post-Mounted Objects. Objects on posts or pylons shall be permitted to overhang 4 inches (100 mm) maximum where more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the floor. Objects on multiple posts or pylons where the clear distance between the posts or pylons is greater than 12 inches (305 mm) shall have the lowest edge of such object either 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the floor.

EXCEPTION: Sloping portions of handrails between the top and bottom riser of stairs and above the ramp run shall not be required to comply with Section 307.3.

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) minimum. Rails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm). The leading edge of such rails or barrier shall be located 27 inches (685 mm) maximum above the floor.

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

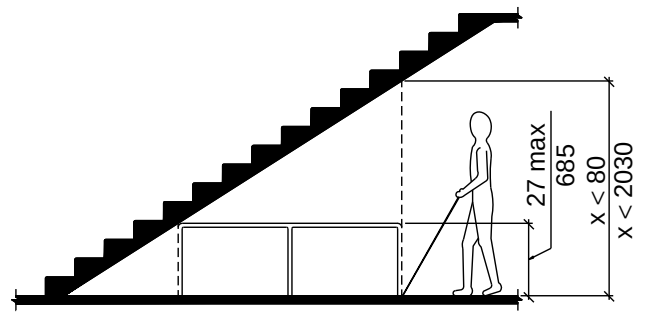


FIG. 307.4
REDUCED VERTICAL CLEARANCE

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges

308.1 General. Reach ranges shall comply with Section 308.

308.2 Forward Reach.

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

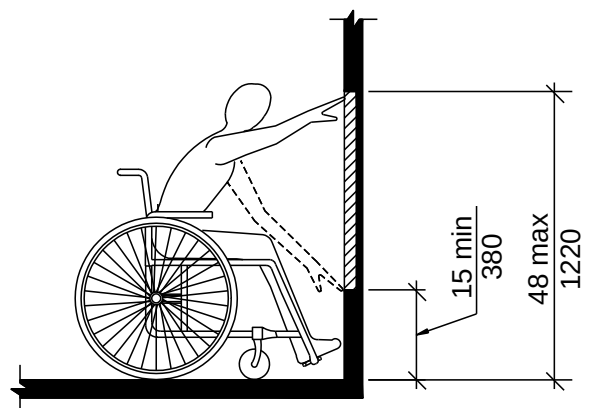
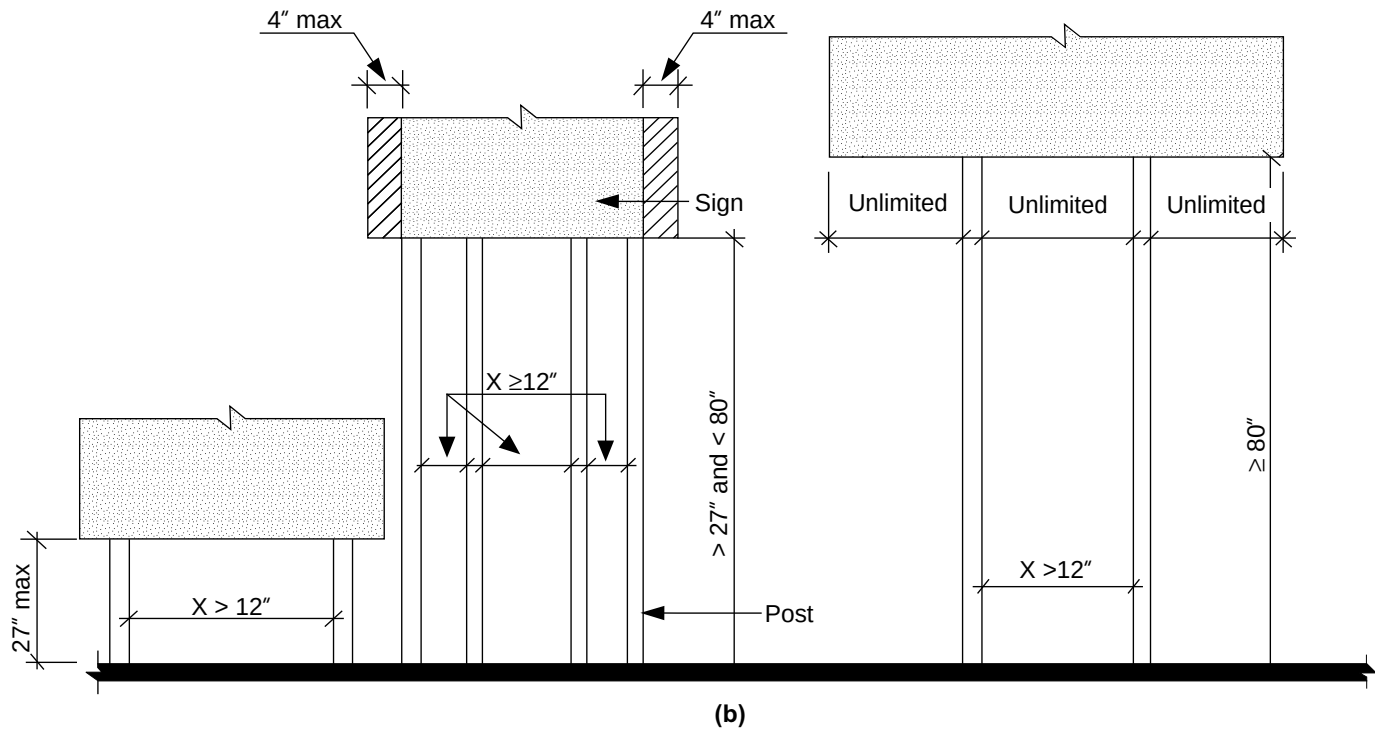


FIG. 308.2.1
UNOBSTRUCTED FORWARD REACH

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space complying with Section 305 shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum above the floor where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum above the floor, and the reach depth shall be 25 inches (635 mm) maximum.



Provided by IHS under license with ICC

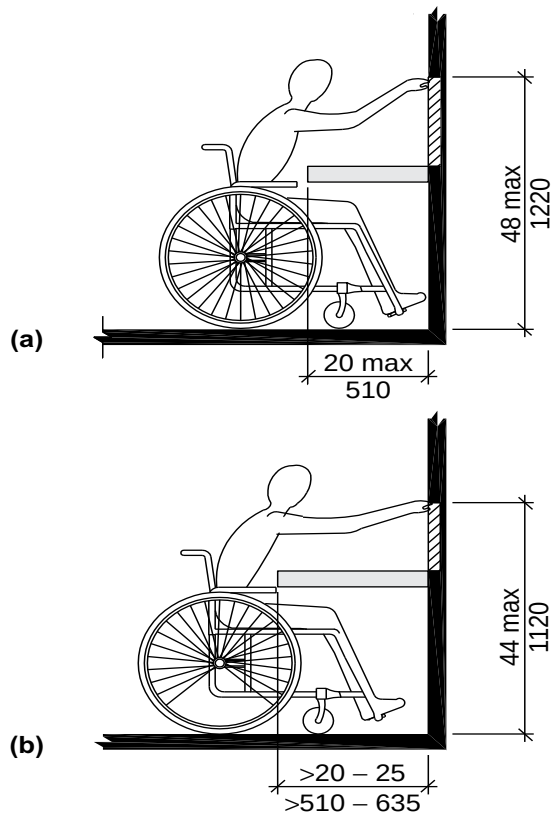


FIG. 308.2.2
OBSTRUCTED HIGH FORWARD REACH

308.3 Side Reach.

308.3.1 Unobstructed. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the edge of the clear floor space is 10 inches (255 mm) maximum from the

element, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the floor.

EXCEPTION: Existing elements that are not altered shall be permitted at 54 inches (1370 mm) maximum above the floor.

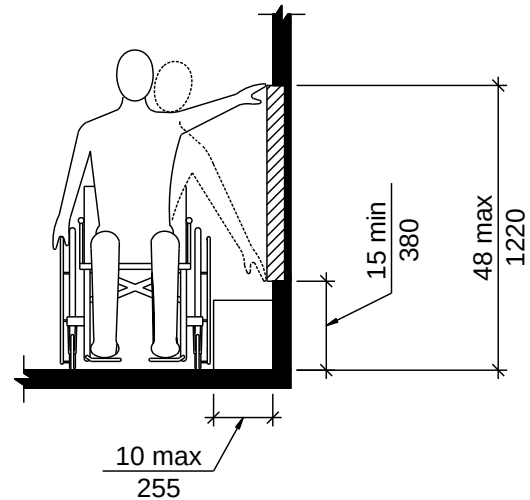


FIG. 308.3.1
UNOBSTRUCTED SIDE REACH

308.3.2 Obstructed High Side Reach. Where a clear floor space complying with Section 305 allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum above the floor and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum above the floor for a reach depth of 10 inches (255 mm) maxi-

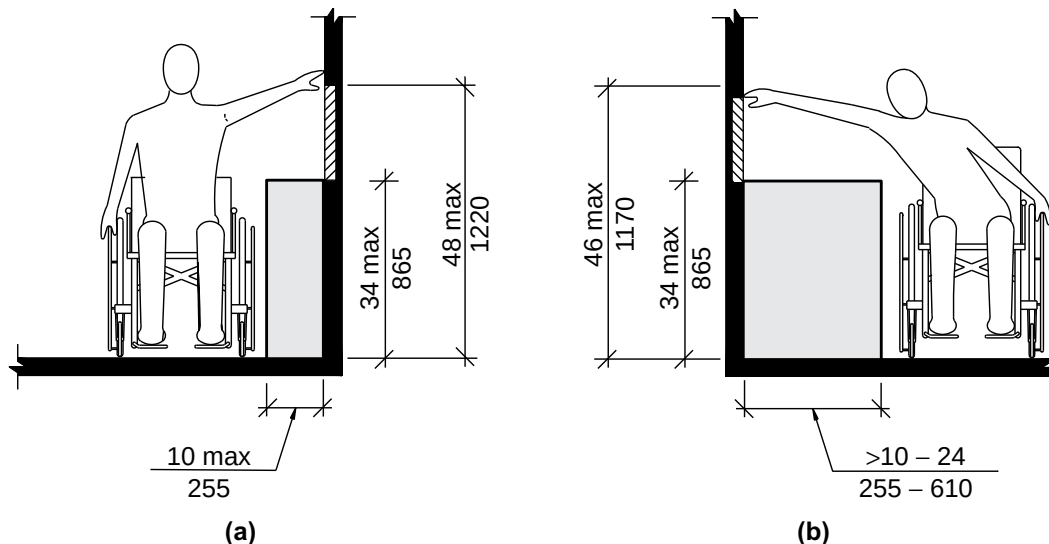


FIG. 308.3.2
OBSTRUCTED HIGH SIDE REACH

imum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum above the floor for a reach depth of 24 inches (610 mm) maximum.

EXCEPTION: At washing machines and clothes dryers, the height of the obstruction shall be permitted to be 36 inches (915 mm) maximum above the floor.

309 Operable Parts

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

309.2 Clear Floor Space. A clear floor space complying with Section 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in Section 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5.0 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5.0 pounds (22.2 N) maximum.

ICC A117.1-2009

Chapter 4. Accessible Routes

401 General

401.1 Scope. Accessible routes required by the scoping provisions adopted by the administrative authority shall comply with the applicable provisions of Chapter 4.

402 Accessible Routes

402.1 General. Accessible routes shall comply with Section 402.

402.2 Components. Accessible routes shall consist of one or more of the following components: Walking surfaces with a 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.

402.3 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

403 Walking Surfaces

403.1 General. Walking surfaces that are a part of an accessible route shall comply with Section 403.

403.2 Floor Surface. Floor surfaces shall comply with Section 302.

403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of a walking surface shall not be steeper than 1:48.

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

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 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.

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 inches (1065 mm) minimum leaving the turn.

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

403.5.2 Passing Space. An accessible route with a clear width less than 60 inches (1525 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 (1525 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 inches (1220 mm) minimum beyond the intersection.

403.6 Handrails. Where handrails are required at the side of a corridor they shall comply with Sections 505.4 through 505.9.

404 Doors and Doorways

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

404.2 Manual Doors. Manual doors and doorways, and manual gates, 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.

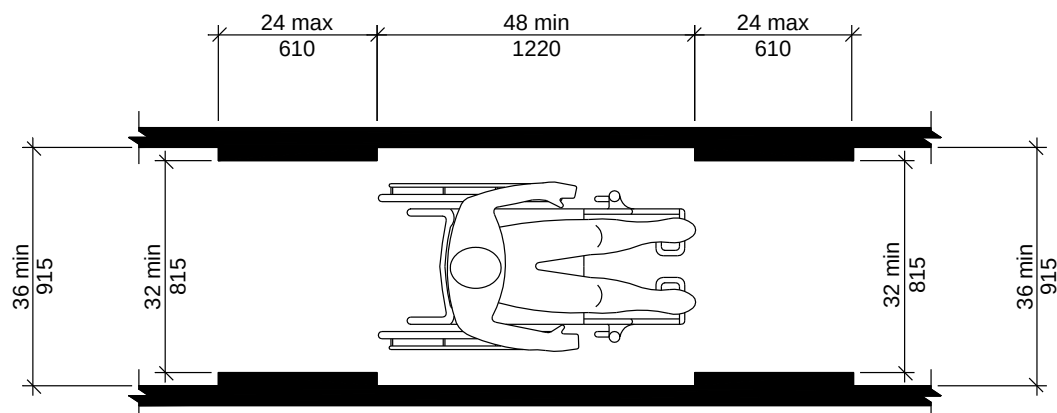


FIG. 403.5
CLEAR WIDTH OF AN ACCESSIBLE ROUTE

404.2.1 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with Sections 404.2.2 and 404.2.3.

404.2.2 Clear Width. Doorways shall have a clear opening width of 32 inches (815 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

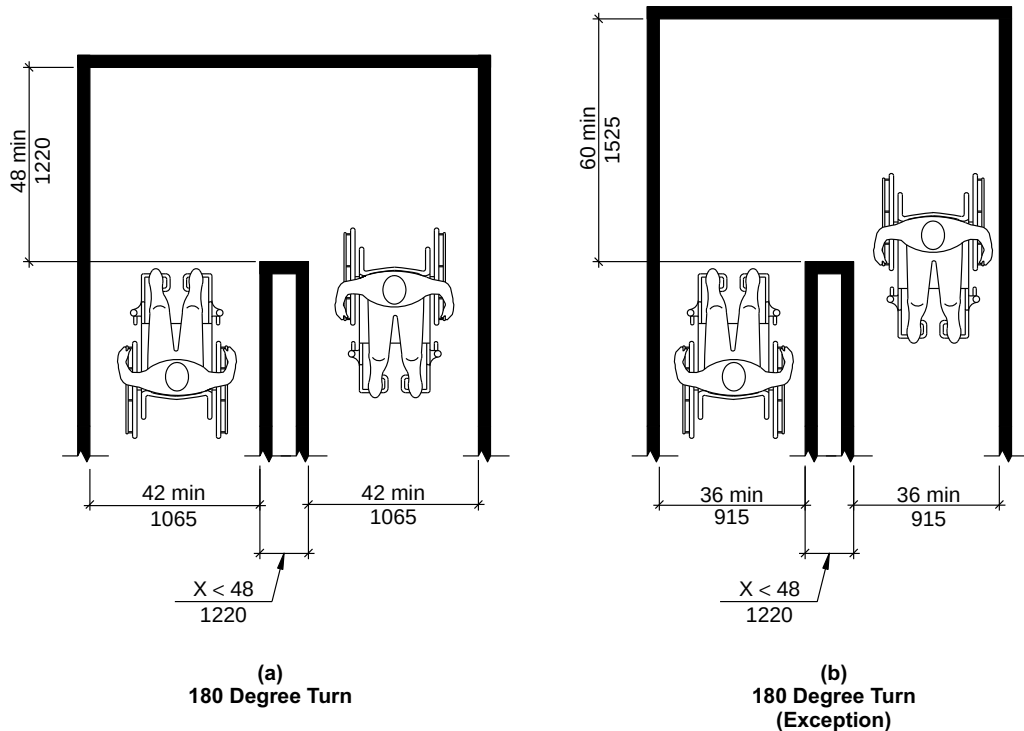


FIG. 403.5.1
CLEAR WIDTH AT 180° TURN

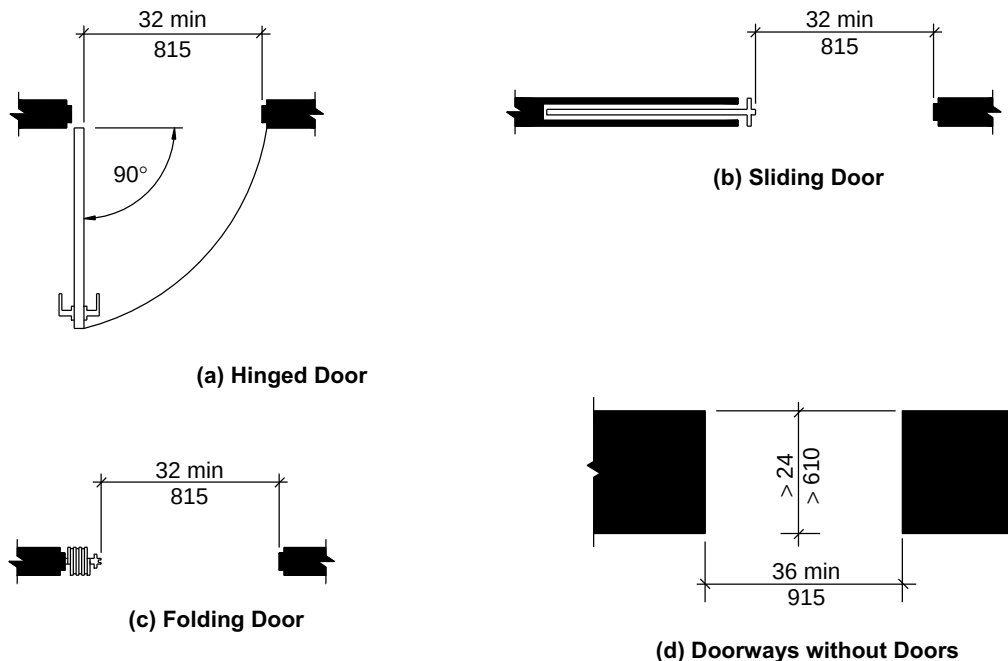


FIG. 404.2.2
CLEAR WIDTH OF DOORWAYS

than 34 inches (865 mm) above the floor. Projections into the clear opening width between 34 inches (865 mm) 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 $\frac{5}{8}$ inch (16 mm) maximum into the required clear opening width shall be permitted for the latch side stop.

404.2.3 Maneuvering Clearances. Minimum maneuvering clearances at doors shall comply

with Section 404.2.3 and shall include the full clear opening width of the doorway. Required door maneuvering clearances shall not include knee and toe clearance.

404.2.3.1 Floor Surface. Floor surface within the maneuvering clearances shall have a slope not steeper than 1:48 and shall comply with Section 302.

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

404.2.3.3 Sliding and Folding Doors. Sliding doors and folding doors shall have maneuvering clearances complying with Table 404.2.3.3.

TABLE 404.2.3.2—MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS

TYPE OF USE		MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS	
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)

¹Add 6 inches (150 mm) if closer and latch provided.

²Add 6 inches (150 mm) if closer provided.

³Add 12 inches (305 mm) beyond latch if closer and latch provided.

⁴Beyond hinge side.

TABLE 404.2.3.3—MANEUVERING CLEARANCES AT SLIDING AND FOLDING DOORS

Approach Direction	MINIMUM MANEUVERING CLEARANCES	
	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)

¹Beyond pocket or hinge side.

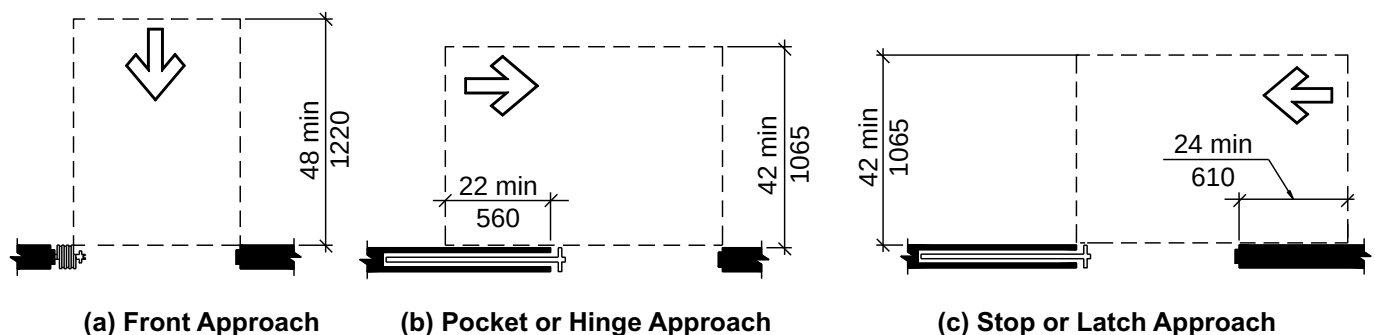


**FIG. 404.2.3.3
MANEUVERING CLEARANCE AT SLIDING AND FOLDING DOORS**

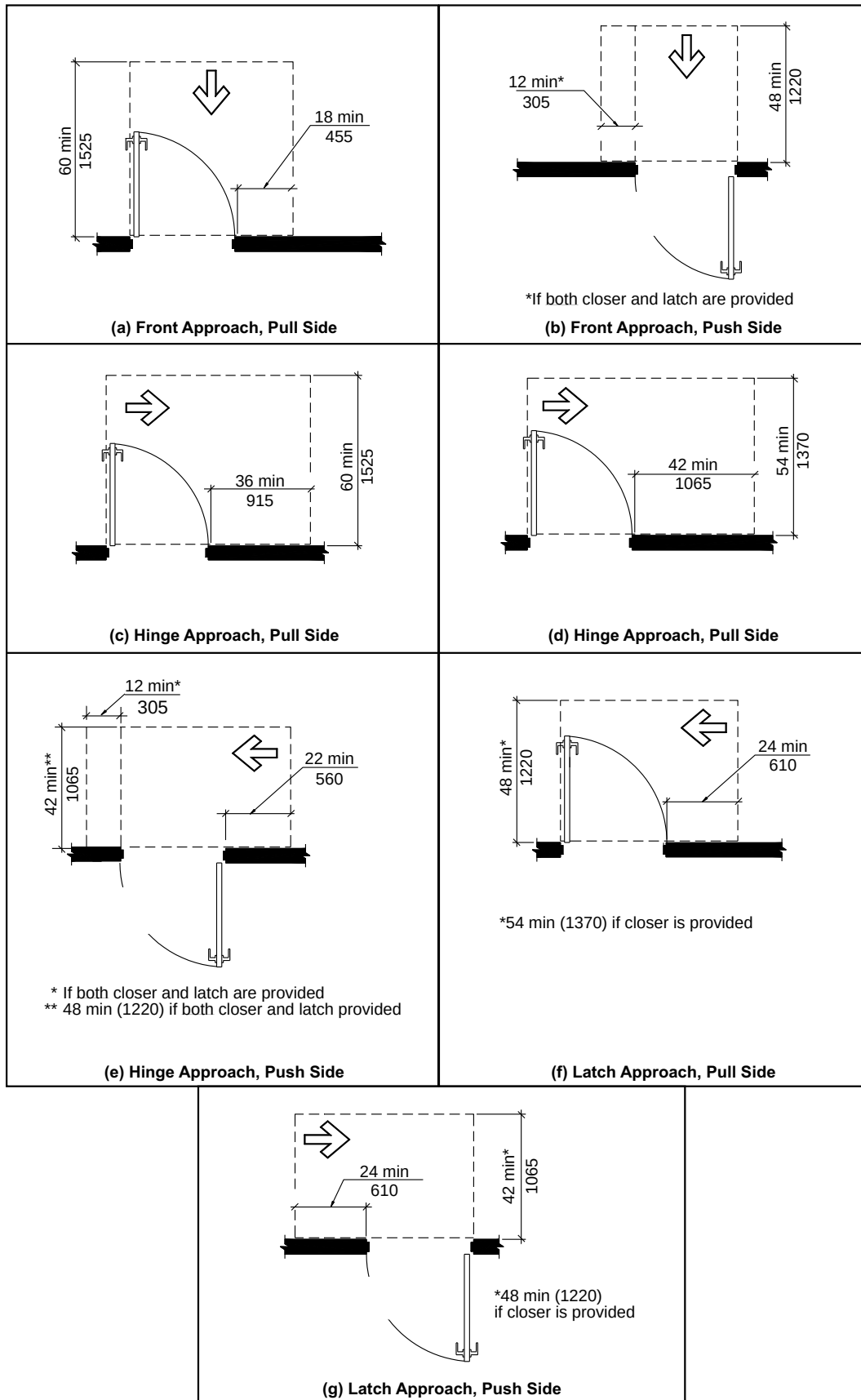


FIG. 404.2.3.2
MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS

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

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.

404.2.4 Thresholds. If provided, thresholds at doorways shall be $\frac{1}{2}$ inch (13 mm) maximum in height. Raised thresholds and changes in level at doorways shall comply with Sections 302 and 303.

EXCEPTION: An existing or altered threshold shall be permitted to be $\frac{3}{4}$ inch (19 mm) maximum in height provided that the threshold has a beveled edge on each side with a maximum slope of 1:2 for the height exceeding $\frac{1}{4}$ inch (6.4 mm).

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. The space between the doors shall provide a turning space complying with Section 304.

404.2.6 Door Hardware. Handles, pulls, latches, locks, and other operable parts on accessible doors shall have a shape that is easy to grasp with one hand and does not require tight grasping, pinching, or twisting of the wrist to operate. 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.

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.

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.

TABLE 404.2.3.4—MANEUVERING CLEARANCES FOR DOORWAYS WITHOUT DOORS

Approach Direction	MINIMUM MANEUVERING CLEARANCES Perpendicular to Doorway
From front	48 inches (1220 mm)
From side	42 inches (1065 mm)

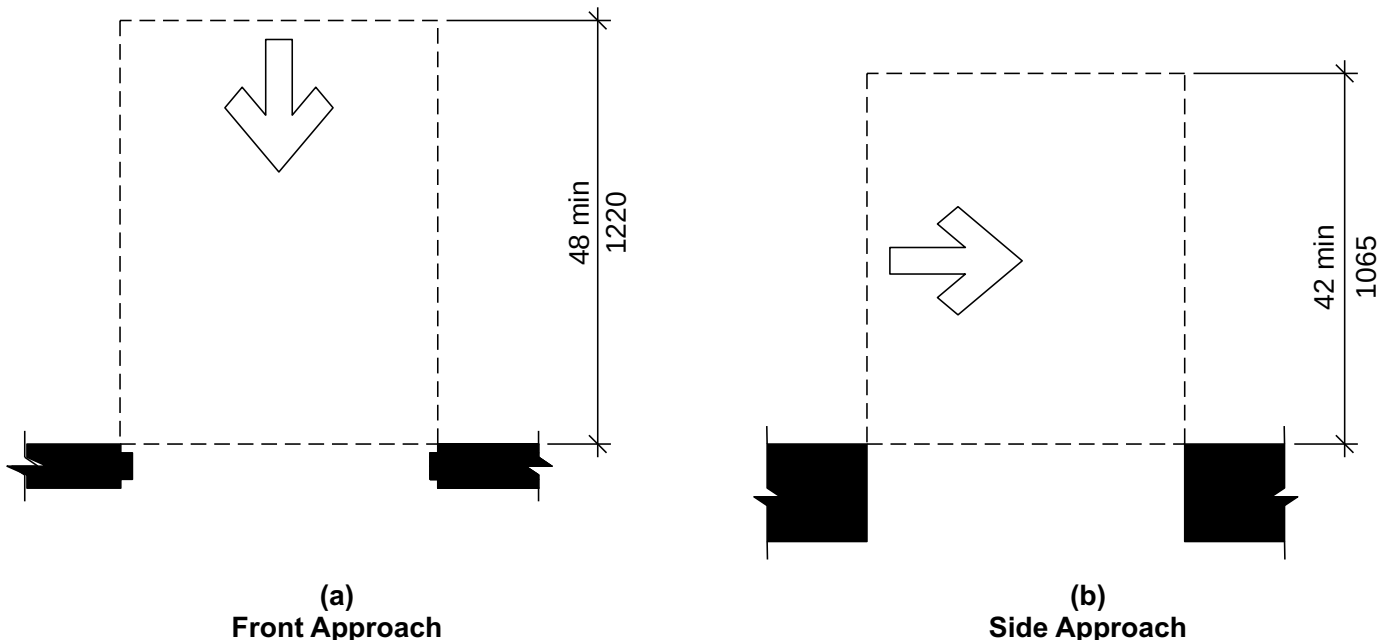


FIG. 404.2.3.4
MANEUVERING CLEARANCE AT DOORWAYS WITHOUT DOORS



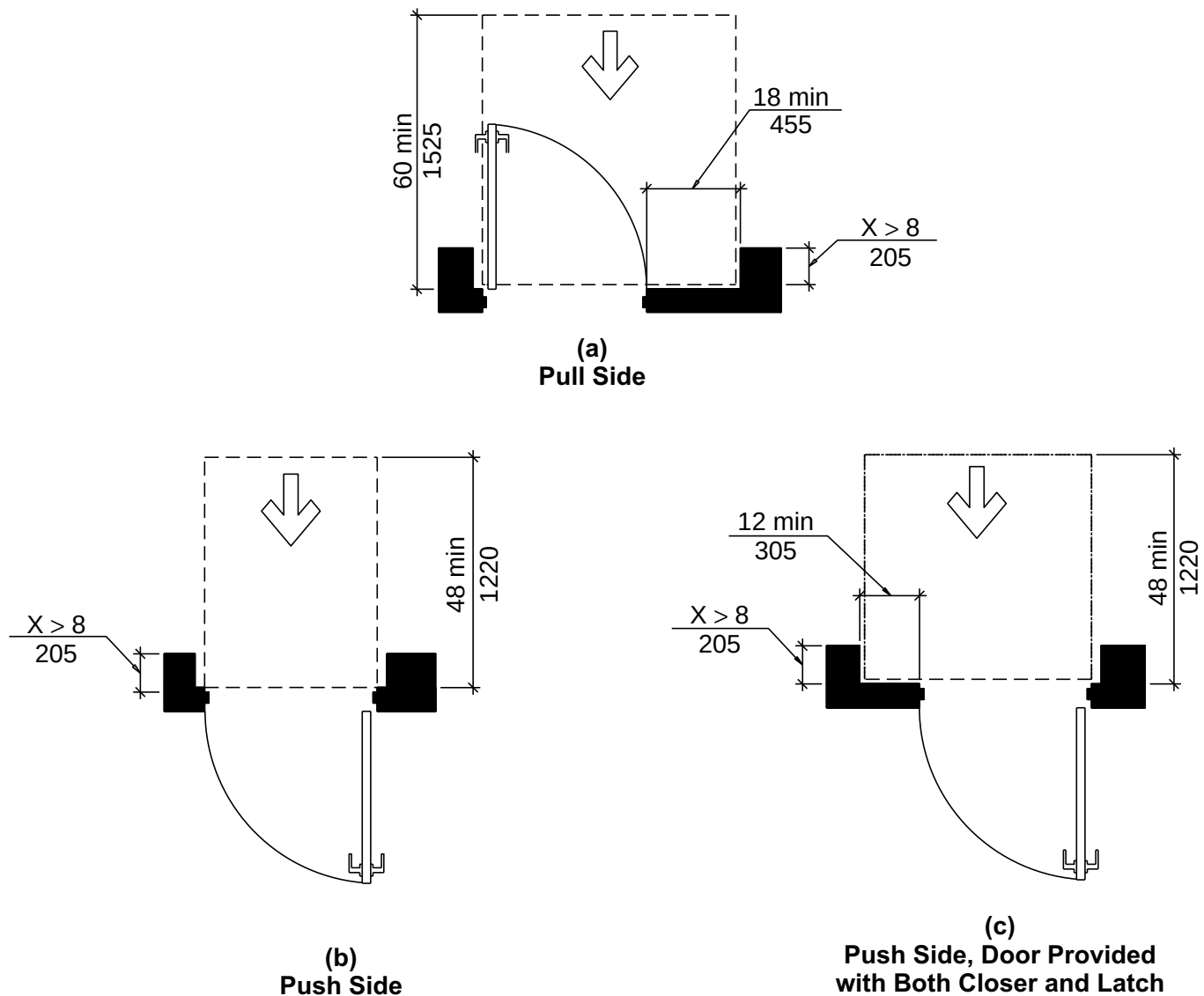


FIG. 404.2.3.5
MANEUVERING CLEARANCE AT RECESSED DOORS

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.

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 $\frac{1}{16}$ 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.
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.

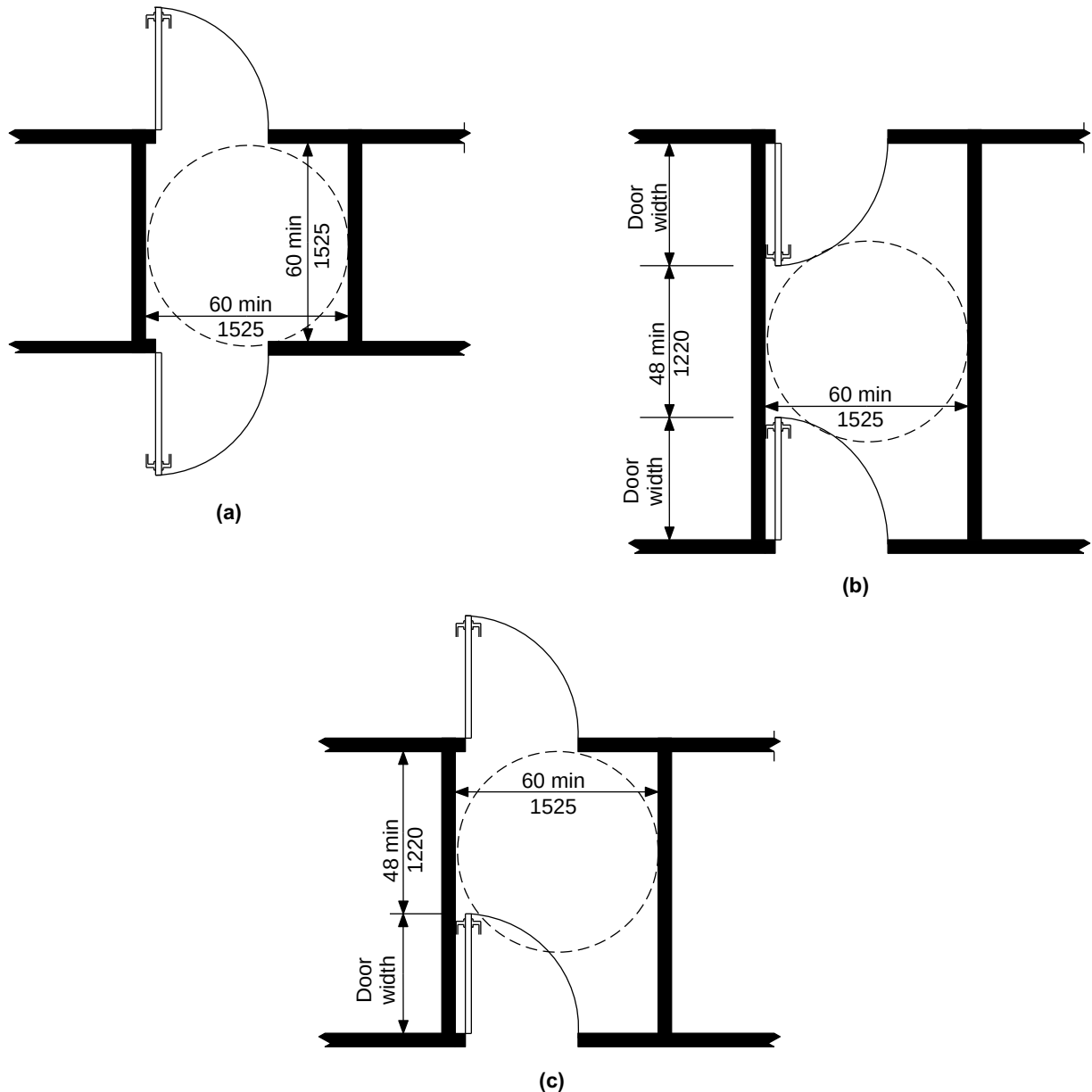


Fig. 404.2.5
TWO DOORS IN A SERIES

404.2.10 Vision Lites. Doors and sidelites adjacent to doors 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: Vision lites with the lowest part more than 66 inches (1675 mm) above the floor shall not be required to comply with Section 404.2.10.

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.

404.3.1 Clear Width. Doorways shall have a clear opening width of 32 inches (815 mm) in power-on and power-off mode. The minimum clear opening width for automatic door systems shall be based on the clear opening width provided with all leaves in the open position.

404.3.2 Maneuvering Clearances. Maneuvering clearances at power-assisted doors shall comply with Section 404.2.3.

404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with Section 404.2.4.

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

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.

405 Ramps

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

EXCEPTION: 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.

405.2 Slope. Ramp runs shall have a running slope greater than 1:20 and not steeper than 1:12.

EXCEPTION: In existing buildings or facilities, ramps shall be permitted to have slopes steeper than 1:12 complying with Table 405.2 where such slopes are necessary due to space limitations.

405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

405.4 Floor Surfaces. Floor surfaces of ramp runs shall comply with Section 302.

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

405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

405.7 Landings. Ramps shall have landings at the bottom and top of each ramp run. Landings shall comply with Section 405.7.

405.7.1 Slope. Landings shall have a slope not steeper than 1:48 and shall comply with Section 302.

405.7.2 Width. Clear width of landings shall be at least as wide as the widest ramp run leading to the landing.

405.7.3 Length. Landings shall have a clear length of 60 inches (1525 mm) minimum.

405.7.4 Change in Direction. Ramps that change direction at ramp landings shall be sized to provide a turning space complying with Section 304.3.

405.7.5 Doorways. Where doorways are adjacent to a ramp landing, maneuvering clearances required by Sections 404.2.3 and 404.3.2 shall be permitted to overlap the landing area. Where a door that is subject to locking is located adjacent to a ramp landing, the landing shall be sized to provide a turning space complying with Section 304.3.

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

TABLE 405.2—ALLOWABLE RAMP DIMENSIONS FOR CONSTRUCTION IN EXISTING SITES, BUILDINGS AND FACILITIES

Slope ¹	Maximum Rise
Steeper than 1:10 but not steeper than 1:8	3 inches (75 mm)
Steeper than 1:12 but not steeper than 1:10	6 inches (150 mm)

¹A slope steeper than 1:8 shall not be permitted.

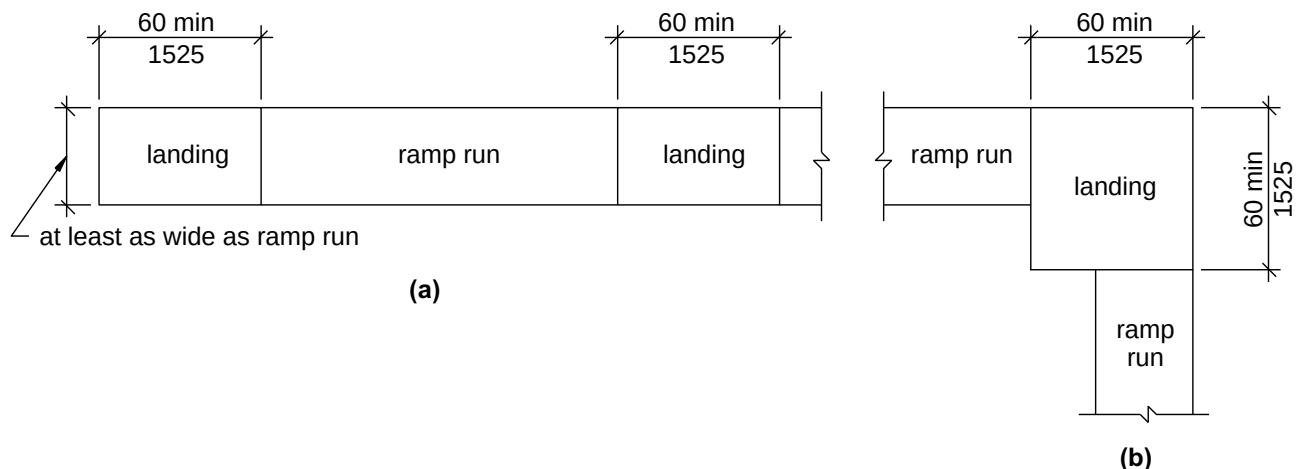


**FIG. 405.7
RAMP LANDINGS**

405.9 Edge Protection. Edge protection complying with Section 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.

EXCEPTIONS:

1. Edge protection shall not be required on ramps not required to have handrails and that have flared sides complying with Section 406.3.
2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of $\frac{1}{2}$ inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in Section 405.7.
4. Edge protection shall not be required on the sides of ramped aisles where the ramps provide access to the adjacent seats and aisle access ways.

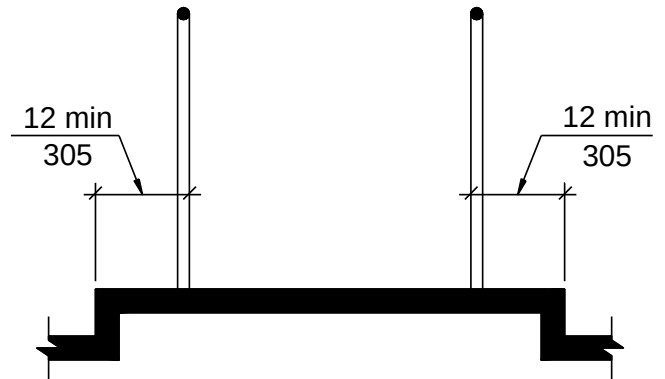
405.9.1 Extended Floor Surface. The floor surface of the ramp run or ramp landing shall extend 12 inches (305 mm) minimum beyond the inside face of a railing complying with Section 505.

405.9.2 Curb or Barrier. A curb complying with Section 405.9.2.1 or a barrier complying with Section 405.9.2.2 shall be provided.

405.9.2.1 Curb. A curb shall be a minimum of 4 inches (100 mm) in height.

405.9.2.2 Barrier. Barriers shall be constructed so that the barrier prevents the passage of a 4-inch (100 mm) diameter sphere where any portion of the sphere is within 4 inches (100 mm) of the floor.

405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.



Extended Floor Surface

**FIG. 405.9.1
EXTENDED FLOOR SURFACE**

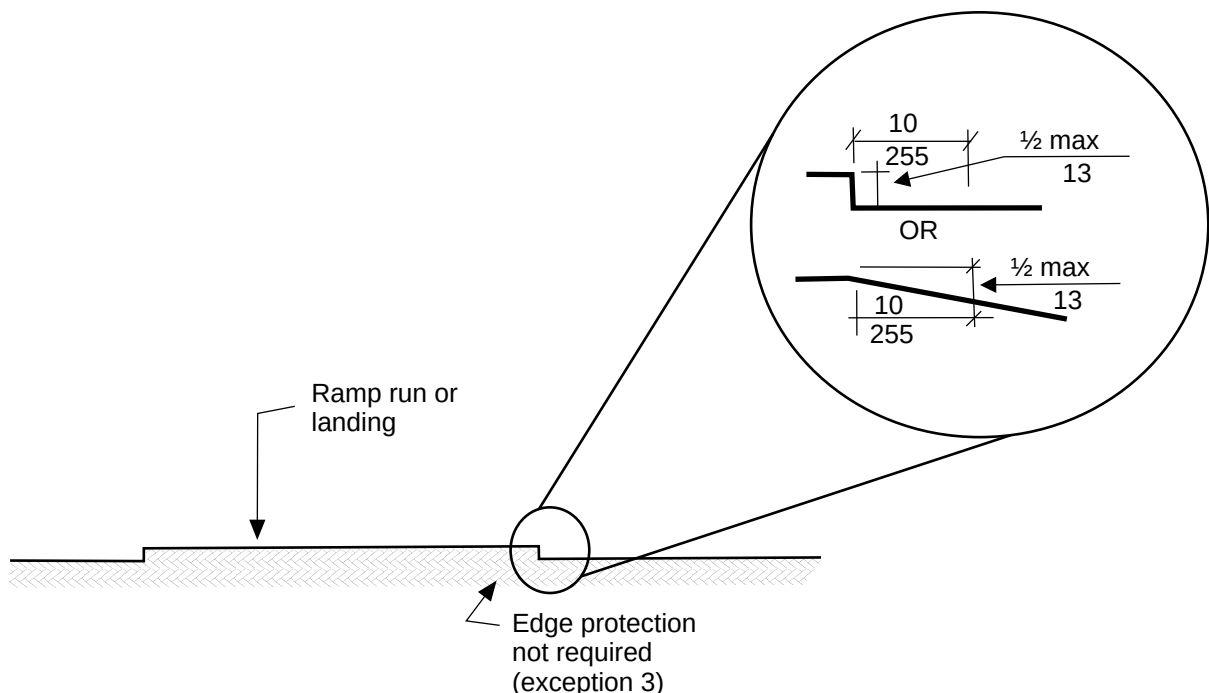


**FIG. 405.9
EDGE PROTECTION—LIMITED DROP OFF**

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.

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

406.4 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.

406.6 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.

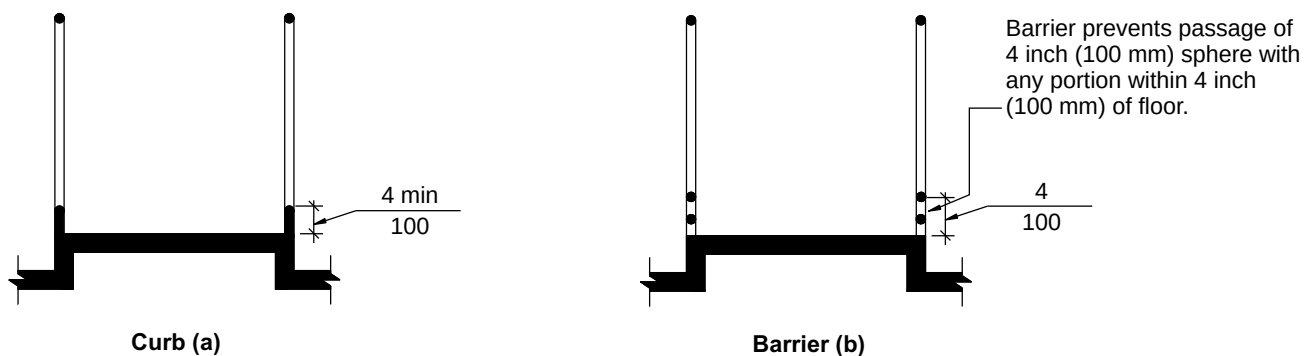


FIG. 405.9.2
RAMP EDGE PROTECTION

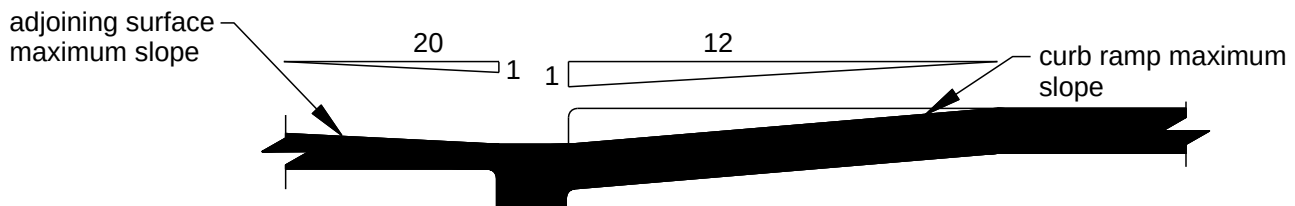


FIG. 406.2
COUNTER SLOPE OF SURFACES ADJACENT TO CURB RAMPS

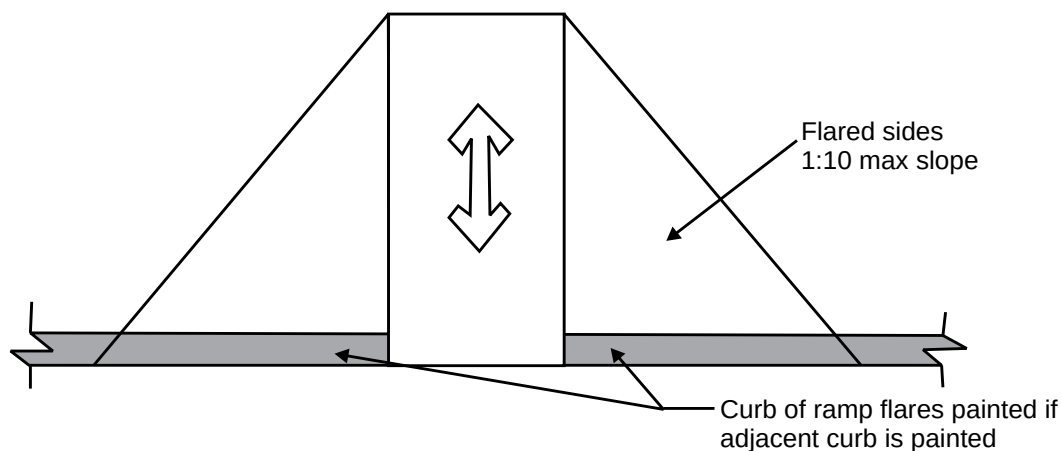


FIG. 406.3
SIDES OF CURB RAMPS

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.

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

406.9 Handrails. Handrails shall not be required on curb ramps.

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.

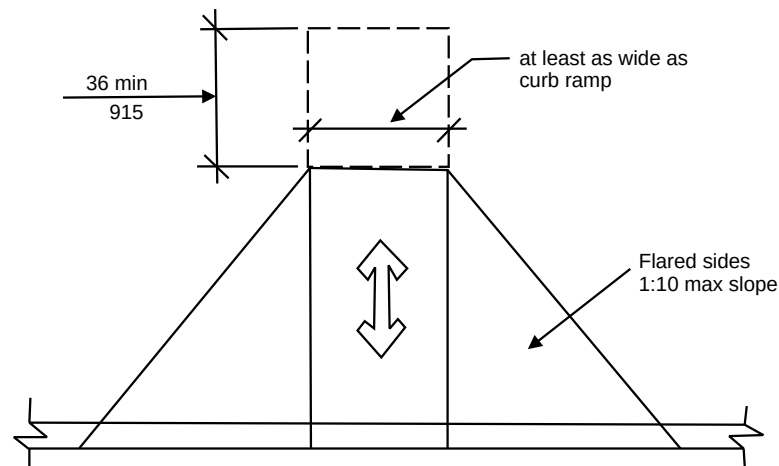


FIG. 406.7
LANDINGS

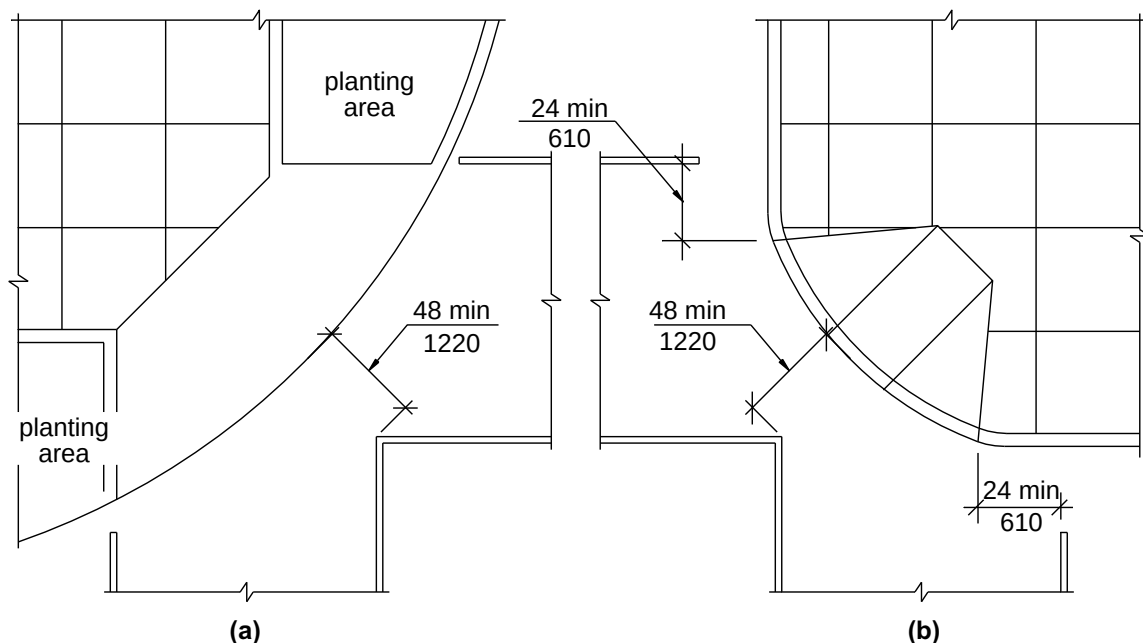


FIG. 406.10
DIAGONAL CURB RAMPS

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.

406.12 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.

406.13 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 pro-

vided 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.

407 Elevators

407.1 General. Elevators shall comply with Section 407 and ASME A17.1/CSA B44 listed in Section 105.2.5. Elevators shall be passenger elevators as classified by ASME A17.1/CSA B44. Elevator operation shall be automatic.

407.2 Elevator Landing Requirements. Elevator landings shall comply with Section 407.2.

407.2.1 Call Controls. Where elevator call buttons or keypads are provided, they shall comply with Sections 407.2.1 and 309.4. Call buttons shall be raised or flush. Objects beneath hall call buttons shall protrude 1 inch (25 mm) maximum.

EXCEPTIONS:

1. Existing elevators shall be permitted to have recessed call buttons.
2. The restriction on objects beneath call buttons shall not apply to existing call buttons.

407.2.1.1 Height. Call buttons and keypads shall be located within one of the reach ranges speci-

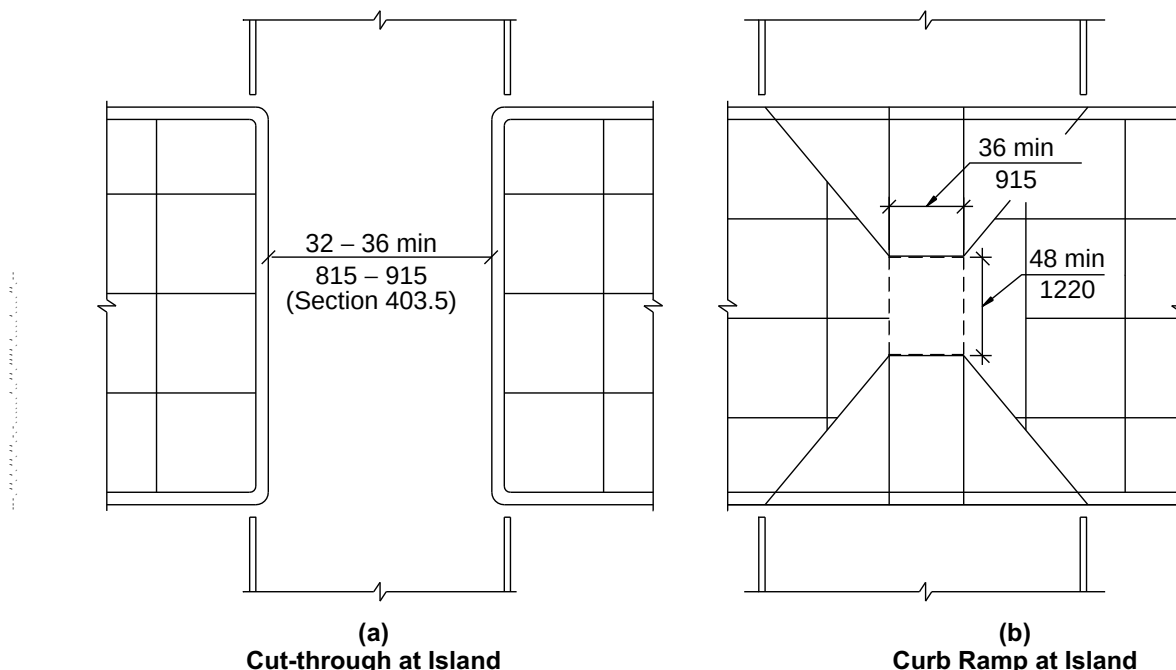


FIG. 406.11
ISLANDS

fied 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.

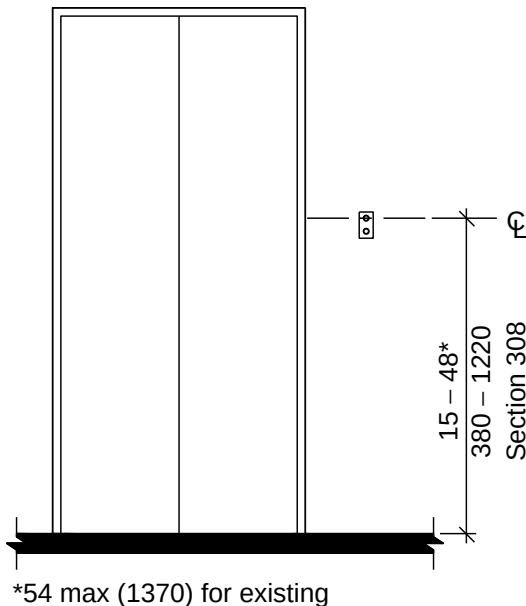


FIG. 407.2.1.1
HEIGHT OF ELEVATOR CALL BUTTONS

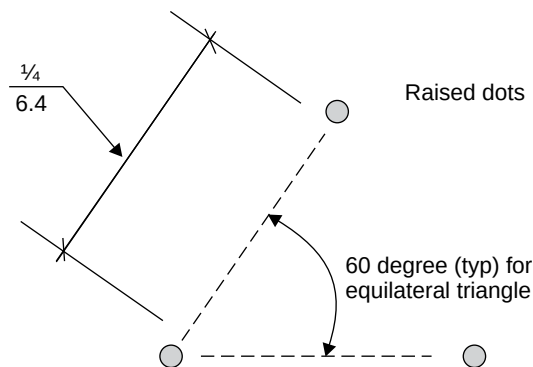
407.2.1.2 Size. Call buttons shall be $\frac{3}{4}$ inch (19 mm) minimum in the smallest dimension.

EXCEPTION: Existing elevator call buttons shall not be required to comply with Section 407.2.1.2.

407.2.1.3 Clear Floor Space. A clear floor space complying with Section 305 shall be provided at call controls.



Visual and raised information



Raised information

FIG. 407.2.1.7
DESTINATION-ORIENTED ELEVATOR INDICATION

407.2.1.4 Location. The call button that designates the up direction shall be located above the call button that designates the down direction.

EXCEPTION: Destination-oriented elevators shall not be required to comply with Section 407.2.1.4.

407.2.1.5 Signals. Call buttons shall have visible signals to indicate when each call is registered and when each call is answered. Call buttons shall provide an audible signal or mechanical motion of the button to indicate when each call is registered.

EXCEPTIONS:

1. Destination-oriented elevators shall not be required to comply with Section 407.2.1.5, provided a visible signal and audible tones and verbal announcements complying with Section 407.2.1.7 are provided.
2. Existing elevators shall not be required to comply with Section 407.2.1.5.

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

407.2.1.7 Destination-oriented Elevator Signals. Destination-oriented elevators shall be provided with a visible signal and audible tones and verbal announcements to indicate which car is responding to a call. The audible tone and verbal announcement shall be activated by pressing a function button. The function button shall be identified by the International Symbol for Accessibility and a raised indication. The International Symbol for Accessibility, complying with Section 703.6.3.1, shall be $\frac{5}{8}$ inch (16 mm) in height and be a visual character complying with Section 703.2. The indication shall be three raised dots, spaced $\frac{1}{4}$ inch (6.4 mm) at base diameter, in the form of an equilateral triangle. The function button shall be located immediately below the keypad arrangement or floor buttons.