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Part II

Architectural and Transportation Barriers Compliance Board

36 CFR Part 1196
Passenger Vessels Accessibility Guidelines; Proposed Rule

ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

36 CFR Part 1196

[Docket No. ATBCB–2013–0003]

RIN 3014–AA11

Passenger Vessels Accessibility Guidelines

AGENCY: Architectural and Transportation Barriers Compliance Board.

ACTION: Notice of proposed rulemaking.

SUMMARY: We, the Architectural and Transportation Barriers Compliance Board (Access Board), are proposing accessibility guidelines for the construction and alteration of passenger vessels covered by the Americans with Disabilities Act (ADA) to ensure that the vessels are readily accessible to and usable by passengers with disabilities. The guidelines would apply to passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers. The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with our guidelines. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

DATES: Submit comments by September 23, 2013. A hearing will be held on the proposed guidelines on July 10, 2013, from 9:30 a.m. to 12:00 p.m. To pre-register to testify at the hearing, contact Al Baes at (202) 272–0011 (voice), (202) 272–0082 (TTY), or *baes@access-board.gov*.

ADDRESSES: Submit comments by any of the following methods:

- Federal eRulemaking Portal: *http://www.regulations.gov*. Follow the instructions for submitting comments. Regulations.gov ID for this docket is ATBCB–2013–0003.
- Email: *pvag@access-board.gov*. Include docket number ATBCB–2013–0003 in the subject line of the message.
- Fax: 202–272–0081.
- Mail or Hand Delivery/Courier: Paul Beatty, Access Board, 1331 F Street NW., Suite 1000, Washington, DC 20004–1111.

All comments received, including any personal information provided, will be posted without change to *http://www.regulations.gov* and are available for public viewing.

The hearing will be held in the Access Board Conference Room, 1331 F Street, NW., Suite 800, Washington, DC 20004. Witnesses can testify in person or by telephone. Call-in information and a communication access real-time translation (CART) web streaming link will be posted on the Access Board's Passenger Vessels homepage at *http://www.access-board.gov/pvag/*. The hearing will be accessible to persons with disabilities. An assistive listening system, communication access real-time translation (in-person and streaming), sign language interpreters, and a call-in number will be provided. Persons attending the meetings are requested to refrain from using perfume, cologne, and other fragrances for the comfort of other participants (see *www.access-board.gov/about/policies/fragrance.htm* for more information).

FOR FURTHER INFORMATION CONTACT: Paul Beatty, Access Board, 1331 F Street NW., Suite 1000, Washington, DC 20004–1111. Telephone: (202) 272–0012 (voice) or (202) 272–0072 (TTY). Email address: *pvag@access-board.gov*.

SUPPLEMENTARY INFORMATION:

Table of Contents for Preamble

In this preamble, ''we'' and ''our'' refer to the Architectural and Transportation Barriers Compliance Board (Access Board).[1]

1. Public Participation and Request for Comments

We encourage all persons interested in the rulemaking to submit comments on the proposed guidelines and the questions in the preamble. Instructions for submitting and viewing comments are provided above under Addresses. We will consider all the comments and may change the proposed guidelines based on the comments.

2. Executive Summary

Legal Authority and Purpose

We are required by section 502 of the Rehabilitation Act and section 504 of the Americans with Disabilities Act (ADA) to establish and maintain accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA to ensure that the vessels are readily accessible to and usable by individuals with disabilities. We are issuing proposed accessibility guidelines for the construction and alteration of passenger vessels pursuant to this authority to address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. For example, the proposed guidelines would enable individuals with mobility disabilities to access and use passenger amenities on the vessels, such as seating areas, toilet rooms, and guest rooms.

The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with our guidelines. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

Summary of Key Provisions

The proposed guidelines would apply to the construction and alteration of passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers. The proposed guidelines would not apply to smaller passenger vessels because providing accessible features on those vessels present greater challenges due to space constraints and other considerations. The proposed guidelines, themselves, would not require existing passenger vessels to be made accessible except where altered.

The proposed guidelines contain proposed scoping and technical provisions. The proposed scoping

[1] The Access Board is an independent federal agency established by section 502 of the Rehabilitation Act. See 29 U.S.C. 792. The Access Board consists of 13 members appointed by the President from the public, a majority of which are individuals with disabilities, and the heads of 12 federal agencies or their designees whose positions are Executive Level IV or above. The federal agencies are: The Departments of Commerce, Defense, Education, Health and Human Services, Housing and Urban Development, Interior, Justice, Labor, Transportation, and Veterans Affairs; General Services Administration; and United States Postal Service.

provisions specify what passenger vessel features would be required to be accessible. Where multiple features of the same type are provided, the proposed scoping provisions specify how many of the features would be required to be accessible. The proposed technical provisions specify the design criteria for accessible features. The passenger vessel features addressed by the proposed scoping and technical provisions include onboard accessible routes connecting passenger decks and passenger amenities within decks; accessible means of escape; doorways and coamings; toilet rooms; wheelchair spaces in assembly areas and transportation seating areas; assistive listening systems; general emergency alarms; guest rooms; and other passenger amenities.

The most significant provisions in the proposed guidelines include the following:

• An elevator, or on certain passenger vessels a limited use-limited application elevator (LULA) or platform lift, would be required to connect passenger decks, unless one of ten proposed exceptions apply. The proposed provision would enable passengers with mobility disabilities to access and use the passenger amenities on the vessels. For new vessels, we estimate an elevator to cost $371,000; a LULA to cost $297,400; and a platform lift to cost $108,700.

• A minimum number of guest rooms with mobility features would be required on cruise ships. Cruise ships with 501 to 1,000 guest rooms would be required to provide a minimum of 3 percent of guest rooms with mobility features. Cruise ships with more than 1,000 guest rooms would be required to provide a minimum of 30 guest rooms with mobility features for the first 1,000 guest rooms (3 percent), plus 2 guest rooms with mobility features for each additional 100 guest rooms or fraction thereof over 1,000 (2 percent). The minimum number is consistent with data on the percentage of the population who use mobility devices. The proposed provision would enable passengers who use wheelchairs, scooters, or other mobility devices to access and use the guest rooms. We estimate the proposed provision would result in a gross revenue loss annualized over 20 years of $50 million discounted at 7 percent, and $58 million discounted at 3 percent for new cruise ships permitted to carry 300 or more overnight passengers.

Summary of Costs and Benefits

The primary estimates of the costs and benefits of the proposed guidelines are shown in Table 1. We estimate the total compliance costs of the proposed guidelines annualized over 20 years are $66 million discounted at 7 percent, and $74 million discounted at 3 percent. We do not quantify the benefits of the proposed guidelines due to the nature of the benefits. The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The proposed guidelines would enable these individuals to achieve greater participation in society, independent living, and economic self-sufficiency. The benefits are difficult to quantify, but include important national values recognized in Executive Order 13563 such as equity, human dignity, and fairness.

TABLE 1—PRIMARY ESTIMATES OF COSTS AND BENEFITS OF PROPOSED GUIDELINES ANNUALIZED OVER 20 YEARS

[2011 Dollars]

	7% Discount rate	3% Discount rate
Costs	$66 million	$74 million
Benefits	The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The benefits are difficult to quantify, but include important national values recognized in Executive Order 13563 such as equity, human dignity, and fairness.	

3. Availability of Proposed Guidelines With Figures and Advisory Sections

The proposed guidelines would be codified as an appendix to 36 CFR part 1196. The proposed guidelines with figures and advisory sections are available at: *http://www.access-board.gov/pvag/* and *http://www.regulations.gov*. The figures illustrate the technical provisions and do not establish mandatory requirements except for symbols. The proposed guidelines would require the use of symbols to identify elevator control buttons, the International Symbol of Accessibility, the International Symbol of TTY, and the International Symbol for Access to Hearing Loss. Since use of these symbols would be mandatory, the figures displaying the symbols are included in the proposed guidelines. The advisory sections provide guidance and are not mandatory requirements. However, some advisory sections reference related mandatory requirements to alert readers about those requirements.

Question 1. Can the figures be improved to better illustrate the technical provisions? Can the advisory sections be improved to provide better guidance?

4. Statutory and Regulatory Background

The Americans with Disabilities Act (ADA) is a civil rights law that prohibits discrimination against individuals with disabilities. See 42 U.S.C. 12101 et seq. Title II of the ADA applies to state and local governments and Title III of the ADA applies to places of public accommodation operated by private entities.[2] The ADA covers designated public transportation services provided by state and local governments and specified public transportation services provided by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce.[3] See 42 U.S.C. 12141 to 12147 and 12184. Passenger vessels that provide designated public transportation

[2] Title III of the ADA covers twelve categories of places of public accommodation, including places of lodging, establishments serving food or drink, and places of exhibition or entertainment. See 42 U.S.C. 12181(7).

[3] The definitions of the terms designated public transportation and specified public transportation are similar and mean transportation by bus, rail, or any other conveyance that provides the general public with general or special service, including charter service, on a regular and continuing basis. See 42 U.S.C. 12141(2) and 12181(10).

services and specified public transportation services such as ferries and excursion vessels, and passenger vessels that are places of public accommodation such as vessels that provide dinner or sightseeing cruises are covered by the ADA.

We are required by section 502 of the Rehabilitation Act and section 504 of the ADA to establish and maintain accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA to ensure that the vessels are readily accessible to and usable by individuals with disabilities. See 29 U.S.C. 792(b)(3) and 42 U.S.C. 12204.

The U.S. Department of Transportation (DOT) is responsible for issuing regulations to implement the transportation provisions of Titles II and III of the ADA. See 42 U.S.C. 12149 and 12186(a). DOT has issued regulations for passenger vessels used to provide designated public transportation services by state and local governments and specified public transportation services by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce. See 49 CFR part 39.

The U.S. Department of Justice (DOJ) is responsible for issuing regulations to implement the other provisions of Titles II and III of the ADA. See 42 U.S.C. 12134 and 12186(b). DOJ has issued regulations for state and local governments and places of public accommodation operated by private entities, including public accommodations provided on passenger vessels such as cruise ships, gaming vessels, and dinner vessels. See 28 CFR parts 35 and 36.

Titles II and III of the ADA require DOT and DOJ to issue accessibility standards for the construction and alteration of passenger vessels covered by the law that are consistent with our guidelines. See 42 U.S.C. 12134(c), 12149(b), and 12186(c). DOT has reserved a subpart in its regulations for accessibility standards for passenger vessels in anticipation of these proposed guidelines. See 49 CFR part 39, subpart E. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

5. Rulemaking History

We have developed and maintained accessibility guidelines for landside facilities for over 30 years. The guidelines for landside facilities represent the state-of-the-art for accessible design. We worked with passenger vessel owners and operators, the disability community, and other interested parties over the past 15 years to address the unique constraints of the marine environment and adapt the guidelines for landside facilities to passenger vessels.

Passenger Vessel Access Advisory Committee

In 1998, we convened a Passenger Vessel Access Advisory Committee comprised of passenger vessel owners and operators, industry trade groups, disability advocacy groups, and state and local government agencies to recommend how to adapt the guidelines for landside facilities to passenger vessels. The advisory committee submitted a report with recommended guidelines in 2000.

2004 Draft Guidelines and ANPRM

Based on the advisory committee's report, we developed draft guidelines for passenger vessels permitted to carry more than 150 passengers or more than 49 overnight passengers. In 2004, we released the draft guidelines for comment and issued an advance notice of proposed rulemaking (ANPRM) on small passenger vessels permitted to carry 150 or fewer passengers or 49 or fewer overnight passengers. See 69 FR 69244 and 69245, November 26, 2004. The ANPRM requested comment on whether and how to develop accessibility guidelines for small passenger vessels. We held hearings in Washington, DC and Los Angeles on the 2004 draft guidelines and the ANPRM, and received more than 90 comments.

2006 Draft Guidelines

Based on the comments on the 2004 draft guidelines and ANPRM, we revised the draft guidelines in 2006 to cover all ferries; other passenger vessels permitted to carry more than 150 passengers or 49 overnight passengers; and tenders permitted to carry more than 59 passengers. We released the 2006 draft guidelines for comment. See 71 FR 38563, July 7, 2006. We received more than 175 comments on the 2006 draft guidelines.

Case Studies

Between 2005 and 2008, we conducted case studies of ten passenger vessels to identify the impact of the draft guidelines on the vessels. We worked with vessel owners and operators, naval architects, and ship builders to review the original designs of the vessels and to identify design changes that would be needed to meet the draft guidelines. The naval architects and ship builders estimated the cost of the design changes, and considered the impact of the design changes on the passenger vessel's space, fuel consumption, and stability. We prepared reports on the case studies. We updated the case study reports to reflect changes to the proposed guidelines from earlier drafts and to adjust the cost estimates to 2011 dollars.

Passenger Vessel Emergency Alarms Advisory Committee

Comments on the 2006 draft guidelines raised issues about emergency alarm systems on passenger vessels alerting passengers who are deaf or have a hearing loss. We convened a Passenger Vessel Emergency Alarms Advisory Committee in 2007 comprised of passenger vessel owners and operators, industry trade groups, organizations representing individuals who are deaf or have a hearing loss, and standard setting organizations to address the comments. The advisory committee submitted a report with its recommendations in 2008. The advisory committee recommended that general emergency alarm systems include visible elements to alert passengers who are deaf or have a hearing loss, and recommended safeguards against triggering photosensitive seizures in individuals with epilepsy. The advisory committee recommended that the visible elements on U.S. flag vessels comply with the NFPA 72 National Fire Alarm Code. The advisory committee recommended that the U.S. Coast Guard work with the International Maritime Organization to develop guidelines for including visible elements in general emergency alarm systems on foreign flag vessels. The International Maritime Organization approved non-mandatory guidelines for including visible elements in general emergency alarm systems in 2012.[4]

The advisory committee recommended that portable devices be permitted in guest rooms, and that the Cruise Lines International Association develop guidelines to ensure that portable devices would be effective and reliable in alerting and awakening passengers who are deaf or have a hearing loss when general emergency alarms and guest room smoke detector alarms are activated. The Cruise Lines International Association convened a group to develop guidelines for portable

[4] International Maritime Organization, Guidelines for the Design and Installation of a Visible Element to the General Emergency Alarm System on Passenger Ships, MSC.1/Circ. 1418, June 13, 2012 at: *http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx*.

devices but, after the group met, it concluded that it did not have the expertise for the task. The advisory committee also recommended that assistive listening systems and visual displays be used to communicate safety briefings and emergency instructions to passengers who are deaf or have a hearing loss.

2008 Draft Guidelines

Based on the comments on the 2006 draft guidelines and the case studies, we revised the draft guidelines in 2008. The 2008 draft guidelines covered ferries permitted to carry more than 99 passengers; other passenger vessels permitted to carry more than 150 passengers or more than 49 overnight passengers; and tenders permitted to carry more than 59 passengers.

The advisory committee reports, ANPRM, earlier drafts of the guidelines, comments on the ANPRM and earlier drafts of the guidelines, updated case study reports, and other background information on the proposed guidelines are available at: *http://www.access-board.gov/pvag/*. We used all this information to develop the proposed guidelines.

6. Barrier Removal, and Operational and Service Issues Addressed by DOT and DOJ

Comments on earlier drafts of the guidelines were concerned about the impact of the guidelines on barrier removal in existing passenger vessels. The ADA requires private entities to remove architectural, communication, and transportation barriers in existing facilities where it is readily achievable. See 42 U.S.C. 12182(b)(2)(A)(iv). The ADA defines readily achievable as easily accomplishable and able to be carried out without much difficulty or expense, and includes factors for determining whether an action is readily achievable. See 42 U.S.C. 12181(9). DOJ has issued regulations on barrier removal in public accommodations that apply to public accommodations on passenger vessels. See 28 CFR 36.304. The passenger vessels accessibility guidelines are not required to be used for barrier removal until DOJ adopts them as accessibility standards for the construction and alteration of passenger vessels. When DOJ issues accessibility standards for the construction and alteration of passenger vessels, it will address the application of the passenger vessels standards to barrier removal.

Comments on earlier drafts of the guidelines also noted operational and service issues that affect accessibility, including passageways blocked by luggage or housekeeping carts; need for real time captioning of announcements; and access to shore excursions offered by cruise ships. DOT and DOJ are responsible for issuing regulations pertaining to operational and service issues. DOT and DOJ have issued regulations addressing maintenance of accessible features (28 CFR 35.133 and 36.211), and auxiliary aids and services to ensure effective communication (28 CFR 35.160 and 36.303; and 49 CFR 39.51 and 39.89).

7. Discussion of Proposed Guidelines

The proposed guidelines consist of 11 chapters. Chapter V 1 addresses the application and administration of the proposed guidelines. Chapter V 2 contains proposed scoping provisions. Chapters V 3 through V 10 contain proposed technical provisions. Chapter V 11 contains proposed scoping and technical provisions for tenders.

We are committed to writing guidelines that are clear, concise, and easy to understand so that persons who use the guidelines know what is required.

Question 2. Is there language in the proposed guidelines that is ambiguous or not clear? Comments should identify specific language in the proposed guidelines that is ambiguous or not clear and, where possible, recommend language that is clear.

The proposed guidelines use mandatory language (i.e., shall) so DOT and DOJ can adopt the guidelines as accessibility standards. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

We tried to avoid conflicts with mandatory requirements of foreign nations for foreign flag vessels. The DOT regulations establish a procedure for requesting a waiver where a mandatory requirement of a foreign nation precludes compliance with a requirement in the DOT regulations. See 49 CFR 39.9. When DOT issues accessibility standards for the new construction and alteration of passenger vessels subject to its jurisdiction, owners and operators of foreign flag vessels can use the procedure in the DOT regulations to request a waiver where a mandatory requirement of a foreign nation precludes compliance with a provision in the accessibility standards.

Chapter V 1: Application and Administration

V101 Purpose

The proposed guidelines contain proposed scoping and technical provisions to ensure that passenger vessels are readily accessible to and usable by individuals with disabilities. The proposed scoping and technical provisions are to be applied during the design, construction, additions to, and alteration of passenger vessels to the extent required by regulations issued by DOT and DOJ under the ADA.

V102 Dimensions for Adults and Children

The proposed guidelines are based on adult dimensions and anthropometrics. The proposed guidelines include proposed technical provisions based on children's dimensions and anthropometrics for drinking fountains, water closets, toilet compartments, lavatories and sinks, and tables and counters.

V103 Equivalent Facilitation

The use of alternative designs or technologies that result in substantially equivalent or greater accessibility than specified in the proposed guidelines would be permitted.

V104 Standard Practices

Dimensions that are not stated as maximum or minimum would be absolute. Absolute dimensions would be subject to conventional industry tolerances. Slopes would be measured when the passenger vessel is in a static design condition at full load. This section also addresses calculation of percentages.

V105 Referenced Standards

This section lists standards that are referenced in the proposed guidelines and where the standards can be obtained. The proposed guidelines would require U.S. flag vessels equipped with a general emergency alarm system or smoke alarms in guest rooms to provide visible notification appliances complying with the NFPA 72 National Fire Alarm Code in public areas and in guest rooms with communication features. The proposed guidelines also would require passenger vessels that provide play areas to comply with the ASTM F1292 Standard Specification for Impact Attenuation of Surface Systems Under and Around Play Equipment and ASTM F1951 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Play Equipment.

Earlier drafts of the guidelines considered referencing U.S. safety standards for power assisted and power operated doors, elevators, platform lifts, and sprinkler systems. Comments from the cruise industry noted that foreign flag vessels comply with foreign safety standards that may conflict with U.S. safety standards. To avoid conflicts, the proposed guidelines do not reference these U.S. safety standards.

V106 Definitions

This section defines terms used in the proposed guidelines. The term administrative authority is used throughout the proposed guidelines and is defined in this section.[5] For U.S. flag vessels, the administrative authority would be the U.S. Coast Guard. For foreign flag vessels, the administrative authority would be the entity designated by the foreign nation that adopts or enforces regulations and guidelines for the design, construction, or alteration of passenger vessels. The other defined terms are discussed under the section where the term is used. Terms not defined in the proposed guidelines, DOT and DOJ regulations implementing the ADA, U.S. Coast Guard regulations, or standards referenced in the guidelines would be defined by collegiate dictionaries.

Chapter V 2: Scoping Requirements

Chapter V 2 contains proposed scoping provisions that specify the passenger vessels to which the proposed guidelines would apply and what features would be required to comply with the proposed technical provisions in Chapters V 3 through V 11.

V201.1 Scope

The proposed guidelines would apply to all areas of newly designed and newly constructed passenger vessels and altered portions of existing passenger vessels with passenger capacities described below, unless a provision in the guidelines would exempt an area or limit the number of features that would be required to comply with the guidelines where multiple features of the same type are provided.

V201.1.1 Large Vessels

The Passenger Vessel Access Advisory Committee recommended guidelines for passenger vessels subject to U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapters H and K.[6] Subchapter H covers passenger vessels that are 100 gross tons or more, and carry more than 12 passengers or are a ferry and carry at least 1 passenger.[7] See 46 CFR 70.05–1. Subchapter K covers passenger vessels that are less than 100 gross tons, and carry more than 150 passengers or more than 49 overnight passengers. See 46 CFR 114.110. Because determining the gross tonnage of a passenger vessel is a complicated process and many foreign flag vessels are not subject to U.S. Coast Guard regulations, the 2004 draft guidelines considered covering passenger vessels based on the Subchapter K passenger capacity (i.e., carry more than 150 passengers or more than 49 overnight passengers). Comments on the 2004 draft guidelines, including comments from the Passenger Vessel Association, supported this approach. The proposed guidelines would apply to passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers.[8]

As shown in Table 2, we estimate there were 346 multi-purpose vessels such as excursion and dinner vessels permitted to carry more than 150 passengers, and 145 cruise ships permitted to carry more than 49 overnight passengers operating in U.S. ports as of 2010–2011. The vessels are listed in Appendices I and II to the regulatory assessment, along with the data sources.

TABLE 2—MULTI-PURPOSE VESSELS PERMITTED TO CARRY MORE THAN 150 PASSENGERS AND CRUISE SHIPS PERMITTED TO CARRY MORE THAN 49 OVERNIGHT PASSENGERS OPERATING IN U.S. PORTS AS OF 2010–2011

Vessel type	Number of vessels
Multi-Purpose Vessels	[1] 346
Small Cruise Ships (50 to 299 overnight passengers)	[1] 32
Large Cruise Ships (300 or more overnight passengers)	[2] 113

Notes:
[1] Vessels as of 2010.
[2] Vessels as of 2011.

We request comment on this proposed scoping provision for large passenger vessels.

Question 3. Should alternative scoping provisions apply to large passenger vessels? Comments should explain the basis for recommending alternative scoping provisions for large passenger vessels.

We conducted case studies of two multi-purpose vessels and one small cruise ship to estimate the incremental cost to construct the vessels in compliance with the proposed guidelines, and the additional annual operation and maintenance costs due to the proposed guidelines. We did not conduct case studies of large cruise ships because we could not find cruise ship owners or operators to participate in case studies.[9]

We present in Table 3 our estimates of the incremental construction costs for the case study vessels, which is difference between the cost of constructing the vessels in the absence of the proposed guidelines (pre-guidelines construction cost) and the cost of constructing the vessels in

[5] The administrative authority is referred to in the following sections: V202.3 Exception 3 (alterations); V207.1 (accessible means of escape); V302.3 Exception 2 (openings); V307.4 Exception 2 (vertical clearance at doorways with coamings); V404.2.5 Exception (thresholds and coamings); V404.2.7 Exception 1 (door hardware force); V404.2.9.1 and V404.2.9.2 Exception (door operating force); V503.4 Exception (handrail height along walking surfaces); V604.5.2 Exception 2 (grab bars at water closets); V703.5.6 Exception 2 (mounting height for signs); and V802.1.5 (wheelchair spaces).

[6] The advisory committee recommended different guidelines for smaller passenger vessels subject to U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapters C and T.

[7] Gross tonnage is a measure of a passenger vessel's volume. See 46 CFR part 69.

[8] Separate scoping provisions are proposed for ferries and tenders in V201.1.2 and V201.1.3.

[9] New large cruise ships provide many of the accessible features that would be required by the proposed guidelines, including elevators to connect passenger decks; guest rooms with mobility features; guest rooms with communication features; wheelchair spaces and assistive listening systems in assembly areas; and pool lifts. The cruise industry is concerned that the proposed scoping provision for guest rooms with mobility features would result in a loss of guest rooms and revenue. We discuss this issue under V224.2 Guest Rooms with Mobility Features.

compliance with the proposed guidelines (post-guidelines construction cost), as a percent increase in construction costs. Our estimates of the pre-guidelines construction costs and incremental construction costs for the case study vessels are presented in dollars in the case study reports and in Table 7 in the regulatory assessment. The construction costs for the case study vessels would increase by 3.2 percent to 9.9 percent. One case study vessel has two entry decks and currently provides an inclined platform lift to connect the two entry decks. The inclined platform lift is included in the pre-guidelines construction cost. If the vessel did not provide an inclined platform lift, the construction costs would increase by 5.3 percent if an inclined lift is provided, and 8.1 percent if a vertical platform lift is provided. One case study vessel would have a 5 percent to 10 percent annual increase in fuel consumption due to the proposed guidelines.

TABLE 3—ESTIMATED COMPLIANCE COSTS FOR CASE STUDY MULTI-PURPOSE VESSELS AND SMALL CRUISE SHIP

Case study vessels	Percent increase in construction costs	Additional annual operation and maintenance costs
300 Passenger Excursion Vessel	[1] 3.2%	Not significant.
600 Passenger Dinner Vessel	9.9%	5% to 10% increase in fuel consumption.
120 Passenger Small Cruise Ship	3.2%	Not significant.

Note:
[1] The vessel has two entry decks and currently provides an inclined platform lift to connect the two entry decks. The inclined platform lift is included in the pre-guidelines construction cost. If the vessel did not provide an inclined platform lift, the construction costs would increase by 5.3% if an inclined lift is provided, and 8.1% if a vertical platform lift is provided.

V201.1.2 Ferries

A ferry would be defined in V106.5 as a vessel that is used on a regular schedule to: (1) Provide transportation only between places that are not more than 300 miles apart; and (2) transport only passengers, or vehicles or railroad cars used in transporting passengers or goods. This definition is based on the definition of a ferry in 46 U.S.C. 2101 (10b).

Ferries differ from multi-purpose vessels and cruise ships that are used primarily for leisure purposes. Ferries serve a critical transportation function. Ferries provide commuter services in major metropolitan areas on both coasts, and link roadways and communities separated by bodies of water. Ferries transport people to work, school, health care facilities, and other places critical to daily living. Because ferries serve a critical transportation function, the 2006 draft guidelines considered covering all ferries regardless of passenger capacity. Comments from ferry owners and operators and the Passenger Vessel Association did not support this approach because it would be more difficult and costly for small ferries to comply with the draft guidelines. Based on the comments, the 2008 draft guidelines considered covering ferries permitted to carry more than 99 passengers.

Like the 2008 draft guidelines, the proposed guidelines would apply to ferries permitted to carry more than 99 passengers. The proposed scoping provision for ferries is broader than for multi-purpose vessels because ferries serve a critical transportation function. The 2008 National Census of Ferry Operators shows that about 700 active ferries provided an estimated 106 million passenger trips in 2007.[10] The ferries operated in 37 states and 3 U.S. territories. We estimate there were 454 ferries permitted to carry more than 99 passengers as of 2010. As shown in Table 4, 221 of these ferries are permitted to carry between 100 and 150 passengers, and 130 of these ferries are permitted to carry 149 or 150 passengers.[11] The ferries are listed in Appendix I to the regulatory assessment, along with the data sources. Applying the same scoping provision proposed for multi-purpose vessels to ferries would result in many ferries being inaccessible to individuals with disabilities.

TABLE 4—FERRIES PERMITTED TO CARRY BETWEEN 100 AND 150 PASSENGERS AS OF 2010

Passenger capacity	Multi-hull ferries	Mono-hull ferries		Total
		Passengers only	Passengers and vehicles	
150	16	27	7	50
149	28	21	31	80
140–148	4	21	15	40
130–139	0	1	5	6
120–129	1	3	2	6
110–119	2	3	9	14
100–109	2	7	6	15
Total	53	83	75	221

We request comment on the proposed scoping provision for ferries.

Question 4. Should alternative scoping provisions apply to ferries? Comments should explain the basis for

[10] U.S. Department of Transportation, Research and Innovative Technology Administration, Bureau of Transportation Statistics, 2008 National Census of Ferry Operators Highlights at: *http://apps.bts.gov/programs/ncfo/*.

[11] Ferries that carry 150 or fewer passengers are subject to U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapter T. Ferries that carry more than 150 passengers or 49 overnight passengers are subject to U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapter K.

recommending alternative scoping provisions for ferries.

We conducted case studies of seven ferries to estimate the incremental construction costs and additional annual operation and maintenance costs due to the proposed guidelines. Where the proposed guidelines would result in a reduction of passenger or vehicle capacity or a reduction of passenger amenities such as fixed seating or storage space provided on the vessel, the case studies examined two design options.[12] The first design option did not increase the ferry size; the second design option increased the ferry size to maintain the passenger and vehicle capacity, and the same passenger amenities.[13] As shown in Table 5, the construction costs for the case study ferries permitted to carry more than 300 passengers would increase by 1.2 percent to 4.2 percent. The construction costs for the case study ferries permitted to carry 149 to 150 passengers would increase by less than 1 percent to 1.8 percent for the first design option (ferry size not increased), and by 6.7 percent to 12.5 percent for the second design option (ferry size increased). The construction costs for the 108 passenger multi-hull ferry would increase by 1.1 percent for the first design option (ferry size not increased), and 24.5 percent for the second design option (ferry size increased). The construction cost increase for the 108 passenger multi-hull ferry is high for the second design option because the ferry owner wanted to lengthen the ferry by 10 feet based on the owner's experience with a larger ferry, instead of the 5 feet minimum needed to maintain the ferry's seating and storage capacity. If the 108 passenger multi-hull ferry is lengthened by 5 feet, instead of 10 feet, the construction costs would increase by 14 percent to 17 percent, instead of 24.5 percent.

TABLE 5—ESTIMATED COMPLIANCE COSTS FOR CASE STUDY FERRIES

Case study ferry	Percent increase in construction costs	Additional annual operation and maintenance costs
108 Passenger Multi-Hull Ferry	Design Option 1: Ferry Size Not Increased	
	1.1%; 6 to 8 seats and storage lost; Revenue loss not estimated.	None.
	Design Option 2: Ferry Size Increased	
	24.5%[1]; No seats or storage lost	18% increase in fuel consumption.
149 Passenger Multi-Hull Ferry	Design Option 1: Ferry Size Not Increased	
	1.8%; 7 seats lost; Annual revenue loss: $134,500.	None.
	Design Option 2: Ferry Size Increased	
	12.5%; No seats lost	3% to 6.6% increase in fuel consumption.
150 Passenger & 20 Vehicle Mono-Hull Ferry	Design Option 1: Ferry Size Not Increased	
	Less than 1%; One vehicle space lost; Annual revenue loss: $51,000 to $86,000.	None.
	Design Option 2: Ferry Size Increased	
	6.7%; No vehicle space lost	Not significant.
300 Passenger & 40 Vehicle Mono-Hull Ferry	3.0%; 2 to 4 seats lost[2]	Not significant.
399 Passenger Mono-Hull Ferry	2.2%; 10 seats lost[2]	None.
450 Passenger Multi-Hull Ferry	Design Option 1: Ferry Size Not Increased	
	1.2%; 42 to 59 seats lost; Revenue loss not estimated.	None.
	Design Option 2: Ferry Size Increased	
	4.2%; No Seats Lost	10% increase in fuel consumption.
4,400 Passenger & 30 Vehicle Mono-Hull Ferry	1.3%; 50 seats lost[2]	$1,100 to $1,300 per automatic door.

Notes:

[1] The ferry owner wanted to lengthen the ferry by 10 feet for second design option based on the owner's experience with a larger ferry, instead of the 5 feet minimum needed to maintain the ferry's seating and storage capacity. If the ferry is lengthened by 5 feet, instead of 10 feet, the construction costs would increase by 14% to 17%, instead of 24.5%. The annual increase in fuel consumption would also be less if the ferry is lengthened by 5 feet, instead of 10 feet.

[2] The case study does include a second design option because the ferry owner was not concerned about the loss of some fixed seating.

[12] The U.S. Coast Guard regulations for passenger vessels subject to 46 CFR Chapter I, Subchapters K and T base the maximum number of passengers permitted on the vessels on the length of rail criterion, deck area criterion, or fixed seating criterion, or a combination of these criteria. See 46 CFR 115.113 and 176.113.

[13] The owners of some of the larger case study ferries were not concerned about the loss of some fixed seating due to the proposed guidelines. The case studies of these ferries do not include a second design option.

The proposed provisions for onboard accessible routes, toilet rooms, wheelchair spaces in transportation seating areas, and assistive listening systems are estimated to have the highest compliance costs for ferries. As discussed under V206 Onboard Accessible Routes, ten exceptions are proposed for onboard accessible routes to connect decks, and five of these exceptions are proposed to reduce the compliance costs for small vessels and high-speed vessels.

Three of the case study ferries would have an annual increase in fuel consumption due to the proposed guidelines under the second design option. One case study ferry would have additional annual maintenance costs for providing automatic doors at doorways with coamings and double ramps.

We may conduct additional case studies of ferries permitted to carry between 100 and 150 passengers to obtain additional information on the compliance costs for these ferries. Owners and operators of ferries that were recently constructed who are interested in participating in a case study are encouraged to contact us. Based on review of the comments and any additional case studies, we may specify a different passenger capacity in the final guidelines for ferries that are covered by the guidelines or modify some of the provisions that would apply to ferries with certain passenger capacities.

Question 5. We request comment on the following questions regarding ferries permitted to carry between 100 and 150 passengers:

(a) Is additional information available for estimating the compliance costs for these ferries, including incremental design, construction, operation and maintenance, lost net revenue, and any other costs?

(b) Would owners of these ferries reduce the passenger and vehicle capacity or reduce any passenger amenities such as fixed seating when the ferries are replaced due to the proposed guidelines, or would owners increase the size of the ferries to maintain the passenger and vehicle capacity, and the same passenger amenities? If the passenger and vehicle capacity would be reduced or any passenger amenities would be reduced, we are interested in information to estimate the cost of such effects.

(c) Is there information available or methods for estimating the benefits of the proposed guidelines for these ferries such as number of new trips by passengers with disabilities or number of trips that would result in improved access for passengers with disabilities?

(d) Would the proposed guidelines have any unintended consequences for these ferries such as safety or vessel stability issues, slower travel times, docking issues due to increasing the size of the vessels, or inconveniences for other passengers such as fewer seats, less standing space, or fewer toilet rooms? If so, we are interested in information to estimate the cost of such effects.

(e) Are there alternative provisions for onboard accessible routes, toilet rooms, wheelchair spaces in transportation seating areas, assistive listening systems, or other features addressed by the proposed guidelines that would reduce the compliance costs for these ferries?

V201.1.3 Tenders

A tender would be defined in V106.5 as a vessel primarily intended for transporting passengers for non-emergency purposes between passenger vessels and shore-side facilities. Because it would be difficult for inflatable tenders to comply with the proposed guidelines and inflatable tenders do not carry more than 59 passengers, the proposed guidelines would apply to tenders permitted to carry more than 59 passengers. The proposed guidelines would require tenders to comply only with the proposed provisions in Chapters V 1 and V 11 because of the limited passenger amenities on tenders. Existing tenders that are not altered, including those that serve newly constructed vessels, would not be required to comply with the proposed guidelines. We request comment on the proposed scoping provision for tenders.

We do not have data on the number of existing tenders that carry more than 59 passengers. We did not conduct a case study of a tender because the proposed provisions for tenders in Chapters V 1 and V 11 are minimal and new tenders met the provisions.

V202 Existing Passenger Vessels

When additions or alterations are made to existing passenger vessels, this section would require the additions or alterations to comply with the proposed provisions for new construction. An addition would be defined in V106.5 as an expansion, extension, or increase in the gross deck area of a passenger vessel. An alteration would be defined in V106.5 as a change to a passenger vessel that affects or could affect the usability of the passenger vessel or portion thereof. Alterations would include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of bulkheads and partitions. The definition would exclude normal maintenance, painting or wallpapering, or changes to propulsion, mechanical, and electrical systems unless they affect the usability of the passenger vessel.

Only the portions of a passenger vessel that are altered would be required to comply with the proposed provisions for new construction. For example, if a toilet room on a passenger vessel is altered, the altered portions of the toilet room would be required to comply with the applicable proposed provisions for new construction. Earlier drafts of the proposed guidelines included a provision that would have required a path of travel to altered areas containing a primary function. This provision is not included in the proposed guidelines because the DOJ regulations require a path of travel to altered areas containing a primary function. See 28 CFR 35.151(b) and 36.403.

Three general exceptions are proposed in this section for alterations to existing passenger vessels. Exception 1 would not require an onboard accessible route where elements or spaces are altered but the circulation path to the altered elements or spaces is not altered.

Exception 2 would require alterations to comply with the proposed guidelines to the maximum extent feasible where compliance is technically infeasible. Technically infeasible would be defined in V106.5 with respect to an alteration as something that has little likelihood of being accomplished because existing structural conditions would require removing or altering an essential structural member; or because other existing physical or vessel constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the guidelines.

Exception 3 would require alterations to provide accessibility to the maximum extent feasible where compliance with the proposed guidelines would result in any of the following:

- An increase in tonnage that changes the passenger vessel's classification from 46 CFR Chapter I, Subchapter T (Small Passenger Vessels (Under 100 Gross Tons)) or 46 CFR Chapter I, Subchapter K (Small Passenger Vessels Carrying More Than 150 Passengers or With Overnight Accommodations For More Than 49 Passengers) to 46 CFR

Chapter I, Subchapter H (Passenger Vessels); [14]

- A violation of the minimum requirements established by the administrative authority for the stability of the vessel;
- A reduction in the structural integrity or fire resistance of a Class A or B bulkhead or deck surface; or
- An increase in power load in excess of the existing power supply.

Specific exceptions are also proposed in certain proposed provisions for alterations to existing passenger vessels, including:

- Platform lifts would be permitted as a component of onboard accessible routes in alterations to existing passenger vessels. V206.7 Exception.
- An accessible means of escape would not be required in alterations to existing passenger vessels. V207.1 Exception 2.
- A unisex toilet room would be permitted in alterations to existing passenger vessels where it is technically infeasible for existing toilet rooms to comply with the proposed guidelines provided the unisex toilet room is located in the same area and on the same deck as the existing non-complying toilet rooms. V213.2 Exception 2.
- Visible alarms in public areas would not be required in alterations to existing passenger vessels unless an existing alarm system is upgraded or replaced, or a new alarm system installed. V215.1 Exception 2.
- Thresholds ¾ inch high maximum would be permitted at doorways without coamings in alterations to existing passenger vessels provided the thresholds have a beveled edge on each side with a slope not steeper than 1:2. V404.2.5.1 Exception.
- Running slopes not steeper than 1:8 for a maximum rise of 3 inches and not steeper than 1:10 for a maximum rise of 6 inches would be permitted in alterations to existing passenger vessels where necessary due to space limitations. V405.2 Exception.
- Elevator cars in altered elevators would not be required to comply with the proposed provision for car dimensions where the existing elevator car configuration provides a clear deck area 16 square feet minimum; an inside clear depth of 54 inches minimum; and an inside clear depth 36 inches minimum. V407.4.1 Exception.
- Alternative dimensions are proposed for sales and service counters in alterations to existing passenger vessels where compliance with the proposed provisions would result in a reduction of the number of existing counters at work stations. V904.4 Exception.

Where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the proposed provisions for onboard accessible routes or toilet rooms would threaten or destroy the historic significance of a qualified historic passenger vessel, exceptions are proposed for those features in V206.2.1 Exception 10 and V213.2 Exception 2.

We request comment on the proposed exceptions for alterations to existing passenger.

Question 6. Should additional exceptions be provided for alterations to existing passenger vessels? Comments should explain the basis for recommending additional exceptions.

We requested comment on the types and frequency of alterations to existing passenger vessels in earlier drafts of the guidelines. The Cruise Lines International Association (formerly International Council of Cruise Lines) responded that when a new deck or mid-section is added to an existing cruise ship, it may not always be feasible for existing circulation paths on the vessel to comply with the proposed provisions for onboard accessible routes. The proposed guidelines would not require existing circulation paths that are not otherwise altered to comply with the proposed provisions for onboard accessible routes when a new deck or mid-section is added to a cruise ship.

Question 7. How many new decks or mid-sections are added to cruise ships in a year? What features in the new decks or mid-sections would need to comply with the proposed guidelines? Comments should include information to estimate the compliance costs.

Individual passenger vessel owners and operators responded that alterations generally involve installing new motors and pumps; redecorating toilet rooms; and changing chairs and equipment such as the beverage dispenser and dish washing machine on a dinner vessel. The Passenger Vessel Association responded that passenger vessels generally do not undergo major alterations if there is no change in ownership because it would trigger a need to comply with subsequently developed U.S. Coast Guard regulations. According to the Passenger Vessels Association, small cosmetic changes are made when a passenger vessel is transferred to a new owner in similar service. Small cosmetic changes generally would not trigger a need to comply with the proposed guidelines. The Passenger Vessel Association noted that if a passenger vessel changes service, more extensive changes may be undertaken. For example, if an excursion vessel changes service to a dinner vessel, a galley would be added, passenger space lay outs would be changed, bulkheads may be moved, and stairways may be added or relocated.

Question 8. How many passenger vessels change service in a year? What altered features would need to comply with the proposed guidelines when passenger vessels change service? Comments should include information to estimate the compliance costs.

Question 9. In addition to adding new decks and mid-sections to cruise ships and undertaking alterations when passenger vessels change service, what other alterations are undertaken to existing passenger vessels that would need to comply with the proposed guidelines? How often are these alterations undertaken? We are interested in information to estimate the compliance costs.

V203 General Exceptions

This section proposes to exempt the following from the proposed guidelines: areas and features intended for use by employees only; limited access spaces; water slides; raised diving boards; certain diving and swimming platforms; raised boxing and wrestling rings; and furnishings that are not fixed to the vessel. Where necessary to meet camber and sheer needs of the passenger vessel, running slopes and cross slopes would be required to meet the applicable technical provisions to the maximum extent feasible.

V204 Protruding Objects

Protruding objects along circulation paths, including objects mounted on wall surfaces and posts, are hazardous to passengers who are blind or have low vision. This section would require protruding objects on circulation paths to comply with the proposed technical provisions for protruding objects in V307, including protrusion limits (V307.2); required clear width (V307.3); and vertical clearance (V307.4). U.S. Coast Guard regulations for passenger vessels subject to 46 CFR Chapter I, Subchapters H and K require stairways and stair towers to be clear of all obstructions other than handrails. See 46 CFR 72.05–20 and 116.438(e). This section would require stairways and stair towers that are required to comply with these U.S. Coast Guard regulations

[14] U.S. Coast Guard regulations in 46 CFR Chapter I, Subchapter H have different requirements for vessels than the regulations in 46 CFR Chapter I, Subchapters T and K.

to be clear of all obstructions other than handrails to avoid conflicts.

The section would not apply to circulation paths used only by employees since V203.2 would not require employee areas to comply with the proposed guidelines. Two exceptions are proposed. Exception 1 would exempt circulation paths within areas of sport activity. Exception 2 would exempt certain circulation paths within play areas.

V205 Operable Parts

An operable part would be defined in V106.5 as a component of an element used to insert or withdraw objects, or to activate, deactivate, or adjust the element. This section would require operable parts on accessible elements, on onboard accessible routes, and in accessible rooms and spaces to meet the proposed technical provisions in V309, including clear deck space (V309.2); height (V309.3); and operation (V309.4). Exceptions are proposed for operable parts used only by employees, certain electrical or communication receptacles, HVAC diffusers, redundant controls other than light switches, and exercise machines.

V206 Onboard Accessible Routes

This section contains proposed scoping provisions for onboard accessible routes, which are discussed below.

Onboard Accessible Routes To Connect Passenger Decks

The proposed scoping provision in V206.2.1 would require at least one onboard accessible route to connect each passenger deck and mezzanine on multi-deck passenger vessels. Where a passenger vessel has more than one entry deck, the section would require at least one onboard accessible route to connect each entry deck. A deck would be defined in V106.5 as a horizontal division of a passenger vessel that contains space designed for passenger occupancy and generally corresponds to a story in a building. A horizontal division without enclosed space, such as a sun deck, would be considered a deck even though it is not provided with a covering. An entry deck would be defined in V106.5 as a deck that contains passenger entry and departure points that allow pedestrian passengers to embark or disembark a passenger vessel from fixed or floating piers, the land, or tenders in non-emergency situations.

The proposed scoping provision in V206.6 would require an elevator complying with the proposed technical provisions in V407 to connect the passenger decks. The proposed scoping provision in V206.6 would permit a limited use-limited application elevator (LULA) complying with the proposed technical provisions in V408 to connect passenger decks on certain passenger vessels. A LULA is a passenger elevator that is limited in use and application by size, capacity, speed, and rise. Safety codes limit the maximum rise of a LULA to 25 feet.[15] A LULA can be used to connect up to three decks. The Passenger Vessel Access Advisory Committee recommended that a LULA be permitted to connect decks on passenger vessels that are less than 5,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships. The Passenger Vessel Access Advisory Committee also recommended that where more than one elevator is provided on passenger vessels that are less than 10,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships, that the additional elevators be permitted to be a LULA. The proposed guidelines would permit a LULA to connect decks on passenger vessels that are less than 10,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships. We assume 85 passenger vessels listed in Appendix I to the regulatory assessment, which have 3 passenger decks and are not eligible to use the exceptions discussed below, are less than 10,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships, and new vessels that replace these vessels would be permitted to provide a LULA to connect the decks. We also assume 12 passenger vessels listed in Appendix I to the regulatory assessment, which have 2 passenger decks and would need to provide access to passenger amenities that are not located on an entry deck such as transportation seating areas on a vehicle ferry, are less than 10,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships, and new vessels that replace these vessels would be permitted to provide a LULA to connect the decks.

Question 10. Are any of the vessels listed in Appendix I to the regulatory assessment that we assume to be less than 10,000 gross tonnage calculated in accordance with the International Convention on the Tonnage Measurement of Ships and would be permitted to provide a LULA to connect decks actually 10,000 or more gross tonnage?

Question 11. Should criterion other than gross tonnage be used to determine when passenger vessels would be permitted to provide a LULA to connect decks?

The proposed scoping provision in V206.6 also would permit a LULA to be provided in passenger vessels eligible to use the exceptions discussed below, and where a platform lift is permitted.

The proposed scoping provision in V206.7 would permit platform lifts complying with the proposed technical provisions in V409 to connect decks that are less than 3,000 square feet. Safety codes limit the maximum rise of a platform lift to 14 feet.[16] The proposed scoping provision in V206.7 also would permit platform lifts to connect to decks where vertical clearance constraints on a passenger vessel route make use of an elevator infeasible.

Exceptions for Onboard Accessible Routes To Connect Decks

Ten exceptions are proposed in V206.2.1 for onboard accessible routes to connect decks. Exceptions 1, 2, and 3 would reduce the compliance costs for small passenger vessels. Exception 1 would not require an onboard accessible route to connect the decks on passenger vessels that have only two passenger decks unless both decks are entry decks. Exception 2 would not require an onboard accessible route to connect decks that are not entry decks where each passenger deck is less than 3,000 square feet. Exception 3 would not require an onboard accessible route to connect decks where a passenger vessel that is otherwise eligible to use Exceptions 1 or 2 has more than one entry deck and at least one designated entry deck: (1) Serves each stop used for embarking and disembarking passengers; and (2) contains drinking fountains, toilet rooms, transportation seating areas, and guest rooms with mobility features, where such amenities are provided on the vessel.

Exceptions 4 and 5 would reduce the compliance costs for high-speed passenger vessels that cannot use Exceptions 1, 2, or 3. Increasing the weight and size of high-speed passenger vessels has a significant impact on the fuel consumption on these vessels. A case study of a high-speed passenger only ferry with two entry decks showed that adding a platform lift to connect the decks on the vessel and providing other accessible features would result in

[15] ASME 17.1–2010 Safety Code for Elevators and Escalators, section 5.2.1.16.5.

[16] ASME 17.1–2010 Safety Code for Elevators and Escalators, section 5.2.1.16.5.

lengthening the vessel by 4 feet and increase the vessel's fuel consumption by 10 percent. The additional fuel costs could inhibit future construction of such vessels.

Exception 4 would not require an onboard accessible route to connect decks on high-speed passenger vessels that have only three passenger decks and do not transport vehicles or overnight passengers provided that at least one designated entry deck: (1) Serves each stop used for embarking and disembarking passengers; (2) contains drinking fountains, toilet rooms, transportation seating areas, and guest rooms with mobility features, where such amenities are provided on the vessel; and (3) contains at least one exterior passenger area that is not covered by other decks, where an uncovered exterior passenger area is provided on the vessel. Exception 4 would require access to certain passenger amenities on the designated entry deck similar to Exception 3 for small passenger vessels. Because high-speed passenger vessels eligible to use Exception 4 are typically larger than vessels eligible to use Exception 3, Exception 4 also would require the designated entry deck to contain at least one exterior passenger area that is not covered by other decks, where an uncovered exterior passenger area is provided on the vessel. Where windscreens are provided, this area could be located on the bow of the vessel.

Exception 5 would not require an onboard accessible route to connect to the sun deck on a high-speed passenger vessel that does not transport overnight passengers where the sun deck has no enclosed passenger spaces and is not an entry deck provided that at least one exterior passenger area that is not covered by other decks is provided on an entry deck or a deck connected to an entry deck by an onboard accessible route. High-speed vehicle ferries and high-speed passenger only ferries with two entry decks that serve different stops used for embarking and disembarking passengers that are not eligible to use Exception 4 can use Exception 5 for a sun deck.

Exceptions 6 and 7 would reduce the compliance costs for vehicle ferries that are designed to accommodate vehicles with high clearances. Where a passenger deck, other than an entry deck, is divided into two separate segments and no horizontal circulation path is provided between the two segments, Exception 6 would require an onboard accessible route to connect to only one segment of the divided deck. Where decks containing vehicle parking lanes are designed to be raised and lowered and do not provide any other passenger amenities, Exception 7 would not require an onboard accessible route to connect to such decks. Although adjustable decks would be exempt from being connected to onboard accessible routes, they would count as a passenger deck for purposes of determining the number of passenger decks the vessel contains.

Exception 8 would not require an onboard accessible route to connect to decks, other than entry decks, that are less than 300 square feet.

Exception 9 would not require an onboard accessible route to connect to decks below the bulkhead deck. This exception addresses concerns about down flooding and onboard accessible routes between main vertical zones. Passenger spaces typically are not located below the bulkhead deck, and other provisions ensure that passenger amenities such as toilet rooms and guest rooms with mobility features are located on decks that are connected to an onboard accessible route.

Exception 10 would apply to alterations to qualified historic passenger vessels and would not require an onboard accessible route to connect the decks on such vessels where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the provisions for onboard accessible routes would threaten or destroy the historic significance of a qualified historic passenger vessel.

We reviewed data on 696 ferries, multi-purpose vessels, and small cruise ships that are expected to reach the end of their expected service over a 20 year period and are assumed to be replaced by new vessels in the regulatory assessment. The data is summarized in Table 9 of the regulatory assessment. We estimate 124 of the new vessels (18%) would be required to provide an elevator, LULA, or platform lift to connect decks, and the proposed exceptions would apply to 431 of the new vessels (62%). We estimate 62 vessels (9%) currently provide an elevator, LULA, or platform lift, and assume the new vessels that replace these vessels would also provide an elevator, LULA, or platform lift in the absence of the proposed guidelines. Eleven of these vessels are small cruise ships that would be required to provide larger elevators on the new vessels. We estimate the other 79 vessels (11%) have only one passenger deck, and assume the new vessels that replace these vessels would not need an elevator, LULA, or platform lift. In addition, we estimate 23 small cruise ships would be required to provide a platform lift to connect to a tender boarding platform at the stern of the new vessels.

We request comment on the proposed exceptions.

Question 12. Would providing an elevator, LULA, or platform lift on passenger vessels not eligible to use the proposed exceptions adversely affect the safety or stability of the vessel?

Question 13. Should additional exceptions be provided for onboard accessible routes to connect decks? Comments should explain the basis for recommending additional exceptions.

Elements and Spaces on Decks That Are Not Connected to an Entry Deck by an Onboard Accessible Route

The proposed scoping provision in V201.1 would require all areas on newly designed and newly constructed passenger vessels to comply with the proposed guidelines. Thus, elements and spaces provided on passenger decks that are not connected to an entry deck by an onboard accessible route would be required to comply with the proposed guidelines. The proposed scoping provision is based on the guidelines for landside facilities. Future additions to landside facilities can result in providing an accessible route to stories that were not required to be connected by an accessible route when the facility was first constructed. The Passenger Vessel Association noted in comments on earlier drafts of the guidelines that future additions to existing passenger vessels are rare. To reduce the compliance costs, we are considering an alternative provision for the final guidelines that would require elements and spaces provided on passenger decks that are not connected to an entry deck by an onboard accessible route to comply only with provisions that meet the needs of individuals with mobility disabilities who can use stairs and individuals with hearing and vision disabilities. This would include the provisions for protruding objects (V204), operable parts (V205), general emergency alarms (V215), signage (V216), and assistive listening systems (V219). We request comment on this alternative provision.

Question 14. In addition to the provisions indicated above, what other provisions should apply to elements and spaces provided on passenger decks that are not connected by an onboard accessible route to an entry deck to meet the needs of individuals with mobility disabilities who can use stairs and individuals with hearing and vision disabilities?

Onboard Accessible Routes Within Decks

The proposed scoping provisions in V206.2.2 through V206.2.9 would require at least one onboard accessible route complying with the proposed technical provisions in Chapter V 4 to connect to the following: Accessible spaces and elements; dining areas; performance areas and assembly seating areas; and certain recreation facilities.

Location

The proposed scoping provision in V206.3 would require onboard accessible routes to coincide with or be located in the same area as general passenger circulation paths. Where two interior accessible spaces are connected by an interior passenger circulation path, an interior onboard accessible route would be required to connect the same spaces. The interior onboard accessible route would be required to be not more than 300 feet longer than the shortest interior passenger circulation path connecting the two spaces. An exception is proposed that would exempt smaller passenger vessels where the largest deck is less than 3,000 square feet.

The Passenger Vessel Access Advisory Committee recommended the 300 feet distance. The 300 feet distance is about twice the distance between main vertical zones required by the U.S. Coast Guard. See 46 CFR 116.415(d). We request comment on the 300 feet distance.

Entry and Departure Points

The proposed scoping provision in V206.4 would require each passenger entry and departure point on a passenger vessel to be to on an onboard accessible route. Where multiple tender boarding platforms are provided, only one platform on each side of the vessel would be required to be on an onboard accessible route.

Doors, Doorways, and Gates

The proposed scoping provision in V206.5 would require at least one door, doorway, or gate provided at accessible deck entry and departure points, and at least one door, doorway, or gate serving each accessible room or space to comply with the proposed technical provisions for doors, doorways, and gates in V404.

Elevators

The proposed scoping provision for elevators in V206.5 is discussed under Onboard Accessible Routes to Connect Passenger Decks.

Platform Lifts

The proposed scoping provision for platform lifts in V206.7 is discussed under Onboard Accessible Routes to Connect Passenger Decks. In addition, platform lifts would be permitted to be a component of an onboard accessible route in alterations to existing passenger vessels. Platform lifts also would be permitted to provide an onboard accessible route to wheelchair spaces in assembly areas; performance areas and speakers' platforms; levels within passenger guest rooms with mobility features; tender boarding platforms; and play components within play areas or soft contained play structures.

Security Barriers

The proposed scoping provision in V206.8 would require security barriers to not obstruct onboard accessible routes or accessible means of escape. Where security barriers incorporate screening devices such as metal detectors or fluoroscopes that cannot comply with the proposed provision, an exception is proposed that would permit the onboard accessible route to be located adjacent to the security barrier. The onboard accessible route would have to permit passengers with disabilities to maintain visual contact with their personal items to the same extent provided to other passengers passing through the security barrier.

V207 Accessible Means of Escape

This section would require a passenger vessel to provide an accessible means of escape where the administrative authority requires the vessel to have a means of escape. The section would require the accessible means of escape to provide a substantially equivalent level of protection from hazards as is required by the administrative authority for the means of escape. An accessible means of escape would not be required in alterations to existing vessels.

We propose the following guidance for providing accessible means of escape. Accessible means of escape should be independently usable by passengers with disabilities and should be made up of onboard accessible route components to the extent possible. However, an accessible means of escape may include inaccessible components where passengers with disabilities would be assisted by crew members. For example, a stairway or an exit only doorway with coamings may be part of an accessible means of escape. If passengers with disabilities would have to wait for crew assistance at or near the stairway or doorway, the waiting area should be sufficiently protected from hazards in order to provide them a level of protection that is substantially equivalent to the level of protection afforded by the means of escape provided for passengers who can use stairs unassisted. Similarly, elevators and platform lifts may require crew operation during emergencies. If passengers with disabilities would have to wait at or near elevator or platform lift landings, the waiting area should afford them substantially equivalent protection. Protected waiting areas would not be needed where another equivalent method of protection is provided, such as where passenger vessels are protected by automatic sprinkler systems or areas are open to the weather.

Protected waiting areas should be sized to accommodate clear deck spaces complying with the proposed technical provisions in V305 based on the occupant load of all accessible spaces to be served by the protected waiting area. Protected waiting areas should be equipped with an audible and visible two-way communication system for summoning crew assistance. Doors to protected waiting areas should be identified by a sign stating ''Protected Waiting Area'' that includes the International Symbol of Accessibility. Signs should be provided in the protected waiting area that provide information on their use during emergencies and directions to other accessible means of escape.

V208 Passenger Vessel Boarding Systems

This section defers to DOT and DOJ to address when accessible passenger boarding systems would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner or operator of the landside facility and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

Technical provisions for accessible passenger boarding systems are proposed in Chapter V 4, including walking surfaces with a running slope not steeper than 1:20 complying with the proposed technical provisions in V403; doors and doorways complying with the proposed technical provisions in V404; ramps complying with the proposed technical provisions in V405; elevators complying with the proposed technical provisions in V407; limited use-limited application elevators (LULA) complying with the proposed technical provisions in V408; platform lifts complying with the proposed technical provisions in V409; gangways

complying with the proposed technical provisions in V410; and manually powered boarding lifts complying with the proposed technical provisions in V411.

V209 [Reserved]

Earlier drafts of the guidelines included a scoping provision for stairs in V209. The proposed guidelines do not include a scoping provision for stairs. The sections will be renumbered in the final guidelines.

V210 Rinsing Showers

This section would apply where rinsing showers are provided for passengers. It does not require rinsing showers to be provided. The section would require rinsing showers to comply with the proposed technical provisions for rinsing showers in V608, including clear deck space (V608.2.4); shower spray unit and water (V608.6); thresholds (V608.7); and enclosures not obstructing controls (V608.8).[17] Where rinsing showers are clustered at a single location, the section would require at least one of the rinsing showers to comply with the proposed technical provisions for rinsing showers in V608.

V211 Drinking Fountains

This section would apply where drinking fountains are provided for passengers. It does not require drinking fountains to be provided. The section would require a minimum number (one or 50 percent of the total number) of drinking fountains provided on a deck to comply with the proposed technical provisions in V602 for clear deck space (V602.2); operable parts (V602.3); spout height and location (V602.4 and V602.5); and water flow (V602.6). The section also would require a minimum number (one or 50 percent of the total number) of drinking fountains provided on a deck to comply with the proposed technical provisions in V602 for standing persons (V602.7).

Where drinking fountains are provided for passengers on decks that are not connected by an onboard accessible route to an entry deck, the section would require drinking fountains complying with the proposed technical provisions in V602 to be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route. This would ensure that the two types of drinking fountain are available to passengers with disabilities who cannot use stairs.

V212 Galleys, Pantries, and Sinks

This section would apply where galleys, pantries, and sinks are provided for passengers. It does not require these features to be provided. The section would require galleys and pantries to comply with the proposed technical provisions in V804 for clearance (V804.2); sinks (V804.3); storage (V804.4); and appliances (V804.5). Where sinks are provided, the section would require at least 5 percent, but no fewer than one, of each type of sink provided in an accessible room or space to comply with proposed technical provisions in V606, including clear deck space (V606.2); height (V606.3); faucets (V606.4); and exposed pipes and surfaces (V606.5). Mop or service sinks would not be required to comply with this section.

V213 Toilet Facilities and Bathing Facilities

This section would apply where toilet facilities and bathing facilities are provided for passengers. It does not require these facilities to be provided. The section would require each toilet room and bathing room to comply with the proposed technical provisions in V603, including clearances (V603.2); mirrors (V603.3); and coat hooks and shelves (V603.4).[18]

Five exceptions are proposed. Exception 1 would apply to alterations of existing passenger vessels. Where it is technically infeasible to comply with the proposed technical provisions in V603, existing toilet rooms and bathing rooms would be required to comply to the maximum extent feasible, or to provide an unisex toilet room or bathing room complying with the proposed technical provisions in V603 in the same area and on the same deck as the existing non-complying toilet room or bathing room.

Exception 2 would apply to alterations to qualified historic passenger vessels and would require no fewer than one toilet room for each sex or one unisex toilet room complying with the proposed technical provisions in V603 to be provided on the vessel where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the proposed provisions for toilet rooms would threaten or destroy the historic significance of a qualified historic passenger vessel.

Exception 3 would apply where multiple single user portable toilet or bathing units are clustered at a single location. At least 5 percent of the toilet units and bathing units at each cluster would be required to comply with the proposed technical provisions in V603.

Exception 4 would apply where multiple single user toilet rooms are clustered at a single location. At least 50 percent of the of the single user toilet rooms for each use at each cluster would be required to comply with the proposed technical provisions in V603.

Exception 5 would apply to high-speed passenger vessels that do not transport overnight passengers. Where multiple single user toilet rooms are clustered at a single location on such vessels, at least 5 percent of the single user toilet rooms for each use at each cluster would be required to comply with the proposed technical provisions in V603. This exception would reduce compliance costs for high-speed passenger vessels where weight and vessel size have a significant impact on the vessel's fuel consumption.

We request comment on the proposed exceptions.

Question 15. Should additional exceptions be provided for toilet rooms? Comments should explain the basis for recommending additional exceptions.

Where toilet rooms are provided for passengers on decks that are not connected by an onboard accessible route to an entry deck, the section would require at least one toilet room for each sex or one unisex toilet room complying with the proposed technical provisions in V603 to be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route. This would ensure that a toilet room is available to passengers with disabilities who cannot use stairs.

The section would require unisex toilet rooms to contain one lavatory and either one water closet or one water closet and one urinal; and unisex bathing rooms to contain one lavatory, one water closet, and either one shower or one bathtub. Doors to unisex toilet rooms and unisex bathing rooms would be required to have privacy latches.

The section would require plumbing fixtures and accessories provided in toilet rooms and bathing rooms complying with V603 to comply with the following proposed technical provisions:

- At least one toilet compartment (stall) would be required to comply with the proposed technical provisions for wheelchair accessible compartments in V604.8.1. Where six or more toilet

[17] Rinsing showers with transfer type, standard roll-in type, or alternate roll-in type shower compartments would be required to comply with the proposed technical provisions for size and clearances for shower compartments (V608.2); grab bars (V608.3); and seats (V608.4).

[18] Only toilet rooms and bathrooms in passenger guest rooms required to provide mobility features would be required to comply with the proposed technical provisions in V603.

compartments are provided, or where the combination of urinals and water closets totals six or more fixtures, at least one toilet compartment would be required to comply with the proposed technical provisions for ambulatory accessible compartments in V604.8.2. The ambulatory accessible compartment would be in addition to the wheelchair accessible compartment.

- At least one water closet would be required to comply with the proposed technical provisions for water closets in V604.
- Where more than one urinal is provided, at least one urinal would be required to comply with the proposed technical provisions for urinals in V605.
- At least one lavatory would be required to comply with the proposed technical provisions for lavatories in V606 and would not be allowed to be located in a toilet compartment.
- At least one mirror would be required to comply with the proposed technical provisions for mirrors in V603.3.
- At least one bathtub would be required to comply with the proposed technical provisions for bathtubs in V607, or at least one shower would be required to comply with the proposed technical provisions for showers in V608.
- At least one of each type of coat hook and shelf would be required to comply with the proposed technical provisions for coat hooks and shelves in V603.4.

V214 Washing Machines and Clothes Dryers

This section would apply where washing machines and clothes dryers are provided for passenger use. Where three or fewer washing machines and three or fewer clothes dryers are provided, at least one washing machine and one clothes dryer would be required to comply with the proposed technical provisions in V611, including clear deck space (V611.2); operable parts (V611.3); and height (V611.4). Where more than three washing machines and more than three clothes dryers are provided, at least two washing machines and two clothes dryers would be required to comply with the proposed technical provisions in V611.

V215 Emergency Alarms

This section would apply where a general alarm system is provided to notify passengers in public areas of emergencies. The Passenger Vessel Emergency Alarms Advisory Committee recommended that general emergency alarm systems include visible elements to alert passengers who are deaf or have a hearing loss. This section would require general emergency alarm systems on U.S. flag vessels to provide visible notification appliances complying with the NFPA 72 National Fire Alarm Code. The International Maritime Organization approved non-mandatory guidelines for including visible elements in general emergency alarm systems in 2012.[19] For the final guidelines, we are considering requiring general emergency alarm systems on foreign flag vessels that operate in U.S. ports to provide visible notification appliances in public areas and to reference the International Maritime Organization guidelines. We request comment on this proposal.

Question 16. What additional costs would be associated with providing visible notification appliances in public areas as part of the general emergency alarm systems on foreign flag vessels that operate in U.S. ports?

Two exceptions are proposed. Exception 1 would not require elevators, enclosed platform lifts, enclosed stairways, and areas only open to passengers in emergencies to comply with the section. Exception 2 would not require alterations to existing passenger vessels to comply with the section.

Question 17. Are visible notification appliances effective in open deck areas such as sun decks and partially covered deck areas for alerting passengers who are deaf or have a hearing loss of an emergency? If not, what alternative systems or devices can be used in these areas to alert passengers who are deaf or have a hearing loss of an emergency?

V216 Signs

This section would apply to signs that identify permanent rooms and spaces (V216.2); directional and informational signs (V216.3); signs for means of escape (V216.4); signs identifying accessible exterior doors where all exterior doors are not accessible (V216.5); signs identifying accessible elevators where all elevators are not accessible in alterations to existing passenger vessels (V216.6); signs identifying toilet rooms and bathrooms (V216.7); signs for TTYs and wheelchair accessible telephones (V216.8 and V216.9); signs for assistive listening systems (V216.10); and signs for accessible check-out counters (V216.11). The section would require signs to identify, and in some cases provide direction to, these elements and spaces. The section would require the signs to comply with the proposed technical provisions for visual characters in V703.5. The section also would require certain signs to comply with the proposed technical provisions for raised letters in V703.2; Braille in V703.3; and installation height and location in V703.4.

Comments on earlier drafts of the guidelines recommended that signs indicating the availability of assistive listening systems include information about the system. The section would require signs indicating the availability of assistive listening systems to also indicate the type of transmitter and receiver used. Where passenger vessels have a central passenger service station to distribute receivers for assistive listening systems and other effective methods are used to notify passengers about the availability, location, and type of transmitter and receiver used, signs would not be required for assistive listening systems.

The section would require directional signs indicating the location of the nearest accessible means of escape to be provided at all exit doors, platform lifts, and elevators that serve accessible spaces but are not part of an accessible means of escape. An exception is proposed that would not require directional signs where platform lifts and elevators are directly accessed from protected stairway landings. Comments on earlier drafts of the guidelines noted that these directional signs, which are intended for passengers with disabilities who cannot use stairs, may be confusing for other passengers in emergencies since the accessible means of escape for passengers with disabilities who cannot use stairs may differ from the means of escape for other passengers. For instance, the signs may direct passengers with disabilities who cannot use stairs to crew-operated elevators or platform lifts that are not intended for use by other passengers.

Question 18. Are there other effective ways to provide information about the location of escape paths to passengers with disabilities who cannot use stairs and other passengers in a way that would minimize any potential for confusion as to which escape path to use?

V217 Telephones

Where a public telephone is provided on a deck, this section would require at least one wheelchair accessible public telephone complying with the proposed technical provisions in V704.2; and at least one public TTY complying with the proposed technical provisions in V704.4 to be provided on the deck. The section also would require all public

[19] International Maritime Organization, Guidelines for the Design and Installation of a Visible Element to the General Emergency Alarm System on Passenger Ships, MSC.1/Circ.1418, June 13, 2012 at: *http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx.*

telephones to have volume controls complying with the proposed technical provisions in V704.3, and to be hearing aid compatible.

V218 Two-Way Communication Systems

Where a two-way communication system is used to gain admittance to a passenger vessel or to restricted areas within the vessel that are open to passengers, this section would require the system to provide both audible and visible signals. The section would not apply to areas intended for use only by employees since employees areas would be covered by the proposed exception in V203.2.

V219 Assistive Listening Systems

Where an audio amplification system is provided in an assembly area or transportation seating area to communicate information that is integral to the use of the areas, this section would require an assistive listening system to be provided. An assistive listening system would be defined in V106.5 as an amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency modulation (FM), or infrared equipment.

Comments on earlier drafts of the guidelines recommended that assistive listening systems be provided in rooms and spaces that do not have audio amplification systems. Portable assistive listening systems can be used in rooms and spaces that do not have audio amplification systems. The proposed guidelines do not address portable equipment. However, portable assistive listening systems may be used to meet the requirements in the DOJ and DOT regulations on use of auxiliary aids and services to ensure effective communication. See 28 CFR 35.160 and 36.303, and 49 CFR 39.51 and 39.89.

The section does not specify the type of assistive listening system to be provided. Comments on earlier drafts of the guidelines noted the benefits of induction loop systems over FM and infrared systems. Individuals who wear hearing aids equipped with telecoils do not need a separate receiver with an induction loop system.[20] Where induction loop systems are provided, individuals who do not use hearing aids and individuals who use hearing aids not equipped with telecoils would need a receiver. A receiver is also needed with FM and infrared systems.

The section would require a minimum number of receivers to be provided for assistive listening systems in accordance with Table V219.3. The table would reduce the number of receivers as the total seating capacity of the assembly areas and transportation seating areas on the passenger vessel increases. For example, the table would require assembly areas and transportation seating areas with:

- 500 seats to provide a minimum of 20 receivers (4%);
- 1,000 seats to provide a minimum of 36 receivers (3.6%); and
- 2,000 seats to provide a minimum of 55 receivers (2.75%).

A proposed exception would permit the number of receivers to be based on the maximum number of passengers that the passenger vessel is permitted to carry.

At least 25 percent, but no fewer than two, of the receivers would be required to be hearing aid compatible (e.g., neck loops that interface with telecoils in hearing aids). Because induction loop systems are compatible with hearing aids equipped with telecoils, a proposed exception would reduce the minimum number of receivers by the number that would be required to be hearing aid compatible where induction loop systems are provided. For example, an assembly area with 500 seats would be required to provide a minimum of 20 receivers, and at least 5 of these receivers would be required to be hearing aid compatible. If an induction loop system is provided, the proposed exception would require a minimum of 15, instead of 20, receivers since the induction loop system is compatible with hearing aids equipped with telecoils.

There are several national surveys that measure hearing loss. The surveys vary in question wording and what they measure. Consequently, the data vary. The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau asks questions about hearing aid use; difficulty hearing a normal conversation (even with a hearing aid); and deafness (unable to hear). The SIPP data show among persons aged 15 and older 7.6 million (3.1%) had difficulty hearing a normal conversation, including 5.6 million (2.3%) used a hearing aid and 1.1 million (0.5%) were deaf.[21] The National Health and Nutritional Examination Surveys (NHANES) sponsored by National Center for Health Statistics asks questions about hearing trouble (no trouble, a little, a lot, deaf) and includes audiometric testing of participants. The NHANES data show among persons aged 12 and older 30 million (12.7%) had bilateral hearing loss and the number increases to 48.1 million (20.3%) when unilateral hearing loss is included.[22]

Where an audio amplification system is provided in public areas to communicate emergency information to passengers, such as passenger safety briefings and instructions on evacuation procedures, the section would require an assistive listening system to be provided. The Passenger Vessel Emergency Alarms Advisory Committee recommended this proposed provision. We tested a portable FM system on a four passenger deck steel ferry that was 310 feet long, and found that all interior and exterior passenger spaces on the vessel received the FM signal. Where passengers are assigned to go to specific muster stations in an emergency when the general emergency alarm is activated, an assistive listening system would not be required.

Question 19. Is an induction loop system effective on passenger vessels that have structural metal in the decks and bulkheads (walls) that may interfere with the signal?

Where audio amplification systems provide emergency information, passengers who have a hearing loss need information about the availability of the assistive listening system and where to obtain receivers in order to use the system.

Question 20. How should information be provided to passengers who have a hearing loss about the availability of the assistive listening system for safety briefings, instructions on evacuation procedures, and other emergency announcements? If signs are provided, what information should be provided on the signs and where should the signs be placed?

The Passenger Vessel Emergency Alarms Advisory Committee also recommended that other methods should be used to effectively communicate emergency and non-emergency information to passengers who are deaf.

Question 21. Would visual displays on passenger vessels provide an effective method for communicating emergency and non-emergency information to passengers who are deaf?

[20] A telecoil is a circuit inside the hearing aid that is designed to pick up electromagnetic signals.

[21] U.S. Census Bureau, Americans with Disabilities: 2010 at: *http://www.census.gov/prod/2012pubs/p70–131.pdf.*

[22] Frank R. Lin, John K. Niparko, and Luigi Ferrucci, Hearing Loss Prevalence in the United States, JAMA Internal Medicine (November 14, 2011) at: *http://archinte.jamanetwork.com/article.aspx?articleid=1106004.*

If visual displays are provided for communicating emergency and non-emergency information to passengers, are assistive listening systems needed for such information? What passenger areas should provide the visual displays and where should they be placed within each area? Have visual displays been installed on passenger vessels for communicating emergency and non-emergency information? What costs would be associated with providing the visual displays?

Question 22. Do passenger vessels have the capability to communicate emergency and non-emergency information such as arrival and departure time to passengers through their personal communications devices (e.g., send text messages to passengers' smartphones when they subscribe to receive such information)? Can such information be provided to passengers through their personal communications devices when passenger vessels are beyond the range of cellular phone towers? What costs would be associated with passenger vessels providing such information to passengers through their personal communications devices?

V220 Automatic Teller Machines and Fare Machines

Where automatic teller machines and fare machines are provided on passenger vessels, this section would require at least one of each type of machine provided at each location to comply with the proposed technical provisions in V707, including clear deck space (V707.2); operable parts (V707.3); privacy (V707.4); speech output (V707.5); input (V707.6); display screen (V707.7); and Braille instructions (V707.8).

V221 Assembly Areas

An assembly area would be defined in V106.5 as a portion of a passenger vessel that is used for entertainment, educational gatherings, or similar purposes. This section would require a minimum number of wheelchair spaces to be provided in assembly areas with fixed seats in accordance with Table V221.2.1.1. The table would reduce the number of wheelchair spaces as the total seating capacity of the assembly area increases. For example, the table would require assembly areas with:

- 300 seats to provide a minimum of 5 wheelchair spaces (1.6%);
- 500 seats to provide a minimum of 6 wheelchair spaces (1.2%); and
- 1,000 seats to provide a minimum of 10 wheelchair spaces (1%).

The Survey of Income and Program Participation sponsored by the U.S. Census Bureau show among persons aged 15 and older 3.6 million (1.5%) used a wheelchair or scooter.[23]

The section would require the wheelchair spaces to be an integral part of the fixed seating plan. The section includes proposed scoping and technical provisions for dispersion of wheelchair spaces where seats are arranged to provide lines of sight to fixed screens or performance areas to ensure that passengers who use wheelchairs have an equivalent choices of seating locations and viewing angles (V221.2.3 and V802.2). The section also includes proposed scoping and technical provisions for dispersion of wheelchair spaces where seats are not arranged to provide lines of sight to fixed screens or performance areas (V221.2.4).

The cruise industry expressed concerns about the vertical dispersion of wheelchair spaces in assembly spaces in comments on earlier drafts of the guidelines. Construction constraints specific to cruise ships can limit the number of onboard accessible route connections between decks and seating sections in theaters on large cruise ships. We reviewed the designs of theaters on several large cruise ships. Based on the theater designs, it appears that the vertical dispersion can be achieved with minimal loss of seats where onboard accessible route connections are provided between more than one deck and the seating sections in the theaters. The wheelchair spaces also would have to meet the provisions for horizontal dispersion and substantially equivalent viewing angles. Some of the theater designs had columns and equipment overhangs that could obstruct viewing angles and can be addressed by careful layout of wheelchair spaces when designing the theaters. We request comment on the proposed provisions for dispersion and fixed lines of sight.

The section also would require a companion seat for each wheelchair space, and a minimum number of designated aisle seats located closest to onboard accessible routes. The technical provisions for companion seats in V802.3 would require companion seats to provide shoulder alignment with the adjacent wheelchair spaces, except where the seating is not arranged to provide lines of sight to fixed screens or performance areas and where seating is provided at tables and counters. The technical provisions for designated aisle seats in V802.4 would require the seats to provide folding or retractable armrests, where armrests are provided on seating in the immediate area, and to be identified by a sign or marker.

V222 Transportation Seating Areas

A transportation seating area would be defined in V106.5 as an area, other than an assembly area, where fixed seats are provided for passengers. This section would require a minimum number of wheelchair spaces in transportation seating areas in accordance with Table V222.3. The table would reduce the number of wheelchair spaces as the total seating capacity of the transportation seating increases. For example, the table would require transportation seating areas with:

- 100 seats to provide a minimum of 2 wheelchair spaces (2%);
- 300 seats to provide a minimum of 5 wheelchair spaces (1.6%); and
- 650 seats to provide a minimum of 7 wheelchair spaces (1%).

The Survey of Income and Program Participation sponsored by the U.S. Census Bureau show among persons aged 15 and older 3.6 million (1.5%) used a wheelchair or scooter.[24]

An exception is proposed for passenger vessels that provide more fixed seats in transportation seating areas than the vessel is permitted to carry. The proposed exception would permit the number of wheelchair spaces to be based on the maximum number of passengers that the passenger vessel is permitted to carry.

The section would require the wheelchair spaces to be an integral part of and dispersed throughout the fixed seating plan. Companion seats would not be required in transportation seating areas.

Where transportation seating areas are provided on decks that are not connected by an onboard accessible route to an entry deck, the section would require at least one transportation seating area to be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route. This would ensure that transportation seating is available to passengers with disabilities who cannot use stairs. Vehicle ferries that are eligible to use the exceptions for onboard accessible routes to connect decks would need to provide a platform lift or elevator to connect to decks where the entry deck is used for vehicles only and a transportation seating area is provided only on another deck.

[23] U.S. Census Bureau, Americans with Disabilities: 2010 at: *http://www.census.gov/prod/2012pubs/p70–131.pdf.*

[24] U.S. Census Bureau, Americans with Disabilities: 2010 at: *http://www.census.gov/prod/2012pubs/p70–131.pdf.*

V223 Medical Care Facilities

This section would apply where passenger ships have medical facilities with patient sleeping rooms. The section would require at least 10 percent of the patient sleeping rooms to provide mobility features complying with the proposed technical provisions in V805, including turning space (V805.2); clear deck space (V805.3); and toilet and bathing rooms (V805.4).

V224 Passenger Guest Rooms

This section would apply to cruise ships and other passenger vessels that transport passengers overnight and provide passenger guest rooms. Some passenger vessels such as ferries or excursion vessels may provide guest rooms that can be reserved by passengers for day use. We will define passenger guest rooms in the final guidelines and are considering defining the term to include rooms used by passengers for overnight accommodations or for day use. If the final guidelines define passenger guest rooms to include rooms for day use, a minimum number of the rooms would need to provide mobility features and communication features in accordance with the proposed scoping provisions discussed below and would need to be located on an entry deck or on a deck that is connected to an entry deck by an onboard accessible route.

Question 23. How many passenger vessels provide guest rooms that can be reserved by passengers for day use? How many of these guest rooms are provided on the passenger vessel? Are any of these guest rooms provided on an entry deck or a deck that is connected to an entry deck by an onboard accessible route? What features are provided in these guest rooms to which the proposed guidelines would apply? We are interested in information for estimating the costs and benefits of applying the proposed guidelines to these guest rooms?

V224.2 Guest Rooms With Mobility Features

This section would require passenger vessels to provide a minimum number of guest rooms with mobility features based on the total number of guest rooms in accordance with Table V224.2. For instance, a cruise ship with 501 to 1,000 guest rooms would be required to provide a minimum of 3 percent of guest rooms with mobility features. A cruise ship with more than 1,000 guest rooms would be required to provide a minimum of 30 guest rooms with mobility features for the first 1,000 guest rooms (3%), plus 2 guest rooms with mobility features for each additional 100 guest rooms or fraction thereof over 1,000 (2%). The section would require a portion of the guest rooms with mobility features to provide a roll-in shower. The section would also require guest rooms with mobility features to be dispersed among the various classes of guest rooms. The minimum number of guest rooms with mobility features that would be required on passenger vessels is consistent with the guidelines for landside facilities such as hotels and resorts. We request comment on this proposed scoping provision.

Guest rooms with mobility features are typically larger than other guest rooms to accommodate passengers who use wheelchairs or scooters. The proposed technical provisions for guest rooms with mobility features would require wider doorways; turning space within the guest room; clear deck space on both sides of a bed or between two beds and at the closet; turning space within the bathroom and clear deck space at the bathtub or shower, lavatory or sink, and toilet (the turning space and clear deck spaces can overlap); and grab bars at the toilet and at the bathtub or shower.

The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau has asked questions about use of mobility devices, including wheelchairs, scooters, canes, crutches, and walkers, by persons aged 15 and older since 1990. The SIPP provides stability in measuring disability over a long period with a large sample that is representative of the U.S. population. We had a report prepared that converted the SIPP data on individuals who used mobility devices to households that have a member who used a mobility device because families typically go on cruises for vacation and leisure travel.[25] This report is referred to as the household report.

The household report shows households with a member who used a wheelchair or scooter doubled from 1.5 percent in 1990 to 3 percent in 2010. If past trends continue, a linear extrapolation to 2025 projects about 4 percent of households will have a member who uses a wheelchair or scooter. We assume households with a member who uses a wheelchair or scooter would need a guest room with mobility features.

The household report also shows households with a member who used a cane, crutches, or walker grew from 4.5 percent in 1990 to 7 percent in 2010. If past trends continue, a linear extrapolation to 2025 projects about 9 percent of households will have a member who uses a cane, crutches, or walker. Households with a member who uses a cane, crutches, or walker may rent a wheelchair or scooter for distance travel on a cruise ship and for shore excursions.[26] We assume these households may need a guest room with mobility features. We assume households with a member who uses a cane, crutches, or walker may also need features such as grab bars at toilets and at bathtubs or showers that are provided in guest rooms with mobility features, regardless of whether they rent a wheelchair or scooter for distance travel on a cruise ship and for shore excursions.

The cruise industry submitted a report indicating that about 70 percent of the passengers who used wheelchairs or scooters on 45 cruise ships in 2005 did not occupy a guest room with mobility features.[27] The report suggested that these passengers may have used wheelchairs or scooters for distance travel on the cruise ships and for shore excursions, and may not have needed a guest room with mobility features. The entry doorway to guest rooms is typically 22 to 24 inches wide and is too narrow for a wheelchair or scooter to pass through.[28] The proposed guidelines would require 32 inches minimum clear opening at the entry doorway to guest rooms with mobility features. The report did not consider other possible reasons why a significant percent of passengers who used wheelchairs or scooters did not occupy a guest room with mobility features. Passengers who do not have a disability may have reserved guest rooms with mobility features because they are larger than other guest rooms resulting in the rooms not being available to passengers with disabilities. Some cruise lines had a practice of requesting passengers with disabilities to provide a doctor's note to reserve a guest room with mobility

[25] Mitch P. LaPlante and H. Stephen Kaye, Mobility Device Use and Hearing Impairments Among Individuals and Households: 1990–2010 (February 15, 2013) at: *http://www.access-board.gov/pvag/.*

[26] Cruise ship passengers can rent wheelchairs and scooters from Special Needs at Seas at: *http://www.specialneedsatsea.com/.*

[27] Cruise Lines International Association, Passenger Vessel Access Guidelines Access Scoping Economic Impact Study (June 23, 2008) at: *http://www.access-board.gov/pvag/.*

[28] A sample of about 500 wheeled mobility devices shows that the minimum clear width needed for a manual wheelchair user ranges from 27 to 31 inches; for a power wheelchair user ranges from 27 to 33 inches; and for a scooter user ranges from 24 to 33 inches. Center for Inclusive Design and Environmental Access, Design Resources DR–15 Clear Floor Area for Wheeled Mobility: Redefining the ''common wheelchair'' (January 4, 2011) at: *http://udeworld.com/documents/designresources/pdfs/CFA.pdf.*

features. This practice may have discouraged passengers with disabilities from reserving guest rooms with mobility features. DOT issued regulations in 2010 that require cruise lines to hold guest rooms with mobility features for passengers with disabilities until all other rooms in the same class are sold, and ban the practice of requesting passengers with disabilities to provide a doctor's note to reserve a guest room with mobility features. See 49 CFR 39.39(b)(2) and (f).

Question 24. How often are individuals with mobility disabilities or households with a member who has a mobility disability who request a guest room with mobility features unable to reserve the type of guest room (e.g., interior, oceanview, balcony, suite) they request, but the same type of guest rooms without mobility features are available?

The cruise industry is concerned about the loss of guest rooms and revenue due to the proposed scoping provision for guest rooms with mobility features. According to the cruise industry, two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features. We estimate the loss of guest rooms and revenue for large cruise ships permitted to carry 300 or more passengers in Chapter 3 of the regulatory assessment. We estimate the 113 large cruise ships operating in U.S. ports as of 2011 contained 123,516 guest rooms, including 2,392 guest rooms with mobility features (1.9% of the total number of guest rooms). We assume 5 percent of the guest rooms in the cruise fleet are replaced annually and the total number of guest rooms increases by 3 percent annually. Based on these assumptions, we estimate 786 guest rooms would be lost over 20 years under the proposed scoping provision against the baseline of the cruise industry practice in the absence of the guidelines. According to the cruise industry, each guest room produced $140,000 gross revenue in 2005. Adjusting this figure for inflation to $161,250 in 2011 dollars, we estimate the gross revenue loss annualized over 20 years is $50 million discounted at 7 percent, and $58 million discounted at 3 percent. We note, however, that gross revenue loss overstates the cost. The correct measure for estimating the cost of lost guest rooms is net revenue, which is gross revenue less the costs to serve the passengers who would occupy the guest rooms.

Question 25. For cruise ships operating in U.S. ports, is it reasonable to assume that 5 percent of the guest rooms in the cruise fleet are replaced annually and the total number of guest rooms increases by 3 percent annually? Comments should include information to support alternative assumptions.

Question 26. Is there other information available to improve our cost estimates? We are particularly interested in information on net revenue per guest room, which accounts for the costs to serve the passengers who occupy the guest rooms.

Cruise lines construct classes of cruise ships or sister vessels based on the same design without major modification. Each new class of cruise ships is generally larger than the previous class. As shown in Appendix II to the regulatory assessment, cruise ships constructed in 2010 and 2011 have over 50 percent more guest rooms than cruise ships constructed in the 1990's. Cruise lines can mitigate the loss of revenue due to providing guest rooms with mobility features by increasing the number of guest rooms when designing new classes of cruise ships.

Question 27. How will cruise lines comply with the proposed scoping provision for guest rooms with mobility features? Will cruise lines construct larger cruise ships than they would have in the absence of the proposed guidelines so they do not lose guest rooms or space for other purposes; will cruise lines choose to reduce guest rooms or space used for other purposes; or will cruise lines do a combination of these choices or something else?

Question 28. Is there information available on the percent of the population with mobility disabilities that takes cruises compared to the percent of the population without mobility disabilities?

As noted above, households with a member who used a cane, crutches, or walker grew from 4.5 percent in 1990 to 7 percent in 2010, and a linear extrapolation to 2025 projects about 9 percent of households will have a member who uses a cane, crutches, or walker. These households may rent a wheelchair or scooter for distance travel on cruise ships and for shore excursions, and may need guest rooms with wider doorways and space to store the wheelchair or scooter. Regardless of whether these households rent a wheelchair or scooter, the household member who uses a mobility device may need grab bars in the bathroom for stability and support.

Question 29. Would it be practical operationally to provide two types of guest rooms with mobility features: (1) One for passengers with mobility disabilities who use a wheelchair or scooter for distance travel only and not in guest rooms; and (2) the other for passengers with mobility disabilities who use a wheelchair or scooter in guest rooms? What specific features would be needed in guest rooms used by passengers with mobility disabilities who use wheelchairs or scooters for distance travel only and not in guest rooms? Would providing two types of guest of guest rooms with mobility features reduce the loss of guest rooms and revenue?

V224.4 Guest Rooms With Communication Features

This section would require passenger vessels to provide a minimum number of guest rooms with communication features based on the total number of guest rooms in accordance with Table V224.4. For instance, a passenger vessel with 501 to 1,000 guest rooms would be required to provide a minimum of 5 percent of guest rooms with communication features. A passenger vessel with more than 1,000 guest rooms would be required to provide a minimum of 50 of guest rooms with communication features for the first 1,000 guest rooms (5%), plus 3 guest rooms with mobility features for each additional 100 guest rooms over 1,000 (3%). The section would require guest rooms with communication features to be dispersed among the various classes of guest rooms. The minimum number of guest rooms with communication features that would be required on passenger vessels is consistent with the guidelines for landside facilities such as hotels and resorts. We request comment on this proposed scoping provision.

The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau asks questions about hearing aid use; difficulty hearing what is said in a normal conversation (even when wearing a hearing aid); and deafness (unable to hear) for persons aged 6 and older. We had a report prepared that converted the SIPP data on individuals who had hearing impairments to households that have a member who had a hearing impairment because families typically go on cruises for vacation and leisure travel.[29] This report is referred to as the household report.

The household report shows about 9 percent of households in 2010 had a member with a hearing impairment (i.e., had difficulty hearing a normal conversation, used a hearing aid, or was

[29] Mitch P. LaPlante and H. Stephen Kaye, Mobility Device Use and Hearing Impairments Among Individuals and Households: 1990–2010 (February 15, 2013) at: *http://www.access-board.gov/pvag/.*

deaf). The percent of households that have a member who used a hearing aid or was deaf is about 5 percent.

The SIPP reports fewer individuals with hearing impairments compared to the National Health and Nutritional Examination Survey (NHANES). NHANES asks questions about hearing trouble (no trouble, a little, a lot, deaf) and includes audiometric testing of participants. NHANES data for persons aged 12 and older show 30 million (12.7%) had a bilateral hearing loss and the number increases to 48.1 million (20.3%) when unilateral hearing loss is included.[30] SIPP data for persons aged 15 and older show 7.6 million (3.1%) had difficulty hearing a normal conversation, including 5.6 million (2.3%) used a hearing aid and 1.1 million (0.5%) were deaf.[31]

Guest rooms with communication features would be required to provide visible notification appliances in the room to alert and awaken passengers who are deaf or who have a hearing loss of general emergency alarms and guest room smoke detector alarms. For U.S. flag vessels, the visible notification appliances would be required to comply with the NFPA 72 National Fire Alarm Code. For foreign flag vessels that operate in U.S. ports, we are considering referencing the International Maritime Organization guidelines in the final guidelines.[32] We request comment on this proposal.

Question 30. What additional costs would be associated with providing visible notification appliances in guest rooms with communication features on foreign flag vessels that operate in U.S. ports?

Guest rooms with communication features also would be required to provide visible devices to alert room occupants of incoming telephone calls and a door knock or bell, and telephones in the rooms would be required to have volume controls and an electrical outlet within 48 inches of the telephone to facilitate use of a TTY.

The Passenger Vessel Emergency Alarms Advisory Committee recommended that portable devices be permitted in guest rooms and that the Cruise Lines International Association develop guidelines to ensure that portable devices would be effective and reliable in alerting and awakening passengers who are deaf or have a hearing loss when general emergency alarms and guest room smoke detector alarms are activated. The Cruise Lines International Association convened a group to develop guidelines for portable devices but, after the group met, it concluded that it did not have the expertise for the task. In the absence of guidelines that ensure portable devices would be effective and reliable in alerting and awakening passengers who are deaf or have a hearing loss when general emergency alarms and guest room smoke detector alarms are activated, we did not consider portable devices.

V225 Storage

This section would require at least one of each type of storage in accessible spaces to comply with the proposed technical provisions for storage in V807, including clear deck space (V807.2); height (V807.3); and operable parts (V807.4).

V226 Tables and Counters

This section would require at least 5 percent of the seating or standing spaces at tables or counters provided for passenger use in areas other than assembly areas and transportation seating areas to comply with the proposed technical provisions for tables and counters in V902, including clear deck space (V902.2) and height (V902.3). The section would require the accessible tables or counters to be dispersed throughout the area where the tables and counters are provided.

V227 Sales and Service

This section would apply to check-out aisles, sales and service counters, food service lines, and queues and waiting lines. The section would require a minimum number of check out aisles to comply with the proposed technical provisions in V904.3, including walking surfaces (V904.3.1); counter height (V904.3.2); and check writing surfaces (V904.3.3). For instance, where 1 to 4 check out aisles are provided, at least one would be required to comply with the proposed technical provisions in V904.3.

The section would require at least one of each type of sales counter and service counter to comply with the proposed technical provisions in V904.4, which would specify dimensions for an accessible portion of the counter and would require a clear deck space for a parallel approach or forward approach to the accessible portion of the counter. An exception is proposed for sales counters and service counters on smaller passenger vessels where the largest deck is less than 3,000 square feet and the employee side of the counter is 80 inches or less in linear length.

The section would require food service lines to comply with the proposed technical provisions in V904.5, which would require self-service shelves and dispensing devices to be within the proposed technical provisions for reach ranges in V308 and would specify dimensions for the height of tray slides.

The section would require queues and waiting lines that serve check-out aisles or sales counters and service counters that meet the proposed technical provisions in V904.3 or V904.4 to comply with the proposed technical provisions for walking surfaces in V403.

V228 Depositories, Vending Machines, Change Machines, and Mail Boxes

This section would require at least one of each type of depository, vending machine, and change machine to comply with the proposed technical provisions for operable parts in V309, including clear deck space (V309.2); height (V309.3); and operation (V309.4).

Where mail boxes are provided in an interior location for passenger use, the section would require at least 5 percent, but no fewer than one, of each type to comply with the proposed technical provisions for operable parts in V309 described above.

V229 Dressing, Fitting, and Locker Rooms

This section would require at least 5 percent, but no fewer than one, of each type of dressing, fitting, and locker rooms provided in each cluster for passenger use to comply with the proposed technical provisions in V803, including turning space (V803.2); door swing (V803.3); benches (V804.3); and coat hooks and shelves (V803.5).

V230 Through V237 Recreational Facilities

These sections would apply where the following recreation facilities are provided on passenger vessels: exercise machines and equipment (V230); miniature golf facilities (V231); play areas (V232); saunas and steam rooms (V233); swimming pools, wading pools, and spas (V234); shooting facilities (V235); gaming and arcade machines (V236); and post-mounted binoculars (V237). The sections would require a minimum number of these facilities to

[30] Frank R. Lin, John K. Niparko, and Luigi Ferrucci, Hearing Loss Prevalence in the United States, JAMA Internal Medicine (November 14, 2011) at: *http://archinte.jamanetwork.com/article.aspx?articleid=1106004.*

[31] U.S. Census Bureau, Americans with Disabilities: 2010 at: *http://www.census.gov/prod/2012pubs/p70–131.pdf.*

[32] International Maritime Organization, Guidelines for the Design and Installation of a Visible Element to the General Emergency Alarm System on Passenger Ships, MSC.1/Circ.1418, June 13, 2012 at: *http://www.imo.org/OurWork/Circulars/Pages/IMODOCS.aspx.*

comply with the proposed technical provisions for the facilities.

Earlier drafts of the guidelines considered requiring sloped entries to pools as an alternative to pool lifts. The cruise industry noted that sloped entries to pools are not provided on cruise ships due to the space constraints. The proposed guidelines do not require sloped entries to pools. The proposed guidelines would allow sloped entries or transfer systems as an accessible means of entry to wading pools. The proposed guidelines would require at least one pool lift to be provided for each swimming pool. Where more than one swimming pool is provided in a cluster, an exception is proposed that would require at least one of each type of pool to provide a pool lift and the other pools to provide transfer walls, transfer systems, or pools stairs complying with the applicable proposed technical provisions in Chapter V 10.

Service Animal Relief Areas

Individuals with disabilities who use service animals have reported traveling difficulties due to the absence of service animal relief areas on passenger vessels. We are considering requiring service animal relief areas on passenger vessels in the final guidelines.

Question 31. Are service animal relief areas currently provided on passenger vessels? What criteria should be used to determine when service animal relief areas are needed? For instance, should need for service animal relief areas be based on the length of trip or total travel time? How many service animal relief areas should be provided on passenger vessels? Should the number vary based on the size of passenger vessel? Where should service animal relief areas be located on passenger vessels? What should be the design criteria for service animal relief areas? What costs are associated with providing service animal relief areas?

Chapter V 3: Building Blocks

Chapter V 3 contains proposed technical provisions that form the building blocks for accessible features. They are referenced in proposed scoping provisions in Chapter V 2 and in proposed technical provisions in Chapters V 4 through V 11. The proposed technical provisions in Chapter V 3 include deck surfaces (V302); changes in level (V303); turning space (V304); clear deck space (V305); knee and toe clearance (V306); protruding objects (V307); reach ranges (V308); and operable parts (V309). The proposed technical provisions in Chapter V 3 are the same as those for landside facilities except as noted below.

A proposed exception would not require openings and changes in level in deck surfaces for vehicle tie-downs on ferries that are flush with the deck surface and are not located within an onboard accessible route to comply with the proposed technical provisions for openings and changes in level. Another proposed exception would permit larger openings for drains that are not located within an onboard accessible route where the administrative authority determines that larger openings are needed for deck drainage.

V307 Protruding Objects

Where doors are required by the administrative authority to have coamings, an exception is proposed that would permit the vertical clearance at the door to be measured from the finish deck surface adjacent to the coamings and not the top of the coamings.

A comment on earlier drafts of the guidelines noted that U.S. Coast Guard regulations permit vertical clearances to be 74 inches on circulation paths and that the proposed technical provisions for protruding objects would require 80 inches minimum vertical clearance, which would affect deck height and may create stability problems. The ferry case studies found that there were no stability problems due to this proposed technical provision.

Chapter V 4: Onboard Accessible Routes and Accessible Passenger Boarding Systems

Chapter V 4 contains proposed technical provisions for the components of onboard accessible routes and accessible passenger boarding systems, including walking surfaces with running slopes less than 1:20 (V403); doors, doorways, and gates (V404); ramps (V405); curb ramps (V406); elevators (V407); limited use-limited application elevators (V408); and platform lifts (V409). In addition, Chapter V 4 contains proposed technical provisions for components that are specific to accessible passenger boarding systems, including gangways (V410) and manually powered boarding lifts (V411). The proposed technical provisions in Chapter V 4 are the same as those for landside facilities except as noted below.

V403 Walking Surfaces

Walking surfaces on vehicle decks would be permitted to overlap vehicle ways. For smaller passenger vessels where the largest deck is less than 3,000 square feet, proposed exceptions would permit the clear width of the walking surface to be 32 inches wide minimum instead of 36 inches wide minimum and would permit fold-down seats to project into walking surface clearances when the seats are in the down position. The proposed exceptions would reduce the impact on smaller passenger vessels such as ferries permitted to carry 150 or fewer passengers.

V404 Doors, Doorways, and Gates

Exceptions are proposed for doors and gates intended to be operated only by employees, and for doors and gates at entry and departure points.

V404.2.5 Thresholds and Coamings

U.S. Coast Guard regulations and international conventions require certain doors on passenger vessels to have raised thresholds known as coamings that are three or more inches in height to provide a watertight barrier at the base of the doors. Coamings are essential to vessel stability and safety, but present barriers to accessibility. This section contains proposed technical provisions for thresholds provided at doorways without coamings, and for single ramp access or double ramp access and automatic doors at doorways with coamings.

An exception is proposed that would permit a ¾ inch high maximum non-beveled threshold on the sealing side of weathertight doors where required by the administrative authority to meet weathertight door sealing requirements provided that the thresholds contrast visually with adjacent deck surfaces. This exception can be used at doorways without coamings, and doorways with coamings where single ramp access or double ramp access and automatic doors are provided. Before using this exception at doorways with coamings where single ramp access or double ramp access and automatic doors are provided, alternatives should be explored with the administrative authority such as installing drainage systems where weathertight doors seal against the top of ramp surfaces.

V404.2.5.1 Doorways Without Coamings

This section would require thresholds at doorways without coamings to be ½ inch high maximum with a beveled edge on each side. An exception is proposed that would permit existing or altered thresholds to be ¾ inch high maximum with a beveled edge on each side.

V404.2.5.2 Doorways With Coamings

This section would require doorways with coamings to conform to the

minimum coaming height determined by the administrative authority.

Question 32. Do passenger vessels exceed the minimum coaming height determined by the administrative authority? If so, comments should provide information explaining conditions where the minimum coaming height is exceeded.

The Passenger Vessel Access Advisory Committee recommended that single ramp access or double ramp access and automatic doors be provided at doorways with coamings. We sponsored a research project by the Volpe National Transportation Systems Center to examine potential access solutions to doorways with coamings.[33] A working group organized by the U.S. Coast Guard and the Passenger Vessel Association reviewed the research project report. The proposed technical provisions for doorways with coamings considered in the earlier drafts of the guidelines are revised based on the research project report, case studies, and input from the U.S. Coast Guard and Passenger Vessel Association working group.

For single ramp access, this section would require a ramp on the side of the doorway to be protected from water infiltration. Changes in level would not be permitted within the maneuvering clearances specified on the other side of the door.

For double ramp access, this section would require ramps on each side of the doorway and automatic doors at the doorway. A exception is proposed that would not require automatic doors where the doors are intended to be operated only by employees.

For both single ramp access and double ramp access, this section would require the ramp width to be equal to or greater than the width of the maneuvering clearances specified on the side of the doorway where the ramp is provided. An exception is proposed that would not require landings at the top of ramps provided at doorways with coamings.

For smaller passenger vessels where the largest deck is less than 3,000 square feet, exceptions are proposed that would permit doorways with coamings that provide single ramp access to have steeper running slopes on ramp runs and the maneuvering clearances on the side of the doorway without a ramp to be 48 inches minimum in depth.

An exception is proposed that would not require single ramp access or double ramp access and automatic doors where the administrative authority permits coamings to be removable; the doors are intended to be operated only by employees; the coamings are readily removable by the employees; and the weather deck areas accessed by the doors are not open to passengers when the vessel is underway except in emergencies.

Where the administrative authority determines that it is not feasible to provide single ramp access or double ramp access and automatic doors at doorways with coamings due to space limitations and watertight doors are provided instead of weathertight doors, an exception is proposed that would permit the thresholds on the sides of the watertight doors containing the door seal to have non-beveled thresholds 1 ¼ inches high maximum provided that the thresholds contrast visually with adjacent deck surfaces.

V404.2.7 Door and Gate Hardware

This section would require the force to activate operable parts of door and gate hardware to not exceed 5 pounds. Where the administrative authority determines that greater force is necessary, an exception would permit the administrative authority to establish the maximum force.

V404.2.9 Door and Gate Opening Force

This section would require fire doors and watertight doors for passenger use to have the minimum opening force determined by the administrative authority.

Question 33. Do fire doors and watertight doors for passenger use exceed the minimum opening force determined by the administrative authority? If so, comments should provide information explaining conditions where the minimum opening force is exceeded.

The section would require other doors and gates for passenger use, except exterior hinged doors and gates, to have an opening force of 5 pounds maximum. Where the administrative authority determines that greater force is necessary, an exception would permit the administrative authority to establish the maximum force.

A proposed exception would not require doors on sailing vessels to comply with the proposed technical provisions for opening force.

V405 Ramps

For smaller passenger vessels where the largest deck is less than 3,000 square feet, proposed exceptions would permit the clear width of ramp runs (including the clear width between handrails, where provided) to be 32 inches minimum instead of 36 inches minimum; and the length of landings at the top and bottom of ramp runs to be 48 inches long minimum instead of 60 inches long minimum.

V407 Elevators

This section would permit any door location on elevator cars that have 36 inches minimum door clear width.

V407 Elevators and V408 Limited Use-Limited Application Elevators

Where elevator cars provide emergency two-way communication systems, these sections would require the systems to provide a visual signal acknowledging that an emergency signal was received at the bridge or other space where emergency actions are directed.

Where a passenger vessel has more than one entry deck, an exception is proposed that would not require the elevator car control button for the entry deck to be identified with the entry deck tactile symbol.

V409 Platform Lifts

This section would require platform lifts to have a 450 pounds minimum rated load. We are considering increasing the rated load to 660 pounds for inclined platform lifts and 750 pounds for vertical platform lifts in the final guidelines. Product reviews of available inclined and vertical platform lifts show that they meet the higher rated loads.

Question 34. Are inclined lifts complying with the ASME A18.1- 2011 Safety Standard for Platform Lifts and Stairway Chairlifts available that have rated loads greater than 660 pounds? How much more do inclined platform lifts with a 660 pounds rated load and vertical platform lifts with a 750 pounds rated load cost compared to platform lifts with a 450 pounds rated load? What are the benefits of inclined platform lifts with a 660 pounds rated load and vertical platform lifts with a 750 pounds rated load compared to platform lifts with a 450 pounds rated load?

For smaller passenger vessels where the largest deck is less than 3,000 square feet, a proposed exception would permit the lift platform to be to be 32 inches wide minimum where it is approached at the short side in order to allow the use of inclined platform lifts.

V410 Gangways

This section contains proposed technical provisions for gangways that are part of accessible passenger boarding systems, including slope (V410.2); cross slope (V410.3); surfaces (V410.4); clear width (V410.5); transition plates

[33] Volpe National Transportation Systems Center, ADA Access to Passenger Vessels: Finding Safety Equivalence Solutions for Watertight Doors with Coamings at: *http://www.access-board.gov/pvag/*.

(V410.6); landings (V410.7); handrails (V410.8); edge protection (V410.9); and wet conditions (V410.10).

The section would require gangway runs to have a running slope of 1:12 maximum. For gangways carried on passenger vessels, a proposed exception would limit the total length of the gangway run or series of gangway runs to the beam of the passenger vessel (width of the vessel at its widest point). For gangways provided at landside facilities, a proposed exception would limit the total length of the gangway run or series of gangway runs to 120 feet. This would result in gangways with running slopes steeper than 1:12 in locations where there are severe tidal or water fluctuations. However, satisfactory solutions cannot be achieved under all conditions in the marine environment. We defer to DOT and DOJ to address when accessible passenger boarding systems, including gangways, would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner or operator of the landside facilities and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

The section would prohibit changes in level, other than running slope and cross slope, on surfaces of gangway runs. A proposed exception would permit changes in level ¼ inch without a bevel and ½ inch with a bevel on surfaces of gangway runs where conditions result in gangways with slopes greater than 1:4. Another proposed exception would permit changes in level on the portion of the surface of a gangway run that is outside a 36 inches wide minimum surface located between handrails and free of changes in level.

For vehicle ferries, a proposed exception for running slope would be permitted where the only way for pedestrian passengers to embark or disembark is by way of a gangway that also functions as a vehicle transfer bridge. Another proposed exception would permit readily removable handrails on gangways that also function as a vehicle transfer bridge.

For smaller passenger vessels where the largest deck is less than 3,000 square feet, a proposed exception would permit the clear width of gangway runs (including the width between handrails, where provided) to be 32 inches minimum instead of 36 inches minimum.

V411 Manually Powered Boarding Lifts

This section contains the proposed technical provisions for manually powered boarding lifts, including design load (V411.2); controls (V411.3); emergency operation (V411.4); equipment failure (V411.5); platform barriers (V411.6); platform surface and size (V411.7); platform approaches (V411.8); platform direction (V411.10); and handrails (V411.11). Manually powered boarding lifts can be used as a component of an accessible passenger boarding system or to access tender boarding platforms in certain conditions.

Chapter V 5: General Passenger Vessel Elements

Chapter V 5 contains the proposed technical provisions for pool stairs, including treads and risers (V502.2); closed risers (V502.3); tread surface (V502.4); nosings (V502.5); and handrails (V502.6);. Chapter V 5 also contains the proposed technical provisions for handrails, including where they would be required (V503.1 and V503.2); continuity (V503.3); height (V503.4); clearance (V503.5); gripping surface (V503.6); cross section (V 503.7); surfaces (V5003,8); fittings (V503.9); and handrail extensions (V503.10). The proposed technical provisions in Chapter V 5 are the same as those for landside facilities except as noted below.

Where the administrative authority requires handrails along walking surfaces with slopes not steeper than 1:20 to be located more than 38 inches above the deck, a proposed exception would not require the handrails to comply with the proposed technical provision for height.

Chapter V 6: Plumbing Elements and Facilities

Chapter V 6 contains the proposed technical provisions for drinking fountains (V602); toilet and bathing rooms (V603); water closets and toilet compartments (V604); urinals (V605); lavatories and sinks (V606); bathtubs (V607); shower compartments and rinsing showers (V608); grab bars (V609); tub and shower seats (V610); laundry equipment (V611); and saunas and steam rooms (V612). The proposed technical provisions in Chapter V 6 are the same as those for landside facilities.

Comments from the cruise industry on earlier drafts of the guidelines noted the need for flexibility in designing bathrooms in guest rooms with mobility features. The proposed technical provisions in V603.2.2 permit clear deck spaces, clearances at fixtures, and turning spaces in bathrooms to overlap (e.g., clearances at water closets and roll-in showers can overlap). A grab bar would be required on the side wall opposite the seat in roll-in showers only if a side wall is provided. If no sidewall is provided, a grab bar would not be required.

Chapter V 7: Communication Elements and Features

Chapter V 7 contains the proposed technical provisions for visible notification appliances for general emergency alarms in public areas (V702); signs (V703); telephones (V704); two-way communication systems (V705); assistive listening systems (V706); and automatic teller machines and fare machines (V707). Except for general emergency alarms, which are discussed under Chapter V 2, the proposed technical provisions in Chapter V 7 are the same as those for landside facilities.

Chapter V 8: Special Rooms, Spaces, and Elements

Chapter V 8 contains the proposed technical provisions for wheelchair spaces, companion seats, and designated aisle seats (V802); dressing, fitting, and locker rooms (V803); galleys and pantries (V804); medical care facilities (V805); passenger guest rooms (V806); and storage (V807). The proposed technical provisions in Chapter V 8 are the same as for landside facilities except as noted below.

V802 Wheelchair Spaces

For ferries permitted to carry 150 or fewer passengers that provide only one transportation seating area under 100 square feet, a proposed exception would permit wheelchair spaces in the transportation seating area to overlap onboard accessible routes, accessible means of escape, and means of escape required by the administrative authority. A proposed exception would not require shoulder alignment of wheelchair spaces and companion seats at tables and counters.

V806.2 Guest Rooms With Mobility Features

A proposed exception would permit shelving to be used in bathrooms to provide comparable counter top space. Where doors connect adjacent guest rooms and one of the guest rooms does not provide mobility features, a proposed exception would not require the door on the side of the guest room that does not provide mobility features to comply with the proposed technical provisions for maneuvering clearances.

Where windows are provided in guest rooms with mobility features for operation by passengers, this section would require at least one window to meet the proposed technical provisions for operable parts in V309, including 5 pounds maximum force to operate.

Question 35. Are marine windows available that do not require more than 5 pounds force to operate? Can methods or products used to facilitate window operation in landside facilities be used in the marine environment? Are automated marine windows available?

Question 36. In new construction, can balcony doors that are not required to have coamings be designed to meet the proposed technical provisions in V404.2.5.1 for height (½-inch maximum) and openings (not allow passage of a sphere more than ½ inch in diameter)? Can drains be provided at balconies to prevent water from entering guest rooms?

For the final guidelines, we are considering technical provisions for beds that are fixed in place, including bed height and clearance between upper and lower berths.

Question 37. Is the 17 inches to 19 inches height specified for shower seats and water closets appropriate for beds in guest rooms with mobility features? What should be the minimum clear height above the lower berth where upper and lower berths are provided?

Chapter V 9: Built-In Elements

Chapter V 9 contains the proposed technical provisions for built-in elements, including tables and counters (V902); benches (V903); and sales and service counters (V904). The proposed technical provisions in Chapter V 9 are the same as for landside facilities except as noted below.

Proposed exceptions would permit clear deck spaces at low beverage tables and narrow counters to be positioned for a parallel approach by passengers who use wheelchairs.

Chapter V 10: Recreation Facilities

Chapter V 10 contains the proposed technical provisions for recreation facilities, including exercise machines and equipment (V1002); miniature golf facilities (V1003); play areas (V1004); swimming pools, wading pools, and spas (V1005); and shooting positions (V1006). The proposed technical provisions in Chapter V 10 are the same as for landside facilities.

The proposed technical provisions for pool lifts would require single person pool lifts to have a weight capacity of 300 pounds minimum and be capable of sustaining a static load of at least one and a half times the rated load.

Question 38. Are there factors unique to the marine environment that may warrant different technical provisions for pool lifts on passenger vessels, including lifting capacity?

Chapter V 11: Tenders

Chapter V 11 contains proposed scoping and technical provisions for tenders permitted to carry more than 59 passengers. Chapter V 11 would require tenders to provide at least two wheelchair spaces. Chapter V 11 also would require at least one onboard accessible route to connect each wheelchair space to the entry and departure points of the tender used by passengers in non-emergency conditions serving the seating area in which the wheelchair space is located.

Question 39. Are there new tenders that do not meet the proposed scoping and technical provisions in Chapter V 11?

8. Regulatory Analyses

Executive Order 13563 (Improving Regulation and Regulatory Review) and Executive Order 12866 (Regulatory Planning and Review)

The Office of Management and Budget has reviewed the proposed guidelines in accordance with Executive Orders 13563 and 12866. Among other things, Executive Order 13563 directs agencies to propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs; tailor the regulation to impose the least burden on society, consistent with obtaining the regulatory objectives; and, in choosing among alternative regulatory approaches, select those approaches that maximize net benefits. Executive Order 13563 recognizes that some benefits are difficult to quantify and provides that, where appropriate and permitted by law, agencies may consider and discuss qualitatively values that are difficult or impossible to quantify, including equity, human dignity, fairness, and distributive impacts.

We prepared a regulatory assessment of the costs and benefits of the proposed guidelines. The regulatory assessment is available at: *http://www.access-board.gov/pvag/* and *http://www.regulations.gov.* We estimate the compliance costs separately for: (1) ferries, multi-purpose vessels such as dinner vessels and excursion vessels, and small cruise ships; and (2) large cruise ships operating in U.S. ports. We consider cruise ships permitted to carry between 50 and 299 overnight passengers small cruise ships, and cruise ship permitted to carry 300 or more passengers large cruise ships.

Ferries, Multi-Purpose Vessels, and Small Cruise Ships

We estimate there were 454 ferries, 346 multi-purpose vessels, and 32 small cruise ships in the size categories covered by the proposed guidelines operating in U.S. ports as of 2010. These 832 vessels are listed in Appendix I to the regulatory assessment, along with the data sources.

Question 40. Are there vessels listed in Appendix I that should not be included in the appendix (e.g., vessels retired)? Are there vessels not listed in Appendix I that should be included in the appendix?

We estimate 387 of the ferries (85%), 286 of the multi-purpose vessels (83%), and 23 of the small cruise ships (72%) for a total of 696 of the vessels (84%) are expected to reach the end of their service life over 20 years. We assume these vessels would be replaced by new vessels and the new vessels would have the same passenger and vehicle capacity, passenger amenities, and number of passenger decks as the vessels they replace. We also assume the total number of vessels would be stable over 20 years.

We conducted case studies of ten vessels to develop estimates of the compliance costs. We divided the 696 vessels that we assume to be replaced over 20 years into 13 groups by type and size of vessel and extrapolated the compliance costs from the case study vessels to these vessels. See Table 8 in regulatory assessment for the 13 groups of vessels and case study vessels matched with each group. The compliance costs include the following components:

- *Vertical Access Construction Cost.* This is the cost of installing an elevator, limited use-limited application elevator (LULA), or platform lift to connect passenger decks on a vessel with more than one deck. See Table 9 in the regulatory assessment for estimates of the vertical access construction costs for the vessels
- *Other Accessible Feature Costs.* This includes the cost to expand toilet rooms; modify doors and thresholds; install automatic doors at doorways with coamings and double ramps; add assistive listening systems; and provide protected waiting areas as part of an accessible means of escape where passengers with disabilities wait for crew assistance during emergencies. See Table 10 in the regulatory assessment for estimates of the other accessible feature costs for the vessels.
- *Lengthening Cost.* This is the cost of increasing the length of a vessel to accommodate the accessible features

and maintain passenger and vehicle capacity. See Table 11 in the regulatory assessment for estimates of the costs to lengthen the vessels.

- *Redesign Cost.* This is the cost for architectural design drawings for a new vessel that differs in design from the vessel it replaces. See Table 12 in the regulatory assessment for estimates of the redesign costs for the vessels.
- *Vertical Access Maintenance Cost.* This is the annual cost of maintaining an elevator, LULA, or platform lift to connect passenger decks. See Table 13 in the regulatory assessment for estimates of the vertical access maintenance costs for the vessels.
- *Automatic Door Maintenance Cost.* This is the annual cost of maintaining and replacing automatic doors at doorways with coamings and double ramps. See Table 13 in the regulatory assessment for estimates of the automatic door maintenance costs for the vessels.
- *Engine Maintenance Cost.* This is the annual cost for additional engine maintenance due to added weight from the accessible features and vessel lengthening. See Table 14 in the regulatory assessment for estimates of the engine maintenance costs for the vessels.
- *Fuel Cost.* This is the annual cost for additional fuel consumption due to installing an elevator, LULA, or platform lift to connect passenger decks and vessel lengthening. See Table 14 in the regulatory assessment for estimates of the additional annual fuel costs for the vessels.

We estimate the total compliance costs for the vessels annualized over 20 years are $16 million discounted at 7 percent and 3 percent. See Table 15 in the regulatory assessment for the total estimated compliance costs.

Question 41. We request comment on the following questions regarding the regulatory assessment:

(a) Is it reasonable to assume the number of ferries, multi-purpose vessels, and small cruise ships to which the proposed guidelines would apply would be stable over 20 years? Comments should include information to support alternate assumptions.

(b) Are the compliance cost estimates reasonable? If the estimates are not reasonable, comments should identify the specific estimate that is not reasonable and alternative methods or sources of information to improve the estimate.

(c) Would providing an elevator, LULA, or platform lift on the vessels in Table 9 in the regulatory assessment result in increased electrical loads that would require larger electric generator systems? Comments should include cost estimates for larger electric generator systems, where possible.

(d) Are the assumptions regarding the increases in fuel consumption in Table 14 in the regulatory assessment reasonable? Comments should include information to support alternate assumptions.

(e) Would increasing the length of the vessels in Table 11 in the regulatory assessment impact their use of docking areas? Comments should describe any impacts and how to estimate the costs of the impacts.

(f) Would the proposed guidelines result in vessel owners and operators reducing the passenger and vehicle capacity of the vessels or reducing passenger amenities such as fixed seating or guest rooms; or would vessel owners and operators increase the size of the vessels to maintain or increase the passenger and vehicle capacity and passenger amenities? If the passenger and vehicle capacity or passenger amenities would be reduced, we are interested in information to estimate the loss of capacity and net revenue loss.

(g) Are there other compliance costs associated with the proposed guidelines that are not identified in the regulatory assessment?

(h) Do the proposed guidelines have any unintended consequences for passenger vessels?

Large Cruise Ships

We estimate there were 113 large cruise ships operating in U.S. ports as of 2011. These large cruise ships are listed in Appendix II to the regulatory assessment, along with the data sources.

Question 42. Are there large cruise ships listed in Appendix II that should not be included in the appendix (e.g., vessels retired)? Are there large cruise ships not listed in Appendix II that should be included in the appendix?

New large cruise ships provide many accessible features that would be required by the proposed guidelines, including elevators to connect passenger decks; guest rooms with mobility features; guest rooms with communication features; wheelchair spaces and assistive listening systems in assembly areas; and pool lifts. We proposed to conduct case studies of new large cruise ships to examine the impact of the proposed guidelines on the vessels. However, we did not conduct case studies of large cruise ships because we could not find cruise ship owners and operators to participate in case studies. The cruise industry is concerned about the impact of the proposed scoping provision for guest rooms with mobility features. Due to the lack of information, we did not estimate the costs for large cruise ships to comply with the proposed guidelines other than the proposed scoping provision for guest rooms with mobility features.

Question 43. Would new large cruise ships incur incremental design, construction, operation and maintenance, or any other costs due to the proposed guidelines? Which proposed provisions would result in incremental costs? We are interested in information to estimate the incremental costs.

As discussed under V224.2 Guest Rooms with Mobility Features, the proposed guidelines would require cruise ships to provide a minimum number of guest rooms with mobility features. Guest rooms with mobility features are typically larger than other guest rooms to accommodate passengers who use wheelchairs or scooters. According to the cruise industry, two guest rooms with mobility features occupy the same square footage as three guest rooms resulting in the loss of one guest room for every two guest rooms with mobility features. We estimate the number of guest rooms that would be lost over 20 years under the proposed scoping provision in Chapter 3 of the regulatory assessment. We estimate the 113 large cruise ships operating in U.S. ports as of 2011 contained 123,516 guest rooms, including 2,392 guest rooms with mobility features (1.9% of the total number of guest rooms). We assume 5 percent of the guest rooms in the cruise fleet are replaced annually and the total number of guest rooms increases by 3 percent annually. Based on these assumptions, we estimate 786 guest rooms would be lost over 20 years under the proposed scoping provision against the baseline of the cruise industry practice in the absence of the guidelines. According to the cruise industry, each guest room produced $140,000 gross revenue in 2005. Adjusting this figure for inflation to $161,250 in 2011 dollars, we estimate the gross revenue loss annualized over 20 years is $50 million discounted at 7 percent, and $58 million discounted at 3 percent.

We do not estimate costs for tenders because the proposed provisions for tenders are minimal and new tenders meet the provisions.

Benefits

We do not quantify the benefits of the proposed guidelines due to the nature of the benefits. The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers

encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. Accessible passenger boarding systems would enable passengers with mobility disabilities to independently board and disembark from passenger vessels. Wheelchair spaces in seating areas would enable passengers who use wheelchairs or scooters to sit with other passengers. Passengers with mobility disabilities would be able to use toilet rooms and guest rooms on passenger vessels and cruise ships. Assistive listening systems would enable passengers who have difficulty hearing to listen to a narrated tour delivered on the public address system of an excursion vessel. Passengers who have difficulty seeing or are blind would be able to walk around passenger vessels without encountering protruding objects. The proposed guidelines would afford individuals with disabilities equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The proposed guidelines would enable individuals with disabilities to achieve greater participation in society, independent living, and economic self-sufficiency. The benefits are difficult to quantify, but include important national values recognized in Executive Order 13563 such as equity, human dignity, and fairness.

The Survey of Income and Program Participation (SIPP) sponsored by the U.S. Census Bureau asks questions about whether persons have difficulty performing a specific set of functional activities.[34] The SIPP provides estimates of disability prevalence that are representative of the civilian non-institutionalized population living in the United States. We recognize that not all these individuals are likely to directly benefit from the proposed guidelines because some may not use passenger vessels covered by the proposed guidelines. We do not have information to estimate the number of people with mobility disabilities or their family members who would directly benefit from the proposed guidelines. We provide the data below for illustrative purposes.

Persons With Mobility Disabilities

The proposed provisions for accessible passenger boarding systems, onboard accessible routes, accessible means of escape, toilet rooms, wheelchair spaces in assembly areas and transportation seating areas, and guest rooms with mobility features would directly benefit persons with mobility disabilities who use passenger vessels covered by the proposed guidelines. The SIPP data show among persons aged 15 and older, 30.6 million (12.6%) had limitations associated with ambulatory activities of the lower body, including difficulty walking, climbing stairs, or using mobility devices. This number includes:

- 23.9 million (9.9%) had difficulty walking a quarter of a mile;
- 22.3 million (9.2%) had difficulty climbing a flight of stairs;
- 11.6 million (4.8%) used a cane, crutches, or walker to assist with mobility; and
- 3.6 million (1.5%) used a wheelchair or scooter.

Persons Who Have Difficulty Hearing or Are Deaf

The proposed provisions for assistive listening systems, general emergency alarms, and guest rooms with communication features would directly benefit persons who have difficulty hearing or are deaf and use passenger vessels covered by the proposed guidelines. The SIPP data show among persons aged 15 and older 7.6 million (3.1%) had difficulty hearing, including 5.6 million (2.3%) used a hearing aid and 1.1 million (0.5%) were deaf.

The SIPP reports fewer persons with hearing impairments compared to the National Health and Nutritional Examination Survey (NHANES). NHANES includes audiometric testing of participants. NHANES data for persons aged 12 and older show 30 million (12.7%) had a bilateral hearing loss and the number increases to 48.1 million (20.3%) when unilateral hearing loss is included.[35]

Persons Who Have Difficulty Seeing or Are Blind

The proposed provisions for protruding objects, elevator call buttons and signals, and tactile and visual characters on signs would directly benefit persons who have difficulty seeing or are blind and use the passenger vessel covered by the proposed guidelines. The SIPP data show among persons aged 15 and older, 8.1 million (3.3%) had difficulty seeing, including 2.0 million (0.8%) were blind.

Question 44. Do the proposed guidelines have other qualitative benefits? Are there methods or sources of information for monetizing or quantifying the benefits of the proposed guidelines?

Primary Estimates of Costs and Benefits

The primary estimates of the costs and benefits of the proposed guidelines are shown in Table 6. We estimate the total compliance costs annualized over 20 years are $66 million discounted at 7 percent, and $74 million discounted at 3 percent.

TABLE 6—PRIMARY ESTIMATES OF COSTS AND BENEFITS OF PROPOSED GUIDELINES ANNUALIZED OVER 20 YEARS

[2011 Dollars]

Costs	7% Discount rate $66 million	3% Discount rate $74 million
Benefits	The proposed guidelines would address the discriminatory effects of architectural, transportation, and communication barriers encountered by individuals with mobility, hearing, and vision disabilities on passenger vessels. The proposed guidelines would afford these individuals equal opportunity to travel on passenger vessels for employment, transportation, public accommodation, and leisure. The benefits are difficult to quantify, but include important national values recognized in Executive Order 13563 such as equity, human dignity, and fairness.	

Question 45. Are there alternatives in addition to those included in the proposed guidelines that would: (1) achieve the statutory and regulatory objective to ensure that passenger vessels are readily accessible to and usable by passengers with disabilities; and (2) reduce the compliance costs for passenger vessel owners and operators?

[34] U.S. Census Bureau, Americans with Disabilities: 2010 at: *http://www.census.gov/prod/2012pubs/p70-131.pdf.*

[35] Frank R. Lin, John K. Niparko, and Luigi Ferrucci, Hearing Loss Prevalence in the United States, JAMA Internal Medicine (November 14, 2011) at: *http://archinte.jamanetwork.com/article.aspx?articleid=1106004.*

Initial Regulatory Flexibility Analysis

We are required by the Regulatory Flexibility Act to consider the impact of regulatory proposals on small entities; analyze alternatives that minimize the impact on small entities; and make the analysis available for comment. We included an initial regulatory flexibility analysis to meet the requirements of the Regulatory Flexibility Act in Chapter 7 of the regulatory assessment. The initial regulatory flexibility analysis estimates the compliance costs for small entities that construct new vessels to replace existing vessels. The initial regulatory flexibility analysis include tables showing the compliance costs for 13 groups of vessels by type and size.

Why are we issuing the proposed guidelines?

We are required by section 502 of the Rehabilitation Act and section 504 of the Americans with Disabilities Act (ADA) to issue accessibility guidelines for the construction and alteration of passenger vessels covered by the ADA. We are issuing the proposed guidelines pursuant to this statutory authority. The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with our guidelines. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

What is the objective of, and legal basis for, the proposed guidelines?

The objective of the proposed guidelines is to ensure that newly constructed and altered portions of passenger vessels are readily accessible to and usable by individuals with disabilities. The legal basis for the proposed guidelines is section 502 of the Rehabilitation Act and section 504 of the ADA.

How many small entities would be affected by proposed guidelines?

The proposed guidelines would affect small businesses identified by the North American Industry Classification System (NAICS) codes listed in Table 7 and small governments with a population of 50,000 or less that own or operate passenger vessels, other than ferries or tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers; ferries permitted to carry more than 99 passengers; and tenders permitted to carry more than 59 passengers.

TABLE 7—SMALL BUSINESS ADMINISTRATION SIZE STANDARDS

NAICS Code		Small business size
483112	Deep Sea Passenger Transportation	500 or fewer employees.
483114	Coastal and Great Lakes Passenger Transportation	500 or fewer employees.
483212	Inland Water Passenger Transportation	500 or fewer employees.
487110	Scenic and Sightseeing Transportation, Water	$7 million or less annual receipts.
713210	Casinos (except Casino Hotels)	$7 million or less annual receipts.

We estimate 381 small entities own or operate 635 vessels in the size categories covered by the proposed guidelines. This includes 372 small businesses that own or operate 257 ferries, 338 multi-purpose vessels, and 23 small cruise ships permitted to carry 50 to 299 overnight passengers; and 9 small governments that own or operate 16 ferries and 1 multi-purpose vessel.

What are the proposed compliance requirements?

The proposed guidelines would apply when small entities replace their existing vessels with new vessels or add new vessels to their fleet. The proposed guidelines, themselves, would not require existing vessels to be made accessible except where altered. The proposed guidelines contain proposed scoping and technical provisions. The proposed scoping provisions specify what passenger vessel features would be required to be accessible. Where multiple features of the same type are provided, the proposed scoping provisions specify how many of the features would be required to be accessible. The proposed technical provisions specify the design criteria for accessible features. The passenger vessel features addressed by the proposed scoping and technical provisions include onboard accessible routes connecting passenger decks and passenger amenities within decks; accessible means of escape; doorways and coamings; toilet rooms; wheelchair spaces in assembly areas and transportation seating areas; assistive listening systems; general emergency alarms; guest rooms; and other passenger amenities. The proposed guidelines include proposed technical provisions for accessible passenger boarding systems. However, we defer to DOT and DOJ to address when accessible passenger boarding systems would be required since passenger boarding systems can be provided at landside facilities and involve operational issues between the owner or operator of the landside facility and the passenger vessel owner or operator that DOT and DOJ are authorized to address.

What are the compliance costs for small entities?

We estimate the compliance costs for small entities that construct new vessels to replace existing vessels. As shown in Table 8, we estimate 533 vessels owned or operated by small entities would reach the end of their expected service life over 20 years beginning in 2011. We assume small entities would construct new vessels to replace these vessels. The estimated compliance costs are based on case studies and are adjusted to 2011 dollars.

TABLE 8—SMALL ENTITY VESSELS REPLACED BY NEW VESSELS OVER 20 YEARS

Vessel	Number	Number replaced over 20 years
Ferries	273	238
Multi-Purpose Vessels	339	279
Small Cruise Ships	23	16
Total	635	533

The compliance costs include the following components:

- *Vertical Access Cost.* This is the cost of installing an elevator, limited use-limited application elevator (LULA), or platform lift to connect passenger decks on a vessel with more than one deck. When small entities construct new vessels to replace existing vessels, we estimate 65 vessels would be required to provide a LULA at a cost of $297,000; 29 vessels would be required to provide

an elevator at a cost of $372,000; 5 small cruise ships that currently provide elevators would be required to provide larger elevators at a cost of $2,700; and 16 small cruise ships would be required to provide a platform lift to tender boarding platforms at the stern of the vessel at a cost of $27,700. See Table 22 in the regulatory assessment for the types and sizes of the vessels that would incur compliance costs for an elevator, LULA, or platform lift.

• *Other Accessible Feature Costs.* This includes the cost to expand toilet rooms; modify doors and thresholds; install automatic doors at doorways with coamings and double ramps; add assistive listening systems; and provide protected waiting areas as part of an accessible means of escape where passengers with disabilities wait for crew assistance during emergencies. When small entities construct new vessels to replace existing vessels, we estimate 516 vessels would incur compliance costs for other accessible features. The costs would range from $19,000 for mono-hull ferries permitted to carry 151 to 1,000 passengers plus vehicles to $631,000 for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles. The costs are higher for mono-hull ferries permitted to carry 1,001 or more passengers plus vehicles because the estimate is based on the case study of a 4,400 passenger and 30 vehicle ferry where the owner wanted to provide automatic sprinkler systems instead of protected waiting areas as part of an accessible means of escape even though the automatic sprinkler systems are more costly. The costs would be lower if protected waiting areas are provided. See Table 23 in the regulatory assessment for the types and sizes of the vessels that would incur compliance costs for other accessible features.

• *Lengthening Cost.* This is the cost of increasing the length of a vessel to accommodate the accessible features and maintain passenger and vehicle capacity. When small entities construct new vessels to replace existing vessels, we estimate 217 vessels would need to be lengthened due to the proposed guidelines. The costs would range from $60,000 for mono-hull ferries permitted to carry 100 to 150 passengers to $2,117,000 for some small cruise ships. See Table 23 in the regulatory assessment for the types and sizes of vessels that would incur compliance costs to lengthen the vessel.

• *Redesign Cost.* This is the cost for architectural design drawings for a new vessel that differs in design from the existing vessel it replaces. When small entities construct new vessels to replace existing vessels, we estimate 470 vessels would need to be redesigned due to the proposed guidelines. The costs would range from $2,000 for some mono-hull ferries permitted to carry 151 to 1,000 passengers plus vehicles to $261,100 for some small cruise ships. See Table 23 in the regulatory assessment for the types and sizes of the vessels that would incur compliance costs to redesign the vessel.

• *Additional Fuel Cost.* This is the annual cost for additional fuel consumption due to installing an elevator, LULA, or platform lift to connect passenger decks and vessel lengthening. When small entities construct new vessels to replace existing vessels, we estimate 243 vessels would incur additional fuel costs due to the proposed guidelines. The costs would range from $5,000 annually for mono-hull vessels permitted to carry 151 to 1,000 passengers to $214,000 annually for multi-hull vessels permitted to carry 151 to 600 passengers. See Table 24 in the regulatory assessment for the types and sizes of the vessels that would incur additional fuel costs.

• *Vertical Access Maintenance Cost.* This is the annual cost of maintaining an elevator, LULA, or platform lift to connect passenger decks. When small entities construct new vessels to replace existing vessels, we estimate 100 vessels would incur these annual maintenance costs. The costs would be $5,500 for an elevator or LULA, and $2,800 for a platform lift. See Table 24 in the regulatory assessment for the types and sizes of the vessels that would incur these annual maintenance costs.

• *Additional Engine Maintenance Cost.* This is the annual cost for additional engine maintenance due to added weight from the accessible features or vessel lengthening. When small entities construct new vessels to replace existing vessels, we estimate 37 vessels would incur these annual maintenance costs. The costs would be $22,000 for multi-hull ferries permitted to carry 100 to 150 passengers. See Table 24 in the regulatory assessment for the types and sizes of the vessels that would incur these annual maintenance costs.

• *Automatic Door Maintenance Cost.* This is the annual cost of maintaining and replacing the automatic doors provided at doorways with coamings and double ramps. When small entities construct new vessels to replace existing vessels, we estimate 54 vessels would incur these annual maintenance costs. The costs would range from $1,000 for mono-hull multi-purpose vessels permitted to carry 500 to 1,000 passengers, to $6,000 for mono-hull multi-purpose vessels permitted to carry 1,001 or more passengers. See Table 24 in the regulatory assessment for the types and sizes of the vessels that would incur these annual maintenance costs.

What significant alternatives did we consider?

We based the proposed guidelines on our accessibility guidelines for landside facilities. Table 25 in the regulatory assessment compares the proposed guidelines for passenger vessels to the guidelines for landside facilities to show the exceptions and alternative provisions that we propose to reduce the impact on passenger vessels owners and operators, including small entities.

Are there other relevant Federal rules?

DOT has issued regulations implementing the ADA for passenger vessels that provide designated public transportation services operated by state and local governments or specified public transportation services operated by private entities that are primarily engaged in the business of transporting people and whose operations affect commerce. DOT has reserved a subpart in the regulations for accessibility standards for the construction and alteration of passenger vessels in anticipation of our issuing these guidelines. See 49 CFR part 39, subpart E. DOJ has issued regulations implementing the ADA for state and local governments and public accommodations, including those provided on passenger vessels such as cruise ships, gaming vessels, and dinner vessels. See 28 CFR parts 35 and 36. Passenger vessel owners and operators would not be required to comply with the guidelines until they are adopted by DOT and DOJ as accessibility standards for the construction and alteration of passenger vessels covered by the ADA.

Executive Order 13132 (Federalism)

The proposed guidelines adhere to the fundamental federalism principles and policy making criteria in Executive Order 13132. The proposed guidelines are issued pursuant to the Americans with Disabilities Act (ADA), civil rights legislation that was enacted by Congress pursuant to its authority to enforce the Fourteenth Amendment to the U.S. Constitution and to regulate commerce. The ADA was enacted to provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities and to ensure that the federal government plays a central role in enforcing the standards. See 42 U.S.C. 12101 (b) (1) and (3). The ADA recognizes the authority of state and local governments to enact and enforce laws that provide

for greater or equal protection for the rights of individuals with disabilities. See 42 U.S.C. 12201 (b). State and local government agencies were members of the advisory committee that provided recommendations for the proposed guidelines. We made drafts of the guidelines available for public comment in 2004 and 2006. State and local governments provided comments on the drafts. We considered the comments when developing the proposed guidelines.

Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act does not apply to proposed or final rules that enforce constitutional rights of individuals or enforce statutory rights that prohibit discrimination on the basis of race, color, sex, national origin, age, handicap, or disability. Since the proposed guidelines are issued pursuant to the Americans with Disabilities Act (ADA), which prohibits discrimination on the basis of disability, an assessment of their effect on state, local, and tribal governments, and the private sector is not required by the Unfunded Mandates Reform Act.

List of Subjects in 36 CFR Part 1196

Civil Rights, Incorporation by reference, Individuals with disabilities, Transportation.

Karen L. Braitmayer,

Chair.

For the reasons stated in the preamble, we propose to add part 1196 to title 36 of the Code of Federal Regulations to read as follows:

PART 1196—PASSENGER VESSELS ACCESSIBILITY GUIDELINES

Sec.

Authority: 29 U.S.C. 794f, 42 U.S.C. 12204.

§ 1196.1 Accessibility guidelines.

The accessibility guidelines for passenger vessels covered by the Americans with Disabilities Act (ADA) are set forth in the appendix to this part. The U.S. Department of Transportation (DOT) and U.S. Department of Justice (DOJ) are required to issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA that are consistent with these guidelines. When DOT and DOJ issue accessibility standards for the construction and alteration of passenger vessels covered by the ADA, passenger vessel owners and operators are required to comply with the standards.

Appendix to Part 1196—Passenger Vessels Accessibility Guidelines

CHAPTER V 1: APPLICATION AND ADMINISTRATION

V101 Purpose

V101.1 General. This document contains scoping and technical requirements for accessibility to passenger vessels by individuals with disabilities. The requirements are to be applied during the design, construction, additions to, and alteration of facilities and elements on passenger vessels to the extent required by regulations issued by the U.S. Department of Transportation and the U.S. Department of Justice under the Americans with Disabilities Act of 1990 (ADA).

V101.2 Effect on Removal of Barriers in Existing Passenger Vessels. This document does not address existing passenger vessels unless altered at the discretion of a covered entity. The U.S. Department of Justice has authority over existing passenger vessels that are subject to the requirement for removal of barriers under title III of the ADA. Any determination that this document applies to existing passenger vessels subject to the barrier removal requirement is solely within the discretion of the U.S. Department of Justice and is effective only to the extent required by regulations issued by the U.S. Department of Justice.

V102 Dimensions for Adults and Children. The technical requirements are based on adult dimensions and anthropometrics. In addition, this document includes technical requirements based on children's dimensions and anthropometrics for drinking fountains, water closets, toilet compartments, lavatories and sinks, and tables and counters.

V103 Equivalent Facilitation. Nothing in these requirements prevents the use of designs, products, or technologies as alternatives to those prescribed, provided they result in substantially equivalent or greater accessibility and usability.

V104 Standard Practices

V104.1 Dimensions. Dimensions that are not stated as ''maximum'' or ''minimum'' are absolute.

V104.1.1 Construction and Manufacturing Tolerances. All dimensions are subject to conventional industry tolerances except where the requirement is stated as a range with specific minimum and maximum end points.

V104.1.2 Slopes. Slopes are measured when the passenger vessel is in a static design condition at full load.

V104.2 Calculation of Percentages. Where the required number of elements or facilities to be provided is determined by calculations of ratios or percentages and remainders or fractions result, the next greater whole number of such elements or facilities shall be provided. Where the determination of the required size or dimension of an element or facility involves ratios or percentages, rounding down for values less than one half shall be permitted.

V105 Referenced Standards

V105.1 General. The standards listed in V105.2 are incorporated by reference in this document and are part of the requirements to the prescribed extent of each such reference. The Director of the Federal Register has approved these standards for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51 (Incorporation by Reference). Copies of the referenced standards may be inspected at the Architectural and Transportation Barriers Compliance Board, 1331 F Street, NW., Suite 1000, Washington, DC 20004.

V105.2 Referenced Standards. The specific edition of the standards listed below are referenced in this document. Where differences occur between this document and the referenced standards, this document applies.

V105.2.1 ASTM. Copies of the referenced standards may be obtained from the American Society for Testing and Materials, 100 Bar Harbor Drive, West Conshohocken, Pennsylvania 19428 (*http://www.astm.org*).

ASTM F1292–99 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment (see V1004.2.6.2).

ASTM F1292–04 Standard Specification for Impact Attenuation of Surface Systems Under and Around Playground Equipment (see V1004.2.6.2).

ASTM F1487–01 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use (see V106.5 ''Use Zone'').

ASTM F1951–99 Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment (see V1004.2.6.1).

V105.2.2 NFPA. Copies of the referenced standard may be obtained from the National Fire Protection Association, 1 Batterymarch Park, Quincy, Massachusetts 02169 -7471 (*http://www.nfpa.org*).

NFPA 72 National Fire Alarm Code, 2010 Edition (see V702.2, and V806.3.3.1).

V106 Definitions

V106.1 General. For the purpose of this document, the terms defined in V106.5 have the indicated meaning.

V106.2 Terms Defined in Referenced Standards. Terms not defined in V106.5 or in regulations issued by the U.S. Department of Justice and the U.S. Department of Transportation to implement the Americans with Disabilities Act, but specifically defined in a referenced standard, shall have the specified meaning from the referenced standard unless otherwise stated.

V106.3 Undefined Terms. The meaning of terms not specifically defined in V106.5 or in regulations issued by the U.S. Department of Justice and the U.S. Department of Transportation to implement the Americans with Disabilities Act, or in U.S. Coast Guard regulations, or in referenced standards shall be as defined by collegiate dictionaries in the sense that the context implies.

V106.4 Interchangeability. Words, terms and phrases used in the singular include the plural and those used in the plural include the singular.

V106.5 Defined Terms.

Accessible. A passenger vessel or portion thereof that complies with this document.

Addition. An expansion, extension, or increase in the gross deck area of a passenger vessel.

Administrative Authority. For U.S. flag vessels, the administrative authority is the U.S. Coast Guard. For foreign flag vessels, the administrative authority is entity designated by the foreign nation that adopts or enforces regulations and guidelines for the design, construction, or alteration of passenger vessels.

Alteration. A change to a passenger vessel that affects or could affect the usability of the passenger vessel or portion thereof. Alterations include, but are not limited to, remodeling, renovation, rehabilitation, reconstruction, historic restoration, changes or rearrangement of the structural parts or elements, and changes or rearrangement in the plan configuration of bulkheads (walls) and partitions. Normal maintenance, painting or wallpapering, or changes to propulsion, mechanical and electrical systems are not alterations unless they affect the usability of the passenger vessel.

Area of Sport Activity. That portion of a room or space where the play or practice of a sport occurs.

Assembly Area. A portion of a passenger vessel, used for the purpose of entertainment or educational gatherings, or similar purposes. For the purposes of these requirements, assembly areas include, but are not limited to, classrooms, passenger meeting rooms, motion picture houses, auditoria, theaters, and dinner theaters.

Assistive Listening System (ALS). An amplification system utilizing transmitters, receivers, and coupling devices to bypass the acoustical space between a sound source and a listener by means of induction loop, radio frequency modulation (FM), or infrared equipment.

Bulkhead Deck. The upper most deck to which watertight bulkheads (walls) and the watertight shell extend.

Camber. The transverse curvature given to the weather deck surfaces to shed water readily, increase deck surface strength, and increase headroom clearance on the centerline for the deck below. Also known as the rise or crown of a deck.

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. Describes spaces and elements specifically designed for use primarily by people 12 years old and younger.

Circulation Path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, weather deck areas, passageways, elevators, platform lifts, ramps, stairways, and landings.

Coaming. The vertical plating located at the base of a doorway for the purpose of stiffening the edges of the opening and resisting entry of water.

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.

Deck. A horizontal division of a passenger vessel which contains space designed for passenger occupancy and generally corresponds to a story in a building. A horizontal division without enclosed space, such as a sun deck, is considered a deck even though it is not provided with a covering. A deck containing one or more mezzanines has more than one deck level.

Element. An architectural or mechanical component of a passenger vessel, facility, or space.

Elevated Play Component. A play component that is approached above the ground level of the play area 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.

Entry Deck. A deck which contains passenger entry and departure points which allow pedestrian passengers to embark or disembark a passenger vessel from tenders, fixed piers, floating piers, or the land in non-emergency conditions.

Facility. All or any portion of passenger vessels, structures, vessel improvements, elements, and pedestrian routes or vehicular ways located on a passenger vessel.

Ferry. A vessel that is used on a regular schedule to: (1) provide transportation only between places that are not more than 300 miles apart, and (2) transport only passengers, or vehicles or railroad cars used in transporting passengers or goods.

Gangway. A variable-sloped pedestrian walkway which consists of one or more runs.

Ground Level. The level within a deck where a play area is located.

Ground Level Play Component. A play component that is approached and exited at the ground level.

Mail Boxes. Receptacles for the receipt of documents, packages, or other deliverable matter.

Mezzanine. An intermediate level or levels between the deck surface and ceiling of any deck with an aggregate deck surface area of not more than one-third of the area of the room or space in which the level or levels are located. Mezzanines have sufficient elevation that space for human occupancy can be provided on the deck level below. Also known as the tween deck.

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 passenger vessel containing play components designed and constructed for children.

Play Component. An element intended to generate specific opportunities for play, socialization, or learning.

Qualified Historic Passenger Vessel. A passenger vessel that is listed in or eligible for listing in the National Register of Historic Places or designated as historic under an appropriate State or local law.

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).

Sailing Vessel. A vessel principally equipped for propulsion by sail even if the vessel has an auxiliary means of propulsion.

Sheer. The fore-and-aft curvature from bow to stern of a ship's deck surface as shown in side elevation.

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.

Space. A definable area, such as a room, toilet room, corridor, assembly area, open deck area, storage room, alcove, or lobby

Structural Members. The components of the passenger vessel that give it its inherent strength, integrity, and resistance to damage. Examples include, but are not limited to, the keel, keelson, stem and stern posts, frames, longitudinals, structural decks, structural and fire protection bulkheads (walls), gussets, stanchions, columns, girders, beams, knees, trusses, and hull plating and planking.

Tactile. An object that can be perceived using the sense of touch.

Technically Infeasible. With respect to an alteration of a passenger vessel, something that has little likelihood of being accomplished because existing structural conditions would require removing or altering an essential structural member; or because other existing physical or vessel constraints prohibit modification or addition of elements, spaces, or features that are in full and strict compliance with the minimum requirements.

Tender. A vessel primarily intended for transporting passengers for non-emergency purposes between passenger vessels and shore side facilities.

Transition Plate. A sloping pedestrian walkway located at the end(s) of a gangway, or between gangways segments on a telescoping gangway.

Transportation Seating Area. An area, other than an assembly area, where fixed seats are provided for passengers.

TTY. An abbreviation for teletypewriter. Machinery that employs interactive text-based communication through the transmission of coded signals across the telephone network. TTYs may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYs are also called text telephones.

Use Zone. The area beneath and immediately adjacent to a play structure or play equipment that is designated by ASTM F1487 Standard Consumer Safety Performance Specification for Playground Equipment for Public Use (incorporated by reference, see ''Referenced Standards'' in Chapter 1) 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.

Vehicular Way. A route provided for vehicular traffic.

Wheelchair Space. Space for a single wheelchair and its occupant.

CHAPTER V 2: SCOPING REQUIREMENTS

V201 Application

V201.1 Scope. All areas of newly designed and newly constructed passenger vessels and altered portions of existing

passenger vessels shall comply with this document to the extent required by V201.1.

V201.1.1 Large Vessels. Passenger vessels, other than ferries and tenders, permitted to carry more than 150 passengers or more than 49 overnight passengers shall comply with Chapters V 1 through V 10.

V201.1.2 Ferries. Ferries permitted to carry more than 99 passengers shall comply with Chapters V 1 through V 10.

V201.1.3 Tenders. Tenders permitted to carry more than 59 passengers shall comply with Chapters V 1 and V 11.

V201.2 Application Based on Facility Use. Where a facility, room, or space on a passenger vessel contains more than one use, each portion shall comply with the applicable requirements for that use.

V201.3 Temporary and Permanent Structures. These requirements shall apply to temporary and permanent structures on passenger vessels.

V202 Existing Passenger Vessels

V202.1 General. Additions and alterations to existing passenger vessels shall comply with V202.

V202.2 Additions. Each addition to an existing passenger vessel shall comply with the requirements for new construction.

V202.3 Alterations. Where existing elements or spaces are altered, each altered element or space shall comply with the applicable requirements of Chapter 2.

EXCEPTIONS: 1. Where elements or spaces are altered and the circulation path to the altered element or space is not altered, an onboard accessible route shall not be required.

2. In alterations, where compliance with applicable requirements is technically infeasible, the alteration shall comply with the requirements to the maximum extent feasible.

3. In alterations, each alteration shall provide accessibility to the maximum extent feasible where compliance with applicable provisions would result in: (a) an increase in tonnage that changes the passenger vessel's classification from 46 CFR Chapter I, Subchapter K (Small Passenger Vessels Carrying More Than 150 Passengers or With Overnight Accommodations For More Than 49 Passengers) or 46 CFR Chapter I, Subchapter T (Small Passenger Vessels (Under 100 Gross Tons)) to 46 CFR Chapter I, Subchapter H (Passenger Vessels); (b) a violation of the minimum requirements established by the administrative authority for the stability of the vessel; (c) a reduction in the structural integrity or fire resistance of a Class A or B bulkhead (wall) or deck surface; or (d) an increase in power load in excess of the existing power supply.

V202.3.1 Prohibited Reduction in Access. An alteration that decreases or has the effect of decreasing the accessibility of a passenger vessel below the requirements for new construction at the time of the alteration is prohibited.

V202.3.2 Extent of Application. An alteration of an existing element, space, or area of a passenger vessel shall not impose a requirement for accessibility greater than required for new construction.

V202.4 Alterations to Qualified Historic Passenger Vessels. Alterations to a qualified historic passenger vessel shall comply with V202.4.

EXCEPTION: Where the State Historic Preservation Officer or Advisory Council on Historic Preservation determines that compliance with the requirements for onboard accessible routes or toilet facilities would threaten or destroy the historic significance of the passenger vessel, the exceptions for alterations to qualified historic passenger vessels for that element shall be permitted to apply.

V203 General Exceptions

V203.1 General. Passenger vessels shall be exempt from these requirements to the extent specified by V203.

V203.2 Employee Areas and Features. Areas and features of passenger vessels which are intended for use only by employees shall not be required to comply with this document.

V203.3 Limited Access Spaces. Spaces accessed only by ladders, catwalks, crawl spaces, manholes, hatches, or very narrow passageways shall not be required to comply with this document.

V203.4 Camber and Sheer. Where necessary to meet camber and sheer needs of the vessel, running slopes and cross slopes shall comply with this document to the maximum extent feasible.

V203.5 Water Slides. Water slides shall not be required to comply with this document.

V203.6 Raised Diving Boards. Raised diving boards shall not be required to comply with this document.

V203.7 Diving Platforms and Swimming Platforms. Diving platforms and swimming platforms shall not be required to comply with this document, if the platforms: 1) are located on the outboard side of passenger vessels, 2) do not function as part of a passenger boarding system subject to V208, and 3) do not function as a tender boarding platform subject to V206.4.

V203.8 Raised Boxing and Wrestling Rings. Raised boxing or wrestling rings shall not be required to comply with this document.

V203.9 Furnishings. Furnishings that are not fixed to the passenger vessel shall not be required to comply with this document.

V204 Protruding Objects

V204.1 General. Protruding objects on circulation paths shall comply with V307. Stairways and stair towers on passenger vessels subject to 46 CFR 72.05–20 or 116.438 (e) shall be clear of all obstructions other than handrails.

EXCEPTIONS: 1. Within areas of sport activity, protruding objects on circulation paths shall not be required to comply with V307.

2. Within play areas, protruding objects on circulation paths shall not be required to comply with V307 provided that ground level accessible routes provide vertical clearance complying with V1004.2.

V205 Operable Parts

V205.1 General. Operable parts on elements required to comply with this document, on onboard accessible routes, and in rooms or spaces required to comply with this document shall comply with V309.

EXCEPTIONS: 1. Operable parts that are intended for use only by employees shall not be required to comply with V309.

2. Electrical or communication receptacles serving a dedicated use shall not be required to comply with V309.

3. Where two or more outlets are provided in a galley or pantry above a length of counter top that is uninterrupted by a sink or appliance, one outlet shall not be required to comply with V309.

4. Deck surface electrical receptacles shall not be required to comply with V309.

5. HVAC diffusers shall not be required to comply with V309.

6. Except for light switches, where redundant controls are provided for a single element, one control in each space shall not be required to comply with V309.

7. Exercise machines shall not be required to comply with V309.

V206 Onboard Accessible Routes

V206.1 General. Onboard accessible routes shall be provided in accordance with V206 and shall comply with V402.1.

V206.2 Where Required. Onboard accessible routes shall be provided where required by V206.2.

V206.2.1 Multi-Deck Passenger Vessels. At least one onboard accessible route shall connect each passenger deck and mezzanine in multi-deck passenger vessels. Where passenger vessels have multiple entry decks, at least one onboard accessible route shall connect each entry deck.

EXCEPTIONS: 1. Passenger vessels that have only two passenger decks shall not be required to provide an onboard accessible route to connect the decks unless both decks are entry decks.

2. Where each passenger deck is less than 3,000 square feet (279 m^2), the passenger vessel shall not be required to provide an onboard accessible route connecting passenger decks that are not entry decks.

3. Where a passenger vessel has more than one entry deck and is otherwise eligible to use exception 1 or 2, the entry decks shall not be required to be connected to an onboard accessible route provided that at least one designated entry deck: (a) serves each stop used for embarking and disembarking passengers, and (b) contains passenger amenities in accordance with V211.1.1, V213.1.1, V222.2, and V224.6, where such passenger amenities are provided on the vessel.

4. On high-speed passenger vessels that have only three passenger decks and do not transport vehicles or overnight passengers, an onboard accessible route shall not be required to connect the decks provided that at least one designated entry deck: (a) serves each stop used for embarking and disembarking passengers; (b) contains passenger amenities in accordance with V211.1.1, V213.1.1, V222.2, and V224.6, where such passenger amenities are provided on the vessel; and (c) contains at least one exterior passenger area that is uncovered by other decks, where an uncovered exterior passenger area is provided on the vessel.

5. On high-speed passenger vessels that do not transport overnight passengers, a deck

that has no enclosed passenger spaces and is not an entry deck shall not be required to be connected to an onboard accessible route provided that at least one exterior passenger area that is uncovered by other decks is provided on an entry deck or a deck connected to an entry deck by an onboard accessible route.

6. On vehicle ferries, where a deck, other than an entry deck, is divided into two separate segments and no horizontal circulation path is provided between the two segments, only one segment of the divided deck is required to be connected by an onboard accessible route.

7. On vehicle ferries, decks containing vehicle parking lanes that are designed to be raised and lowered and do not provide any other passenger amenities shall not be required to be connected to an onboard accessible route.

8. Decks, other than entry decks, that are less than 300 (28 m^2) square feet shall not be required to be connected to an onboard accessible route.

9. Decks below the bulkhead deck shall not be required to be connected to an onboard accessible route.

10. Where exceptions for alterations to qualified historic passenger vessels are permitted by V202.4, an onboard accessible route shall not be required between decks.

V206.2.1.1 Stairs and Escalators in Existing Passenger Vessels. In alterations and additions, where an escalator or stair is provided where none existed previously and major structural modifications are necessary for the installation, at least one onboard accessible route shall be provided between the levels served by the escalator or stair unless exempted by V206.2.1 Exceptions 1 through 10.

V206.2.2 Spaces and Elements. Within a deck, at least one onboard accessible route shall connect all spaces and elements within the passenger vessel required to comply with this document which are otherwise connected by a circulation path, unless exempted by V206.2.1 Exceptions 1 through 10.

EXCEPTIONS: 1. In assembly areas with fixed seating required to comply with V221, an onboard accessible route shall not be required to serve fixed seating where wheelchair spaces required to be on an onboard accessible route are not provided.

2. Onboard accessible routes shall not be required to connect mezzanines where passenger vessels have no more than one passenger deck. In addition, onboard accessible routes shall not be required to connect decks or mezzanines where multi-deck passenger vessels are exempted by V206.2.1 Exceptions 1 through 10.

V206.2.3 Restaurants and Cafeterias. In restaurants and cafeterias, at least one onboard accessible route shall be provided to all dining areas, including raised or sunken dining areas, and outdoor dining areas.

EXCEPTIONS: 1. In passenger vessels not required to provide an onboard accessible route between decks, an onboard accessible route shall not be required to a mezzanine dining area where the mezzanine contains less than 25 percent of the total combined area for seating and dining and where the same decor and services are provided in the accessible area.

2. In alterations, an onboard accessible route shall not be required to existing raised or sunken dining areas, or to all parts of existing outdoor dining areas where the same services and decor are provided in a space required to comply with this document and not restricted to use by people with disabilities.

V206.2.4 Performance Areas. Where a circulation path directly connects a performance area to an assembly seating area, at least one onboard accessible route shall directly connect the assembly seating area with the performance area.

V206.2.5 Bowling Lanes. Where bowling lanes are provided, at least 5 percent, but no fewer than one of each type of bowling lane, shall be on an onboard accessible route.

V206.2.6 Court Sports. In court sports, at least one onboard accessible route shall directly connect both sides of the court.

V206.2.7 Exercise Machines and Equipment. Exercise machines and equipment required to comply with V230 shall be on an onboard accessible route.

V206.2.8 Miniature Golf Facilities. Holes required to comply with V231.2, including the start of play, shall be on an onboard accessible route. Accessible routes serving miniature golf facilities shall comply with V402 except as modified by V1003.2.

V206.2.9 Play Areas. Play areas shall provide onboard accessible routes in accordance with V206.2.9. Accessible routes serving play areas shall comply with V402 except as modified by V1004.2.

V206.2.9.1 Ground Level and Elevated Play Components. At least one onboard accessible route shall be provided within the play area. The onboard accessible route shall connect ground level play components required to comply with V232.2.1 and elevated play components required to comply with V232.2.2, including entry and exit points of the play components.

V206.2.9.2 Soft Contained Play Structures. Where three or fewer entry points are provided for soft contained play structures, at least one entry point shall be on an onboard accessible route. Where four or more entry points are provided for soft contained play structures, at least two entry points shall be on an onboard accessible route.

V206.3 Location. Onboard accessible routes shall coincide with or be located in the same area as general passenger circulation paths. Where any two interior spaces which are required to comply with this document are connected by an interior general passenger circulation path, the onboard accessible route connecting the same two spaces shall also be interior. An onboard accessible route connecting any two spaces required to comply with this document shall not be more than 300 feet (91 m) longer than the shortest general passenger circulation path connecting the same two spaces.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), V206.3 shall not apply.

V206.4 Entry and Departure Points. Each entry and departure point used by passengers shall be on an onboard accessible route.

EXCEPTION: Only one tender boarding platform on the port and starboard side of the vessel shall be required to be on an onboard accessible route.

V206.5 Doors, Doorways, and Gates. Doors, doorways, and gates providing user passage shall be provided in accordance with V206.5.

V206.5.1 Deck Entry and Departure. Where doors, doorways, or gates are provided at entry and departure points required to comply with V206.4, at least one door, doorway, or gate shall comply with V404.

V206.5.2 Rooms and Spaces. Within a passenger vessel, at least one door, doorway, or gate serving each room or space complying with these requirements shall comply with V404.

V206.6 Elevators. Elevators provided for passengers shall comply with V407. Where multiple elevators are provided, each elevator shall comply with V407.

EXCEPTIONS: 1. In passenger vessels less than 10,000 gross tonnage calculated in accordance with the International Convention on Tonnage Measurement of Ships, elevators complying with V408 shall be permitted.

2. In passenger vessels permitted to use the exceptions to V206.2.1 or permitted by V206.7 to use a platform lift, elevators complying with V408 shall be permitted.

V206.6.1 Existing Elevators. Where elements of existing elevators are altered, the same element shall also be altered in all elevators that are programmed to respond to the same hall call control as the altered elevator and shall comply with the requirements of V407 or V408 for the altered element.

V206.7 Platform Lifts. Platform lifts shall comply with V409. Platform lifts shall be permitted as a component of an onboard accessible route in accordance with V206.7.

EXCEPTION: In alterations, platform lifts shall be permitted as a component of any onboard accessible route.

V206.7.1 Decks Less Than 3,000 Square Feet. Platform lifts shall be permitted to provide an onboard accessible route to decks that are less than 3,000 square feet (279 m^2).

V206.7.2 Vertical Clearance Constraints. Platform lifts shall be permitted where the vertical clearance constraints of a route where a passenger vessel operates makes the use of an elevator infeasible.

V206.7.3 Wheelchair Spaces. Platform lifts shall be permitted to provide an onboard accessible route to comply with the wheelchair space dispersion and line-of-sight requirements of V221 and V802.

V206.7.4 Performance Areas and Speakers' Platforms. Platform lifts shall be permitted to provide onboard accessible routes to performance areas and speakers' platforms.

V206.7.5 Passenger Guest Rooms. Platform lifts shall be permitted to connect levels within guest rooms required to provide mobility features complying with V806.2.

V206.7.6 Tender Platforms. Platform lifts shall be permitted to provide an onboard accessible route to tender boarding platforms.

EXCEPTION: Where platform lifts serving tender boarding platforms are exposed to waves and the tender boarding platforms are

less than 300 square feet (28 m^2), manually powered boarding lifts complying with V411 shall be permitted.

V206.7.7 Play Areas. Platform lifts shall be permitted to provide onboard accessible routes to play components or soft contained play structures.

V206.8 Security Barriers. Security barriers, including but not limited to, security bollards and security check points shall not obstruct a required onboard accessible route or accessible means of escape.

EXCEPTION: Where security barriers incorporate elements that cannot comply with these requirements such as certain metal detectors, fluoroscopes, or other similar devices, the onboard accessible route shall be permitted to be located adjacent to the security barriers. The onboard accessible route shall permit persons with disabilities passing around security barriers to maintain visual contact with their personal items to the same extent provided others passing through the security barrier.

V207 Accessible Means of Escape

V207.1 General. Where the administrative authority requires a passenger vessel to have a means of escape, an accessible means of escape shall be provided and shall provide a substantially equivalent level of protection from hazards as is required by the administrative authority for the means of escape.

EXCEPTIONS: 1. Where a required means of escape is permitted by the administrative authority to include a ladder, window, hatch, or deck scuttle, the corresponding accessible means of escape shall not be required.

2. In alterations, accessible means of escape shall not be required.

V208 Passenger Vessel Boarding Systems

V208.1 General. Where required by U.S. Department of Transportation or the U.S. Department of Justice, at least one accessible passenger boarding system complying with V402.2 shall connect an entry deck to fixed piers, floating piers, or landside structures.

V209 [Reserved]

V210 Rinsing Showers

V210.1 General. Where provided, rinsing showers shall comply with V608.

EXCEPTION: Where rinsing showers are clustered at a single location, at least one of the rinsing showers shall be required to comply with V608.

V211 Drinking Fountains

V211.1 General. Where provided on a deck, drinking fountains shall be provided in accordance with V211.

V211.1.1 Entry Deck Location. Where passenger drinking fountains are provided on decks not connected by an onboard accessible route to an entry deck as permitted by the exceptions in V206.2.1, passenger drinking fountains complying with V211.2 shall be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route.

V211.2 Minimum Number. No fewer than two drinking fountains shall be provided. One drinking fountain shall comply with V602.1 through V602.6 and one drinking fountain shall comply with V602.7.

EXCEPTION: Where a single drinking fountain complies with V602.1 through V602.6 and V602.7 it shall be permitted in place of two separate drinking fountains.

V211.3 More Than Two. Where more than two drinking fountains are provided, 50 percent of the total number of drinking fountains provided shall comply with V602.1 through V602.6 and 50 percent of the total number of drinking fountains provided shall comply with V602.7.

EXCEPTION: Where 50 percent of the drinking fountains yields a fraction, 50 percent shall be permitted to be rounded up or down if the total number of drinking fountains complying with V211 equals 100 percent of drinking fountains.

V212 Galleys, Pantries, and Sinks

V212.1 General. Where provided, galleys, pantries, and sinks shall comply with V212.

V212.2 Galleys and Pantries. Galleys and pantries shall comply with V804.

V212.3 Sinks. Where sinks are provided, at least 5 percent, but not fewer than one, of each type provided in each room or space required to comply with this document shall comply with V606.

EXCEPTION: Mop or service sinks shall not be required to comply with V212.3.

V213 Toilet Facilities and Bathing Facilities

V213.1 General. Where passenger toilet facilities and passenger bathing facilities are provided, they shall comply with V213.

V213.1.1 Entry Deck Location. Where passenger toilet rooms are provided on decks not connected by an onboard accessible route to an entry deck as permitted by the exceptions in V206.2.1, at least one passenger toilet room for each sex, or one unisex toilet room, complying with V603 shall be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route.

V213.2 Toilet Rooms and Bathing Rooms. Where toilet rooms are provided, each toilet room shall comply with V603. Where bathing rooms are provided, each bathing room shall comply with V603.

EXCEPTIONS: 1. In alterations, where it is technically infeasible to comply with V603, the existing toilet rooms or bathing rooms shall comply to the maximum extent feasible in accordance with V202.3 exception 2, or provide a single unisex toilet room or bathing room complying with V603 that is located in the same area and on the same deck as existing inaccessible toilet or bathing rooms.

2. Where exceptions for alterations to qualified historic passenger vessels are permitted by V202.4, no fewer than one toilet room for each sex or one unisex toilet room complying with V603 shall be provided.

3. Where multiple single user portable toilet or bathing units are clustered at a single location, at least 5 percent of the toilet units and bathing units at each cluster shall be required to comply with V603. Portable toilet units and bathing units complying with V603 shall be identified by the International Symbol of Accessibility complying with V703.7.2.1.

4. Where multiple single user toilet rooms are clustered at a single location, at least 50 percent of the single user toilet rooms for each use at each cluster shall be required to comply with V603.

5. On high-speed passenger vessels that do not transport overnight passengers, where multiple single user toilet rooms are clustered at a single location, at least 5 percent of the single user toilet rooms for each use at each cluster shall be required to comply with V603.

V213.2.1 Unisex (Single-Use or Family) Toilet and Unisex Bathing Rooms. Unisex toilet rooms shall contain one lavatory and either one water closet or one water closet and one urinal. Unisex bathing rooms shall contain one lavatory, one water closet and either one shower or one shower and one bathtub. Doors to unisex toilet rooms and unisex bathing rooms shall have privacy latches.

V213.3 Plumbing Fixtures and Accessories. Plumbing fixtures and accessories provided in a toilet room or bathing room required to comply with V213.2 shall comply with V213.3.

V213.3.1 Toilet Compartments (Stalls). Where toilet compartments are provided, at least one toilet compartment shall comply with V604.8.1. In addition to the compartment required to comply with V604.8.1, at least one compartment shall comply with V604.8.2 where six or more toilet compartments are provided, or where the combination of urinals and water closets totals six or more fixtures.

V213.3.2 Water Closets. Where water closets are provided, at least one shall comply with V604.

V213.3.3 Urinals. Where more than one urinal is provided, at least one shall comply with V605.

V213.3.4 Lavatories. Where lavatories are provided, at least one shall comply with V606 and shall not be located in a toilet compartment.

V213.3.5 Mirrors. Where mirrors are provided, at least one shall comply with V603.3.

V213.3.6 Bathing Facilities. Where bathtubs or showers are provided, at least one bathtub complying with V607 or at least one shower complying with V608 shall be provided.

V213.3.7 Coat Hooks and Shelves. Where coat hooks or shelves are provided in toilet rooms without toilet compartments, at least one of each type shall comply with V603.4. Where coat hooks or shelves are provided in toilet compartments, at least one of each type complying with V604.8.3 shall be provided in toilet compartments required to comply with V213.3.1. Where coat hooks or shelves are provided in bathing facilities, at least one of each type complying with V603.4 shall serve fixtures required to comply with V213.3.6.

V214 Washing Machines and Clothes Dryers

V214.1 General. Where provided, washing machines and clothes dryers shall comply with V214.

V214.2 Washing Machines. Where three or fewer washing machines are provided, at least one shall comply with V611. Where

more than three washing machines are provided, at least two shall comply with V611.

V214.3 Clothes Dryers. Where three or fewer clothes dryers are provided, at least one shall comply with V611. Where more than three clothes dryers are provided, at least two shall comply with V611.

V215 General Emergency Alarm

V215.1 General. Where a general alarm system is provided to notify passengers in public areas of emergencies, the alarm system shall provide notification appliances in public areas in accordance with V702.

EXCEPTIONS: 1. Elevators, enclosed platform lifts, enclosed stairways, and areas only open to passengers in emergencies shall not be required to comply with V215.

2. In alterations, compliance with V215 shall not be required except where an existing alarm system is upgraded or replaced, or a new alarm system is installed.

V216 Signs

V216.1 General. Signs shall be provided in accordance with V216 and shall comply with V703.

EXCEPTIONS: 1. Vessel directories, menus, seat and row designations in assembly areas, occupant names, vessel names, and company names and logos shall not be required to comply with V216.

2. In parking facilities, signs shall not be required to comply with V216.2, V216.3, and V216.6 through V216.9.

3. Temporary, 7 days or less, signs shall not be required to comply with V216.

V216.2 Designations. Interior and exterior signs identifying permanent rooms and spaces shall comply with V703.1, V703.2, and V703.5. Where pictograms are provided as designations of permanent interior rooms and spaces, the pictograms shall comply with V703.6 and shall have text descriptors complying with V703.2 and V703.5.

EXCEPTION: Exterior signs that are not located at the door to the space they serve shall not be required to comply with V703.2.

V216.3 Directional and Informational Signs. Signs that provide direction to or information about spaces and facilities of the passenger vessel shall comply with V703.5.

V216.4 Means of Escape Signs. Signs for means of escape shall comply with V216.4.

V216.4.1 Exit Doors. Exit doors identified with illuminated exit signs shall be identified by tactile signs complying with V703.1, V703.2, and V703.5.

V216.4.2 Directional Signs. At exit doors, platform lifts, and elevators that are not part of an accessible means of escape, signs complying with V703.5 shall be provided indicating the location of the accessible means of escape.

EXCEPTION: Where platform lifts and elevators are directly accessed from protected stairway landings, V216.4.2 shall not apply.

V216.5 Exterior Doors. Where not all exterior public doors comply with V404, public doors complying with V404 shall be identified by the International Symbol of Accessibility complying with V703.7.2.1. Directional signs complying with V703.5 that indicate the location of the nearest public door complying with V404 shall be provided at exterior public doors that do not comply with V404.

V216.6 Elevators. In alterations, where existing elevators do not comply with V407 or V408, elevators complying with V407 or V408 shall be identified with the International Symbol of Accessibility complying with V703.7.2.1.

V216.7 Toilet Rooms and Bathing Rooms. Signs for toilet rooms and bathing rooms shall be provided in accordance with V216.7.

V216.7.1 Alterations. In alterations, where existing toilet rooms or bathing rooms do not comply with V603, directional signs complying with V703.5 shall be provided to indicate the location of the nearest toilet room or bathing room complying with V603 within the facility. In addition, the toilet rooms or bathing rooms complying with V603 shall be identified by the International Symbol of Accessibility complying with V703.7.2.1. Directional signs shall include the International Symbol of Accessibility complying with V703.7.2.1.

V216.7.2 Clustered Single User Toilet Facilities or Bathing Facilities. Where clustered single user toilet facilities or bathing facilities are permitted to use V213.2 Exceptions 3 through 5, toilet facilities or bathing facilities complying with V603 shall be identified by the International Symbol of Accessibility complying with V703.7.2.1 unless all toilet facilities and bathing facilities comply with V603.

V216.8 TTYs. Identification and directional signs for public TTYs shall be provided in accordance with V216.8.

V216.8.1 Identification Signs. Public TTYs shall be identified by the International Symbol of TTY complying with V703.7.2.2.

V216.8.2 Directional Signs. Directional signs indicating the location of the nearest public TTY shall be provided at public telephones not containing a public TTY. In addition, where signs provide direction to public telephones, they shall also provide direction to public TTYs required by V217. Directional signs shall comply with V703.5 and shall include the International Symbol of TTY complying with V703.7.2.2.

V216.9 Wheelchair Accessible Telephones. Where signs provide direction to public telephones, they shall also provide direction to public wheelchair accessible telephones required by V217, unless all public telephone locations have wheelchair accessible telephones. Directional signs shall comply with V703.5.

V216.10 Assistive Listening Systems. Each assembly area and transportation seating area required by V219 to provide assistive listening systems shall provide signs informing passengers of the availability of the assistive listening system and type of transmitter and receiver used. Assistive listening signs shall comply with V703.5 and shall include the International Symbol of Access for Hearing Loss complying with V703.7.2.3.

EXCEPTION: Where passenger vessels have a central passenger service station to distribute receivers for assistive listening systems and other effective methods besides signage are used to notify passengers of the availability, location, and type of assistive listening systems provided, V216.10 shall not apply.

V216.11 Check-Out Aisles. Where more than one check-out aisle is provided, check-out aisles complying with V904.3 shall be identified by the International Symbol of Accessibility complying with V703.7.2.1. Where check-out aisles are identified by numbers, letters, or functions, signs identifying check-out aisles complying with V904.3 shall be located in the same location as the check-out aisle identification.

EXCEPTION: Where all check-out aisles serving a single function comply with V904.3, V703.7.2.1 shall not apply.

V217 Telephones

V217.1 General. Where public telephones are provided, public telephones shall be provided in accordance with V217 for each type of public telephone provided.

V217.2 Minimum Number. Where a public telephone is provided on a deck, at least one shall be a wheelchair accessible public telephone complying with V704.2 and at least one shall be a public TTY complying with V704.4.

V217.3 Volume Controls. All public telephones shall have volume controls complying with V704.3.

V217.4 Hearing Aid Compatibility. All public telephones shall be hearing aid compatible.

V218 Two-Way Communication Systems

V218.1 General. Where a two-way communication system is provided to gain admittance to a passenger vessel or to restricted areas open to passengers within a passenger vessel, the system shall comply with V705.

V219 Assistive Listening Systems

V219.1 General. Assistive listening systems shall be provided in accordance with V219.

V219.2 Required Systems. Passenger areas shall provide assistive listening systems complying with V706 in accordance with V219.2.

V219.2.1 Assembly and Transportation Seating Areas. Where an audio amplification system is provided in an assembly area or transportation seating area to communicate information that is integral to the use of the space, an assistive listening system shall be provided.

V219.2.2 Emergency Information. Where an audio amplification system is provided in public areas to communicate emergency information to passengers, an assistive listening system shall be provided.

EXCEPTION: Where passengers are assigned specific muster stations to go to in an emergency when the general emergency alarm is activated, V219.2.2 shall not apply.

V219.3 Receivers. Receivers complying with V706.3 shall be provided for assistive listening systems in accordance with Table V219.3. The minimum number of receivers shall be based on the total seating capacity in all the assembly areas and transportation seating areas required to comply with V219.2 that use the same type of assistive listening system. Twenty-five percent minimum of receivers provided, but no fewer than two, for each type of assistive listening system, shall be hearing-aid compatible and shall comply with V706.3.

EXCEPTIONS: 1. Where an induction loop assistive listening system is provided, the minimum number of receivers required by Table V219.3 to be hearing-aid compatible shall not be required to be provided.

2. The number of receivers shall be permitted to be based on the maximum number of passengers permitted to be carried on the passenger vessel.

TABLE V219.3—RECEIVERS FOR ASSISTIVE LISTENING SYSTEMS

Capacity of seating	Minimum number of required receivers	Minimum number of required receivers required to be hearing-aid compatible
50 or less	2	2.
51 to 200	2, plus 1 per 25 seats over 50 seats, or fraction thereof	2.
201 to 500	2, plus 1 per 25 seats over 50 seats, or fraction thereof	1 per 4 receivers, or fraction thereof.
501 to 1000	20, plus 1 per 33 seats over 500 seats, or fraction thereof	1 per 4 receivers, or fraction thereof.
1001 to 2000	35, plus 1 per 50 seats over 1000 seats, or fraction thereof	1 per 4 receivers, or fraction thereof.
2001 and over	55, plus 1 per 100 seats over 2000 seats , or fraction thereof	1 per 4 receivers, or fraction thereof.

V220 Automatic Teller Machines and Fare Machines

V220.1 General. Where automatic teller machines or self-service fare vending, collection, or adjustment machines are provided, at least one of each type provided at each location shall comply with V707. Where bins are provided for envelopes, waste paper, or other purposes, at least one of each type shall comply with V807.

V221 Assembly Areas

V221.1 General. Assembly areas shall comply with V221.

EXCEPTION: In passenger vessels that function primarily as ferries, assembly areas shall be permitted to comply with V222.

V221.2 Wheelchair Spaces. Wheelchair spaces shall be provided in assembly areas with fixed seating in accordance with V221.2.

V221.2.1 Number. The number of wheelchair spaces shall be provided in accordance with V221.2.1.

V221.2.1.1 General Seating. In general seating, wheelchair spaces complying with V802.1 shall be provided in accordance with Table V221.2.1.1 based on the number of fixed seats in each assembly area.

TABLE V221.2.1.1—NUMBER OF WHEELCHAIR SPACES

Number of seats	Minimum number of required wheelchair spaces
4 to 25	1.
26 to 50	2.
51 to 150	4.
151 to 300	5.
301 to 500	6.
501 to 5000	6, plus 1 for each 150, or fraction thereof, between 501 through 5000.
5001 and over	36, plus 1 for each 200, or fraction thereof, over 5000.

V221.2.1.2 Boxes. In boxes, wheelchair spaces complying with V802.1 shall be provided in accordance with Table V221.2.1.1 based on the total number of fixed seats provided in boxes. Wheelchair spaces shall be located in not less than 20 percent of all boxes provided.

V221.2.2 Integration. Wheelchair spaces shall be an integral part of the fixed seating plan.

V221.2.3 Dispersion and Fixed Lines of Sight. Where seats are arranged to provide lines of sight to fixed screens or performance areas, wheelchair spaces shall provide lines of sight complying with V802.2 and shall comply with V221.2.3. In providing lines of sight, wheelchair spaces shall be dispersed. Wheelchair spaces shall provide spectators with choices of seating locations and viewing angles that are substantially equivalent to, or better than, the choices of seating locations and viewing angles available to all other spectators. Where tables or counters with fixed seats are provided in assembly areas, wheelchair spaces shall be dispersed at the tables and counters. When the number of wheelchair spaces required by V221.2.1 has been met, further dispersion shall not be required.

V221.2.3.1 Horizontal Dispersion. Wheelchair spaces shall be dispersed horizontally.

EXCEPTIONS: 1. Horizontal dispersion shall not be required in assembly areas with 300 or fewer seats provided that the companion seats required by V221.3 and wheelchair spaces are located within the 2nd or 3rd quartile of the total row length. Intermediate aisles shall be included in determining the total row length. If the row length in the 2nd and 3rd quartile of a row is insufficient to accommodate the required number of companion seats and wheelchair spaces, the additional companion seats and wheelchair spaces shall be permitted to be located in the 1st and 4th quartile of the row.

2. In row seating, two wheelchair spaces shall be permitted to be located side-by-side.

V221.2.3.2 Vertical Dispersion. Wheelchair spaces shall be dispersed vertically at varying distances from the screen or performance area. In addition, wheelchair spaces shall be located in each balcony or mezzanine that is located on an onboard accessible route which connects to an entry deck.

EXCEPTIONS: 1. Vertical dispersion shall not be required in assembly areas with 300 or fewer seats provided that the wheelchair spaces provide viewing angles that are equivalent to, or better than, the average viewing angle provided in the facility.

2. In bleachers, wheelchair spaces shall not be required to be provided in rows other than rows at points of entry to bleacher seating.

V221.2.4 Dispersion and No Fixed Lines of Sight. Where seats are not arranged to provide lines of sight to fixed screens or performance areas, wheelchair spaces shall be dispersed throughout the fixed seating plans. Where tables or counters with fixed seats are provided, wheelchair spaces shall be dispersed at the tables and counters. When the number of wheelchair spaces required by V221.2.1 has been met, further dispersion shall not be required.

EXCEPTION: Two wheelchair spaces shall be permitted to be located side-by-side.

V221.3 Companion Seats. At least one companion seat complying with V802.3 shall be provided for each wheelchair space required by V221.2.1.

V221.4 Designated Aisle Seats. In assembly areas, at least 5 percent of the total number of fixed aisle seats provided shall comply with V802.4 and shall be the aisle seats located closest to onboard accessible routes.

V222 Transportation Seating Areas

V222.1 General. Transportation seating areas shall comply with V222.

V222.2 Entry Deck Location. Where transportation seating areas are provided on decks not connected by an onboard accessible route to an entry deck as permitted by the exceptions in V206.2.1, at least one transportation seating area complying with

V222 shall be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route.

V222.3 Wheelchair Spaces. The number of wheelchair spaces shall be provided in accordance with V222.3.

V222.3.1 Number. Wheelchair spaces complying with V802.1 shall be provided in accordance with Table V222.3 based on the total number of fixed seats provided in transportation seating areas of the passenger vessel.

EXCEPTION: Where more fixed seats are provided in transportation seating areas than the maximum number of passengers the vessel is permitted to carry, the number of wheelchair spaces shall be permitted to be based on the maximum number of passengers permitted to be carried.

TABLE V222.3—NUMBER OF WHEELCHAIR SPACES

Number of seats	Minimum number of required wheelchair spaces
1 to 60	1.
61 to 120	2.
121 to 180	3.
181 to 240	4.
241 to 300	5.
301 to 500	6.
501 to 5000	6, plus 1 for each 150, or fraction thereof, between 501 through 5000.
5001 and over	36, plus 1 for each 200, or fraction thereof, over 5000.

V222.3.2 Integration. Wheelchair spaces shall be an integral part of the fixed seating plans.

V222.3.3 Dispersion. Wheelchair spaces shall be dispersed throughout the fixed seating plans of the transportation seating areas located on an entry deck or connected by an accessible route to an entry deck. Where tables or counters with fixed seats are provided in transportation seating areas located on an entry deck or connected by an accessible route to an entry deck, wheelchair spaces shall be dispersed at the tables and counters. When the number of wheelchair spaces required by V222.3.1 has been met, further dispersion shall not be required.

EXCEPTION: Two wheelchair spaces shall be permitted to be located side-by-side.

V223 Medical Care Facilities

V223.1 General. Where patient sleeping rooms are provided in medical care facilities, at least 10 percent, but no fewer than one, of the patient sleeping rooms shall provide mobility features complying with V805.

EXCEPTION: Toilet rooms that are part of critical or intensive care patient sleeping rooms shall not be required to comply with V603.

V223.1.1 Alterations. Where sleeping rooms are altered or added, the requirements of V223 shall apply only to the sleeping rooms being altered or added until the number of sleeping rooms complies with the minimum number required for new construction.

V224 Passenger Guest Rooms

V224.1 General. Where passenger guest rooms are provided, guest rooms shall comply with V224.

V224.1.1 Alterations. Where guest rooms are altered or added, the requirements of V224 shall apply only to the guest rooms being altered or added until the number of guest rooms complies with the minimum number required for new construction.

V224.2 Guest Rooms with Mobility Features. Guest rooms with mobility features complying with V806.2 shall be provided in accordance with Table V224.2.

EXCEPTION: In passenger vessels with fewer than 121 guest rooms, the total number of guest rooms required to provide mobility features in compliance with V806.2 shall be permitted to be 5 percent provided that the number of rooms with roll-in showers specified in Table V224.2 is provided.

TABLE V224.2—GUEST ROOMS WITH MOBILITY FEATURES

Total number of guest rooms provided	Minimum required number of rooms with tubs or showers	Minimum number of required rooms with roll-in showers	Total number of required rooms
1 to 25	1	0	1.
26 to 50	2	0	2.
51 to 75	3	1	4.
76 to 100	4	1	5.
101 to 150	5	2	7.
151 to 200	6	2	8.
201 to 300	7	3	10.
301 to 400	8	4	12.
401 to 500	9	4	13.
501 to 1000	2 percent of total	1 percent of total	3 percent of total.
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000.	10, plus 1 for each 100, or fraction thereof, over 1000.	30, plus 2 for each 100, or fraction thereof, over 1000.

V224.3 Beds. In guest rooms having more than 25 beds, 5 percent minimum of the beds shall have clear deck space complying with V806.2.3.

V224.4 Communication Features. Guest rooms with communication features complying with V806.3 shall be provided in accordance with Table V224.4.

TABLE V224.4—GUEST ROOMS WITH COMMUNICATION FEATURES

Total number of guest rooms provided	Minimum number of required guest rooms with communication features
2 to 25	2.
26 to 50	4.
51 to 75	7.
76 to 100	9.

TABLE V224.4—GUEST ROOMS WITH COMMUNICATION FEATURES—Continued

Total number of guest rooms provided	Minimum number of required guest rooms with communication features
101 to 150	12.
151 to 200	14.

TABLE V224.4—GUEST ROOMS WITH COMMUNICATION FEATURES—Continued

Total number of guest rooms provided	Minimum number of required guest rooms with communication features
201 to 300	17.
301 to 400	20.
401 to 500	22.
501 to 1000	5 percent of total.
1001 and over	50, plus 3 for each 100 over 1000.

V224.5 Dispersion. Guest rooms required to provide mobility features complying with V806.2 and guest rooms required to provide communication features complying with V806.3 shall be dispersed among the various classes of guest rooms, and shall provide choices of types of guest rooms, number of beds, and other amenities comparable to the choices provided to other guests. Where the minimum number of guest rooms required to comply with V806 is not sufficient to allow for complete dispersion, guest rooms shall be dispersed in the following priority: guest room type, number of beds, and amenities. At least one guest room required to provide mobility features complying with V806.2 shall also provide communication features complying with V806.3. One guest room or not more than 10 percent of guest rooms required to provide mobility features complying with V806.2 shall be used to satisfy the minimum number of guest rooms required to provide communication features complying with V806.3.

V224.6 Location. Guest rooms required to provide mobility features complying with V806.2 shall be provided on an entry deck or on a deck connected to an entry deck by an onboard accessible route.

V225 Storage

V225.1 General. Storage facilities shall comply with V225.

V225.2 Storage. Where storage is provided in spaces required to comply with this document, at least one of each type shall comply with V807.

V225.3 Self-Service Shelving. Self-service shelves at other than food service lines shall be located on an onboard accessible route complying with V402. Self-service shelving shall not be required to comply with V308.

V226 Tables and Counters

V226.1 General. Where tables or counters are provided for passenger use in areas other than assembly areas and transportation seating areas, at least 5 percent of the seating or standing spaces at the tables and counters shall comply with V902.

EXCEPTIONS: 1. Sales and service counters shall not be required to comply with V902.

2. Check writing surfaces provided at check-out aisles that are not required to comply with V904.3 shall not be required to comply with V902.

V226.2 Dispersion. Tables and counters required to comply with V902 shall be dispersed throughout the area where the tables and counters are provided.

V227 Sales and Service

V227.1 General. Where provided, check-out aisles, sales counters, service counters, food service lines, queues, and waiting lines shall comply with V227 and V904.

V227.2 Check-Out Aisles. Where check-out aisles are provided, check-out aisles complying with V904.3 shall be provided in accordance with Table V227.2. Where check-out aisles serve different functions, check-out aisles complying with V904.3 shall be provided in accordance with Table V227.2 for each function. Where check-out aisles are dispersed throughout the passenger vessel or facility, check-out aisles complying with V904.3 shall be dispersed.

EXCEPTION: Where the selling space is under 5,000 square feet (465 m^2) no more than one check-out aisle complying with V904.3 shall be required.

TABLE V227.2—ACCESSIBLE CHECK-OUT AISLES

Number of check-out aisles of each function	Minimum number of check-out aisles of each function required to comply with V904.3
1 to 4	1.
5 to 8	2.
9 to 15	3.
16 and over	3, plus 20 percent of additional aisles.

V227.2.1 Altered Check-Out Aisles. Where check-out aisles are altered, at least one of each check-out aisle serving each function shall comply with V904.3 until the number of check-out aisles complies with V227.2.

V227.3 Counters. Where provided in a space, at least one of each type of sales counter and service counter shall comply with V904.4.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2) and the employee side of the counter is 80 inches (2030 mm) or less in linear length, the counter shall not be required to comply with V227.3.

V227.4 Food Service Lines. Food service lines shall comply with V904.5. Where self-service shelves are provided, at least 50 percent, but no fewer than one, of each type provided shall comply with V308.

V227.5 Queues and Waiting Lines. Queues and waiting lines servicing counters or check-out aisles required to comply with V904.3 or V904.4 shall comply with V403.

V228 Depositories, Vending Machines, Change Machines, and Mail Boxes

V228.1 General. Where provided, at least one of each type of depository, vending machine, and change machine shall comply with V309.

V228.2 Mail Boxes. Where mail boxes are provided in an interior location, at least 5 percent, but no fewer than one, of each type shall comply with V309.

V229 Dressing, Fitting, and Locker Rooms

V229.1 General. Where dressing rooms, fitting rooms, or locker rooms are provided, at least 5 percent, but no fewer than one, of each type of use in each cluster provided shall comply with V803.

EXCEPTION: In alterations, where it is technically infeasible to provide rooms in accordance with V229.1, one room for each sex on each level shall comply with V803. Where only unisex rooms are provided, unisex rooms shall be permitted.

V229.2 Coat Hooks and Shelves. Where coat hooks or shelves are provided in dressing, fitting or locker rooms without individual compartments, at least one of each type shall comply with V803.5. Where coat hooks or shelves are provided in individual compartments at least one of each type complying with V803.5 shall be provided in individual compartments in dressing, fitting, or locker rooms required to comply with V229.1.

V230 Exercise Machines and Equipment

V230.1 General. At least one of each type of exercise machine and equipment shall comply with V1002.

V231 Miniature Golf Facilities

V231.1 General. Miniature golf facilities shall comply with V231.

V231.2 Minimum Number. At least 50 percent of holes on miniature golf courses shall comply with V1003.3.

V231.3 Miniature Golf Course Configuration. Miniature golf courses shall be configured so that the holes complying with V1003.3 are consecutive. Miniature golf courses shall provide an onboard accessible route from the last hole complying with V1003.3 to the course entrance or exit without requiring travel through any other holes on the course.

EXCEPTION: One break in the sequence of consecutive holes shall be permitted if the last hole on the miniature golf course is the last hole in the sequence.

V232 Play Areas

V232.1 General. Play areas for children ages 2 and over shall comply with V232. Where separate play areas are provided for

specific age groups, each play area shall comply with V232.

EXCEPTIONS: 1. In existing play areas, where play components are relocated for the purposes of creating safe use zones and the ground surface is not altered or extended for more than one use zone, the play area shall not be required to comply with V232.

2. Where play components are altered and the ground surface is not altered, the ground surface shall not be required to comply with V1004.2.6.

V232.2 Play Components. Where provided, play components shall comply with V232.2 and V1004.

V232.2.1 Ground Level Play Components. Ground level play components shall be provided in the number and types required by V232.2.1. Ground level play components that are provided to comply with V232.2.1.1 shall be permitted to satisfy the additional number required by V232.2.1.2 if the minimum required types of play components are satisfied. Where two or more required ground level play components are provided, they shall be dispersed throughout the play area and integrated with other play components.

V232.2.1.1 Minimum Number and Types. Where ground level play components are provided, at least one of each type shall be on an onboard accessible route and shall comply with V1004.4.

V232.2.1.2 Additional Number and Types. Where elevated play components are provided, ground level play components shall be provided in accordance with Table V232.2.1.2 and shall comply with V1004.4.

EXCEPTION: If at least 50 percent of the elevated play components are connected by a ramp and at least 3 of the elevated play components connected by the ramp are different types of play components, the play area shall not be required to comply with V232.2.1.2.

TABLE V232.2.1.2—NUMBER AND TYPES OF GROUND LEVEL PLAY COMPONENTS REQUIRED TO BE ON AN ONBOARD ACCESSIBLE ROUTE

Number of elevated play components provided	Minimum number of ground level play components required to be on an onboard accessible route	Minimum number of different types of ground level play components required to be on an onboard accessible route
1	Not applicable	Not applicable
2 to 4	1	1
5 to 7	2	2
8 to 10	3	3
11 to 13	4	3
14 to 16	5	3
17 to 19	6	3
20 to 22	7	4
23 to 25	8	4
26 and over	8, plus 1 for each additional 3, or fraction thereof, over 25	5

V232.2.2 Elevated Play Components. Where elevated play components are provided, at least 50 percent shall be on an onboard accessible route and shall comply with V1004.4.

V233 Saunas and Steam Rooms

V233.1 General. Where provided, saunas and steam rooms shall comply with V612.

EXCEPTION: Where saunas or steam rooms are clustered at a single location, no more than 5 percent of the saunas and steam rooms, but no fewer than one, of each type in each cluster shall be required to comply with V612.

V234 Swimming Pools, Wading Pools, and Spas

V234.1 General. Swimming pools, wading pools, and spas shall comply with V234.

V234.2 Swimming Pools. At least one swimming pool lift complying with V1005.2 shall be provided for each swimming pool.

EXCEPTIONS: 1. Catch pools shall not be required to comply with V234.2 if the catch pool edge is on an onboard accessible route.

2. Where swimming pools are provided in a cluster and at least one of each type of pool in the cluster has a swimming pool lift complying with V1005.2, the other pools in the cluster shall be permitted to provide transfer walls complying with V1005.4; transfer systems complying with V1005.5; or pool stairs complying with V1005.6.

V234.3 Wading Pools. At least one accessible means of entry shall be provided for wading pools. Accessible means of entry shall comply with sloped entries complying with V1005.3 or transfer systems complying with V1005.5.

V234.4 Spas. At least one accessible means of entry shall be provided for spas. Accessible means of entry shall comply with swimming pool lifts complying with V1005.2; transfer walls complying with V1005.4; or transfer systems complying with V1005.5.

EXCEPTION: Where spas are provided in a cluster, no more than 5 percent, but no fewer than one, spa in each cluster shall be required to comply with V234.4.

V235 Shooting Facilities

V235.1 General. Where shooting facilities with firing positions are designed and constructed, at least 5 percent, but no fewer than one, of each type of firing position shall comply with V1006.

V236 Gaming and Arcade Machines

V236.1 General. Where gaming and arcade machines are provided, at least 5 percent, but no fewer than one, of each type shall comply with V309.

V237 Binoculars

V237.1 General. Where post-mounted binoculars are provided, at least 5 percent, but no fewer than one, of each type shall comply with V309.

CHAPTER V 3: BUILDING BLOCKS

301 General

V301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V302 Deck Surfaces

V302.1 General. Deck surfaces shall be stable, firm, and slip resistant and shall comply with V302.

EXCEPTIONS: Areas of sport activity shall not be required to comply with V302.

V302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, or backing or no cushion. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be ½ inch (13 mm) maximum. Exposed edges of carpet shall be fastened to deck surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with V303.

V302.3 Openings. Openings in deck surfaces shall not allow passage of a sphere more than ½ inch (13 mm) in diameter except as allowed in V407.4.3 and V409.4. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

EXCEPTIONS: 1. Vehicle tie-downs that are flush with the deck surface and are not located within an onboard accessible route shall not be required to comply with V302.3.

2. Where the administrative authority determines that larger openings are needed for deck drainage, openings not located within an accessible route shall be permitted to be increased, if the size shall not allow passage of a sphere more than ¾ inch (19 mm) in diameter.

V303 Changes in Level

V303.1 General. Where changes in level are permitted in deck surfaces, they shall comply with V303.

EXCEPTIONS: 1. Areas of sport activity shall not be required to comply with V303.

2. Vehicle tie-downs that are flush with the deck surface and are not located within an accessible route shall not be required to comply with V303.

V303.2 Vertical. Changes in level of ¼ inch (6.4 mm) high maximum shall be permitted to be vertical.

V303.3 Beveled. Changes in level between ¼ inch (6.4 mm) high minimum and ½ inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

V303.4 Ramps. Changes in level greater than ½ inch (13 mm) high shall be ramped, and shall comply with V405 or V406.

V304 Turning Space

V304.1 General. Turning space shall comply with V304.

V304.2 Deck Surfaces. Deck surfaces of a turning space shall comply with V302. Changes in level are not permitted.

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

V304.3 Size. Turning space shall comply with V304.3.1 or V304.3.2.

V304.3.1 Circular Space. The turning space shall be a space of 60 inches (1525 mm) diameter minimum. The space shall be permitted to include knee and toe clearance complying with V306.

V304.3.2 T-Shaped Space. The turning space shall be a T-shaped space within a 60 inch (1525 mm) square minimum with arms and base 36 inches (915 mm) wide minimum. 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 space shall be permitted to include knee and toe clearance complying with V306 only at the end of either the base or one arm.

V304.4 Door Swing. Doors shall be permitted to swing into turning spaces.

V305 Clear Deck Space

V305.1 General. Clear deck space shall comply with V305.

V305.2 Deck Surfaces. Deck surfaces of a clear deck space shall comply with V302. Changes in level are not permitted.

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

V305.3 Size. The clear deck space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

V305.4 Knee and Toe Clearance. Unless otherwise specified, clear deck space shall be permitted to include knee and toe clearance complying with V306.

V305.5 Position. Unless otherwise specified, clear deck space shall be positioned for either forward or parallel approach to an element.

V305.6 Approach. One full unobstructed side of the clear deck space shall adjoin an accessible route or adjoin another clear deck space.

V305.7 Maneuvering Clearance. Where a clear deck space is confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with V305.7.

V305.7.1 Forward Approach. Where the clear deck space is approached at the short side, the space shall be 36 inches (915 mm) wide minimum where the depth of the confined clear deck space exceeds 24 inches (610 mm).

V305.7.2 Parallel Approach. Where the clear deck space is approached at the long side, the space shall be 60 inches (1525 mm) wide minimum where the depth of the confined clear deck space exceeds 15 inches (380 mm).

V306 Knee and Toe Clearance

V306.1 General. Where space beneath an element is included as part of clear deck space or turning space, the space shall comply with V306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear deck space or turning space.

V306.2 Toe Clearance.

V306.2.1 General. Space under an element between the finish deck surface and 9 inches (230 mm) above the finish deck surface shall be considered toe clearance and shall comply with V306.2.

V306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

V306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear deck space, the toe clearance shall extend 17 inches (430 mm) minimum under the element.

V306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the finish deck surface shall not be considered toe clearance.

V306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

V306.3 Knee Clearance.

V306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish deck surface shall be considered knee clearance and shall comply with V306.3.

V306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish deck surface.

V306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear deck space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish deck surface, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish deck surface.

V306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish deck surface, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

V306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

V307 Protruding Objects

V307.1 General. Protruding objects shall comply with V307.

V307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish deck surface shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.

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

V307.3 Required Clear Width. Protruding objects shall not reduce the clear width required for onboard accessible routes.

V307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish deck surface.

EXCEPTIONS: 1. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish deck surface.

2. Where doors are required by the administrative authority to have coamings, measurements shall be permitted to be taken from the finish deck surface adjacent to the coamings and not the top of the coamings.

V308 Reach Ranges

V308.1 General. Reach ranges shall comply with V308.

V308.2 Forward Reach.

V308.2.1 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 finish deck surface.

V308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear deck space 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 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 and the reach depth shall be 25 inches (635 mm) maximum.

V308.3 Side Reach.

V308.3.1 Unobstructed. Where a clear deck space allows a parallel approach to an element and the side reach is unobstructed, 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 finish deck surface.

EXCEPTION: An obstruction shall be permitted between the clear deck space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.

V308.3.2 Obstructed High Reach. Where a clear deck space 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 and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255

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

EXCEPTION: The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish deck surface.

V309 Operable Parts

V309.1 General. Operable parts shall comply with V309.

V309.2 Clear Deck Space. A clear deck space complying with V305 shall be provided.

V309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in V308.

V309.4 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 pounds (22.2 N) maximum.

CHAPTER V 4: ONBOARD ACCESSIBLE ROUTES AND ACCESSIBLE PASSENGER BOARDING SYSTEMS

V401 General

V401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V402 Components

V402.1 Accessible Routes. Onboard accessible routes shall consist of one or more of the following components:

(a) walking surfaces with a running slope not steeper than 1:20 complying with V403,

(b) doors, doorways, and gates complying with V404,

(c) ramps complying with V405,

(d) curb ramps complying with V406,

(e) elevators complying with V407,

(f) elevators, where permitted by V206.6, complying with 408, and

(g) platform lifts, where permitted by V206.7, complying with V409.

V402.2 Accessible Passenger Boarding Systems. Accessible passenger boarding systems shall consist of one or more of the following components:

(a) walking surfaces with a running slope not steeper than 1:20 complying with V403;

(b) doors and doorways complying with V404;

(c) ramps complying with V405;

(d) elevators complying with V407 or V408;

(e) platform lifts complying with V409;

(f) gangways complying with V410; and

(g) manually powered boarding lifts complying with V411.

V403 Walking Surfaces

V403.1 General. Walking surfaces with running slopes not steeper than1:20 shall comply with V403. Walking surfaces on vehicle decks shall be permitted to overlap vehicle ways.

V403.2 Deck Surface. Deck surfaces shall comply with V302.

V403.3 Slope. The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

V403.4 Changes in Level. Changes in level shall comply with V303.

V403.5 Clearances. Walking surfaces shall provide clearances complying with V403.5.

V403.5.1 Clear Width. Except as provided in V403.5.2 and V403.5.3, the clear width of walking surfaces shall be 36 inches (915 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, if reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

2. Where the largest deck is less than 3,000 square feet (279 m^2), the walking surface shall be permitted to have a clear width of 32 inches (815 mm) minimum.

3. Where the largest deck is less than 3,000 square feet (279 m^2), fold-down seats complying with V309 shall be permitted to project into walking surface clearances when in the down position.

V403.5.2 Clear Width at Turn.

V403.5.2.1 Clear Width at 180 Degree Turn. Where the walking surface makes a 180 degree turn around an element which is less than 48 inches (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum,V403.5.2.1 shall not apply.

V403.5.2.2 Clear Width at 90 Degree Turn. Where the walking surface is less than 36 inches (915 mm) wide and makes a 90 degree turn, an L-shaped space shall be provided with one stroke 90 inches (2285 mm) minimum in length having a width of 32 inches (815 mm) minimum and the other stroke 56 inches (1420 mm) minimum in length having a width of 42 inches (1065 mm) minimum.

V403.5.3 Passing Spaces. A walking surface 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 space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with V304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.

V403.6 Handrails. Where handrails are provided along walking surfaces with running slopes not steeper than 1:20, handrails shall comply with V503.

V404 Doors, Doorways, and Gates

V404.1 General. Doors, doorways, and gates shall comply with V404.

EXCEPTION: Where doors, doorways, and gates are intended to be operated only by employees, they shall not be required to:

1. Provide the portion of the maneuvering clearance beyond the latch side of the door specified in V404.2.4; or

2. Comply with V404.2.7, V404.2.8, V404.2.9, V404.3.2 and V404.3.4 through V404.3.7.

V404.2 Manual Doors, Doorways, and Manual Gates. Manual doors and doorways and manual gates intended for user passage shall comply with V404.2.

V404.2.1 Revolving Doors, Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

V404.2.2 Double-Leaf Doors and Gates. At least one of the active leaves of doorways with two leaves shall comply with V404.2.3 and V404.2.4.

EXCEPTION: At doorways intended to be operated only by employees at entry and departure points, and at vessel evacuation points, V404.2.2 shall not apply.

V404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches (815 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish deck surface. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish deck surface shall not exceed 4 inches (100 mm).

EXCEPTIONS: 1. In alterations, a projection of $\frac{5}{8}$ inch (16 mm) maximum into the required clear width shall be permitted for the latch side stop.

2. Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish deck surface.

3. The clear width of doors to stairways shall be permitted to comply with the applicable requirements of the administrative authority.

V404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with V404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

EXCEPTIONS: 1. Entry doors to medical facility patient rooms shall not be required to provide the clearance beyond the latch side of the door.

2. Maneuvering clearances shall not be required on the outboard side of doors and gates at entry and departure points that are required to be accessible.

3. Where the largest deck is less than 3,000 square feet (279 m^2), fold-down seats when in the down position shall be permitted to project into maneuvering clearances for doors and gates intended to be operated only by employees.

V404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table V404.2.4.1.

TABLE V404.2.4.1—MANEUVERING CLEARANCES AT MANUAL SWINGING DOORS AND GATES

Types of use		Minimum maneuvering clearance	
Approach direction	Door or gate side	Perpendicular to doorway	Parallel to doorway (beyond latch side unless noted)
From front	Pull	60 inches (1525 mm)	18 inches (455 mm).
From front	Push	48 inches (1220 mm)	0 inches (0 mm).[1]
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)[2]	22 inches (560 mm).[3]
From latch side	Pull	48 inches (1220 mm)[4]	24 inches (610 mm).
From latch side	Push	42 inches (1065 mm)[4]	24 inches (610 mm).

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

V404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors. Doorways less than 36 inches (915 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table V404.2.4.2.

TABLE V404.2.4.2—MANEUVERING CLEARANCES AT DOORWAYS WITHOUT DOORS OR GATES, MANUAL SLIDING DOORS, AND MANUAL FOLDING DOORS

Approach direction	Minimum maneuvering clearance	
	Perpendicular to doorway	Parallel to doorway (beyond stop/latch side unless noted)
From front	48 inches (1220 mm)	0 inches (0 mm).
From side[1]	42 inches (1065 mm)	0 inches (0 mm).
From pocket/hinge side	42 inches (1065 mm)	22 inches (560 mm).[2]
From stop/latch side	42 inches (1065 mm)	24 inches (610 mm).

[1] Doorway with no door only.
[2] Beyond pocket/hinge side.

V404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when 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 or gate.

V404.2.4.4 Deck Surface. Deck surface within required maneuvering clearances shall comply with V302. Changes in level are not permitted.

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

2. Changes in level at thresholds and coamings complying with V404.2.5 shall be permitted.

V404.2.5 Thresholds and Coamings. Doorways without coamings shall comply with V404.2.5.1. Doorways with coamings shall comply with V404.2.5.2.

EXCEPTION: Where required by the administrative authority to meet weathertight door sealing requirements, weathertight doors shall be permitted to have non-beveled thresholds ¾ inch (19 mm) high maximum on the sealing side of the doors provided that the thresholds contrast visually with adjacent deck surfaces either light-on-dark or dark-on-light.

V404.2.5.1 Doorways without Coamings. Where provided at doorways without coamings, thresholds shall be ½ inch (13 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with V302 and V303.

EXCEPTION: Existing or altered thresholds ¾ inch (19 mm) high maximum that have a beveled edge on each side with a slope not steeper than 1:2 shall not be required to comply with V404.2.5.1.

V404.2.5.2 Doorways with Coamings. Where the administrative authority requires doorways to have coamings, the coaming shall conform to the minimum coaming height determined by the administrative authority and the doorways shall comply with V404.2.5.2.1 or with V404.2.5.2.2.

EXCEPTIONS: 1. Where ramps are provided at doorways with coamings, the landing at the top of the ramps specified in V405.7 shall not be required.

2. Where the administrative authority permits coamings to be removable, doorways shall not be required to comply with V404.2.5.2 provided that: (a) the thresholds are readily removable by employees; (b) the doors are only employee operated; and (c) the weather deck areas accessed by the doors are not open to passengers when the vessel is underway, except in emergencies.

3. Where the administrative authority determines that it is not feasible to comply with V404.2.5.2 due to space limitations and watertight doors are provided instead of weathertight doors, the thresholds on the side of the watertight doors containing the door seal are permitted to have non-beveled thresholds 1¼ inches (32 mm) high maximum provided that the thresholds contrast visually with adjacent deck surfaces either light-on-dark or dark-on-light.

V404.2.5.2.1 Single Ramp Access. Doorways with coamings shall provide single ramp access complying with V404.2.5.2.1.

V404.2.5.2.1.1 Side with Ramp. A ramp complying with V405 shall be provided on the side of the doorway to be protected from water infiltration. The ramp width shall be equal to or greater than the width of the maneuvering clearances required by V404.2.2.4.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), the slope of the ramp run at doorways with coamings that provide single ramp access shall be permitted to comply with Table V405.2.

V404.2.5.2.1.2 Side without Ramp. On the side of the doorway without a ramp, changes in level are not permitted within the maneuvering clearances required by V404.2.2.4.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), maneuvering clearances specified in V404.2.4 shall be permitted to be 48 inches (1220 mm) minimum in depth on the side of the doorway without a ramp.

V404.2.5.2.2 Double Ramp Access and Automatic Doors. Doorways with coamings shall provide double ramp access and automatic doors complying with V404.2.5.2.2.

V404.2.5.2.2.1 Double Ramps. Ramps complying with V405 shall be provided on each side of the doorway. The ramp width shall be equal to or greater than the width of the maneuvering clearances required by V404.2.2.4.

V404.2.5.2.2.2 Automatic Doors. Automatic doors complying with V404.3 shall be provided at doorways with double ramp access at coamings.

EXCEPTION: Where the doors are intended to be operated only by employees, the doors shall not be required to be automatic.

V404.2.6 Doors in Series and Gates in Series. The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1220 mm) minimum plus the width of doors or gates swinging into the space.

V404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with V309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 mm) maximum above the finish deck surface. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

EXCEPTIONS: 1. Where the administrative authority has determined that forces greater than 5 pounds (22.2 N) are necessary for hardware on fire doors, watertight doors, or other doors, the maximum force shall be permitted to be established by the administrative authority for such doors.

2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54 inches (1370 mm) maximum above the finish deck surface provided that the self-latching devices are not also self-locking devices and operated by means of a key, electronic opener, or integral combination lock.

3. In alterations, existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles with locks that are activated only at the top or bottom rail.

V404.2.8 Closing Speed. Door and gate closing speed shall comply with V404.2.8.

V404.2.8.1 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 a position of 12 degrees from the latch is 5 seconds minimum.

V404.2.8.2 Spring Hinges. Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

V404.2.9 Door and Gate Opening Force. Door and gate opening forces shall comply with V404.2.9.

EXCEPTION: Doors on sailing vessels shall not be required to comply with V404.2.9.

V404.2.9.1 Fire and Watertight Doors. Fire doors and watertight doors shall have the minimum opening force determined by the administrative authority.

V404.2.9.2 Gates and Other Doors. At gates and doors other than fire and watertight doors, the force for pushing or pulling open interior and exterior sliding and folding doors, and interior hinged doors and gates, shall be 5 pounds (22.2 N) maximum.

EXCEPTION: Where the administrative authority determines that forces greater than 5 pounds (22.2 N) are necessary, the maximum opening force shall be permitted to be established by the administrative authority.

V404.2.10 Door and Gate Surfaces. Swinging door and gate surfaces within 10 inches (255 mm) of the finish deck surface measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces 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 V404.2.10.

2. Tempered glass doors without stiles that have a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch (255 mm) bottom smooth surface height requirement.

3. Doors and gates that do not extend to within 10 inches (255 mm) of the finish deck surface shall not be required to comply with V404.2.10.

4. In alterations, existing doors and gates without smooth surfaces within 10 inches (255 mm) of the finish deck surface shall not be required to provide smooth surfaces complying with V404.2.10 provided that, if added kick plates are installed, cavities created by such kick plates are capped.

V404.2.11 Vision Lights. Doors, gates, and side lights 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 glazed panel located 43 inches (1090 mm) maximum above the finish deck surface.

EXCEPTION: Vision lights with the lowest part more than 66 inches (1675 mm) from the finish deck surface shall not be required to comply with V404.2.11.

V404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with V404.3.

V404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position, unless the breakout opening requirement in V404.3.6 applies.

V404.3.2 Maneuvering Clearance. Clearances at power-assisted doors and gates shall comply with V404.2.4. Clearances at automatic doors and gates without emergency power and serving an accessible means of escape shall comply with V404.2.4.

EXCEPTION: Where automatic doors and gates remain open in the power-off condition, V404.3.2 shall not apply.

V404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with V404.2.5.

V404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with V404.2.6.

V404.3.5 Controls. Manually operated controls shall comply with V309. The clear deck space adjacent to the control shall be located beyond the arc of the door swing.

V404.3.6 Break Out Opening. Where doors and gates without emergency power are a part of an accessible means of escape, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (815 mm) minimum when operated in emergency mode.

EXCEPTION: Where manual swinging doors and gates comply with V404.2 and serve the same accessible means of escape, V404.3.6 shall not apply.

V404.3.7 Revolving Doors, Revolving Gates, and Turnstiles. Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

V405 Ramps

V405.1 General. Ramps shall comply with V405.

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 V405.

V405.2 Slope. Ramp runs shall have a running slope not steeper than 1:12.

EXCEPTION: In alterations, ramps shall be permitted to comply with Table V405.2 where such slopes are necessary due to space limitations.

TABLE V405.2—ALTERNATE RAMP SLOPES PERMITTED BY EXCEPTION

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).

[1] A slope steeper than 1:8 is prohibited.

V405.3 Cross Slope. Cross slope of ramp runs shall not be steeper than 1:48.

V405.4 Deck Surfaces. Deck surfaces of ramp runs shall comply with V302. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

V405.5 Clear Width. The clear width of a ramp run and, where handrails are provided, the clear width between handrails shall be 36 inches (915 mm) minimum.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), the clear width of ramp runs and the clear width

between handrails shall be permitted to 32 inches (815 mm) minimum.

V405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

V405.7 Landings. Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with V405.7.

V405.7.1 Slope. Landings shall comply with V302. Changes in level are not permitted.

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

V405.7.2 Width. The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

V405.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), the landing clear length shall be permitted to be 48 inches (1220 mm) long minimum.

V405.7.4 Change in Direction. Ramps that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

V405.7.5 Doorways. Where doorways are located adjacent to a ramp landing, maneuvering clearances required by V404.2.4 and V404.3.2 shall be permitted to overlap the required landing area.

V405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with V503.

V405.9 Edge Protection. Edge protection complying with V405.9.1 or V405.9.2 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 that are not required to have handrails and have sides complying with V406.3.

2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run, gangway run, or stairway.

3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of ½ inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in V405.7.

V405.9.1 Extended Deck Surface. The deck surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with V503.

V405.9.2 Curb or Barrier. A curb or barrier shall be provided that 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 finish deck surface.

V405.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

V406 Curb Ramps

V406.1 General. Curb ramps shall comply with V406, V405.2 through V405.5, and V405.10.

V406.2 Counter Slope. Counter slopes of adjoining gutters and vehicular way 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 vehicular ways shall be at the same level.

V406.3 Sides of Curb Ramps. Where provided, curb ramp flares shall not be steeper than 1:10.

V406.4 Landings. Landings shall be provided at the tops of curb ramps. The landing clear length shall be 36 inches (915 mm) minimum. The landing clear width 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 existing curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

V407 Elevators

V407.1 General. Elevators shall comply with V407. They shall be passenger elevators. Elevator operation shall be automatic.

V407.2 Elevator Landing Requirements. Elevator landings shall comply with V407.2.

V407.2.1 Call Controls. Where elevator call buttons or keypads are provided, they shall comply with V407.2.1 and V309.4. Call buttons shall be raised or flush.

EXCEPTION: In alterations, existing elevators shall be permitted to have recessed call buttons.

V407.2.1.1 Height. Call buttons and keypads shall be located within one of the reach ranges specified in V308, measured to the centerline of the highest operable part.

EXCEPTION: In alterations, existing call buttons and existing keypads shall be permitted to be located at 54 inches (1370 mm) maximum above the finish deck surface measured to the centerline of the highest operable part.

V407.2.1.2 Size. Call buttons shall be ¾ inch (19 mm) minimum in the smallest dimension.

EXCEPTION: In alterations, existing elevator call buttons shall not be required to comply with V407.2.1.2.

V407.2.1.3 Clear Deck Space. A clear deck space complying with V305 shall be provided at call controls.

V407.2.1.4 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 V407.2.1.4.

V407.2.1.5 Signals. Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with V407.2.1.5 if visible and audible signals complying with V407.2.2 indicating which elevator car to enter are provided.

2. In alterations, existing elevators shall not be required to comply with V407.2.1.5.

V407.2.1.6 Keypads. Where keypads are provided, keypads shall be in a standard telephone keypad arrangement and shall comply with V407.4.7.2.

V407.2.2 Hall Signals. Hall signals, including in-car signals, shall comply with V407.2.2.

V407.2.2.1 Visible and Audible Signals. A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the deck area adjacent to the hall call buttons.

EXCEPTIONS: 1. Visible and audible signals shall not be required at each destination-oriented elevator where a visible and audible signal complying with V407.2.2 is provided indicating the elevator car designation information.

2. In alterations to existing elevators, a signal indicating the direction of car travel shall not be required.

V407.2.2.2 Visible Signals. Visible signal fixtures shall be centered at 72 inches (1830 mm) minimum above the finish deck surface. The visible signal elements shall be 2½ inches (64 mm) minimum measured along the vertical centerline of the element. Signals shall be visible from the deck area adjacent to the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall be permitted to have signals visible from the deck area adjacent to the hoistway entrance.

2. In alterations, existing elevators shall not be required to comply with V407.2.2.2.

V407.2.2.3 Audible Signals. Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB maximum, measured at the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with V407.2.2.3 if the audible tone and verbal announcement is the same as those given at the call button or call button keypad.

2. In alterations, existing elevators shall not be required to comply with the requirements for frequency and dB range of audible signals.

V407.2.2.4 Differentiation. Each destination-oriented elevator in a bank of elevators shall have audible and visible means for differentiation.

V407.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with V407.2.3.

V407.2.3.1 Deck Designation. Deck designations complying with V703.2 and V703.4.1 shall be provided on both jambs of elevator hoistway entrances. Deck designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum. Where vessel entry points are provided on only one deck, a tactile star shall be provided on both jambs at the entry deck.

V407.2.3.2 Car Designations. Destination-oriented elevators shall provide tactile car identification complying with V703.2 on both jambs of the hoistway immediately below the deck designation. Car designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum.

V407.3 Elevator Door Requirements. Hoistway and car doors shall comply with V407.3.

V407.3.1 Type. Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

V407.3.2 Operation. Elevator hoistway and car doors shall open and close automatically.

EXCEPTION: In alterations, existing manually operated hoistway swing doors shall be permitted if they comply with V404.2.3 and V404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

V407.3.3 Reopening Device. Elevator doors shall be provided with a reopening device complying with V407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

EXCEPTION: In alterations, existing elevators with manually operated doors shall not be required to comply with V407.3.3.

V407.3.3.1 Height. The device shall be activated by sensing an obstruction passing through the opening at 5 inches (125 mm) nominal and 29 inches (735 mm) nominal above the finish deck surface.

V407.3.3.2 Contact. The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

V407.3.3.3 Duration. Door reopening devices shall remain effective for 20 seconds minimum.

V407.3.4 Door and Signal Timing. The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation: T = D/(1.5 ft/s) or T = D/(455 mm/s) = 5 seconds minimum where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1525 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

EXCEPTIONS: 1. For cars with in-car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (1525 mm) directly in front of the farthest hall call button and the audible signal is sounded.

2. Destination-oriented elevators shall not be required to comply with V407.3.4.

V407.3.5 Door Delay. Elevator doors shall remain fully open in response to a car call for 3 seconds minimum.

V407.3.6 Width. The width of elevator doors shall comply with Table V407.4.1.

EXCEPTION: In alterations to existing elevators, a power-operated car door complying with V404.2.3 shall be permitted.

V407.4 Elevator Car Requirements. Elevator cars shall comply with V407.4.

V407.4.1 Car Dimensions. Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table V407.4.1.

EXCEPTION: In alterations, existing elevator car configurations that provide a clear deck area 16 square feet (1.5 m^2) minimum, and an inside clear depth 54 inches (1370 mm) minimum and an inside clear width 36 inches (915 mm) minimum shall be permitted.

TABLE V407.4.1—ELEVATOR CAR DIMENSIONS

Door location	Minimum dimensions			
	Door clear width	Inside car, side to side	Inside car, back wall to front return	Inside car, back wall to inside face of door
Centered	42 inches (1065 mm)	80 inches (2030 mm)	51 inches (1295 mm)	54 inches (1370 mm).
Any	36 inches (915 mm) [1]	68 inches (1725 mm)	51 inches (1295 mm)	54 inches (1370 mm).
Any	36 inches (915 mm) [1]	54 inches (1370 mm)	80 inches (2030 mm)	80 inches (2030 mm).
Any	36 inches (915 mm) [1]	60 inches (1525 mm) [2]	60 inches (1525 mm) [2]	60 inches (1525 mm).[2]

[1] A tolerance of minus 5/8 inch (16 mm) is permitted.

[2] Other car configurations that provide a turning space complying with V304 with the door closed shall be permitted.

V407.4.2 Deck Surfaces. Deck surfaces in elevator cars shall comply with V302 and V303.

V407.4.3 Platform to Hoistway Clearance. The clearance between the car platform sill and the edge of any hoistway landing shall be 1/4 inch (32 mm) maximum.

V407.4.4 Leveling. Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at deck landings within a tolerance of 1/2 inch (13 mm) under rated loading to zero loading conditions.

V407.4.5 Illumination. The level of illumination at the car controls, platform, car threshold, and car landing sill shall be 5 foot candles (54 lux) minimum.

V407.4.6 Elevator Car Controls. Where provided, elevator car controls shall comply with V407.4.6 and V309.4.

EXCEPTION: In alterations to existing elevators, where a new car operating panel complying with V407.4.6 is provided, existing car operating panels shall not be required to comply with V407.4.6.

V407.4.6.1 Location. Controls shall be located within one of the reach ranges specified in V308.

EXCEPTIONS: 1. Where the elevator panel serves more than 16 openings and a parallel approach is provided, buttons with deck designations shall be permitted to be 54 inches (1370 mm) maximum above the finish deck surface.

2. In alterations to existing elevators, car control buttons with deck designations shall be permitted to be located 54 inches (1370 mm) maximum above the finish deck surface where a parallel approach is provided.

V407.4.6.2 Buttons. Car control buttons with deck designations shall comply with V407.4.6.2 and shall be raised or flush.

EXCEPTION: In alterations to existing elevators, buttons shall be permitted to be recessed.

V407.4.6.2.1 Size. Buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

V407.4.6.2.2 Arrangement. Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided, they shall read from left to right.

V407.4.6.3 Keypads. Car control keypads shall be in a standard telephone keypad arrangement and shall comply with V407.4.7.2.

V407.4.6.4 Emergency Controls. Emergency controls shall comply with V407.4.6.4.

V407.4.6.4.1 Height. Emergency control buttons shall have their centerlines 35 inches (890 mm) minimum above the finish deck surface.

V407.4.6.4.2 Location. Emergency controls, including the emergency alarm, shall be grouped at the bottom of the panel.

V407.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with V407.4.7.

EXCEPTION: In alterations to existing elevators, where a new car operating panel complying with V407.4.7 is provided, existing car operating panels shall not be required to comply with V407.4.7.

V407.4.7.1 Buttons. Car control buttons shall comply with V407.4.7.1.

V407.4.7.1.1 Type. Control buttons shall be identified by tactile characters complying with V703.2.

V407.4.7.1.2 Location. Raised character and braille designations shall be placed immediately to the left of the control button to which the designations apply.

EXCEPTION: In alterations, where space on an existing car operating panel precludes tactile markings to the left of the controls, markings shall be placed as near to the controls as possible.

V407.4.7.1.3 Symbols. The control button for the emergency stop, alarm, door open, door close, entry deck, and phone, shall be identified with tactile symbols shown in Figure V407.4.7.1.3 at the end of this document.

EXCEPTION: Where a passenger vessel has more than one entry deck, the entry deck tactile symbol is not required.

V407.4.7.1.4 Visible Indicators. Buttons with deck designations shall be provided with visible indicators to show that a call has

been registered. The visible indication shall extinguish when the car arrives at the designated deck.

V407.4.7.2 Keypads. Keypads shall be identified by characters complying with V703.5 and shall be centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall be 0.118 inch (3 mm) to 0.120 inch (3.05 mm) base diameter and in other aspects comply with Table V703.3.1.

V407.4.8 Car Position Indicators. Audible and visible car position indicators shall be provided in elevator cars.

V407.4.8.1 Visible Indicators. Visible indicators shall comply with V407.4.8.1.

V407.4.8.1.1 Size. Characters shall be ½ inch (13 mm) high minimum.

V407.4.8.1.2 Location. Indicators shall be located above the car control panel or above the door.

V407.4.8.1.3 Deck Arrival. As the car passes a deck and when a car stops at a deck served by the elevator, the corresponding character shall illuminate.

EXCEPTION: Destination-oriented elevators shall not be required to comply with V407.4.8.1.3 if the visible indicators extinguish when the call has been answered.

V407.4.8.1.4 Destination Indicator. In destination-oriented elevators, a display shall be provided in the car with visible indicators to show car destinations.

V407.4.8.2 Audible Indicators. Audible indicators shall comply with V407.4.8.2.

V407.4.8.2.1 Signal Type. The signal shall be an automatic verbal annunciator which announces the deck at which the car is about to stop.

EXCEPTION: For elevators other than destination-oriented elevators that have a rated speed of 200 feet per minute (1 m/s) or less, a non-verbal audible signal with a frequency of 1500 Hz maximum which sounds as the car passes or is about to stop at a deck served by the elevator shall be permitted.

V407.4.8.2.2 Signal Level. The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

V407.4.8.2.3 Frequency. The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

V407.4.9 Emergency Communication. Where provided, emergency two-way communication systems shall comply with V308 and shall provide a visual signal in the elevator car acknowledging that an emergency signal was received at the bridge of the vessel or other space where emergency actions are directed. Tactile symbols and characters shall be provided adjacent to the operable parts of the system in the elevator car and shall comply with V703.2.

V408 Limited Use-Limited Application Elevators

V408.1 General. Limited use-limited application elevators shall comply with V408. They shall be passenger elevators. Elevator operation shall be automatic.

V408.2 Elevator Landings. Landings serving limited-use/limited-application elevators shall comply with V408.2.

V408.2.1 Call Buttons. Elevator call buttons and keypads shall comply with V407.2.1.

V408.2.2 Hall Signals. Hall signals shall comply with V407.2.2.

V408.2.3 Hoistway Signs. Signs at elevator hoistways shall comply with V407.2.3.1.

V408.3 Elevator Doors. Elevator hoistway doors shall comply with V408.3.

V408.3.1 Sliding Doors. Sliding hoistway and car doors shall comply with V407.3.1 through V407.3.3 and V408.4.1.

V408.3.2 Swinging Doors. Swinging hoistway doors shall open and close automatically and shall comply with V404, V407.3.2 and V408.3.2.

V408.3.2.1 Power Operation. Swinging doors shall be power-operated.

V408.3.2.2 Duration. Power-operated swinging doors shall remain open for 20 seconds minimum when activated.

V408.4 Elevator Cars. Elevator cars shall comply with V408.4.

V408.4.1 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. In alterations, 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 m^2) minimum.

V408.4.2 Deck Surfaces. Deck surfaces in elevator cars shall comply with V302 and V303.

V408.4.3 Platform to Hoistway Clearance. The platform to hoistway clearance shall comply with V407.4.3.

V408.4.4 Leveling. Elevator car leveling shall comply with V407.4.4.

V408.4.5 Illumination. Elevator car illumination shall comply with V407.4.5.

V408.4.6 Car Controls. Elevator car controls shall comply with V407.4.6. Control panels shall be centered on a side wall and shall comply with V309.

V408.4.7 Designations and Indicators of Car Controls. Designations and indicators of car controls shall comply with V407.4.7.

V408.4.8 Emergency Communications. Car emergency signaling devices complying with V407.4.9 shall be provided.

V409 Platform Lifts

V409.1 General. Platform lifts shall comply with V409. Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from the lift. The rated load of the platform lifts shall be 450 pounds (204 kg) minimum.

V409.2 Platform Surface and Size. The lift platform surface and size shall comply with V302, V303, and V305.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), the lift platform shall be permitted to be 32 inches (815 mm) wide minimum where the lift platform is approached at the short side.

V409.3 Platform to Runway Clearance. The clearance between the platform sill and the edge of any runway landing shall be 1¼ inch (32 mm) maximum.

V409.4 Operable Parts. Controls for platform lifts shall comply with V309.

V409.5 Doors and Gates. Platform lifts shall have low-energy power-operated doors or gates complying with V404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (815 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1065 mm) minimum.

EXCEPTION: Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self-closing manual doors or gates.

V410 Gangways

V410.1 General. Gangways that are part of accessible passenger boarding systems shall comply with V410.

V410.2 Slope. Gangway runs shall have a running slope not steeper than 1:12.

EXCEPTIONS: 1. Where gangways have only one run and the gangways do not exceed a rise of 6 inches (150 mm), the gangways shall be permitted to have running slopes in accordance with Table V410.2.

2. Where an existing gangway run or series of gangway runs is replaced or altered, an increase in the length of the gangway run shall not be required to comply with V410.2.

3. On vessel carried gangways, where the total length of the gangway run or series of runs is at least as long as the beam of the vessel, gangways shall not be required to comply with V410.2.

4. On pier provided gangways, where the total length of a gangway run or series of runs is at least 120 feet (37 m), gangways shall not be required to comply with V410.2.

5. On passenger vessels which carry vehicles, where the only way for pedestrian passengers to embark or disembark is by way of a gangway that also functions as a vehicle transfer bridge, gangways shall not be required to comply with V410.2.

TABLE V410.2—ALTERNATE RUNNING SLOPES PERMITTED BY EXCEPTION 1

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).

[1] A slope steeper than 1:8 is prohibited.

V410.3 Cross Slope. Cross slope of gangway runs shall not be steeper than 1:48.

V410.4 Surfaces. Surfaces of gangway runs shall comply with V302. Changes in level other than the running slope and cross slope are not permitted on gangway runs.

EXCEPTIONS: 1. Where gangways are deployed and conditions result in slopes greater than 1:4, changes in level complying with V303.2 or V303.3 shall be permitted on surfaces of gangway runs.

2. Changes in level shall be permitted on gangway run surfaces that extend beyond the minimum clear width specified in V410.5.

V410.5 Clear Width. The clear width of a gangway run and, where handrails are provided, the clear width between handrails shall be 36 inches (915 mm) minimum.

EXCEPTION: Where the largest deck is less than 3,000 square feet (279 m^2), the width of gangway runs and the distance between handrails, if provided, shall be permitted to have clear widths of 32 inches (815 mm) minimum.

V410.6 Transition Plates. Transition plates provided at the ends of gangway runs shall contrast visually with adjacent passenger walkways either light-on-dark or dark-on-light.

V410.7 Landings. Gangways shall have landings at the top and the bottom of each gangway run. Landings shall comply with V410.7.

EXCEPTIONS: 1. Landings shall not be required between transition plates complying with V403 or V405, and gangways.

2. On telescoping gangways, landings shall not be required between gangway segments where transition plates are provided which comply with V405.1 through V405.6, and V405.8 through V405.10.

V410.7.1 Slope. Landings shall comply with V302. Changes in level are not permitted.

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

V410.7.2 Width. The landing clear width shall be at least as wide as the widest gangway run leading to the landing.

V410.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

V410.7.4 Change in Direction. Gangways that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

V410.7.5 Doorways. Where doorways are located adjacent to a gangway landing, maneuvering clearances required by V404.2.4 and V404.3.2 shall be permitted to overlap the required landing area.

V410.8 Handrails. Gangway runs with a rise greater than 6 inches (150 mm) shall have handrails complying with V503.

EXCEPTION: Gangways that also function as vehicle transfer bridges shall be permitted to have readily removable handrails.

V410.9 Edge Protection. Edge protection complying with V410.9.1 or V410.9.2 shall be provided on each side of gangway runs and at each side of gangway landings.

EXCEPTIONS: 1. Edge protection shall not be required on the sides of gangway landings serving an adjoining ramp run, gangway run, or stairway.

2. Edge protection shall not be required on the sides of gangway landings having a vertical drop-off of ½ inch (13 mm) maximum within 10 inches (255 mm) horizontally of the minimum landing area specified in V410.7.

V410.9.1 Extended Deck Surface. The deck surface of the gangway run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with V503.

V410.9.2 Curb or Barrier. A curb or barrier shall be provided that 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 finish deck surface.

V410.10 Wet Conditions. Landings subject to wet conditions shall be designed to prevent the accumulation of water.

V411 Manually Powered Boarding Lifts

V411.1 General. Manually powered boarding lifts shall comply with V411.

V411.2 Design Load. The design load of the lift shall be at least 600 pounds (272 kg). Working parts, such as cables, pulleys, and shafts, which would be expected to wear, and upon which the lift depends for support of the load, shall have a safety factor of at least six, based on the ultimate strength of the material. Nonworking parts, such as platform, frame, and attachment hardware which would not be expected to wear, shall have a safety factor of at least three, based on the ultimate strength of the material.

V411.3 Controls. Where provided, each control for deploying, lowering, raising, and stowing the lift and lowering the roll-off barrier shall require continuous manual pressure by the operators and an inherent design feature or other system shall not allow improper lift sequencing when the lift platform is occupied. The controls shall allow reversal of the lift operation sequence when the lift is occupied.

V411.4 Emergency Operation. The lift, when occupied, shall incorporate an emergency method of lowering.

V411.5 Equipment Failure. The lift, when occupied, shall have provisions to prevent it from falling any faster than 12 inches/second (305 mm/second) and dropping an occupant in the event of a single failure of any load carrying component.

V411.6 Platform Barriers. The lift platform shall be equipped with barriers to prevent any of the wheels of a wheelchair or mobility aid from rolling off the lift during its operation.

V411.7 Platform Surface and Size. The lift platform surface and size shall comply with V302, V303, and V305.

EXCEPTION: Where the lift platform is approached at the long side, the platform shall be permitted to be 56 inches (1420 mm) wide minimum.

V411.8 Platform Approaches. The approaches to the lift platform, or loading-edge barriers used as approaches, shall comply with V403 or V405. Transitions from adjacent deck and pier surfaces shall comply with V303.

EXCEPTIONS: 1. Ramped approaches to the lift platform shall be permitted to have running slopes not exceeding 1:8 if the rise of the ramps does not exceed 3 inches (75 mm).

2. Landings specified in V405.7 shall not be required between ramped approaches and the lift platform.

V411.9 Platform Deflection. The lift platform shall not deflect more than 3 degrees in any direction between its unloaded position and its position when loaded with 600 pounds (272 kg) applied through a 26 inch (660 mm) by 26 inch (660 mm) test pallet at the centroid of the lift platform.

V411.10 Boarding Direction. The lift shall permit both inboard and outboard facing of wheelchairs and mobility aids.

V411.11 Handrails. The platform on the lift shall be equipped with handrails on two sides, which move in tandem with the lift, and which shall be graspable and provide support to standees throughout the entire lift operation. Handrails shall have a usable component 8 inches (205 mm) long minimum, and the top of the gripping surface shall be 30 inches (760 mm) minimum and 38 inches (965 mm) maximum above the platform. The handrails shall be capable of withstanding a force of 100 pounds (449 N) concentrated at any point on the handrail without permanent deformation of the rail or its supporting structure. The handrails shall comply with V503.5 through V503.9.

CHAPTER V5: GENERAL PASSENGER VESSEL ELEMENTS

V501 General

V501.1 Scope. The provisions of Chapter 5 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V502 Pool Stairs

V502.1 General. Pool stairs shall comply with V502.

V502.2 Treads and Risers. All steps on pool stairs shall have uniform riser heights and uniform tread depths. Risers shall be 4 inches (100 mm) high minimum and 7 inches

(180 mm) high maximum. Treads shall be 11 inches (280 mm) deep minimum. Tread depth shall be measured from riser to riser.

EXCEPTION: Risers shall not be required to comply with V502.2 if riser heights are uniform.

V502.3 Closed Risers. Risers shall be closed.

V502.4 Tread Surface. Stair treads shall comply with V302. Changes in level are not permitted.

EXCEPTION: Treads shall be permitted to have a slope not steeper than 1:48.

V502.5 Nosings. The radius of curvature at the leading edge of the tread shall be ½ inch (13 mm) maximum. Nosings that project beyond risers shall have the underside of the leading edge curved or beveled. Risers shall be permitted to slope under the tread at an angle of 30 degrees maximum from vertical. The permitted projection of the nosing shall extend 1½ inches (38 mm) maximum over the tread below.

V502.6 Handrails. Pool stairs shall have handrails complying with V503.

V503 Handrails

V503.1 General. Handrails provided along walking surfaces complying with V403, at elevators complying with V407 or V408, and at platform lifts complying with V409, shall comply with V503. Handrails required at ramps complying with V405, gangways complying with V410, and pool stairs complying with V502, shall comply with V503.

V503.2 Where Required. Handrails shall be provided on both sides of pool stairs, gangways, and ramps.

EXCEPTION: In assembly areas, handrails shall not be required on both sides of aisle ramps where a handrail is provided at either side or within the aisle width.

V503.3 Continuity. Handrails shall be continuous within the full length of each set of pool stairs, gangway run, or ramp run. Inside handrails on switchback or dogleg ramps shall be continuous between flights or runs.

EXCEPTION: In assembly areas, handrails on ramps shall not be required to be continuous in aisles serving seating.

V503.4 Height. Top of gripping surfaces of handrails shall be 34 inches (865 mm) minimum and 38 inches (965 mm) maximum vertically above walking surfaces, stair nosings, gangway surfaces, and ramp surfaces. Handrails shall be at a consistent height above walking surfaces, stair nosings, gangway surfaces, and ramp surfaces.

EXCEPTION: Where the administrative authority requires handrails along walking surfaces with slopes not steeper than 1:20 to be located more than 38 inches (965 mm) above deck surfaces, the handrails shall not be required to comply with V503.4.

V503.5 Clearance. Clearance between handrail gripping surfaces and adjacent surfaces shall be 1½ inches (38 mm) minimum.

V503.6 Gripping Surface. Handrail gripping surfaces shall be continuous along their length and shall not be obstructed along their tops or sides. The bottoms of handrail gripping surfaces shall not be obstructed for more than 20 percent of their length. Where provided, horizontal projections shall occur 1½ inches (38 mm) minimum below the bottom of the handrail gripping surface.

EXCEPTIONS: 1. Where handrails are provided along walking surfaces with slopes not steeper than 1:20, the bottoms of handrail gripping surfaces shall be permitted to be obstructed along their entire length where they are integral to crash rails or bumper guards.

2. The distance between horizontal projections and the bottom of the gripping surface shall be permitted to be reduced by ⅛ inch (3.2 mm) for each ½ inch (13 mm) of additional handrail perimeter dimension that exceeds 4 inches (100 mm).

V503.7 Cross Section. Handrail gripping surfaces shall have a cross section complying with V503.7.1 or V503.7.2.

V503.7.1 Circular Cross Section. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.

V503.7.2 Non-Circular Cross Sections. Handrail gripping surfaces with a non-circular cross section shall have a perimeter dimension of 4 inches (100 mm) minimum and 6¼ inches (160 mm) maximum, and a cross-section dimension of 2¼ inches (57 mm) maximum.

V503.8 Surfaces. Handrail gripping surfaces and any surfaces adjacent to them shall be free of sharp or abrasive elements and shall have rounded edges.

V503.9 Fittings. Handrails shall not rotate within their fittings.

V503.10 Handrail Extensions. Handrail gripping surfaces shall extend beyond and in the same direction of pool stairs, gangway runs, and ramp runs in accordance with V503.10.

EXCEPTIONS: 1. Extensions shall not be required for continuous handrails at the inside turn of switchback or dogleg gangways, and ramps.

2. In assembly areas, extensions shall not be required for ramp handrails in aisles serving seating where the handrails are discontinuous to provide access to seating and to permit crossovers within aisles.

3. In alterations, full extensions of handrails shall not be required where such extensions would be hazardous due to plan configuration.

4. Where gangways and transition plates connect and are required to have handrails, handrail extensions shall not be required.

5. Where handrail extensions are provided on gangways or transition plates, extensions shall not be required to be horizontal to the landing surface.

V503.10.1 Top and Bottom Extension at Ramps and Gangways. Ramp and gangway handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beyond the top and bottom of ramp and gangway runs. Extensions shall return to a wall, guard, or the landing surface, or shall be continuous to the handrail of an adjacent ramp run.

V503.10.2 Top Extension at Pool Stairs. At the top of pool stairs, handrails shall extend horizontally above the landing for 12 inches (305 mm) minimum beginning directly above the first riser nosing. Extensions shall return to a wall, guard, or the landing surface.

CHAPTER V 6: PLUMBING ELEMENTS AND FACILITIES

V601 General

V601.1 Scope. The provisions of Chapter 6 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V602 Drinking Fountains

V602.1 General. Drinking fountains shall comply with V307 and V602.

V602.2 Clear Deck Space. Units shall have a clear deck space complying with V305 positioned for a forward approach and centered on the unit. Knee and toe clearance complying with V306 shall be provided.

EXCEPTION: A parallel approach complying with V305 shall be permitted at units for children's use where the spout is 30 inches (760 mm) maximum above the finish deck surface and is 3½ inches (90 mm) maximum from the front edge of the unit, including bumpers.

V602.3 Operable Parts. Operable parts shall comply with V309.

V602.4 Spout Height. Spout outlets shall be 36 inches (915 mm) maximum above the finish deck surface.

V602.5 Spout Location. The spout shall be located 15 inches (380 mm) minimum from the vertical support and 5 inches (125 mm) maximum from the front edge of the unit, including bumpers.

V602.6 Water Flow. The spout shall provide a flow of water 4 inches (100 mm) high minimum and shall be located 5 inches (125 mm) maximum from the front of the unit. The angle of the water stream shall be measured horizontally relative to the front face of the unit. Where spouts are located less than 3 inches (75 mm) of the front of the unit, the angle of the water stream shall be 30 degrees maximum. Where spouts are located between 3 inches (75 mm) and 5 inches (125 mm) maximum from the front of the unit, the angle of the water stream shall be 15 degrees maximum.

V602.7 Drinking Fountains for Standing Persons. Spout outlets of drinking fountains for standing persons shall be 38 inches (965 mm) minimum and 43 inches (1090 mm) maximum above the finish deck surface.

V603 Toilet and Bathing Rooms

V603. General. Toilet and bathing rooms shall comply with V603.

V603.2 Clearances. Clearances shall comply with V603.2.

V603.2.1 Turning Space. Turning space complying with V304 shall be provided within the room.

V603.2.2 Overlap. Required clear deck spaces, clearance at fixtures, and turning space shall be permitted to overlap.

V603.2.3 Door Swing. Doors shall not swing into the clear deck space or clearance required for any fixture. Doors shall be permitted to swing into the required turning space.

EXCEPTION: Where the toilet room or bathing room is for individual use and a clear deck space complying with V305.3 is provided within the room, beyond the arc of

the door swing, doors shall be permitted to swing into the clear deck space or clearance required for any fixture.

V603.3 Mirrors. Mirrors located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 40 inches (1015 mm) maximum above the finish deck surface. Mirrors not located above lavatories or countertops shall be installed with the bottom edge of the reflecting surface 35 inches (890 mm) maximum above the finish deck surface.

V603.4 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in V308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish deck surface.

V604 Water Closets and Toilet Compartments (Stalls)

V604.1 General. Water closets and toilet compartments shall comply with V604.2 through V604.8.

EXCEPTION: Water closets and toilet compartments for children's use shall be permitted to comply with V604.9.

V604.2 Location. The water closet shall be positioned with a wall or partition to the rear and to one side. The centerline of the water closet shall be 16 inches (405 mm) minimum to 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in V604.8.2. Water closets shall be arranged for a left-hand or right-hand approach.

V604.3 Clearance. Clearances around water closets and in toilet compartments shall comply with V604.3.

V604.3.1 Size. Clearance around a water closet shall be 60 inches (1525 mm) minimum measured perpendicular from the side wall and 56 inches (1420 mm) minimum measured perpendicular from the rear wall.

V604.3.2 Overlap. The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, dispensers, sanitary napkin disposal units, coat hooks, shelves, accessible routes, clear deck spaces and clearances required at other fixtures, and the turning space. No other fixtures or obstructions shall be located within the required water closet clearance.

V604.4 Seats. The seat height of a water closet above the finish deck surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

V604.5 Grab Bars. Grab bars for water closets shall comply with V609. Grab bars shall be provided on the side wall closest to the water closet and on the rear wall.

V604.5.1 Side Wall. The side wall grab bar shall be 42 inches (1065 mm) long minimum, located 12 inches (305 mm) maximum from the rear wall and extending 54 inches (1370 mm) minimum from the rear wall.

V604.5.2 Rear Wall. The rear wall grab bar shall be 36 inches (915 mm) long minimum and extend from the centerline of the water closet 12 inches (305 mm) minimum on one side and 24 inches (610 mm) minimum on the other side.

EXCEPTIONS: 1. The rear grab bar shall be permitted to be 24 inches (610 mm) long minimum, centered on the water closet, where wall space does not permit a length of 36 inches (915 mm) minimum due to the location of a recessed fixture adjacent to the water closet.

2. Where an administrative authority requires flush controls for flush valves to be located in a position that conflicts with the location of the rear grab bar, then the rear grab bar shall be permitted to be split or shifted to the open side of the toilet area.

V604.6 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with V309. Flush controls shall be located on the open side of the water closet, except in compartments with vacuum flush systems and in ambulatory accessible compartments complying with V604.8.2.

V604.7 Dispensers. Toilet paper dispensers shall comply with V309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 15 inches (380 mm) minimum and 48 inches (1220 mm) maximum above the finish deck surface and shall not be located behind grab bars. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

V604.8 Toilet Compartments. Wheelchair accessible toilet compartments shall meet the requirements of V604.8.1 and V604.8.3. Compartments containing more than one plumbing fixture shall comply with V603. Ambulatory accessible compartments shall comply with V604.8.2 and V604.8.3.

V604.8.1 Wheelchair Accessible Compartments. Wheelchair accessible compartments shall comply with V604.8.1.

V604.8.1.1 Size. Wheelchair accessible compartments shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 56 inches (1420 mm) deep minimum for wall hung water closets, and 59 inches (1500 mm) deep minimum for deck surface mounted water closets measured perpendicular to the rear wall. Wheelchair accessible compartments for children's use shall be 60 inches (1525 mm) wide minimum measured perpendicular to the side wall, and 59 inches (1500 mm) deep minimum for wall hung and deck surface mounted water closets measured perpendicular to the rear wall.

V604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with V404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with V404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

V604.8.1.3 Approach. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

V604.8.1.4 Toe Clearance. The front partition and at least one side partition shall provide a toe clearance of 9 inches (230 mm) minimum above the finish deck surface and 6 inches (150 mm) deep minimum beyond the compartment-side face of the partition, exclusive of partition support members. Compartments for children's use shall provide a toe clearance of 12 inches (305 mm) minimum above the finish deck surface.

EXCEPTION: Toe clearance at the front partition shall not be required in a compartment greater than 62 inches (1575 mm) deep with a wall-hung water closet or 65 inches (1650 mm) deep with a deck-surface-mounted water closet. Toe clearance at the side partition shall not be required in a compartment greater than 66 inches (1675 mm) wide. Toe clearance at the front partition shall not be required in a compartment for children's use that is greater than 65 inches (1650 mm) deep.

V604.8.1.5 Grab Bars. Grab bars shall comply with V609. A side-wall grab bar complying with V604.5.1 shall be provided and shall be located on the wall closest to the water closet. In addition, a rear-wall grab bar complying with V604.5.2 shall be provided.

V604.8.2 Ambulatory Accessible Compartments. Ambulatory accessible compartments shall comply with V604.8.2.

V604.8.2.1 Size. Ambulatory accessible compartments shall have a depth of 60 inches (1525 mm) minimum and a width of 35 inches (890 mm) minimum and 37 inches (940 mm) maximum.

V604.8.2.2 Doors. Toilet compartment doors, including door hardware, shall comply with V404, except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. The door shall be self-closing. A door pull complying with V404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

V604.8.2.3 Grab Bars. Grab bars shall comply with V609. A side-wall grab bar complying with V604.5.1 shall be provided on both sides of the compartment.

V604.8.3 Coat Hooks and Shelves. Coat hooks shall be located within one of the reach ranges specified in V308. Shelves shall be located 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish deck surface.

V604.9 Water Closets and Toilet Compartments for Children's Use. Water closets and toilet compartments for children's use shall comply with V604.9.

ADVISORY SPECIFICATIONS FOR WATER CLOSETS SERVING CHILDREN AGES 3 THROUGH 12

	Ages 3 and 4	Ages 5 through 8	Ages 9 through 12
Water Closet Centerline	12 inches (305 mm)	12 to 15 inches (305 to 380 mm)	15 to 18 inches (380 to 455 mm).
Toilet Seat Height	11 to 12 inches (280 to 305 mm)	12 to 15 inches (305 to 380 mm)	15 to 17 inches (380 to 430 mm).
Grab Bar Height	18 to 20 inches (455 to 510 mm)	20 to 25 inches (510 to 635 mm)	25 to 27 inches (635 to 685 mm).
Dispenser Height	14 inches (355 mm)	14 to 17 inches (355 to 430 mm)	17 to 19 inches (430 to 485 mm).

V604.9.1 Location. The water closet shall be located with a wall or partition to the rear and to one side. The centerline of the water closet shall be 12 inches (305 mm) minimum and 18 inches (455 mm) maximum from the side wall or partition, except that the water closet shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum from the side wall or partition in the ambulatory accessible toilet compartment specified in V604.8.2. Compartments shall be arranged for left-hand or right-hand approach to the water closet.

V604.9.2 Clearance. Clearance around a water closet shall comply with V604.3.

V604.9.3 Height. The height of water closets shall be 11 inches (280 mm) minimum and 17 inches (430 mm) maximum measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

V604.9.4 Grab Bars. Grab bars for water closets shall comply with V604.5.

V604.9.5 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with V309.2 and V309.4 and shall be installed 36 inches (915 mm) maximum above the finish deck surface. Flush controls shall be located on the open side of the water closet, except in compartments with vacuum flush systems and in ambulatory accessible compartments complying with V604.8.2.

V604.9.6 Dispensers. Toilet paper dispensers shall comply with V309.4 and shall be 7 inches (180 mm) minimum and 9 inches (230 mm) maximum in front of the water closet measured to the centerline of the dispenser. The outlet of the dispenser shall be 14 inches (355 mm) minimum and 19 inches (485 mm) maximum above the finish deck surface. There shall be a clearance of 1½ inches (38 mm) minimum below the grab bar. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

V604.9.7 Toilet Compartments. Toilet compartments shall comply with V604.8.

V605 Urinals

V605.1 General. Urinals shall comply with V605.

V605.2 Height and Depth. Urinals shall be the stall-type or the wall-hung type with the rim 17 inches (430 mm) maximum above the finish deck surface. Urinals shall be 13½ inches (345 mm) deep minimum measured from the outer face of the urinal rim to the back of the fixture.

V605.3 Clear Deck Space. A clear deck space complying with V305 positioned for forward approach shall be provided.

V605.4 Flush Controls. Flush controls shall be hand operated or automatic. Hand operated flush controls shall comply with V309.

V606 Lavatories and Sinks

V606.1 General. Lavatories and sinks shall comply with V606.

V606.2 Clear Deck Space. A clear deck space complying with V305, positioned for a forward approach, and knee and toe clearance complying with V306 shall be provided.

EXCEPTIONS: 1. A parallel approach complying with V305 shall be permitted to a galley and pantry sink in a space where a cook top or conventional range is not provided and to wet bars.

2. A knee clearance of 24 inches (610 mm) minimum above the finish deck surface shall be permitted at lavatories and sinks used primarily by children 6 through 12 years where the rim or counter surface is 31 inches (785 mm) maximum above the finish deck surface.

3. A parallel approach complying with V305 shall be permitted to lavatories and sinks used primarily by children 5 years and younger.

4. The dip of the overflow shall not be considered in determining knee and toe clearances.

5. No more than one bowl of a multi-bowl sink shall be required to provide knee and toe clearance complying with V306.

V606.3 Height. Lavatories and sinks shall be installed with the front of the higher of the rim or counter surface 34 inches (865 mm) maximum above the finish deck surface.

V606.4 Faucets. Controls for faucets shall comply with V309. Hand-operated, metering faucets shall remain open for 10 seconds minimum.

V606.5 Exposed Pipes and Surfaces. Water supply and drain pipes under lavatories and sinks shall be insulated or otherwise configured to protect against contact. There shall be no sharp or abrasive surfaces under lavatories and sinks.

V607 Bathtubs

V607.1 General. Bathtubs shall comply with V607.

V607.2 Clearance. Clearance in front of bathtubs shall extend the length of the bathtub and shall be 30 inches (760 mm) wide minimum. A lavatory complying with V606 shall be permitted at the control end of the clearance. Where a permanent seat is provided at the head end of the bathtub, the clearance shall extend 12 inches (305 mm) minimum beyond the wall at the head end of the bathtub.

V607.3 Seat. A permanent seat at the head end of the bathtub or a removable in-tub seat shall be provided. Seats shall comply with V610.

V607.4 Grab Bars. Grab bars for bathtubs shall comply with V609 and shall be provided in accordance with V607.4.1 or V607.4.2.

V607.4.1 Bathtubs With Permanent Seats. For bathtubs with permanent seats, grab bars shall be provided in accordance with V607.4.1.

V607.4.1.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with V609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be installed 15 inches (380 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

V607.4.1.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

V607.4.2 Bathtubs Without Permanent Seats. For bathtubs without permanent seats, grab bars shall comply with V607.4.2.

V607.4.2.1 Back Wall. Two grab bars shall be installed on the back wall, one located in accordance with V609.4 and the other located 8 inches (205 mm) minimum and 10 inches (255 mm) maximum above the rim of the bathtub. Each grab bar shall be 24 inches (610 mm) long minimum and shall be installed 24 inches (610 mm) maximum from the head end wall and 12 inches (305 mm) maximum from the control end wall.

V607.4.2.2 Control End Wall. A grab bar 24 inches (610 mm) long minimum shall be installed on the control end wall at the front edge of the bathtub.

V607.4.2.3 Head End Wall. A grab bar 12 inches (305 mm) long minimum shall be installed on the head end wall at the front edge of the bathtub.

V607.5 Controls. Controls, other than drain stoppers, shall be located on an end wall. Controls shall be between the bathtub rim and grab bar, and between the open side of the bathtub and the centerline of the width of the bathtub. Controls shall comply with V309.4.

V607.6 Shower Spray Unit and Water. A shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Bathtub shower spray units shall deliver water that is 120 °F (49 °C) maximum.

V607.7 Bathtub Enclosures. Enclosures for bathtubs shall not obstruct controls, faucets, shower and spray units, or obstruct transfer from wheelchairs onto bathtub seats or into bathtubs. Enclosures on bathtubs shall not have tracks installed on the rim of the open face of the bathtub.

V608 Shower Compartments and Rinsing Showers

V608.1 General. Shower compartments and rinsing showers shall comply with V608.

V608.2 Size and Clearances for Shower Compartments and Rinsing Showers. Shower compartments and rinsing showers shall have sizes and clearances complying with V608.2.

V608.2.1 Transfer Type Shower Compartments. Transfer type shower compartments shall be 36 inches (915 mm) by 36 inches (915 mm) clear inside dimensions measured at the center points of opposing sides and shall have a 36 inch (915 mm) wide minimum entry on the face of the shower compartment. Clearance of 36 inches (915 mm) wide minimum by 48 inches (1220 mm) long minimum measured from the control wall shall be provided.

V608.2.2 Standard Roll-In Type Shower Compartments. Standard roll-in type shower compartments shall be 30 inches (760 mm) wide minimum by 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides and shall have a 60 inches (1525 mm) wide minimum entry on the face of the shower compartment.

V608.2.2.1 Clearance. A 30 inch (760 mm) wide minimum by 60 inch (1525 mm) long minimum clearance shall be provided adjacent to the open face of the shower compartment.

EXCEPTION: A lavatory complying with V606 shall be permitted on one 30 inch (760 mm) wide minimum side of the clearance if it is not on the side of the clearance adjacent to the controls or, where provided, not on the side of the clearance adjacent to the shower seat.

V608.2.3 Alternate Roll-In Type Shower Compartments. Alternate roll-in type shower compartments shall be 36 inches (915 mm) wide and 60 inches (1525 mm) deep minimum clear inside dimensions measured at center points of opposing sides. A 36 inch (915 mm) wide minimum entry shall be provided at one end of the long side of the compartment.

V608.2.4 Rinsing Showers. At rinsing showers, a clear deck space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum shall be provided. The shower head location shall be centered on one side of the clear deck space.

V608.3 Grab Bars. Grab bars shall comply with V609 and shall be provided in accordance with V608.3. Where multiple grab bars are used, required horizontal grab bars shall be installed at the same height above the finish deck surface.

V608.3.1 Transfer Type Shower Compartments. In transfer type compartments, grab bars shall be provided across the control wall and back wall to a point 18 inches (455 mm) from the control wall.

V608.3.2 Standard Roll-In Type Shower Compartments. Where a seat is provided in standard roll-in type shower compartments, grab bars shall be provided on the back wall and, if provided, on the side wall opposite the seat. Grab bars shall not be provided above the seat. Where a seat is not provided in standard roll-in type shower compartments, grab bars shall be provided on three walls. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

V608.3.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, grab bars shall be provided on the back wall and the side wall farthest from the compartment entry. Grab bars shall not be provided above the seat. Grab bars shall be installed 6 inches (150 mm) maximum from adjacent walls.

V608.4 Seats. A folding or non-folding seat shall be provided in transfer type shower compartments. A folding seat shall be provided in roll-in type showers required in guest rooms with mobility features complying with V806.2. Seats shall comply with V610. Seats shall not be provided in rinsing showers unless the rinsing showers meet the criteria in V608 for transfer-type, standard roll-in type, or alternate roll-in type showers.

V608.5 Controls. In shower compartments, controls, faucets, and shower spray units shall comply with V309.4 and V608.5. In rinsing showers, controls, faucets, and shower spray units shall comply with V309.

V608.5.1 Transfer Type Shower Compartments. In transfer type shower compartments, the controls, faucets, and shower spray unit shall be installed on the side wall opposite the seat 38 inches (965 mm) minimum and 48 inches (1220 mm) maximum above the shower deck surface and shall be located on the control wall 15 inches (380 mm) maximum from the centerline of the seat toward the shower opening.

V608.5.2 Standard Roll-In Type Shower Compartments. In standard roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower deck surface. Where a seat is provided, the controls, faucets, and shower spray unit shall be installed on the back wall adjacent to the seat wall and shall be located 27 inches (685 mm) maximum from the seat wall.

V608.5.3 Alternate Roll-In Type Shower Compartments. In alternate roll-in type shower compartments, the controls, faucets, and shower spray unit shall be located above the grab bar, but no higher than 48 inches (1220 mm) above the shower deck surface. Where a seat is provided, the controls, faucets, and shower spray unit shall be located on the side wall adjacent to the seat 27 inches (685 mm) maximum from the side wall behind the seat or shall be located on the back wall opposite the seat 15 inches (380 mm) maximum, left or right, of the centerline of the seat. Where a seat is not provided, the controls, faucets, and shower spray unit shall be installed on the side wall farthest from the compartment entry.

V608.6 Shower Spray Unit and Water. In shower compartments and rinsing showers, a shower spray unit with a hose 59 inches (1500 mm) long minimum that can be used both as a fixed-position shower head and as a hand-held shower shall be provided. The shower spray unit shall have an on/off control with a non-positive shut-off. If an adjustable-height shower head on a vertical bar is used, the bar shall be installed so as not to obstruct the use of grab bars. Shower spray units shall deliver water that is 120 °F (49 °C) maximum.

EXCEPTION: A fixed shower head located at 48 inches (1220 mm) maximum above the shower finish deck surface shall be permitted instead of a hand-held spray unit in facilities that are not medical care facilities or guest rooms.

V608.7 Thresholds. Thresholds in rinsing showers and roll-in type shower compartments shall be ½ inch (13 mm) high maximum in accordance with V303. In transfer type shower compartments, thresholds ½ inch (13 mm) high maximum shall be beveled, rounded, or vertical.

EXCEPTION: In alterations, a threshold 2 inches (51 mm) high maximum shall be permitted in transfer type shower compartments in existing vessels where provision of a½ inch (13 mm) high threshold would disturb the structural integrity of the deck surface.

V608.8 Shower Enclosures. Enclosures for shower compartments and rinsing showers shall not obstruct controls, faucets, shower spray units and, where provided, shower seats.

V609 Grab Bars

V609.1 General. Grab bars in toilet facilities and bathing facilities shall comply with V609.

V609.2 Cross Section. Grab bars shall have a cross section complying with V609.2.1 or V609.2.2.

V609.2.1 Circular Cross Section. Grab bars with circular cross sections shall have an outside diameter of 1¼ inches (32 mm) minimum and 2 inches (51 mm) maximum.

V609.2.2 Non-Circular Cross Section. Grab bars with non-circular cross sections shall have a cross-section dimension of 2 inches (51 mm) maximum and a perimeter dimension of 4 inches (100 mm) minimum and 4.8 inches (120 mm) maximum.

V609.3 Spacing. The space between the wall and the grab bar shall be 1½ inches (38 mm). At rinsing showers, if grab bars are installed on posts, the space between the post and grab bar shall be 1½ inches (38 mm). The space between the grab bar and projecting objects below and at the ends shall be 1½ inches (38 mm) minimum. The space between the grab bar and projecting objects above shall be 12 inches (305 mm) minimum.

EXCEPTION: The space between the grab bars and shower controls, shower fittings, and other grab bars above shall be permitted to be 1½ inches (38 mm) minimum.

V609.4 Position of Grab Bars. Grab bars shall be installed in a horizontal position, 33 inches (840 mm) minimum and 36 inches (915 mm) maximum above the finish deck surface measured to the top of the gripping surface, except that at water closets for children's use complying with V604.9, grab bars shall be installed in a horizontal position 18 inches (455 mm) minimum and 27 inches (685 mm) maximum above the finish deck surface measured to the top of the gripping surface. The height of the lower grab bar on the back wall of a bathtub shall comply with V607.4.1.1 or V607.4.2.1.

V609.5 Surface Hazards. Grab bars and any wall or other surfaces adjacent to grab

bars shall be free of sharp or abrasive elements and shall have rounded edges.

V609.6 Fittings. Grab bars shall not rotate within their fittings.

V609.7 Installation. Grab bars shall be installed in any manner that provides a gripping surface at the specified locations and that does not obstruct the required clear deck space.

V609.8 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the grab bar, fastener, mounting device, or supporting structure.

V610 Seats

V610.1 General. Seats in bathtubs and shower compartments shall comply with V610.

V610.2 Bathtub Seats. The top of bathtub seats shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish deck surface. The depth of a removable in-tub seat shall be 15 inches (380 mm) minimum and 16 inches (405 mm) maximum. The seat shall be capable of secure placement. Permanent seats at the head end of the bathtub shall be 15 inches (380 mm) deep minimum and shall extend from the back wall to or beyond the outer edge of the bathtub.

V610.3 Shower Compartment Seats. Where a seat is provided in a standard roll-in shower compartment, it shall be a folding type, shall be installed on the side wall adjacent to the controls, and shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. Where a seat is provided in an alternate roll-in type shower compartment, it shall be a folding type, shall be installed on the front wall opposite the back wall, and shall extend from the adjacent side wall to a point within 3 inches (75 mm) of the compartment entry. In transfer type showers, the seat shall extend from the back wall to a point within 3 inches (75 mm) of the compartment entry. The top of the seat shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the bathroom finish deck surface. Seats shall comply with V610.3.1 or V610.3.2.

V610.3.1 Rectangular Seats. The rear edge of a rectangular seat shall be 2½ inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The side edge of the seat shall be 1½ inches (38 mm) maximum from the adjacent wall.

V610.3.2 L-Shaped Seats. The rear edge of an L-shaped seat shall be 2½ inches (64 mm) maximum and the front edge 15 inches (380 mm) minimum and 16 inches (405 mm) maximum from the seat wall. The rear edge of the ''L'' portion of the seat shall be 1½ inches (38 mm) maximum from the wall and the front edge shall be 14 inches (355 mm) minimum and 15 inches (380 mm) maximum from the wall. The end of the ''L'' shall be 22 inches (560 mm) minimum and 23 inches maximum (585 mm) from the main seat wall.

V610.4 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device, or supporting structure.

V611 Washing Machines and Clothes Dryers

V611.1 General. Washing machines and clothes dryers shall comply with V611.

V611.2 Clear Deck Space. A clear deck space complying with V305 positioned for parallel approach shall be provided. The clear deck space shall be centered on the appliance.

V611.3 Operable Parts. Operable parts, including doors, lint screens, and detergent and bleach compartments shall comply with V309.

V611.4 Height. Top loading machines shall have the door to the laundry compartment located 36 inches (915 mm) maximum above the finish deck surface. Front loading machines shall have the bottom of the opening to the laundry compartment located 15 inches (380 mm) minimum and 36 inches (915 mm) maximum above the finish deck surface.

V612 Saunas and Steam Rooms

V612.1 General. Saunas and steam rooms shall comply with V612.

V612.2 Bench. Where seating is provided in saunas and steam rooms, at least one bench shall comply with V903. Doors shall not swing into the clear deck space required by V903.2.

EXCEPTION: A readily removable bench shall be permitted to obstruct the turning space required by V612.3 and the clear deck space required by V903.2.

V612.3 Turning Space. A turning space complying with V304 shall be provided within saunas and steam rooms.

CHAPTER V 7: COMMUNICATION ELEMENTS AND FEATURES

V701 General

V701.1 Scope. The provisions of Chapter 7 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V702 Notification Appliances

V702.1 General. Notification appliances in public areas shall comply with V702.

V702.2 U.S. Flag Passenger Vessels. U.S. flag passenger vessels shall provide visible notification appliances complying with section 18.5 of NFPA 72 (incorporated by reference, see ''Referenced Standards'' in Chapter 1). Visible notification appliances shall be activated upon activation of the passenger vessel general emergency alarm.

V703 Signs

V703.1 General. Signs shall comply with V703. Where both visual and tactile characters are required, either one sign with both visual and tactile characters, or two separate signs, one with visual, and one with tactile characters, shall be provided.

V703.2 Raised Characters. Raised characters shall comply with V703.2 and shall be duplicated in braille complying with V703.3. Raised characters shall be installed in accordance with V703.4.

V703.2.1 Depth. Raised characters shall be 1/32 inch (0.8 mm) minimum above their background.

V703.2.2 Case. Characters shall be uppercase.

V703.2.3 Style. Characters shall be sans serif. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

V703.2.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter ''O'' is 55 percent minimum and 110 percent maximum of the height of the uppercase letter ''I''.

V703.2.5 Character Height. Character height measured vertically from the baseline of the character shall be 5/8 inch (16 mm) minimum and 2 inches (51 mm) maximum based on the height of the uppercase letter ''I''.

EXCEPTION: Where separate raised and visual characters with the same information are provided, raised character height shall be permitted to be ½ inch (13 mm) minimum.

V703.2.6 Stroke Thickness. Stroke thickness of the uppercase letter ''I'' shall be 15 percent maximum of the height of the character.

V703.2.7 Character Spacing. Character spacing shall be measured between the two closest points of adjacent raised characters within a message, excluding word spaces. Where characters have rectangular cross sections, spacing between individual raised characters shall be 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum. Where characters have other cross sections, spacing between individual raised characters shall be 1/16 inch (1.6 mm) minimum and 4 times the raised character stroke width maximum at the base of the cross sections, and 1/8 inch (3.2 mm) minimum and 4 times the raised character stroke width maximum at the top of the cross sections. Characters shall be separated from raised borders and decorative elements 3/8 inch (9.5 mm) minimum.

V703.2.8 Line Spacing. Spacing between the baselines of separate lines of raised characters within a message shall be 135 percent minimum and 170 percent maximum of the raised character height.

V703.3 Braille. Braille shall be contracted (Grade 2) and shall comply with V703.3 and V703.4.

V703.3.1 Dimensions and Capitalization. Braille dots shall have a domed or rounded shape and shall comply with Table V703.3.1. The indication of an uppercase letter or letters shall only be used before the first word of sentences, proper nouns and names, individual letters of the alphabet, initials, and acronyms.

TABLE V703.3.1—BRAILLE DIMENSIONS

Measurement range	Minimum in inches Maximum in inches
Dot base diameter	0.059 (1.5 mm) to 0.063 (1.6 mm).
Distance between two dots in the same cell [1]	0.090 (2.3 mm) to 0.100 (2.5 mm).
Distance between corresponding dots in adjacent cells [1]	0.241 (6.1 mm) to 0.300 (7.6 mm).
Dot height	0.025 (0.6 mm) to 0.037 (0.9 mm).
Distance between corresponding dots from one cell directly below [1]	0.395 (10 mm) to 0.400 (10.2 mm).

[1] measured center-to-center.

V703.3.2 Position. Braille shall be positioned below the corresponding text. If text is multi-lined, braille shall be placed below the entire text. Braille shall be separated 3/8 inch (9.5 mm) minimum from any other tactile characters and 3/8 inch (9.5 mm) minimum from raised borders and decorative elements.

EXCEPTION: Braille provided on elevator car controls shall be separated 3/16 inch (4.8 mm) minimum and shall be located either directly below or adjacent to the corresponding raised characters or symbols.

V703.4 Installation Height and Location. Signs with tactile characters shall comply with V703.4.

V703.4.1 Height Above Finish Deck Surface. Tactile characters on signs shall be located 48 inches (1220 mm) minimum above the finish deck surface, measured from the baseline of the lowest tactile character and 60 inches (1525 mm) maximum above the finish deck surface, measured from the baseline of the highest tactile character.

EXCEPTION: Tactile characters for elevator car controls shall not be required to comply with V703.4.1.

V703.4.2 Location. Where a tactile sign is provided at a door, the sign shall be located alongside the door at the latch side. Where a tactile sign is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a tactile sign is provided at double doors with two active leafs, the sign shall be located to the right of the right hand door. Where there is no wall space at the latch side of a single door or at the right side of double doors, signs shall be located on the nearest adjacent wall. Signs containing tactile characters shall be located so that a clear deck space of 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the tactile characters, is provided beyond the arc of any door swing between the closed position and 45 degree open position.

EXCEPTION: Signs with tactile characters shall be permitted on the push side of doors with closers and without hold-open devices.

V703.5 Visual Characters. Visual characters shall comply with V703.5.

EXCEPTION: Where visual characters comply with V703.2 and are accompanied by braille complying with V703.3, they shall not be required to comply with V703.5.2 through V703.5.9.

V703.5.1 Finish and Contrast. Characters and their background shall have a non-glare finish. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

V703.5.2 Case. Characters shall be uppercase or lowercase or a combination of both.

V703.5.3 Style. Characters shall be conventional in form. Characters shall not be italic, oblique, script, highly decorative, or of other unusual forms.

V703.5.4 Character Proportions. Characters shall be selected from fonts where the width of the uppercase letter ''O'' is 55 percent minimum and 110 percent maximum of the height of the uppercase letter ''I''.

V703.5.5 Character Height. Minimum character height shall comply with Table V703.5.5. Viewing distance shall be measured as the horizontal distance between the character and an obstruction preventing further approach towards the sign. Character height shall be based on the uppercase letter ''I''.

TABLE V703.5.5—VISUAL CHARACTER HEIGHT

Height to finish deck surface from baseline of character	Horizontal viewing distance	Minimum character height
40 inches (1015 mm) to less than or equal to 70 inches (1780 mm).	Less than 72 inches (1830 mm)	5/8 inch (16 mm).
	72 inches (1830 mm) and greater	5/8 inch (16 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 72 inches (1830 mm).
Greater than 70 inches (1780 mm) to less than or equal to 120 inches (3050 mm).	Less than 180 inches (4570 mm)	2 inches (51 mm).
	180 inches (4570 mm) and greater	2 inches (51 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 180 inches (4570 mm).
Greater than 120 inches (3050 mm)	Less than 21 feet (6400 mm)	3 inches (75 mm).
	21 feet (6400 mm) and greater	3 inches (75 mm), plus 1/8 inch (3.2 mm) per foot (305 mm) of viewing distance above 21 feet (6400 mm).

V703.5.6 Height From Finish Deck Surface. Visual characters shall be 40 inches (1015 mm) minimum above the finish deck surface.

EXCEPTIONS: 1. Visual characters indicating elevator car controls shall not be required to comply with V703.5.6.

2. Where the administrative authority requires signs to be mounted below 40 inches (1015 mm), V703.5.6 shall not apply.

V703.5.7 Stroke Thickness. Stroke thickness of the uppercase letter ''I'' shall be 10 percent minimum and 30 percent maximum of the height of the character.

V703.5.8 Character Spacing. Character spacing shall be measured between the two closest points of adjacent characters, excluding word spaces. Spacing between individual characters shall be 10 percent minimum and 35 percent maximum of character height.

V703.5.9 Line Spacing. Spacing between the baselines of separate lines of characters within a message shall be 135 percent minimum and 170 percent maximum of the character height.

V703.6 Pictograms. Pictograms shall comply with V703.6.

V703.6.1 Pictogram Field. Pictograms shall have a field height of 6 inches (150 mm) minimum. Characters and braille shall not be located in the pictogram field.

V703.6.2 Finish and Contrast. Pictograms and their field shall have a non-glare finish. Pictograms shall contrast with their field

with either a light pictogram on a dark field or a dark pictogram on a light field.

V703.6.3 Text Descriptors. Pictograms shall have text descriptors located directly below the pictogram field. Text descriptors shall comply with V703.2, V703.3 and V703.4.

V703.7 Symbols of Accessibility. Symbols of accessibility shall comply with V703.7.

V703.7.1 Finish and Contrast. Symbols of accessibility and their background shall have a non-glare finish. Symbols of accessibility shall contrast with their background with either a light symbol on a dark background or a dark symbol on a light background.

V703.7.2 Symbols.

V703.7.2.1 International Symbol of Accessibility. The International Symbol of Accessibility shall comply with Figure V703.7.2.1 at the end of this document.

V703.7.2.2 International Symbol of TTY. The International Symbol of TTY shall comply with Figure V703.7.2.2 at the end of this document.

V703.7.2.3 Assistive Listening Systems. Assistive listening systems shall be identified by the International Symbol of Access for Hearing Loss complying with Figure V703.7.2.3 at the end of this document.

V704 Telephones

V704.1 General. Public telephones shall comply with V704.

V704.2 Wheelchair Accessible Telephones. Wheelchair accessible telephones shall comply with V704.2.

V704.2.1 Clear Deck Space. A clear deck space complying with V305 shall be provided. The clear deck space shall not be obstructed by bases, enclosures, or seats.

V704.2.1.1 Parallel Approach. Where a parallel approach is provided, the distance from the edge of the telephone enclosure to the face of the telephone unit shall be 10 inches (255 mm) maximum.

V704.2.1.2 Forward Approach. Where a forward approach is provided, the distance from the front edge of a counter within the telephone enclosure to the face of the telephone unit shall be 20 inches (510 mm) maximum.

V704.2.2 Operable Parts. Operable parts shall comply with V309. Telephones shall have push-button controls where such service is available.

V704.2.3 Telephone Directories. Telephone directories, where provided, shall be located in accordance with V309.

V704.2.4 Cord Length. The cord from the telephone to the handset shall be 29 inches (735 mm) long minimum.

V704.3 Volume Control Telephones. Public telephones required to have volume controls shall be equipped with a receiver volume control that provides a gain adjustable up to 20 dB minimum. For incremental volume control, provide at least one intermediate step of 12 dB of gain minimum. An automatic reset shall be provided.

V704.4 TTYs. TTYs required at a public telephone shall be permanently affixed within, or adjacent to, the telephone enclosure. Where an acoustic coupler is used, the telephone cord shall be sufficiently long to allow connection of the TTY and the telephone receiver.

V704.4.1 Height. When in use, the touch surface of TTY keypads shall be 34 inches (865 mm) minimum above the finish deck surface.

EXCEPTION: Where seats are provided, V704.4.1 shall not apply.

V705 Two-Way Communication Systems

V705.1 General. Two-way communication systems shall comply with V705.

V705.2 Audible and Visual Indicators. The system shall provide both audible and visual signals.

V705.3 Handsets. Handset cords, if provided, shall be 29 inches (735 mm) long minimum.

V706 Assistive Listening Systems

V706.1 General. Assistive listening systems shall comply with V706.

V706.2 Receiver Jacks. Receivers required for use with an assistive listening system shall include a ⅛ inch (3.2 mm) standard mono jack.

V706.3 Receiver Hearing-Aid Compatibility. Receivers required to be hearing-aid compatible shall interface with telecoils in hearing aids through the provision of neck loops.

V706.4 Sound Pressure Level. Assistive listening systems shall be capable of providing a sound pressure level of 110 dB minimum and 118 dB maximum with a dynamic range on the volume control of 50 dB.

V706.5 Signal-to-Noise Ratio. The signal-to-noise ratio for internally generated noise in assistive listening systems shall be 18 dB minimum.

V706.6 Peak Clipping Level. Peak clipping shall not exceed 18 dB of clipping relative to the peaks of speech.

V707 Automatic Teller Machines and Fare Machines

V707.1 General. Automatic teller machines and fare machines shall comply with V707.

V707.2 Clear Deck Space. A clear deck space complying with V305 shall be provided.

V707.3 Operable Parts. Operable parts shall comply with V309. Unless a clear or correct key is provided, each operable part shall be able to be differentiated by sound or touch, without activation.

V707.4 Privacy. Automatic teller machines shall provide the opportunity for the same degree of privacy of input and output available to all individuals.

V707.5 Speech Output. Machines shall be speech enabled. Operating instructions and orientation, visible transaction prompts, user input verification, error messages, and all displayed information for full use shall be accessible to and independently usable by individuals with vision impairments. Speech shall be delivered through a mechanism that is readily available to all users, including but not limited to, an industry standard connector or a telephone handset. Speech shall be recorded or digitized human, or synthesized.

EXCEPTIONS: 1. Audible tones shall be permitted instead of speech for visible output that is not displayed for security purposes, including but not limited to, asterisks representing personal identification numbers.

2. Advertisements and other similar information shall not be required to be audible unless they convey information that can be used in the transaction being conducted.

3. Where speech synthesis cannot be supported, dynamic alphabetic output shall not be required to be audible.

V707.5.1 User Control. Speech shall be capable of being repeated or interrupted. Volume control shall be provided for the speech function.

EXCEPTION: Speech output for any single function shall be permitted to be automatically interrupted when a transaction is selected.

V707.5.2 Receipts. Where receipts are provided, speech output devices shall provide audible balance inquiry information, error messages, and all other information on the printed receipt necessary to complete or verify the transaction.

EXCEPTIONS: 1. Machine location, date and time of transaction, customer account number, and the machine identifier shall not be required to be audible.

2. Information on printed receipts that duplicates information available on-screen shall not be required to be presented in the form of an audible receipt.

3. Printed copies of bank statements and checks shall not be required to be audible.

V707.6 Input. Input devices shall comply with V707.6.

V707.6.1 Input Controls. At least one tactilely discernible input control shall be provided for each function. Where provided, key surfaces not on active areas of display screens, shall be raised above surrounding surfaces. Where membrane keys are the only method of input, each shall be tactilely discernible from surrounding surfaces and adjacent keys.

V707.6.2 Numeric Keys. Numeric keys shall be arranged in a 12-key ascending or descending telephone keypad layout. The number five key shall be tactilely distinct from the other keys.

V707.6.3 Function Keys. Function keys shall comply with V707.6.3.

V707.6.3.1 Contrast. Function keys shall contrast visually from background surfaces. Characters and symbols on key surfaces shall contrast visually from key surfaces. Visual contrast shall be either light-on-dark or dark-on-light.

EXCEPTION: Tactile symbols required by V707.6.3.2 shall not be required to comply with V707.6.3.1.

V707.6.3.2 Tactile Symbols. Function key surfaces shall have tactile symbols as follows: Enter or Proceed key: raised circle; Clear or Correct key: raised left arrow; Cancel key: raised letter ex; Add Value key: raised plus sign; Decrease Value key: raised minus sign.

V707.7 Display Screen. The display screen shall comply with V707.7.

V707.7.1 Visibility. The display screen shall be visible from a point located 40 inches (1015 mm) above the center of the clear deck space in front of the machine.

V707.7.2 Characters. Characters displayed on the screen shall be in a sans serif font. Characters shall be 3/16 inch (4.8 mm) high minimum based on the uppercase letter ''I''. Characters shall contrast with their background with either light characters on a dark background or dark characters on a light background.

V707.8 Braille Instructions. Braille instructions for initiating the speech mode shall be provided. Braille shall comply with V703.3.

CHAPTER V 8: SPECIAL ROOMS, SPACES, AND ELEMENTS

V801 General

V801.1 Scope. The provisions of Chapter 8 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V802 Wheelchair Spaces, Companion Seats, and Designated Aisle Seats

V802.1 Wheelchair Spaces. Wheelchair spaces shall comply with V802.1.

EXCEPTION: Where ferries permitted to carry 150 or fewer passengers provide only one transportation seating area that is less than 100 square feet (9.29 m^2), wheelchair spaces shall not be required to comply with V802.1.4 and V802.1.5.

V802.1.1 Deck Surface. The deck surface of wheelchair spaces shall comply with V302. Changes in level are not permitted.

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

V802.1.2 Width. A single wheelchair space shall be 36 inches (915 mm) wide minimum. Where two adjacent wheelchair spaces are provided, each wheelchair space shall be 33 inches (840 mm) wide minimum.

V802.1.3 Depth. Where a wheelchair space can be entered from the front or rear, the wheelchair space shall be 48 inches (1220 mm) deep minimum. Where a wheelchair space can be entered only from the side, the wheelchair space shall be 60 inches (1525 mm) deep minimum.

V802.1.4 Approach. Wheelchair spaces shall adjoin accessible routes. Accessible routes shall not overlap wheelchair spaces.

V802.1.5 Overlap. Wheelchair spaces shall not overlap accessible means of escape required by this document, and means of escape required by the administrative authority.

V802.1.6 Tables and Counters. Where wheelchair spaces are provided at tables or counters, the tables and counters shall comply with V902. The knee and toe clearance required by V902.2 shall extend the width of the wheelchair space.

V802.2 Lines of Sight. Lines of sight to the screen, or performance area, for spectators in wheelchair spaces shall comply with V802.2.

V802.2.1 Lines of Sight Over Seated Spectators. Where spectators are expected to remain seated during events, spectators in wheelchair spaces shall be afforded lines of sight complying with V802.2.1.

V802.2.1.1 Lines of Sight Over Heads. Where spectators are provided lines of sight over the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of seated spectators in the first row in front of wheelchair spaces.

V802.2.1.2 Lines of Sight Between Heads. Where spectators are provided lines of sight over the shoulders and between the heads of spectators seated in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of seated spectators in the first row in front of wheelchair spaces.

V802.2.2 Lines of Sight Over Standing Spectators. Where spectators are expected to stand during events, spectators in wheelchair spaces shall be afforded lines of sight complying with V802.2.2.

V802.2.2.1 Lines of Sight Over Heads. Where standing spectators are provided lines of sight over the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the heads of standing spectators in the first row in front of wheelchair spaces.

V802.2.2.2 Lines of Sight Between Heads. Where standing spectators are provided lines of sight over the shoulders and between the heads of spectators standing in the first row in front of their seats, spectators seated in wheelchair spaces shall be afforded lines of sight over the shoulders and between the heads of standing spectators in the first row in front of wheelchair spaces.

V802.3 Companion Seats. Companion seats shall comply with V802.3.

V802.3.1 Alignment. Companion seats shall be located to provide shoulder alignment with adjacent wheelchair spaces. The shoulder alignment point of the wheelchair space shall be measured 36 inches (915 mm) from the front of the wheelchair space. The deck surface of the companion seat shall be at the same elevation as the deck surface of the wheelchair space.

EXCEPTIONS: 1. Where seats in the assembly area are not arranged to provide lines of sight to fixed screens or performance areas, companion seats shall not be required to provide shoulder alignment with adjacent wheelchair spaces.

2. Companion seats at tables and counters shall not be required to provide shoulder alignment with adjacent wheelchair spaces.

V802.3.2 Type. Companion seats shall be equivalent in size, quality, comfort, and amenities to the seating in the immediate area. Companion seats shall be permitted to be movable.

V802.4 Designated Aisle Seats. Designated aisle seats shall comply with V802.4.

V802.4.1 Armrests. Where armrests are provided on the seating in the immediate area, folding or retractable armrests shall be provided on the aisle side of the seat.

V802.4.2 Identification. Each designated aisle seat shall be identified by a sign or marker.

V803 Dressing, Fitting, and Locker Rooms

V803.1 General. Dressing, fitting, and locker rooms shall comply with V803.

V803.2 Turning Space. Turning space complying with V304 shall be provided within the room.

V803.3 Door Swing. Doors shall not swing into the room unless a clear deck space complying with V305.3 is provided, beyond the arc of the door swing.

V803.4 Benches. A bench complying with V903 shall be provided within the room.

V803.5 Coat Hooks and Shelves. Coat hooks provided within the room shall be located within one of the reach ranges specified in V308. Shelves shall be 40 inches (1015 mm) minimum and 48 inches (1220 mm) maximum above the finish deck surface.

V804 Galleys and Pantries

V804.1 General. Galleys and pantries shall comply with V804.

V804.2 Clearance. Where a pass through galley is provided, clearances shall comply with V804.2.1. Where a U-shaped galley is provided, clearances shall comply with V804.2.2.

EXCEPTION: Spaces that do not provide a cooktop or conventional range shall not be required to comply with V804.2.

V804.2.1 Pass Through Galleys. In pass through galleys where counters, appliances, or cabinets are on two opposing sides, or where counters, appliances, or cabinets are opposite a parallel wall, clearance between all opposing base cabinets, counter tops, appliances, or walls within galley work areas shall be 40 inches (1015 mm) minimum. Pass through galleys shall have two entries.

V804.2.2 U-Shaped Galleys. In U-shaped galleys enclosed on three contiguous sides, clearance between all opposing base cabinets, counter tops, appliances, or walls within galley work areas shall be 60 inches (1525 mm) minimum.

V804.3 Sinks. Sinks shall comply with V606.

V804.4 Storage. At least 50 percent of shelf space in storage facilities shall comply with V807.

V804.5 Appliances. Where provided, galley appliances shall comply with V804.5.

V804.5.1 Clear Deck Space. A clear deck space complying with V305 shall be provided at each galley appliance. Clear deck spaces shall be permitted to overlap.

V804.5.2 Operable Parts. All appliance controls shall comply with V309.

EXCEPTIONS: 1. Appliance doors and door latching devices shall not be required to comply with V309.4.

2. Bottom-hinged appliance doors, when in the open position, shall not be required to comply with V309.3.

V804.5.3 Dishwasher. Clear deck space shall be positioned adjacent to the dishwasher door. The dishwasher door, in the open position, shall not obstruct the clear deck space for the dishwasher or the sink.

V804.5.4 Range or Cooktop. Where a forward approach is provided, the clear deck space shall provide knee and toe clearance complying with V306. Where knee and toe space is provided, the underside of the range or cooktop shall be insulated or otherwise configured to prevent burns, abrasions, or electrical shock. The location of controls shall not require reaching across burners.

V804.5.5 Oven. Ovens shall have controls on front panels.

V804.5.6 Refrigerator/Freezer. Combination refrigerators and freezers shall have at least 50 percent of the freezer space 54 inches (1370 mm) maximum above the

finish deck surface. The clear deck space shall be positioned for a parallel approach to the space dedicated to a refrigerator/freezer with the centerline of the clear deck space offset 24 inches (610 mm) maximum from the centerline of the dedicated space.

V805 Medical Care Facilities

V805.1 General. Medical care facility patient sleeping rooms required to provide mobility features shall comply with V805.

V805.2 Turning Space. Turning space complying with V304 shall be provided within the room.

V805.3 Clear Deck Space. A clear deck space complying with V305 shall be provided on each side of the bed. The clear deck space shall be positioned for a parallel approach to the side of the bed.

V805.4 Toilet and Bathing Rooms. Toilet and bathing rooms that are provided as part of a patient sleeping room shall comply with V603. Where provided, no fewer than one water closet, one lavatory, and one bathtub or shower shall comply with the applicable requirements of V603 through V610.

V806 Passenger Guest Rooms

V806.1 General. Guest rooms shall comply with V806. Guest rooms required to provide mobility features shall comply with V806.2. Guest rooms required to provide communication features shall comply with V806.3.

V806.2 Guest Rooms with Mobility Features. Guest rooms required to provide mobility features shall comply with V806.2.

V806.2.1 Living and Dining Areas. Living and dining areas shall be accessible.

V806.2.2 Exterior Spaces. Exterior spaces, including patios, terraces and balconies that serve the guest room shall be accessible.

V806.2.3 Sleeping Areas. At least one sleeping area shall be accessible and shall provide a clear deck space complying with V305 on both sides of a bed. The clear deck space shall be positioned for parallel approach to the side of the bed.

EXCEPTION: Where a single clear deck space complying with V305 positioned for parallel approach is provided between two beds, a clear deck space shall not be required on both sides of a bed.

V806.2.4 Toilet and Bathing Facilities. At least one bathroom that is provided as part of a guest room shall comply with V603. No fewer than one water closet, one lavatory, and one bathtub or shower shall comply with applicable requirements of V603 through V610. In addition, required roll-in shower compartments shall comply with V608.2.2 or V608.2.3. Toilet and bathing fixtures required to comply with V603 through V610 shall be permitted to be located in more than one toilet or bathing area, if travel between fixtures does not require travel between other parts of the guest room.

V806.2.4.1 Vanity Counter Top Space. If vanity counter top space is provided in non-accessible guest toilet or bathing rooms, comparable vanity counter top space in terms of size and proximity to the lavatory, shall also be provided in accessible guest toilet or bathing rooms.

EXCEPTION: Shelving shall be permitted to be used to provide the comparable counter top space.

V806.2.5 Galleys and Pantries. Galleys and pantries shall comply with V804.

V806.2.6 Turning Space. Turning space complying with V304 shall be provided within the guest room.

V806.2.7 Doors to Adjacent Guest Rooms. Where provided, doors that connect adjacent guest rooms shall comply with V404.

EXCEPTION: Where the adjacent guest room is not required to comply with V806.2, the side of the door in the adjacent guest room shall not be required to comply with V404.2.4.

V806.2.8 Windows. Where glass and other glazed openings are provided for operation by passengers, at least one opening shall comply with V309.

V806.3 Guest Rooms with Communication Features. Guest rooms required to provide communication features shall comply with V806.3.

V806.3.1 General Emergency Alarm. Where general emergency alarms are provided in passenger vessels, visible notification appliances complying with V806.3.3 shall be provided in the guest rooms to alert passengers of the general emergency alarms. The visible notification appliances shall not be used for any other purpose.

V806.3.2 Smoke Alarm. Where smoke alarms are provided in guest rooms, visible notification appliances complying with V806.3.3 shall be provided in the guest rooms to alert passengers of smoke alarms. Such visible notification appliances shall not be used for any other purpose.

V806.3.3 Visible Notification Appliances. Visible notification appliances shall comply with V806.3.3.

EXCEPTION: In alterations, existing passenger vessels shall not be required to comply with V806.3.3 unless an existing alarm system is upgraded or replaced, or a new alarm system is installed.

V806.3.3.1 U.S. Flag Passenger Vessels. U.S. flag passenger vessels shall provide visible notification appliances complying with applicable sections in 18.5 of NFPA 72 (incorporated by reference, see ''Referenced Standards'' in Chapter 1).

V806.3.3.2 General Alarm Activation. Visible notification appliances provided in guest rooms for the general emergency alarm systems shall be activated upon activation of the passenger vessel general emergency alarm.

V806.3.3.3 Smoke Detector Activation. Visible notification appliances provided in guest rooms for smoke detectors shall be activated upon activation of the smoke detectors.

V806.3.4 Visible Devices. Visible devices shall be provided to alert room occupants of incoming telephone calls and a door knock or bell. Visible devices shall not be connected to visible notification appliances required by V806.3.1 and V806.3.2. Telephones shall have volume controls compatible with the telephone system and shall comply with V704.3. Telephones shall be served by an electrical outlet complying with V309 located within 48 inches (1220 mm) of the telephone to facilitate the use of a TTY.

V807 Storage

V807.1 General. Storage shall comply with V807.

V807.2 Clear Deck Space. A clear deck space complying with V305 shall be provided.

V807.3 Height. Storage elements shall comply with at least one of the reach ranges specified in V308.

V807.4 Operable Parts. Operable parts shall comply with V309.

CHAPTER V 9: BUILT–IN ELEMENTS

V901 General

V901.1 Scope. The provisions of Chapter 9 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V902 Tables and Counters

V902.1 General. Tables and counters shall comply with V902.2 and V902.3.

EXCEPTION: Tables and counters for children's use shall be permitted to comply with V902.4.

V902.2 Clear Deck Space. A clear deck space complying with V305 positioned for a forward approach shall be provided. Knee and toe clearance complying with V306 shall be provided.

EXCEPTIONS: 1. Where raised seating surfaces are provided at tables or counters and the tops of the tables or counters are 15 inches (380 mm) minimum and 17 inches (430 mm) maximum above the finish deck surface, clear deck spaces shall be permitted to be positioned for parallel approaches.

2. Where the top of tables or counters is 10 inches (255 mm) maximum deep, clear deck spaces shall be permitted to be positioned for parallel approaches.

V902.3 Height. The tops of tables and counters shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish deck surface.

EXCEPTION: The top of tables and counters shall be permitted to be 15 inches (380 mm) minimum and 17 inches (430 mm) maximum above the finish deck surface where the clear deck spaces are allowed by V902.2 to be positioned for parallel approaches.

V902.4 Tables and Counters for Children's Use. Accessible tables and counters for children's use shall comply with V902.4.

EXCEPTION: Tables and counters that are used primarily by children, 5 years and younger, shall not be required to comply with V902.4 where a clear deck space complying with V305 positioned for a parallel approach is provided.

V902.4.1 Clear Deck Space. A clear deck space complying with V305 positioned for a forward approach shall be provided. Knee and toe clearance complying with V306 shall be provided, except that knee clearance 24 inches (610 mm) minimum above the finish deck surface shall be permitted.

V902.4.2 Height. The tops of tables and counters shall be 26 inches (660 mm) minimum and 30 inches (760 mm) maximum above the finish deck surface.

V903 Benches

V903.1 General. Benches shall comply with V903.

V903.2 Clear Deck Space. Clear deck space complying with V305 shall be provided and shall be positioned at the end of the bench seat and parallel to the short axis of the bench.

V903.3 Size. Benches shall have seats that are 42 inches (1065 mm) long minimum and 20 inches (510 mm) deep minimum and 24 inches (610 mm) deep maximum.

V903.4 Back Support. The bench shall provide for back support or shall be affixed to a wall. Back support shall be 42 inches (1065 mm) long minimum and shall extend from a point 2 inches (51 mm) maximum above the seat surface to a point 18 inches (455 mm) minimum above the seat surface. Back support shall be 2½ inches (64 mm) maximum from the rear edge of the seat measured horizontally.

V903.5 Height. The top of the bench seat surface shall be 17 inches (430 mm) minimum and 19 inches (485 mm) maximum above the finish deck surface.

V903.6 Structural Strength. Allowable stresses shall not be exceeded for materials used when a vertical or horizontal force of 250 pounds (1112 N) is applied at any point on the seat, fastener, mounting device, or supporting structure.

V903.7 Wet Locations. Where installed in wet locations, the surface of the seat shall be slip resistant and shall not accumulate water.

V904 Sales and Service Counters

V904.1 General. Check-out aisles and sales and service counters shall comply with the applicable requirements of V904.

V904.2 Approach. All portions of counters required to comply with V904 shall be located adjacent to a walking surface complying with V403.

V904.3 Check-Out Aisles. Check-out aisles shall comply with V904.3.

V904.3.1 Aisle. Aisles shall comply with V403.

V904.3.2 Counter. The counter surface height shall be 38 inches (965 mm) maximum above the finish deck surface. The top of the counter edge protection shall be 2 inches (51 mm) maximum above the top of the counter surface on the aisle side of the check-out counter.

V904.3.3 Check Writing Surfaces. Where provided, check writing surfaces shall comply with V902.3.

V904.4 Sales and Service Counters. Sales counters and service counters shall comply with V904.4.1 or V904.4.2. The accessible portion of the counter top shall extend the same depth as the sales or service counter top.

EXCEPTION: In alterations, when the provision of a counter complying with V904.4 would result in a reduction of the number of existing counters at work stations or a reduction of the number of existing mail boxes, the counter shall be permitted to have a portion which is 24 inches (610 mm) long minimum complying with V904.4.1 provided that the required clear deck space is centered on the accessible length of the counter.

V904.4.1 Parallel Approach. A portion of the counter surface that is 36 inches (915 mm) long minimum and 36 inches (915 mm) high maximum above the finish deck surface shall be provided. A clear deck space complying with V305 shall be positioned for a parallel approach adjacent to the 36 inch (915 mm) minimum length of counter.

EXCEPTION: Where the provided counter surface is less than 36 inches (915 mm) long, the entire counter surface shall be 36 inches (915 mm) high maximum above the finish deck surface.

V904.4.2 Forward Approach. A portion of the counter surface that is 30 inches (760 mm) long minimum by 36 inches (915 mm) high maximum shall be provided. Knee and toe space complying with V306 shall be provided under the counter. A clear deck space complying with V305 shall be positioned for a forward approach to the counter.

V904.5 Food Service Lines. Counters in food service lines shall comply with V904.5.

V904.5.1 Self-Service Shelves and Dispensing Devices. Self-service shelves and dispensing devices for tableware, dishware, condiments, food, and beverages shall comply with V308.

V904.5.2 Tray Slides. The tops of tray slides shall be 28 inches (710 mm) minimum and 34 inches (865 mm) maximum above the finish deck surface.

V904.6 Security Glazing. Where counters or teller windows have security glazing to separate employees from the passengers, a method to facilitate voice communication shall be provided. Telephone handset devices, if provided, shall comply with V704.3.

CHAPTER V 10: RECREATION FACILITIES

V1001 General

V1001.1 Scope. The provisions of Chapter 10 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

V1002 Exercise Machines and Equipment

V1002.1 Clear Deck Space. Exercise machines and equipment shall have a clear deck space complying with V305 positioned for transfer or for use by an individual seated in a wheelchair. Clear deck spaces required at exercise machines and equipment shall be permitted to overlap.

V1003 Miniature Golf Facilities

V1003.1 General. Miniature golf facilities shall comply with V1003.

V1003.2 Accessible Routes. Accessible routes serving holes on miniature golf courses shall comply with V402. Accessible routes located on playing surfaces of miniature golf holes shall be permitted to use the exceptions in V1003.2.

EXCEPTIONS: 1. Playing surfaces shall not be required to comply with V302.2.

2. Where accessible routes intersect playing surfaces of holes, a 1 inch (25 mm) maximum curb shall be permitted for a width of 32 inches (815 mm) minimum.

3. A slope not steeper than 1:4 for a 4 inch (100 mm) maximum rise shall be permitted.

4. Ramp landing slopes specified by V405.7.1 shall be permitted to be 1:20 maximum.

5. Ramp landing length specified by V405.7.3 shall be permitted to be 48 inches (1220 mm) long minimum.

6. Ramp landing size specified by V405.7.4 shall be permitted to be 48 inches (1220 mm) minimum by 60 inches (1525 mm) minimum.

7. Handrails shall not be required on holes. Where handrails are provided on holes, the handrails shall not be required to comply with V503.

V1003.3 Miniature Golf Holes. Miniature golf holes shall comply with V1003.3.

V1003.3.1 Start of Play. A clear deck space 48 inches (1220 mm) minimum by 60 inches (1525 mm) minimum with slopes not steeper than 1:48 shall be provided at the start of play.

V1003.3.2 Golf Club Reach Range Area. All areas within holes where golf balls rest shall be within 36 inches (915 mm) maximum of a clear deck space 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum having a running slope not steeper than 1:20. The clear deck space shall be served by an accessible route.

V1004 Play Areas

V1004.1 General. Play areas shall comply with V1004.

V1004.2 Accessible Routes. Accessible routes serving play areas shall comply with V402 and V1004.2 and shall be permitted to use the exceptions in V1004.2.1 through V1004.2.3. Where accessible routes serve ground level play components, the vertical clearance shall be 80 inches high (2030 mm) minimum.

V1004.2.1 Ground Level and Elevated Play Components. Accessible routes serving ground level play components and elevated play components shall be permitted to use the exceptions in V1004.2.1.

EXCEPTIONS: 1. Transfer systems complying with V1004.3 shall be permitted to connect elevated play components except where 20 or more elevated play components are provided no more than 25 percent of the elevated play components shall be permitted to be connected by transfer systems.

2. Where transfer systems are provided, an elevated play component shall be permitted to connect to another elevated play component as part of an accessible route.

V1004.2.2 Soft Contained Play Structures. Accessible routes serving soft contained play structures shall be permitted to use the exception in V1004.2.2.

EXCEPTION: Transfer systems complying with V1004.3 shall be permitted to be used as part of an accessible route.

V1004.2.3 Water Play Components. Accessible routes serving water play components shall be permitted to use the exceptions in V1004.2.3.

EXCEPTIONS: 1. Where the surface of the accessible route, clear deck spaces, or turning spaces serving water play components is submerged, compliance with V302, V403.3, V405.2, V405.3, and V1004.2.6 shall not be required.

2. Transfer systems complying with V1004.3 shall be permitted to connect elevated play components in water.

V1004.2.4 Clear Width. Accessible routes connecting play components shall provide a clear width complying with V1004.2.4.

V1004.2.4.1 Ground Level. At ground level, the clear width of accessible routes shall be 60 inches (1525 mm) minimum.

EXCEPTIONS: 1. In play areas less than 1000 square feet (92 m^2), the clear width of accessible routes shall be permitted to be 44 inches (1120 mm) minimum provided that at least one turning space complying with V304.3 is provided where the restricted accessible route exceeds 30 feet (9.14 m) in length.

2. The clear width of accessible routes shall be permitted to be 36 inches (915 mm) minimum for a distance of 60 inches (1525 mm) maximum provided that multiple reduced width segments are separated by segments that are 60 inches (1525 mm) wide minimum and 60 inches (1525 mm) long minimum.

V1004.2.4.2 Elevated. The clear width of accessible routes connecting elevated play components shall be 36 inches (915 mm) minimum.

EXCEPTIONS: 1. The clear width of accessible routes connecting elevated play components shall be permitted to be reduced to 32 inches (815 mm) minimum for a distance of 24 inches (610 mm) maximum if reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

2. The clear width of transfer systems connecting elevated play components shall be permitted to be 24 inches (610 mm) minimum.

V1004.2.5 Ramps. Within play areas, ramps connecting ground level play components and ramps connecting elevated play components shall comply with V1004.2.5.

V1004.2.5.1 Ground Level. Ramp runs connecting ground level play components shall have a running slope not steeper than 1:16.

V1004.2.5.2 Elevated. The rise for any ramp run connecting elevated play components shall be 12 inches (305 mm) maximum.

V1004.2.5.3 Handrails. Where required on ramps serving play components, the handrails shall comply with V503, except as modified by V1004.2.5.3.

EXCEPTIONS: 1. Handrails shall not be required on ramps located within ground level use zones.

2. Handrail extensions shall not be required.

V1004.2.5.3.1 Handrail Gripping Surfaces. Handrail gripping surfaces with a circular cross section shall have an outside diameter of 0.95 inches (24 mm) minimum and 1.55 inches (39 mm) maximum. Where the shape of the gripping surface is non-circular, the handrail shall provide an equivalent gripping surface.

V1004.2.5.3.2 Handrail Height. The top of handrail gripping surfaces shall be 20 inches (510 mm) minimum and 28 inches (710 mm) maximum above the ramp surface.

V1004.2.6 Ground Surfaces. Deck surfaces on accessible routes, clear deck spaces, and turning spaces shall comply with V1004.2.6.

V1004.2.6.1 Accessibility. Deck surfaces shall comply with ASTM F1951 (incorporated by reference, see ''Referenced Standards'' in Chapter 1). Ground surfaces shall be inspected and maintained regularly and frequently to ensure continued compliance with ASTM F1951.

V1004.2.6.2 Use Zones. Deck surfaces located within use zones shall comply with ASTM F1292 (1999 edition or 2004 edition) (incorporated by reference, see ''Referenced Standards'' in Chapter 1).

V1004.3 Transfer Systems. Where transfer systems are provided to connect to elevated play components, transfer systems shall comply with V1004.3.

V1004.3.1 Transfer Platforms. Transfer platforms shall be provided where transfer is intended from wheelchairs or other mobility aids. Transfer platforms shall comply with V1004.3.1.

V1004.3.1.1 Size. Transfer platforms shall have level surfaces 14 inches (355 mm) deep minimum and 24 inches (610 mm) wide minimum.

V1004.3.1.2 Height. The height of transfer platforms shall be 11 inches (280 mm) minimum and 18 inches (455 mm) maximum measured to the top of the surface from the deck surface.

V1004.3.1.3 Transfer Space. A transfer space complying with V305.2 and V305.3 shall be provided adjacent to the transfer platform. The 48 inch (1220 mm) long minimum dimension of the transfer space shall be centered on and parallel to the 24 inch (610 mm) long minimum side of the transfer platform. The side of the transfer platform serving the transfer space shall be unobstructed.

V1004.3.1.4 Transfer Supports. At least one means of support for transferring shall be provided.

V1004.3.2 Transfer Steps. Transfer steps shall be provided where movement is intended from transfer platforms to levels with elevated play components required to be on accessible routes. Transfer steps shall comply with V1004.3.2.

V1004.3.2.1 Size. Transfer steps shall have level surfaces 14 inches (355 mm) deep minimum and 24 inches (610 mm) wide minimum.

V1004.3.2.2 Height. Each transfer step shall be 8 inches (205 mm) high maximum.

V1004.3.2.3 Transfer Supports. At least one means of support for transferring shall be provided.

V1004.4 Play Components. Ground level play components on accessible routes and elevated play components connected by ramps shall comply with V1004.4.

V1004.4.1 Turning Space. At least one turning space complying with V304 shall be provided on the same level as play components. Where swings are provided, the turning space shall be located immediately adjacent to the swing.

V1004.4.2 Clear Deck Space. Clear deck space complying with V305.2 and V305.3 shall be provided at play components.

V1004.4.3 Play Tables. Where play tables are provided, knee clearance 24 inches (610 mm) high minimum, 17 inches deep (430 mm) minimum, and 30 inches (760 mm) wide minimum shall be provided. The tops of rims, curbs, or other obstructions shall be 31 inches (785 mm) high maximum.

EXCEPTION: Play tables designed and constructed primarily for children 5 years and younger shall not be required to provide knee clearance where the clear deck space required by V1004.4.2 is arranged for a parallel approach.

V1004.4.4 Entry Points and Seats. Where play components require transfer to entry points or seats, the entry points or seats shall be 11 inches (280 mm) minimum and 24 inches (610 mm) maximum from the clear deck space.

EXCEPTION: Entry points of slides shall not be required to comply with V1004.4.4.

V1004.4.5 Transfer Supports. Where play components require transfer to entry points or seats, at least one means of support for transferring shall be provided.

V1005 Swimming Pools, Wading Pools, and Spas

V1005.1 General. Where provided, pool lifts, sloped entries, transfer walls, transfer systems, and pool stairs shall comply with V1005.

V1005.2 Pool Lifts. Pool lifts shall comply with V1005.2.

V1005.2.1 Seat Location. In the raised position, the centerline of the seat shall be located over the deck surface and 16 inches (405 mm) minimum from the edge of the pool. The deck surface between the centerline of the seat and the pool edge shall have a slope not steeper than 1:48.

V1005.2.2 Clear Deck Space. On the side of the seat opposite the water, a clear deck space shall be provided parallel with the seat. The space shall be 36 inches (915 mm) wide minimum and shall extend forward 48 inches (1220 mm) minimum from a line located 12 inches (305 mm) behind the rear edge of the seat. The clear deck space shall have a slope not steeper than 1:48.

V1005.2.3 Seat Height. The height of the lift seat shall be designed to allow a stop at 16 inches (405 mm) minimum to 19 inches (485 mm) maximum measured from the deck surface to the top of the seat surface when in the raised (load) position.

V1005.2.4 Seat Width. The seat shall be 16 inches (405 mm) wide minimum.

V1005.2.5 Footrests and Armrests. Footrests shall be provided and shall move with the seat. If provided, the armrest positioned opposite the water shall be removable or shall fold clear of the seat when the seat is in the raised (load) position.

EXCEPTION: Footrests shall not be required on pool lifts provided in spas.

V1005.2.6 Operation. The lift shall be capable of unassisted operation from both the deck surface and water levels. Controls and operating mechanisms shall be unobstructed when the lift is in use and shall comply with V309.4.

V1005.2.7 Submerged Depth. The lift shall be designed so that the seat will submerge to a water depth of 18 inches (455 mm) minimum below the stationary water level.

V1005.2.8 Lifting Capacity. Single person pool lifts shall have a weight capacity of 300 pounds (136 kg) minimum and be capable of sustaining a static load of at least one and a half times the rated load.

V1005.3 Sloped Entries. Sloped entries shall comply with V1005.3.

V1005.3.1 Sloped Entries. Sloped entries shall comply with V402 except as modified in V1005.3.1 through V1005.3.3.

EXCEPTION: Where sloped entries are provided, the surfaces shall not be required to be slip resistant.

V1005.3.2 Submerged Depth. Sloped entries shall extend to a depth of 24 inches (610 mm) minimum and 30 inches (760 mm) maximum below the stationary water level. Where landings are required by V405.7, at least one landing shall be located 24 inches (610 mm) minimum and 30 inches (760 mm) maximum below the stationary water level.

EXCEPTION: In wading pools, the sloped entry and landings, if provided, shall extend to the deepest part of the wading pool.

V1005.3.3 Handrails. At least two handrails complying with V503 shall be provided on the sloped entry. The clear width between required handrails shall be 33 inches (840 mm) minimum and 38 inches (965 mm) maximum.

EXCEPTIONS: 1. Handrail extensions specified by V503.10.1 shall not be required at the bottom landing serving a sloped entry.

2. Where a sloped entry is provided for wave action pools, leisure rivers, sand bottom pools, and other pools where user access is limited to one area, the handrails shall not be required to comply with the clear width requirements of V1005.3.3.

3. Sloped entries in wading pools shall not be required to provide handrails complying with V1005.3.3. If provided, handrails on sloped entries in wading pools shall not be required to comply with V503.

V1005.4 Transfer Walls. Transfer walls shall comply with V1005.4.

V1005.4.1 Clear Deck Space. A clear deck space of 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer wall. Where one grab bar is provided, the clear deck space shall be centered on the grab bar. Where two grab bars are provided, the clear deck space shall be centered on the clearance between the grab bars.

V1005.4.2 Height. The height of the transfer wall shall be 16 inches (405 mm) minimum and 19 inches (485 mm) maximum measured from the deck surface.

V1005.4.3 Wall Depth and Length. The depth of the transfer wall shall be 12 inches (305 mm) minimum and 16 inches (405 mm) maximum. The length of the transfer wall shall be 60 inches (1525 mm) minimum and shall be centered on the clear deck space.

V1005.4.4 Surface. Surfaces of transfer walls shall not be sharp and shall have rounded edges.

V1005.4.5 Grab Bars. At least one grab bar complying with V609 shall be provided on the transfer wall. Grab bars shall be perpendicular to the pool wall and shall extend the full depth of the transfer wall. The top of the gripping surface shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above transfer walls. Where one grab bar is provided, clearance shall be 24 inches (610 mm) minimum on both sides of the grab bar. Where two grab bars are provided, clearance between grab bars shall be 24 inches (610 mm) minimum.

EXCEPTION: Grab bars on transfer walls shall not be required to comply with V609.4.

V1005.5 Transfer Systems. Transfer systems shall comply with V1005.5.

V1005.5.1 Transfer Platform. A transfer platform shall be provided at the head of each transfer system. Transfer platforms shall provide 19 inches (485 mm) minimum clear depth and 24 inches (610 mm) minimum clear width.

V1005.5.2 Transfer Space. A transfer space of 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum with a slope not steeper than 1:48 shall be provided at the base of the transfer platform surface and shall be centered along a 24 inch (610 mm) minimum side of the transfer platform. The side of the transfer platform serving the transfer space shall be unobstructed.

V1005.5.3 Height. The height of the transfer platform shall comply with V1005.4.2.

EXCEPTION: Transfer platforms which serve wading pools are permitted to have a height of 11 inches (280 mm) minimum and 18 inches (455 mm) maximum measured to the top of the platform surface from the deck surface.

V1005.5.4 Transfer Steps. Transfer step height shall be 8 inches (205 mm) maximum. The surface of the bottom tread shall extend to a water depth of 18 inches (455 mm) minimum below the stationary water level.

EXCEPTION: In wading pools where the depth of the water is less than 18 inches (455 mm), the water depth of the bottom tread surface is permitted to be equal to the depth of the pool.

V1005.5.5 Surface. The surface of the transfer system shall not be sharp and shall have rounded edges.

V1005.5.6 Size. Each transfer step shall have a tread clear depth of 14 inches (355 mm) minimum and 17 inches (430 mm) maximum and shall have a tread clear width of 24 inches (610 mm) minimum.

V1005.5.7 Grab Bars. At least one grab bar on each transfer step and the transfer platform or a continuous grab bar serving each transfer step and the transfer platform shall be provided. Where a grab bar is provided on each step, the tops of gripping surfaces shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above each step and transfer platform. Where a continuous grab bar is provided, the top of the gripping surface shall be 4 inches (100 mm) minimum and 6 inches (150 mm) maximum above the step nosing and transfer platform. Grab bars shall comply with V609 and be located on at least one side of the transfer system. The grab bar located at the transfer platform shall not obstruct transfer.

EXCEPTION: Grab bars on transfer systems shall not be required to comply with V609.4.

V1005.6 Pool Stairs. Pool stairs shall comply with V1005.6.

V1005.6.1 Pool Stairs. Pool stairs shall comply with V502.

V1005.6.2 Handrails. The width between handrails shall be 20 inches (510 mm) minimum and 24 inches (610 mm) maximum.

V1006 Shooting Positions

V1006.1 Turning Space. A circular turning space 60 inches (1525 mm) diameter minimum with slopes not steeper than 1:48 shall be provided at shooting positions.

CHAPTER V 11: TENDERS

V1101 General. Tenders shall comply with the provisions of Chapter 11 where required by V201.1.3.

V1102 Wheelchair Spaces. At least two wheelchair spaces shall be provided and shall comply V1102.

V1102.1 Deck Surface. The deck surface of wheelchair spaces shall comply with V302. Changes in level are not permitted.

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

V1102.2 Width. A single wheelchair space shall be 36 inches (915 mm) wide minimum. Where two adjacent wheelchair spaces are provided, each wheelchair space shall be 33 inches (840 mm) wide minimum.

V1102.3 Depth. Wheelchair spaces shall be 48 inches (1220 mm) deep minimum.

V1102.4 Securement. Wheelchair spaces shall be provided with securement systems which limit the movement of occupied wheelchairs or mobility aids under normal tender operating conditions.

V1103 Onboard Accessible Route. At least one onboard accessible route complying with V402 shall connect each wheelchair space to the entry and departure points of the tender used by passengers in non-emergency conditions serving the seating area in which the wheelchair space is located.

Figure V407.4.7.1.3 Elevator Control Button Identification

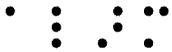
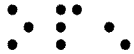
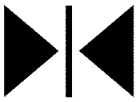
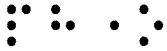
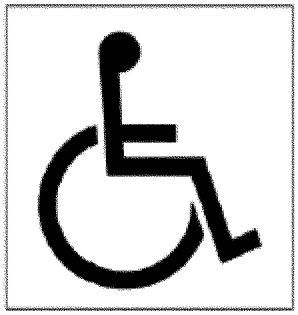
Control Button	Tactile Symbol	Braille Message
Emergency Stop		 "ST"OP Three cells
Alarm		 AL"AR"M Four cells
Door Open		 OP"EN" Three cells
Door Close		 CLOSE Five cells
Entry Deck		 MA"IN" Three cells
Phone		 PH"ONE" Four cells

Figure V703.7.2.1 International Symbol of Accessibility



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