A17.1-1990. The highest operable part of a two-way communication system shall be a maximum of 48 in (1220 mm) from the floor of the car. It shall be identified by a raised symbol and lettering complying with 4.30 and located adjacent to the device. If the system uses a handset then the length of the cord from the panel to the handset shall be at least 29 in (735 mm). If the system is located in a closed compartment the compartment door hardware shall conform to 4.27, Controls and Operating Mechanisms. The emergency intercommunication system shall not require voice communication.

4.11 Platform Lifts *(Wheelchair Lifts).*

4.11.1 Location. *Platform lifts (wheelchair lifts) permitted by 4.1 shall comply with the requirements of 4.11.*

4.11.2* Other Requirements. If platform lifts *(wheelchair lifts)* are used, they shall comply with 4.2.4, 4.5, 4.27, and *ASME A17.1 Safety Code for Elevators and Escalators, Section XX, 1990.*

4.11.3 Entrance. *If platform lifts are used then they shall facilitate unassisted entry, operation, and exit from the lift in compliance with 4.11.2.*

4.12 Windows.

4.12.1* General. *(Reserved).*

4.12.2* Window Hardware. *(Reserved).*

4.13 Doors.

4.13.1 General. *Doors required to be accessible by 4.1* shall comply with the requirements of 4.13.

4.13.2 Revolving Doors and Turnstiles. Revolving doors or turnstiles shall not be the only means of passage at an accessible entrance or along an accessible route. *An accessible gate or door shall be provided adjacent to the turnstile or revolving door and shall be so designed as to facilitate the same use pattern.*

4.13.3 Gates. Gates, including ticket gates, shall meet all applicable specifications of 4.13.

4.13.4 Double-Leaf Doorways. If doorways have two *independently operated* door leaves, then at least one leaf shall meet the specifications in 4.13.5 and 4.13.6. That leaf shall be an active leaf.

4.13.5 Clear Width. Doorways shall have a minimum clear opening of 32 in (815 mm) with the door open 90 degrees, measured between the face of the door and the *opposite* stop (see Fig. 24(a), (b), (c), and (d)). Openings more than 24 in (610 mm) in depth shall comply with 4.2.1 and 4.3.3 (see Fig. 24(e)).

EXCEPTION: Doors not requiring full user passage, such as shallow closets, may have the clear opening reduced to 20 in (510 mm) minimum.

4.13.6 Maneuvering Clearances at Doors. Minimum maneuvering clearances at doors that are not automatic or power-assisted shall be as shown in Fig. 25. The floor or ground area within the required clearances shall be level and clear.

EXCEPTION: Entry doors to acute care hospital bedrooms for in-patients shall be exempted from the requirement for space at the latch side of the door (see dimension "x" in Fig. 25) if the door is at least 44 in (1120 mm) wide.

4.13.7 Two Doors in Series. The minimum space between two hinged or pivoted doors in series shall be 48 in (1220 mm) plus the width of any door swinging into the space. Doors in series shall swing either in the same direction or away from the space between the doors (see Fig. 26).

4.13.8* Thresholds at Doorways. Thresholds at doorways shall not exceed 3/4 in (19 mm) in height for exterior sliding doors or 1/2 in (13 mm) for other types of doors. Raised thresholds and floor level changes at accessible doorways shall be beveled with a slope no greater than 1:2 (see 4.5.2).

4.13.9* Door Hardware. Handles, pulls, latches, locks, and other operating devices on accessible doors shall have a shape that is

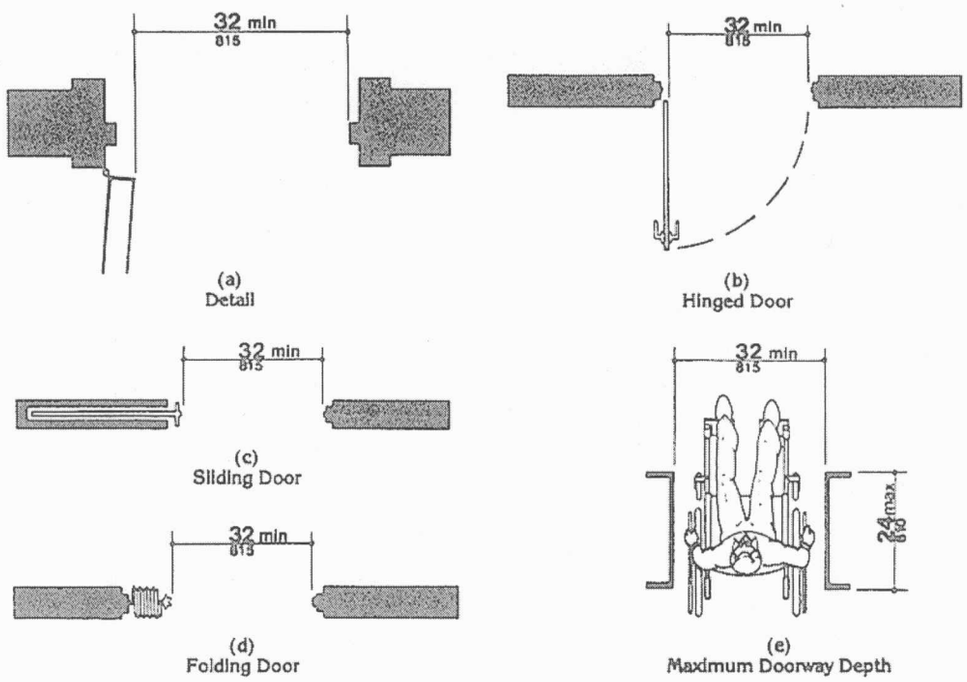


Fig. 24
Clear Doorway Width and Depth

easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist to operate. Lever-operated mechanisms, push-type mechanisms, and U-shaped handles are acceptable designs. When sliding doors are fully open, operating hardware shall be exposed and usable from both sides. *Hardware required for accessible door passage shall be mounted no higher than 48 in (1220 mm) above finished floor.*

4.13.10* Door Closers. If a door has a closer, then the sweep period of the closer shall be adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3 in (75 mm) from the latch, measured to the leading edge of the door.

4.13.11* Door Opening Force. The maximum force for pushing or pulling open a door shall be as follows:

(1) Fire doors shall have the minimum opening force allowable by the appropriate administrative authority.

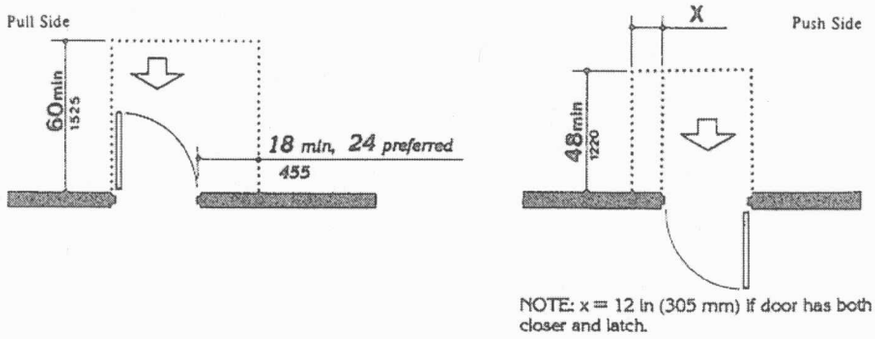
(2) Other doors.

(a) exterior hinged doors: (Reserved).

(b) interior hinged doors: 5 lbf (22.2N)

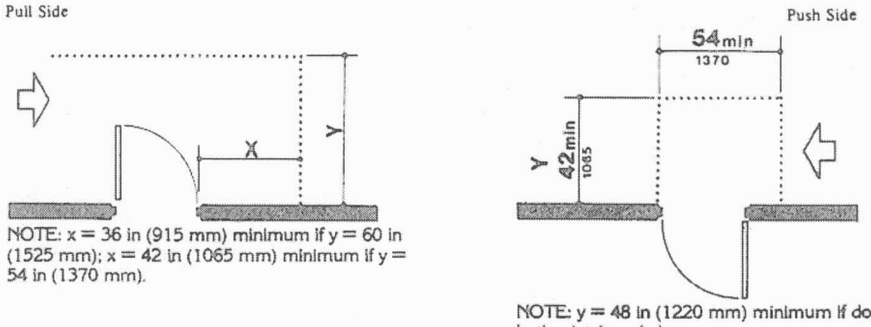
(c) sliding or folding doors: 5 lbf (22.2N)

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



NOTE: x = 12 in (305 mm) if door has both a closer and latch.

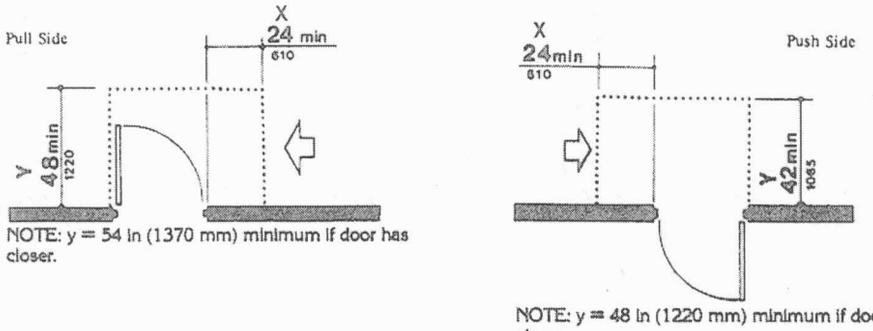
(a)
Front Approaches — Swinging Doors



NOTE: x = 36 in (915 mm) minimum if y = 60 in (1525 mm); x = 42 in (1065 mm) minimum if y = 54 in (1370 mm).

NOTE: y = 48 in (1220 mm) minimum if door has both a latch and closer.

(b)
Hinge Side Approaches — Swinging Doors



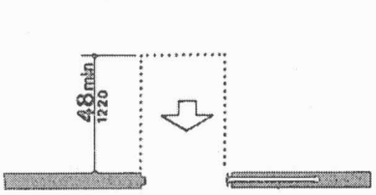
NOTE: y = 54 in (1370 mm) minimum if door has closer.

NOTE: y = 48 in (1220 mm) minimum if door has closer.

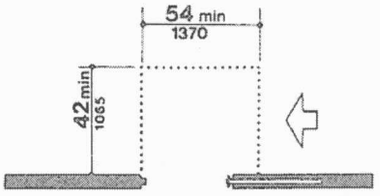
(c)
Latch Side Approaches — Swinging Doors

NOTE: All doors in alcoves shall comply with the clearances for front approaches.

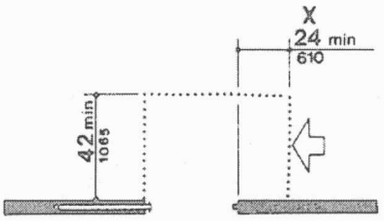
Fig. 25
Maneuvering Clearances at Doors



(d)
Front Approach — Sliding Doors *and Folding Doors*



(e)
Slide Side Approach — Sliding Doors *and Folding Doors*



(f)
Latch Side Approach — Sliding Doors *and Folding Doors*

NOTE: All doors in alcoves shall comply with the clearances for front approaches.

Fig. 25
Maneuvering Clearances at Doors *(Continued)*

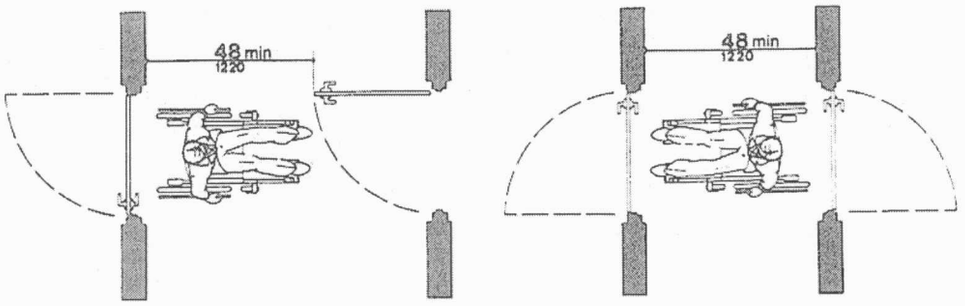


Fig. 26
Two Hinged Doors in Series

4.13.12* Automatic Doors and Power-Assisted Doors. If an automatic door is used, then it shall comply with *ANSI/BHMA A156.10-1985.* Slowly opening, *low-powered,* automatic doors shall comply with *ANSI A156.19-1984.* Such doors shall not open to back check faster than 3 seconds and shall require no more than 15 lbf (66.6N) to stop door movement. If a power-assisted door is used, its door-opening force shall comply with 4.13.11 and its closing shall conform to the requirements in *ANSI A156.19-1984.*

4.14 Entrances.

4.14.1 Minimum Number. *Entrances required to be accessible by 4.1* shall be part of an accessible route complying with 4.3. Such entrances shall be connected by an accessible route to public transportation stops, to accessible parking and passenger loading zones, and to public streets or sidewalks if available (see 4.3.2(1)). They shall also be connected by an accessible route to all accessible spaces or elements within the building or facility.

4.14.2 Service Entrances. A service entrance shall not be the sole accessible entrance unless it is the only entrance to a building or facility (for example, in a factory or garage).

4.15 Drinking Fountains and Water Coolers.

4.15.1 Minimum Number. Drinking fountains or water coolers required to be accessible by 4.1 shall comply with 4.15.

4.15.2* Spout Height. Spouts shall be no higher than 36 in (915 mm), measured from the floor or ground surfaces to the spout outlet (see Fig. 27(a)).

4.15.3 Spout Location. The spouts of drinking fountains and water coolers shall be at the front of the unit and shall direct the water flow in a trajectory that is parallel or nearly parallel to the front of the unit. The spout shall provide a flow of water at least 4 in (100 mm) high so as to allow the insertion of a cup or glass under the flow of water. *On an accessible drinking fountain with a round or oval bowl, the spout must be positioned so the flow of water is within 3 in (75 mm) of the front edge of the fountain.*

4.15.4 Controls. Controls shall comply with 4.27.4. *Unit controls shall be front mounted or side mounted near the front edge.*

4.15.5 Clearances.

(1) Wall- and post-mounted cantilevered units shall have a clear knee space between the bottom of the apron and the floor or ground at least 27 in (685 mm) high, 30 in (760 mm) wide, and 17 in to 19 in (430 mm to 485 mm) deep (see Fig. 27(a) and (b)). Such units shall also have a minimum clear floor space 30 in by 48 in (760 mm by 1220 mm) to allow a person in a wheelchair to approach the unit facing forward.

(2) Free-standing or built-in units not having a clear space under them shall have a clear floor space at least 30 in by 48 in (760 mm by 1220 mm) that allows a person in a wheelchair to make a parallel approach to the unit (see Fig. 27(c) and (d)). This clear floor space shall comply with 4.2.4.

4.16 Water Closets.

4.16.1 General. Accessible water closets shall comply with 4.16.

4.16.2 Clear Floor Space. Clear floor space for water closets not in stalls shall comply with Fig. 28. Clear floor space may be arranged to allow either a left-handed or right-handed approach.

4.16.3* Height. The height of water closets shall be 17 in to 19 in (430 mm to 485 mm), measured to the top of the toilet seat (see Fig. 29(b)). *Seats shall not be sprung to return to a lifted position.*

4.16.4* Grab Bars. Grab bars for water closets not located in stalls shall comply with 4.26 and Fig. 29. *The grab bar behind the water closet shall be 36 in (915 mm) minimum.*

4.16.5* Flush Controls. Flush controls shall be hand operated *or automatic* and shall comply with 4.27.4. Controls for flush valves