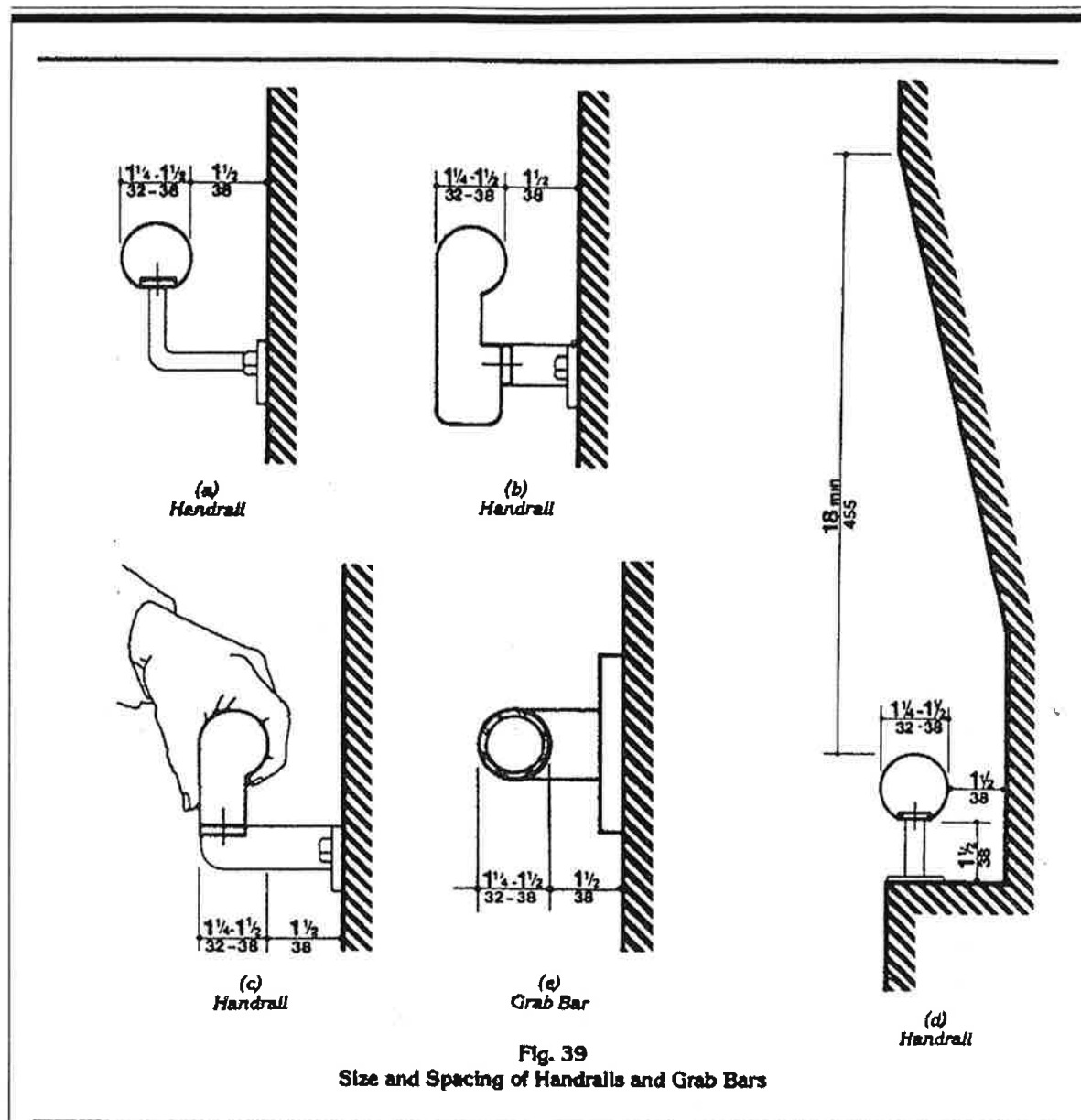


4.26 Handrails, Grab Bars, and Tub and Shower Seats



4.26.4 Eliminating Hazards. A handrail or grab bar and any wall or other surface adjacent to it shall be free of any sharp or abrasive elements. Edges shall have a minimum radius of 1/8 in (3.2 mm).

4.27 Controls and Operating Mechanisms.

4.27.1 General. Controls and operating mechanisms required to be accessible by 4.1 shall comply with 4.27.

4.28 Alarms

4.27.2 Clear Floor Space. Clear floor space complying with 4.2.4 that allows a forward or a parallel approach by a person using a wheel-chair shall be provided at controls, dispensers, receptacles, and other operable equipment.

4.27.3* Height. The highest operable part of controls, dispensers, receptacles, and other operable equipment shall be placed within at least one of the reach ranges specified in 4.2.5 and 4.2.6. Electrical and communications system receptacles on walls shall be mounted no less than 15 in (380 mm) above the floor.

EXCEPTION: These requirements do not apply where the use of special equipment dictates otherwise or where electrical and communications systems receptacles are not normally intended for use by building occupants.

4.27.4 Operation. Controls and operating mechanisms shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls shall be no greater than 5 lbf (22.2 N).

4.28 Alarms.

4.28.1 General. Alarm systems required to be accessible by 4.1 shall comply with 4.28. At a minimum, visual signal appliances shall be provided in buildings and facilities in each of the following areas: restrooms and any other general usage areas (e.g., meeting rooms), hallways, lobbies, and any other area for common use.

4.28.2* Audible Alarms. If provided, audible emergency alarms shall produce a sound that exceeds the prevailing equivalent sound level in the room or space by at least 15 dbA or exceeds any maximum sound level with a duration of 60 seconds by 5 dbA, whichever is louder. Sound levels for alarm signals shall not exceed 120 dbA.

4.28.3* Visual Alarms. Visual alarm signal appliances shall be integrated into the building or facility alarm system. If single station audible alarms are provided then single station visual alarm signals shall be provided. Visual alarm signals shall have the following minimum photometric and location features:

(1) The lamp shall be a xenon strobe type or equivalent.

(2) The color shall be clear or nominal white (i.e., unfiltered or clear filtered white light).

(3) The maximum pulse duration shall be two-tenths of one second (0.2 sec) with a maximum duty cycle of 40 percent. The pulse duration is defined as the time interval between initial and final points of 10 percent of maximum signal.

(4) The intensity shall be a minimum of 75 candela.

(5) The flash rate shall be a minimum of 1 Hz and a maximum of 3 Hz.

(6) The appliance shall be placed 80 in (2030 mm) above the highest floor level within the space or 6 in (152 mm) below the ceiling, whichever is lower.

(7) In general, no place in any room or space required to have a visual signal appliance shall be more than 50 ft (15 m) from the signal (in the horizontal plane). In large rooms and spaces exceeding 100 ft (30 m) across, without obstructions 6 ft (2 m) above the finish floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum 100 ft (30 m) apart, in lieu of suspending appliances from the ceiling.

(8) No place in common corridors or hallways in which visual alarm signalling appliances are required shall be more than 50 ft (15 m) from the signal.

4.28.4* Auxiliary Alarms. Units and sleeping accommodations shall have a visual alarm connected to the building emergency alarm system or shall have a standard 110-volt electrical receptacle into which such an alarm can be connected and a means by which a signal from the building emergency alarm system can trigger such an auxiliary alarm. When visual alarms are in place the signal shall be visible in all areas of the unit or room. Instructions for use of the auxiliary alarm or receptacle shall be provided.

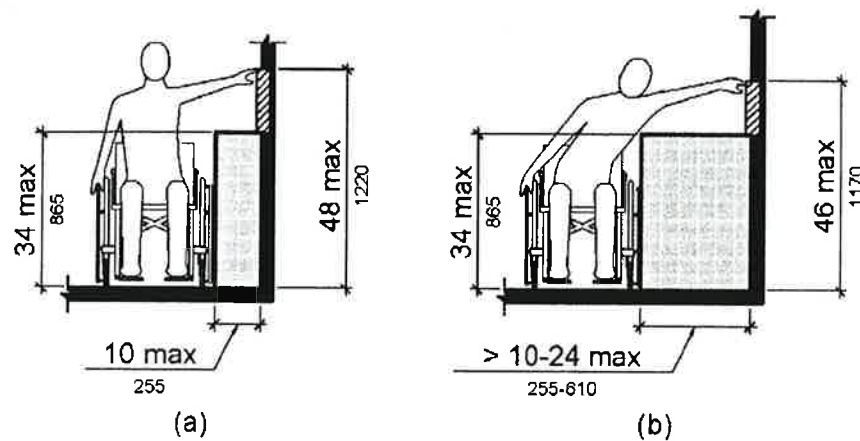


Figure 308.3.2
Obstructed High Side Reach

309 Operable Parts

309.1 General. *Operable parts* shall comply with 309.

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

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

309.4 Operation. *Operable parts* shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate *operable parts* shall be 5 pounds (22.2 N) maximum.

EXCEPTION: Gas pump nozzles shall not be required to provide *operable parts* that have an activating force of 5 pounds (22.2 N) maximum.

DESIGN VALIDATION REQUIREMENTS

PROJECT NAME: ADA Turn Knobs
 ORIGINATOR: Tom Boone

DATE: 10-02-03
 ESR: 02-0316

Specific Validation Requirments Summary:

Turn knob cylinder that is ADA compliant - specifically
compliant against ADA 4.27.4

Testing or Trials Performed:

Assemble turn knob cylinder in 4500 Series deadbolt and
measure force to extend and retract bolt.

Method:

Using push-pull force meter fully extend and then
fully retract bolt.

Results:

Maximum Force attained was 3 lbs. Less than 5 is
ADA compliant against ADA 4.27.4.

Certifications Obtained: Compliant with ADA 4.27.4

Signature Approvals:

Originator:	<u>Tom Boone</u>	<u>TAB</u>	
Engineering:	<u>Tom Boone</u>	<u>TAB</u>	
Marketing:	<u>Mike Phillips</u>	<u>[Signature]</u>	
Manufacturing:	<u>Darvin Richardson</u>	<u>[Signature]</u>	
Q.A.	<u>Fred Slight</u>	<u>[Signature]</u>	
Material:	<u>Barbara Lynch</u>	<u>BDL</u>	
Brass Mill: Customer Service	<u>Nicole Hitzfield</u>	<u>[Signature]</u>	
V.P.: OEM Sales	<u>Don Harrelson</u>	<u>[Signature]</u>	
Other:	<u>Mike Kirkpatrick</u>	<u>[Signature]</u>	
Purchasing	<u>Ken Mills</u>	<u>[Signature]</u>	

Retention Period: See ENOP-16-01 Control of Quality Records.

DESIGN VALIDATION REQUIREMENTS

PROJECT NAME: ADA Turn Knobs
 ORIGINATOR: Tom Boone

DATE: 5-20-04
 ESR: 02-0316

Specific Validation Requirements Summary:

3. Compliance with ADA para. 4.27.4 shall be validated
using Adams Rite MS 1850 Series lock.

Testing or Trials Performed:

Cylinder installed in Adams Rite 1850A Lock and
used to extend and retract bolt.

Method:

Using push-pull Force gage applied a 1.25 inches from
center of plug - the force to extend and retract the
bolt is measured.

Results:

Force to extend - 2 lbs Force to retract 3 lbs Less than
5 lbs is compliant with ADA para. 4.27.4.

Certifications Obtained:

Compliance with ADA para. 4.27.4

Signature Approvals:

Originator:	<u>Tom Boone</u>	<u>TUB</u>	
Engineering:	<u>Tom Boone</u>	<u>TUB</u>	
Marketing:	<u>Mike Phillips</u>	<u>MP</u>	
Manufacturing:	<u>Darvin Richardson</u>	<u>D.R.</u>	
Q.A.	<u>Fred Slight</u>	<u>FS</u>	
Material:	<u>Barbara Lynch</u>	<u>BDL</u>	
Brass Mill: O.E.M. Sales	<u>Donnie Harrelson</u>	<u>DH</u>	
V.P.: Customer Service	<u>Nicole Hitzfield</u>	<u>NH</u>	
Other:	<u>Mike Kirkpatrick</u>	<u>MKP</u>	
Purchasing	<u>Ken Mills</u>	<u>KM</u>	

Retention Period: See ENOP-16-01 Control of Quality Records.