

Fair Housing Act Best Practices Handbook

A Guide to Accessible Design and Construction Compliance



A product of The Equal Rights Center and
Steven Winter Associates, Inc.



The Multifamily Housing Resource Program (MHRP) is a membership program within the Equal Rights Center (ERC) Corporate Partnerships and Training Program. The MHRP is a proactive collaboration with housing developers, accessibility experts, and industry professionals to increase the number of residential housing units in the United States that are accessible to persons with disabilities. The MHRP enhances housing industry compliance with federal, state, and local accessibility laws through the use of best practices, employee training, and collaboration with disability advocates.

Steven Winter Associates, Inc. (SWA) provides research, consulting and advisory services to help improve built environments for private and public sector clients nationwide. The firm’s Accessibility Compliance and Consulting Group provides regulatory and building code compliance consulting including plan reviews, field inspections, construction supervision, due diligence consulting, litigation consulting and training

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Introduction

The intent of this publication is to highlight compliance oversights made during design and construction which are common among projects subject to the Fair Housing Act (the Act). It can be used as a guide by design and construction professionals. Practical solutions to consider for mitigating oversights are offered and are based on lessons learned. This document is not a safe harbor for compliance with the Act; departures from solutions recommended in this guide are acceptable as long as the solution selected achieves compliance with the requirements of the Act.

The seven requirements of the Act are used as section headings in this guide. A brief description of the common compliance oversight is included below each section heading, followed by possible solutions to consider. Advisories provided at the end of each section are intended to supplement the solutions offered.

Reference in this document is made to the U.S. Department of Housing and Urban Development's (HUD's) Fair Housing Act Design Manual. The Design Manual is one of a number of HUD-approved safe harbors for compliance with the Act; it is referenced herein because it provides practical and easily understood guidance for compliance.

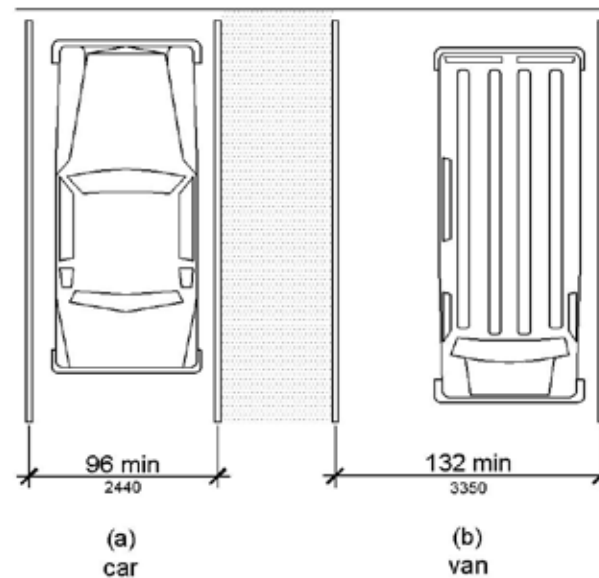


Requirement 1: Accessible building entrance on an accessible route

The Fair Housing Act (the Act) requires that every building with at least four dwelling units which is newly constructed for first occupancy on or after March 13, 1991 be served by at least one accessible entrance on an accessible route. In addition, at least one accessible route must connect the accessible building entrance with all site arrival points; unless it is impractical to do so as determined by site impracticability tests (see advisory to follow for more detail). An accessible route is a continuous, unobstructed path that is at least 36-inches wide, and connects dwelling units and building entrances to common-use amenities and features located in a building or on a site. Site arrival points include accessible parking spaces and accessible passenger loading zones, public transportation stops within the site boundary and public streets or sidewalks.

Common Compliance Oversight: Lack of Van-Accessible Parking

Areas such as leasing or sales offices within a multifamily housing development serve the general public and are not limited to residents and their guests. Spaces available to the general public which are not limited to residents and their guests are considered places of public



- Van-accessible spaces subject to the 2010 ADA Standards must be 96 inches wide where the access aisle is 96 inches wide; or, must be 132 inches wide where the access aisle is 60 inches wide. They must also be designated by signage including the words “van-accessible.” Signage must be mounted at least 60 inches

accommodation and are subject to coverage by the Americans with Disabilities Act (ADA).

When parking serves a leasing or sales office or other public use spaces within the multifamily housing development, van-accessible parking is required. Often, designated van-accessible parking in areas which serve a public use space within the multifamily housing development are not provided. Van-accessible parking differs from standard accessible parking; van-accessible parking includes more space in which a van can park, deploy its lift and support easy transfer in and out of the vehicle.

Possible Solutions:

- When projects covered by the Act include a leasing or sales office, ensure that the proper number of designated van-accessible parking spaces are provided.
- Accessible parking spaces must be on the shortest accessible route to the accessible building entrance.

above the ground, measured to the bottom of the sign. The minimum number of van-accessible parking spaces required by the 2010 ADA Standards is one out of every six accessible parking spaces, but never less than one.





Common Compliance Oversight: Excessive Slope

The accessible route connecting site arrival points with the accessible building entrance often slopes more than the maximum permitted. Accessible routes are subject to a maximum cross slope of 2% (1:50). Running slopes of walks are subject to a maximum slope of 5% (1:20); running slopes of ramps and curb ramps are subject to a maximum slope of 8.33% (1:12). A running slope greater than 5% is a ramp, and is subject to ramp criteria.

Possible Solutions:

- Indicate slopes along accessible routes in percentage. Spot elevations on civil plans are not enough to confirm compliance of every point along an entire accessible route.
- Where full ramp criteria apply on walks with running slopes in excess of 5%, ensure that compliant landings at the top and bottom of the ramp and edge protection on the ramp and landings are provided. Handrails are required whenever the rise of the ramp is more than 6 inches.

- If a route on the plans is indicated at a maximum slope of 5%, but before construction it can be determined that the running slope of the installed walk will be more than 5%, then bring it to the attention of the architect.
- Ensure that a cross slope of no more than 2% and a running slope of no more than 5% is maintained along the entire accessible route. Careful planning and oversight is required to ensure compliance.
- Where accessible routes negotiate across flared driveway entrances, compliance with the 2% maximum cross slope required along accessible routes must be maintained. It is highly recommended to incorporate tolerance into the design. In other words, consider specifying less than 2%, where possible.

Advisory

There are two tests which can be used to determine whether an accessible route connecting site arrival points to an accessible building entrance is not practical to provide; the site analysis test and the individual building test. Site impracticality cannot be determined without applying the appropriate test. See the Design Manual 1.51 for information on site impracticality.

A two-foot digital level is a common tool used to measure the slope of the finished grade. The two-foot width of the level is closer to the width of a wheelchair than the conventional four-foot level and will pick up slight grade changes which cannot be detected by a wider level. Even slight grade changes can be challenging to negotiate for people who use wheelchairs.

Be mindful of maintaining compliance with slope criteria along all parts of all accessible routes.





Requirement 2:

Accessible and usable public and common use areas

Amenities and spaces which serve residents and their guests are considered common use areas and must comply with FHA regulations. Amenities and spaces that are open to the general public such as leasing offices and their associated parking facilities are considered public use areas and must comply with the ADA requirements in addition to all applicable requirements of the FHA. The Design Manual includes a chart of elements and features subject to Requirement 2. Refer to the chart for the proper application and associated criteria.

Common Compliance Oversight: Insufficient Accessible Parking

The number of accessible parking spaces serving dwelling units must equal no less than 2% of the number of parking spaces which serve dwelling units. However, where there is more than one type of parking facility provided for residents, at least one accessible parking space in each parking facility must be provided, even if the total number of accessible parking spaces will exceed 2%. Often, only one type of parking is made accessible when other parking facilities are available.

For example, where 50 uncovered and 50 covered carport parking

spaces serve a multifamily building covered by the Act (100 total parking spaces), then no less than 2% (2 parking spaces) must be accessible. In this case, providing one uncovered accessible parking space and one accessible carport parking space meets the requirement of the Act. However, if a third type of parking facility is provided in the example above, then one additional parking space must also be accessible, even if the total number of accessible parking spaces exceeds 2% of the total parking spaces serving the project.

Possible Solutions:

- Accessible parking must be located on the shortest accessible route to the accessible building entrance.
- When common use garages and uncovered parking is available for rent or lease to residents, an accessible carport parking space in lieu of an accessible garage is permissible. However, where only individual common use garages are available, and no other parking facility type is provided, then the appropriate number of individual garages must be accessible. The Supple-





mental Notice of Fair Housing Accessibility (the Q&As) provides guidance on accessible individual garages.

- Individual garages attached to dwelling units are not required to be accessible. However, an accessible route must connect the accessible entrance of the dwelling unit with accessible parking spaces in a common use parking facility, such as the parking lot located in front of dwelling units.
- Achieving compliance with slope criteria at asphalt parking is challenging due to the nature of the material. Oversight when pouring asphalt parking lots is key. When possible, consider using parking surface material which is more stable than asphalt, such as concrete.
- When individual garages are provided in a separate garage building, in addition to uncovered parking, consider utilizing the end garage as the accessible one and installing a swing door on the side of the garage building which can be used as the accessible entry/exit. Or, provide an accessible carport in lieu of an accessible garage.

Common Compliance Oversight: Curb Ramp Creates Excessive Cross Slope

Curb ramp designs must be selected carefully. Often, the wrong type of curb ramp can result in a cross slope in excess of 2% (1:50) along the accessible route.

Possible Solutions:

- Where accessible routes negotiate the perimeter of parking, consider using parallel curb ramps in lieu of the typical flared curb ramps. When accessible routes negotiate across parallel curb ramps, compliance with the 2% maximum cross slope required along accessible routes is easily achieved.
- Ensure that the transition between curb ramps and adjoining access aisles and accessible routes is smooth and without abrupt level changes.

- Where gutters are located along the accessible route, ensure that they slope no more than 5% (1:20). Steep gutter slopes at curb ramps can be dangerous to negotiate; gradual transitions between gutters and curb ramps are required.
- Where a route of less than 48 inches wide negotiates around the top of a flared curb ramp, the slope of the flares must be no more than 8.33% (1:12). The slope of flares may be increased to 10% (1:10) where routes around the top of flared curb ramps are wider than 48 inches.
- Curb ramps must include a surface texture which warns people with visual disabilities of hazardous vehicular areas.



Common Compliance Oversight: Maneuvering Clearance Obstruction

Maneuvering clearance must be provided on both sides of doors that are a part of the accessible route. Maneuvering clearance is required to support usability of the door. Based on the approach a user makes to the door, the maneuvering clearance required varies. Often, elements obstruct maneuvering clearance and can compromise usability of the door.

Possible Solutions:

- Where dwelling unit entry doors are inset in alcoves located along a corridor and purse/package shelves are installed, ensure that the purse/package shelf does not encroach into the required latch-side maneuvering clearance.
- Ensure that wall-mounted lights, fire extinguishers and other elements located more than 27 and less than 80 inches above the finished floor (AFF), do not protrude more than 4 inches from the wall.



- Where wall-mounted lights, fire extinguishers and other elements are located more than 27 and less than 80 inches AFF, and protrude more than 4 inches from the wall, replace them with low profile models which do not project more than 4 inches from the wall; recess the elements into the wall to reduce their protrusion into the circulation space to less than 4 inches; lower the elements (such as a fire extinguisher) below 27 inches, AFF; or, raise the elements (such as wall-mounted lights) above 80 inches, AFF.

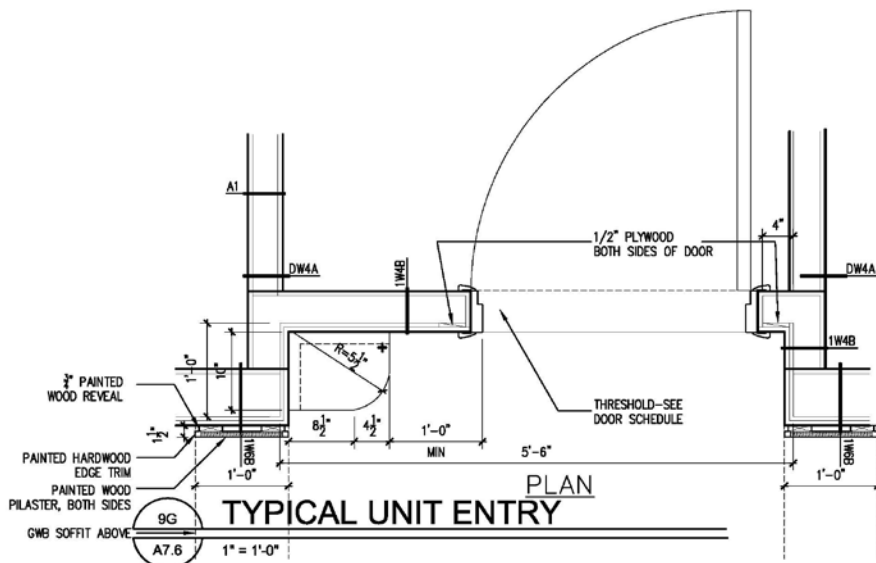


Common Compliance Oversight: Mailboxes Out of Reach

Mailboxes serving dwelling units subject to the Act must be located within accessible reach range. Often, installed mailboxes are located more than the maximum allowable side reach of 54 inches.

Possible Solutions:

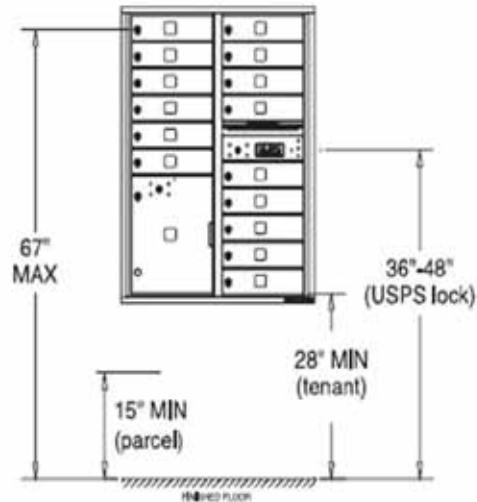
- When mailboxes serve dwelling units in elevator buildings, the operable parts of all mailboxes must be located below 54 inches AFF, when served by a side approach. When access is provided only from a front approach, operable parts such as mail slots and keyholes must be located below 48 inches, AFF.
- When mailboxes serve dwelling units in buildings not served by elevators, only mailboxes serving dwelling units located on the ground floor must be located below 54 inches, when served by a side approach. When access is provided only from a front approach, operable parts must be located below 48 inches, AFF.



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Installation requirements specified in the U.S. Postal Service STD-4C regulation are outlined below:

1. At least one customer compartment shall be positioned less than 48 inches from the finished floor.
2. No parcel locker compartment (interior bottom shelf) shall be positioned less than 15 inches from the finished floor.
3. No patron (tenant) lock shall be located more than 67 inches above the finished floor.
4. No customer compartment (interior bottom shelf) shall be positioned less than 28 inches from the finished floor.
5. The USPS Arrow lock shall be located between 36 and 48 inches above the finished floor.



- Install mailboxes according to both the requirements of the US Postal Services and the Fair Housing Amendments Act. To achieve compliance with both, the appropriate suite of mailboxes must be selected.
- Ensure that outgoing mail slots are located within accessible reach.
- Shelves installed below mailboxes should be shallow and should not obstruct reach to mailboxes.



Common Compliance Oversight: Lack of Accessible Common Use Amenities

Common use areas and amenities are those spaces outside individual dwelling units which are made available for the enjoyment of residents and their guests (such as an exercise room or game room in a community area). They differ from public use areas (such as the leasing or sales office) which are available to the general public and not limited to residents and their guests.

A sufficient number of common use amenities (at least one of each type), such as barbecues, picnic tables, fitness centers, pools, playgrounds, pet litter stations, garbage facilities, etc., must be accessible. Often, after construction is complete, management installs amenities which are not accessible. For example, picnic tables and barbecues are often installed in grassy areas not served by an accessible route.

Possible Solutions:

- Where possible, add features, such as pet litter stations, trash facilities, etc., along the accessible route as opposed to bringing



the accessible route to the feature.

- In instances where there are two of the same type of amenity (e.g., two lap pools), at least one must be located along an accessible route.
- Within a common use area, at least one of each type of appliance or equipment must be accessible. For example, in a laundry room, at least one washer and one dryer must be located along an accessible route with controls within reach range. Similarly, fitness centers must have accessible routes leading to at least one of each type of equipment.
- Be mindful of features added to the project that are not included on the design drawings. It is common for management to add features and elements, such as benches, which were not a part of the original design. Where features are added to the project but do not appear on the plans, notify the architect or management staff to verify any impact on accessibility.



Common Compliance Oversight: Protruding Objects and Headroom Reduction

Where located between 27 and 80 inches AFF, wall-mounted objects are subject to a maximum protrusion limit of 4 inches. Often, wall-mounted objects protrude more than the maximum 4 inches permitted. Headroom is not permitted to be less than 80 inches AFF. Features, such as open stairs, often reduce headroom to less than 80 inches.

Wall-mounted protruding objects and lack of sufficient headroom can be hazardous to people with visual disabilities. Protruding object and headroom compliance is required along accessible routes or maneuvering spaces including, but not limited to, halls corridors, passageways, or aisles.

Possible Solutions:

- Ensure that wall-mounted lights, fire extinguishers and other elements located more than 27 and less than 80 inches AFF, do not protrude more than 4 inches from the wall.
- When selecting wall-mounted lighting, consider models which do not protrude more than 4 inches from walls, when installed.
- Install barriers below open stairs.
- Use semi-recessed, or recessed fire extinguishers and drinking fountains where possible.

Advisory

The maximum side reach permitted by the Guidelines is 54 inches AFF. Be mindful that the maximum 54 inch reach has been reduced to 48 inches maximum in most safe harbors for compliance with the Fair Housing Amendments Act, including all editions of the ANSI A117.1 Standard after 1992. Check with the local code and with the requirements of other laws which may apply to the project.



Requirement 3: Usable doors

Within dwelling units, all doors intended for user passage must provide a “nominal” clear opening of at least 32 inches. The FHA Design Manual defines a “nominal” width as 31 5/8 inches. Examples of usable doors include:

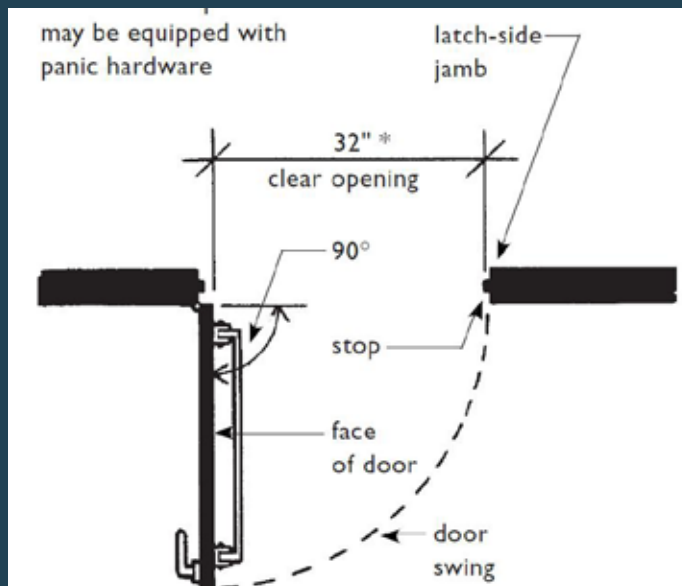
- Doors to attached garages
- Doors to unfinished attics and basements
- Doors to walk-in closets
- Doors to exterior spaces (such as balconies, patios and terraces)
- Doors located in sunken or raised areas (such as lofts or sunken areas within rooms)

How to Measure Clear Width at a Swinging Door:

1. Open the door 90 degrees.
2. Place a measuring tape on the face of the door at mid-height.
3. Pull the measuring tape to the opposing stop and measure the distance. Ensure that the measuring tape is taut and not crimped or bent.
4. The distance measured must be nominal 32 inches.
5. Repeat on the top and bottom half of the door using the same methodology. Ensure that all dimensions recorded are nominal 32 inches.

How to Measure Clear Width at a Sliding Door:

1. Slide open the operable leaf completely.
2. Measure the opening through which the user passes.
3. The distance measured must be 32 inches, nominal.



Measuring Clear Width at Hinged Doors



Common Compliance Oversight:

Lack of Clearance at Multiple Doors Providing Access to One Space

When one space or room can be accessed through two separate doors, the clear width provided by one of the two doors is often less than the required nominal 32 inches. For example, when two bedrooms share the same adjoining bathroom, often only one door provides the required minimum clear width when both doors are subject to Requirement 3. Similarly, when a terrace can be accessed through a door from the master bedroom and also through a door from the living room, both doors are subject to the minimum clearance requirement, but many times only one door complies.

Possible Solutions:

- Specify swing doors which are at least 34 inches wide.
- Install 34-inch wide doors in the standard manner.
- Specify sliding doors which are at least six-foot wide with

stops that allow operable panes to provide a nominal clear width of at least 32 inches, nominal.

- Use swing-clear hinges on existing narrow doors to increase the clear width to a nominal 32 inches.
- Replace narrow doors with wider doors.



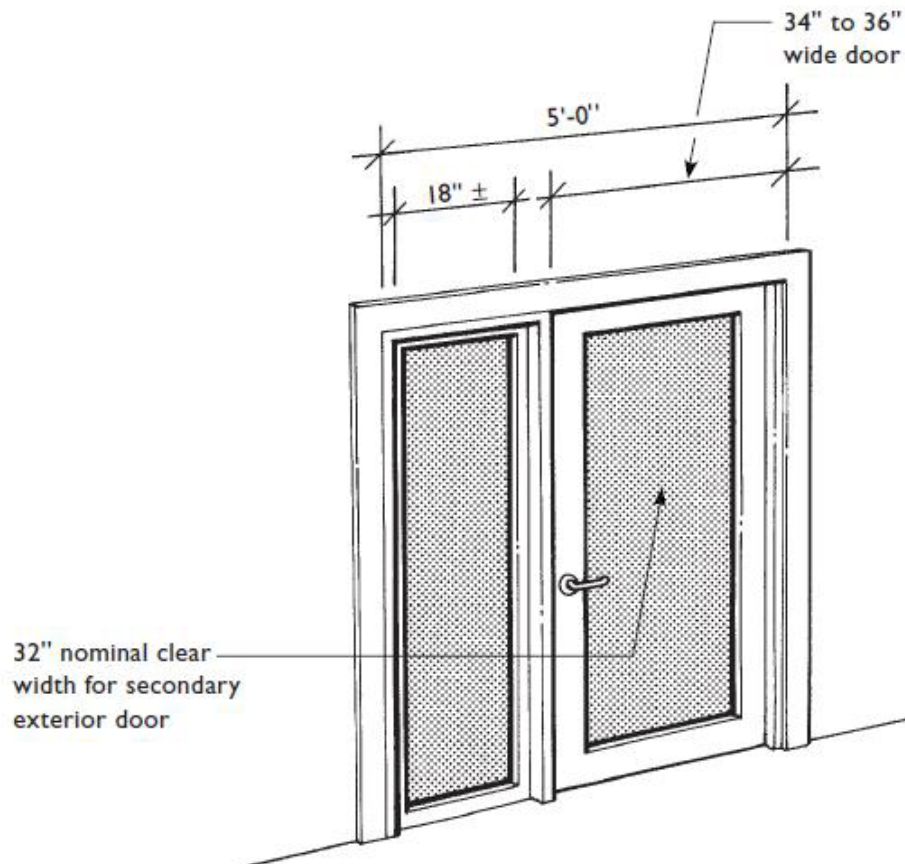
Common Compliance Oversight: Lack of Clearance at French Doors

When double swinging doors (French doors) provide access to exterior spaces, typically one leaf is operable and the other remains locked in the closed position. If the clear width of nominal 32 inches is achieved only when both doors are open, then the user is expected to unlock the stationary leaf. Typically, these locking mechanisms are outside of accessible reach range. As a result, doors are not usable.

Possible Solutions:

- When using double swinging doors (French doors), specify those with at least one 34-inch wide operable leaf.
- When using double swinging doors (French doors) with leaves that are less than 34 inches wide, specify those with locking mechanisms which are no less than 15 inches and no more than 48 inches AFF. Locking mechanisms should be easy to operate with a closed fist, such as a latch on lever handles.

- Replace double swinging doors (French doors) with doors which include at least one 34-inch wide operable leaf.



Common Compliance Oversight: Lack of Clearance at All User Passage Doors

Doors which provide access to walk-in closets, unfinished attics, unfinished basements and attached garages are subject to Requirement 3 because they are meant for user passage. Commonly these doors do not provide the required clear width of nominal 32 inches.

Doors to attached private residential garages

A door within a dwelling is commonly provided to allow direct access to a private attached garage. Because the door is intended for user passage, it must provide a nominal clear width of at least 32 inches, regardless of whether the parking surface is lower than the top of the interior floor surface of the dwelling unit.

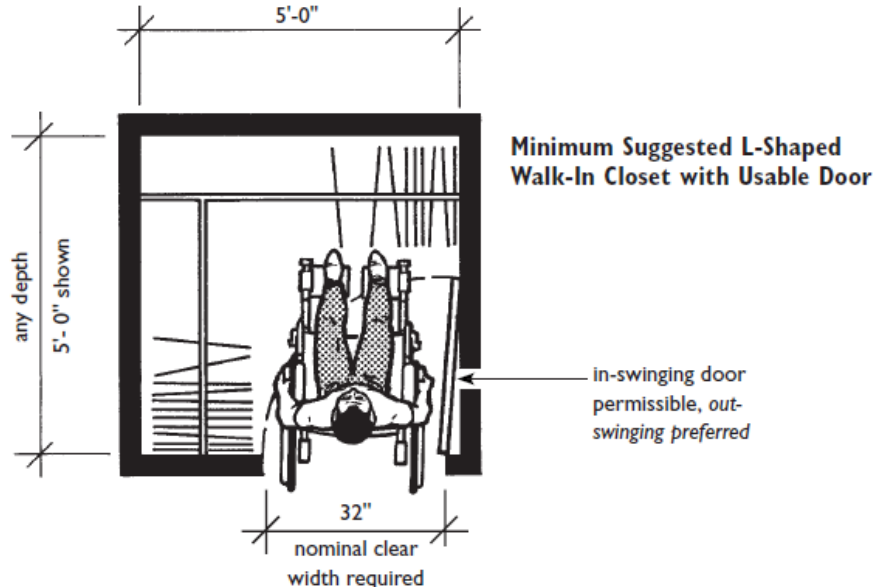
An accessible route connecting a private attached garage to the accessible primary entrance of a dwelling unit is not required. However, an accessible route connecting the primary entrance of a dwelling unit to a common use parking facility, such as a parking lot or underground garage, is required to be provided.

Doors to walk-in closets

Doors to walk-in closets are intended for user passage and must provide a nominal clear width of at least 32 inches. Doors subject to the nominal clear width requirement include those to walk-in closets accessed from within a bedroom and door to similar spaces including the door to a walk-in pantry closet and the door to a laundry room.

Possible Solutions:

- Specify doors which are at least 34 inches wide everywhere in the dwelling unit.
- Where deep pantry or storage closets include doors which do not provide the required nominal clear width of at least 32 inches, consider installing full-depth shelves which prevent user passage and eliminate the requirement for a wide door. Full-



depth shelves also increase shelf area.

- Install 34-inch wide doors in the standard manner.
- Use swing-clear hinges on existing narrow doors to increase the clear width to a nominal 32 inches.
- Replace narrow doors with wider doors.

Advisory

A 34-inch swing door provides an acceptable "nominal" 32-inch clear opening when installed in the standard manner. A standard six-foot sliding door provides an acceptable "nominal" 32-inch clear opening.

The primary entry door to the dwelling unit is the only door which must provide an "actual" clear opening of no less than 32 inches.

When considering the installation of swing-clear hinges on existing doors, ensure that space is available on the hinge-side of the door into which the door can be positioned when fully open. When a door frame is installed too close to an adjacent wall, enough space may not be available behind the door to accommodate proper positioning of the door to achieve a nominal 32-inch clear. Similarly, features installed on walls, such as baseboard heating or radiators can prevent doors from opening 90 degrees.

Requirement 3 does not include the requirement for accessible hardware on doors within dwelling units. For example, locking mechanisms on doors within dwelling units are not required to be accessible. If a stationary leaf or a double leaf door must be unlocked by the resident so that the nominal 32-inch clear width is provided when both leaves are open, then the locking mechanisms must be within accessible reach. If they are not, then the requirement for usable doors is not met.

Operation of locking mechanisms using one finger or a closed fist is a good general rule of thumb when determining whether locks are easily operated.

Even though people who use wheelchairs cannot access spaces via stairs, such as step-down garages and basements, people who use other types of mobility devices, including walkers, benefit from wider doorways.

Even though closet depth is not addressed by Requirement 3, closet depths of 24 inches or less are not considered to be walk-in closets. When closets are deeper than 24 inches, the determination of whether usability requires that they be treated as “walk-in” may not be obvious. To eliminate any ambiguity as to whether a closet is a walk-in, it is recommended that spaces deeper than 24 inches are fitted with doors which provide a nominal clear width of at least 32 inches. Or, provide 34-inch wide doors everywhere within the dwelling unit.



Requirement 4:

Accessible route into and through the covered dwelling unit

All areas within covered dwelling units, including secondary exterior spaces, such as balconies and terraces, must be connected by an accessible route.

Common Compliance Oversight:

High Thresholds at Sliding Doors

Where sliding doors are used, thresholds are often too high. Thresholds at doors to secondary exterior spaces cannot exceed $\frac{3}{4}$ inch in height, measured from the top of the interior finished floor surface to the top of the threshold. Thresholds must be beveled with a slope no greater than 1:2.

Sliding doors to secondary spaces with impervious surfaces

When the surface of the secondary exterior space is impervious, the distance from the top of the impervious surface to the top of the threshold is permitted to be no more than $4\frac{3}{4}$ inches. In this case, the impervious surface is permitted to be located no more than 4 inches below the top of the interior floor surface.



Sliding doors to secondary spaces with pervious surfaces

When the surface of the secondary exterior space is pervious, the distance from the top of the pervious surface to the top of the threshold is permitted to be no more than 1 ¼ inches. In this case, the impervious surface is permitted to be located no more than ½ inch below the top of the interior floor surface.

Possible Solutions:

- Do not use sliding doors; replace with swing doors with compliant thresholds.
- If sliding doors are preferred, specify commercial sliding doors with low profile thresholds. Or, where possible, recess thresholds into the floor slab.
- Where thresholds are too high, measured on the interior side, consider ramping up the floor surface to within no more than ¼ inch of the top of the threshold. Ramp slopes cannot exceed 8.33%.
- Where thresholds meet the maximum height requirement, but are not beveled, consider adding a bevel insert; the slope of the bevel must not exceed 1:2.



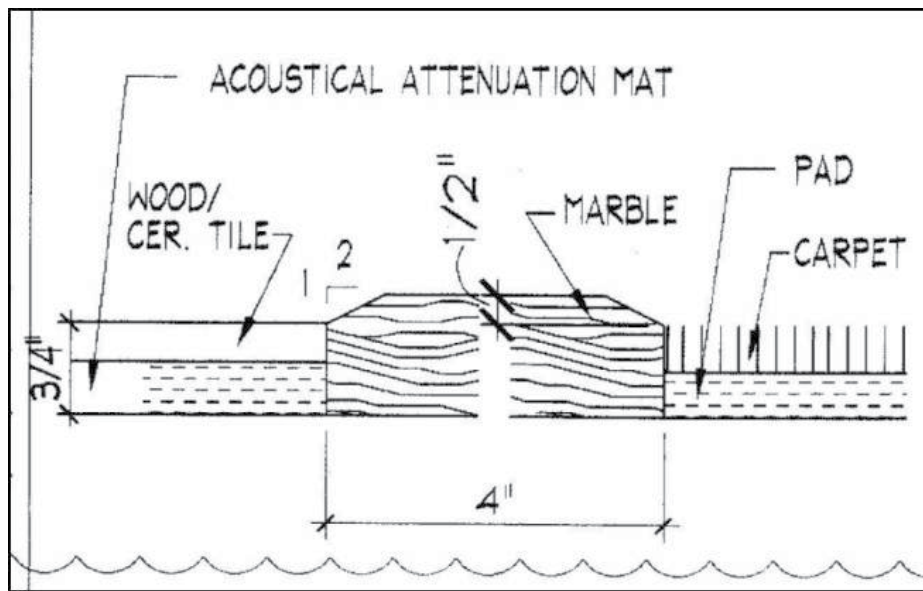
Common Compliance Oversight: Level Changes along the Accessible Route

Thresholds are often installed at doors within the dwelling unit, including thresholds at bathrooms, so that the distance between the top of the threshold and the top of the adjacent floor surface is more than ¼ inch. Where the distance is more than ¼ inch, but not more than ½ inch, it is often unbeveled, which is not permitted.

Possible Solutions:

- When selecting thresholds, ensure that compliance can be achieved when installed.
- Include a detail in the plan set of the installed threshold indicating maximum height and bevel to ensure compliant installation.
- In no case shall the distance between the top of a floor surface and the top of a threshold (measured on both sides of the threshold) be more than ½ inch when the threshold is located on the accessible route. A distance of more than ¼ inch must be beveled. A distance more than ½ inch is not permitted.





Advisory

A door which provides access to a secondary area attached to the dwelling unit, such as a balcony or terrace, must include a beveled threshold which does not exceed $\frac{3}{4}$ inch in height. Thresholds which are part of the accessible route within dwelling units are subject to a maximum height of $\frac{1}{2}$ inch; beveled on both sides.

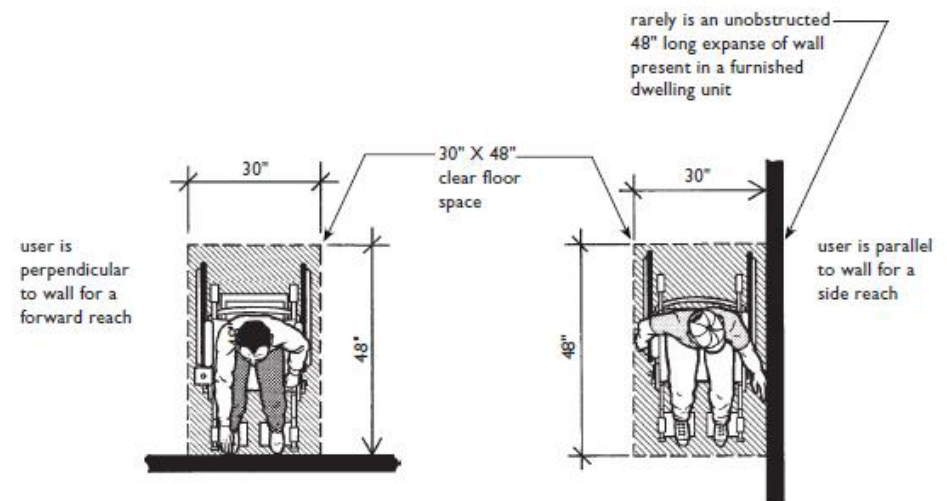
As stated above, the distance between the top of the interior floor surface and the top of an impervious surface of a secondary exterior space (such as a concrete terrace, balcony or patio) is permitted to be no more than four inches. The intent of the step down is to allow enough of a height difference to mitigate water infiltration concerns; however, the large change in level can pose challenges to accessibility. Should there be a need to address this large change in level, one could install a wood deck on top of the impervious surface to be flush with the top of the interior floor surface; thereby creating access to secondary exterior space.



Requirement 5:

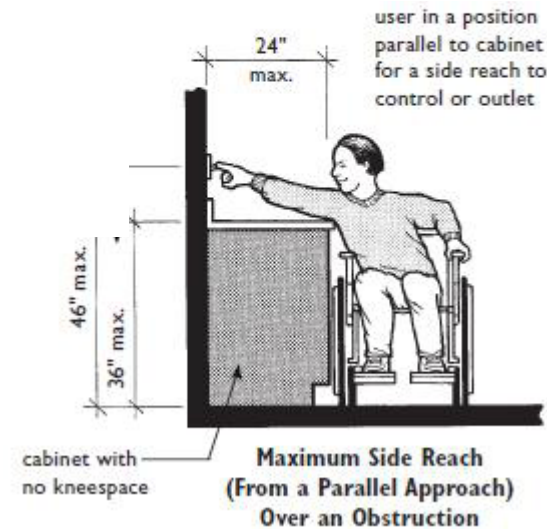
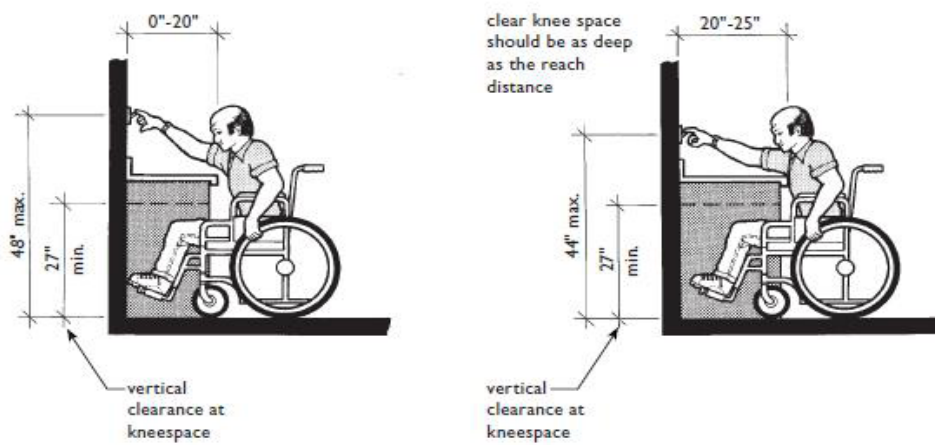
Light switches, electrical outlets, thermostats and other environmental controls in accessible locations

Within dwelling units, light switches, electrical outlets, thermostats, and other environmental controls must be located within accessible reach range and served by a clear floor space positioned for a forward or side approach. "Other environmental controls" include heating, air conditioning and ventilation mechanisms (such as ceiling fans and electrically operated skylights).



Forward Reach

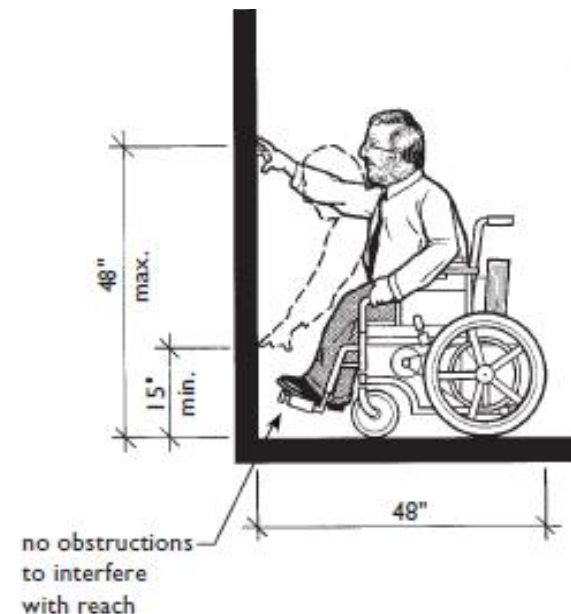
- To accommodate a forward reach to an unobstructed control, it must be served by a clear floor space positioned for a front approach and located between 15 and 48 inches AFF.
- To accommodate a forward reach to an obstructed control, it must be served by a clear floor space positioned for a front approach, knee space at least 30 inches wide and as deep as the obstruction must be available below the obstruction, such as a counter, and the following conditions must be met:
 - When reaching over an obstruction which is not deeper than 20 inches to access a control, the control must be mounted below 48 inches AFF.
 - When reaching over an obstruction which is deeper than 20 inches, but not deeper than 25 inches, to access a control, the control must be mounted below 44 inches AFF.
- A control subject to Requirement 5 cannot be located over obstructions which are deeper than 25 inches.



- To accommodate a side reach to an obstructed control, it must be served by a clear floor space positioned for a side approach and located below 46 inches AFF. Controls subject to Requirement 5 cannot be located over obstructions which are deeper than 24 inches.

Countertop Tolerance

- When controls are located over kitchen countertops and are accessible by a forward or side reach, the Design Manual permits the depth of countertops to be 25 1/2 inches.



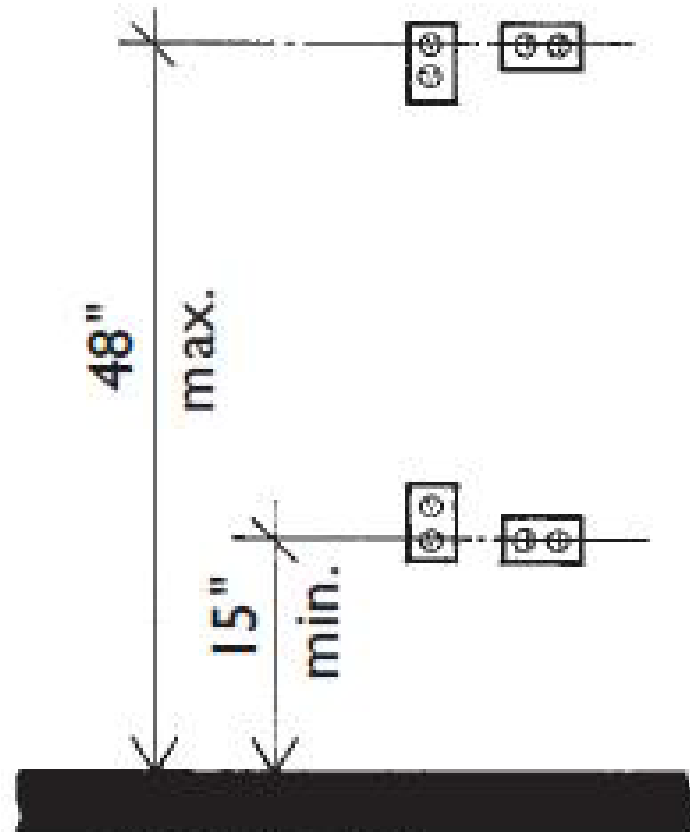


Common Compliance Oversight: Controls Located out of Reach

Light switches and thermostats are often mounted more than 48 inches AFF and electrical outlets are often installed lower than 15 inches AFF.

Possible Solutions:

- Include appropriate notes on plans: When designing for an unobstructed forward approach to controls, indicate on plans that those located throughout the dwelling unit must be mounted no more than 48 inches AFF; indicate on plans that wall-mounted outlets must be mounted no less than 15 inches AFF.
- Technically, if the dimension to the centerline of the lower receptacle of an outlet is 15 inches AFF or more, compliance is achieved. However, it is recommended to measure from the bottom of the electrical box to ensure that when installed both receptacles are clearly more than 15 inches AFF.



- Do not dimension the maximum 48-inch height or the minimum 15-inch height to the centerline of the electrical box; this can result in controls located more than 48 inches and less than 15 inches.
- Do not install switches and thermostats more than 48 inches AFF. Because each temperature controlled “zone” within a dwelling unit is controlled by one thermostat, all thermostats must be installed so that operable parts are no more than 48 inches AFF.
- Do not install wall-mounted outlets less than 15 inches AFF.



Common Compliance Oversight: Obstructed Reach to Outlets in Kitchens

Outlets installed over counter tops in kitchens requiring a side approach are often located more than 46 inches AFF.

Possible Solutions:

- Always include a note and/or a detail on plans indicating that outlets mounted above counter tops must be located no more than 46 inches AFF.
- When located above counter tops, do not install duplex outlets more than 46 inches AFF.
- Adding an outlet to a side wall adjacent to a counter top and as close as possible to the front edge of the counter top is a method of creating access to an outlet. Be mindful of the electrical load when adding outlets to the same circuit.
- Installing outlets horizontally may be a method of achieving compliance.

Advisory

Inaccessible controls are permitted as long as accessible controls are located within the same area. For example, a floor mounted outlet is permitted as long as a wall-mounted outlet is provided nearby and mounted no less than 15 inches AFF. Similarly, an inaccessible wall-mounted outlet installed below a large window which extends lower than 15 inches AFF, or an inaccessible outlet located over a counter top in a kitchen is permitted as long as an accessible outlet is provided nearby.

Requirement 5 does not address controls which are served by an unobstructed side reach because furnishings commonly obstruct the proper positioning of the clear floor space to accommodate an unobstructed side reach (48 clear inches at controls and outlets are required to support the unobstructed side reach). Mounting light switches, thermostat controls and outlets between 15 and 48 inches AFF, will accommodate accessible reach regardless of whether they are served by a clear floor space positioned for front or side approach.

Although Requirement 5 allows inaccessible outlets as long as accessible outlets are located nearby, it is recommended that all outlets above counter tops are designed so that when installed they are no more than 46 inches AFF.





Requirement 6:

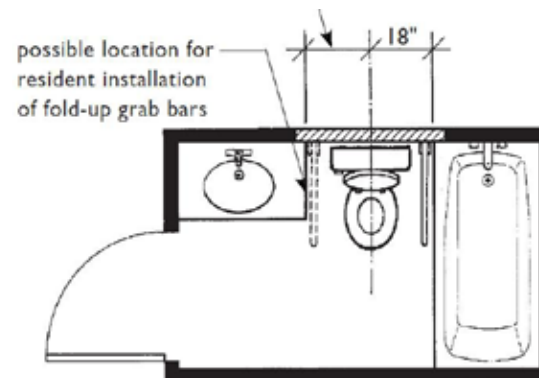
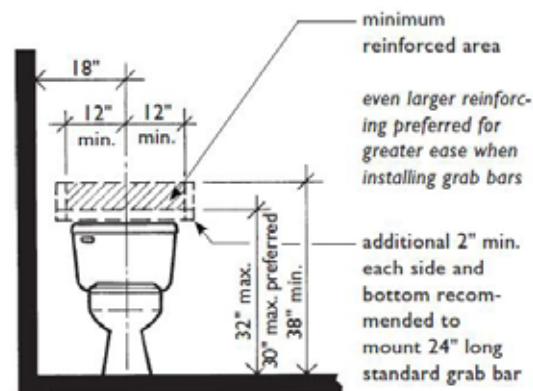
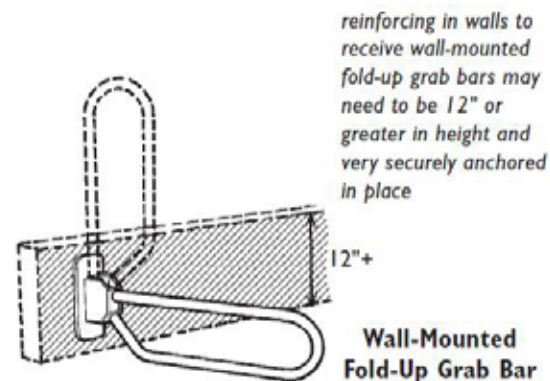
Reinforced walls for grab bars

Walls in bathrooms must be reinforced to permit the installation of grab bars by residents, when needed. Reinforced walls to allow the later installation of grab bars is an adaptable design feature permitted by Requirement 6.

Common Compliance Oversight: Insufficient Reinforcement

When a toilet is not located adjacent to a side wall, the wall behind the toilet must contain enough reinforcing to accommodate the later installation of two bars; one wall-mounted grab bar to serve the back of the toilet and a second wall mounted alternative grab bar to serve the side of the toilet.

Alternative grab bars (such as wall-mounted fold-down grab bars and wall-and-floor mounted grab bars) require larger reinforced areas at the back wall. For example, Requirement 6 requires that the back wall be reinforced between 32 and 38 inches AFF, for a width of 24 inches, centered on the toilet. This reinforced area is appropriate when a toilet is located adjacent to a wall and the side wall includes reinforcing to accommodate the later installation of a grab bar on the side wall. However, this reinforced area is not enough to accommodate the later



installation of an alternative type grab bar (such as a wall-mounted fold-down grab bar) to serve the side of the toilet when the toilet is not located next to a wall.

Possible Solutions:

- Specify larger than required reinforced areas behind the toilet when the fixture is not installed next to a wall.
- When the toilet is not installed next to a wall, ensure that enough reinforcing is provided in the wall behind the toilet to accommodate the later installation of a 24-inch wall-mounted grab bar and the installation of an alternative grab bar intended to serve the side of the toilet.
- If plans show the toilet not located next to a wall with a reinforced area at the back wall of only 24-inches wide,

then not enough reinforcing is provided. Increase the reinforced area to accommodate the later installation of an alternative type of grab bar to serve the side of the toilet.

Common Compliance Oversight: Removal of Reinforcing

Reinforcing is typically installed during the framing phase of construction, before plumbing is installed. Often, when vertical plumbing is installed in the wall cavity, reinforcing is removed to accommodate plumbing installation.

Possible Solutions:

- Do not design for reinforcing between studs; design reinforcing so that the wall cavity remains clear to allow the installation of plumbing without having to remove reinforcing.
- If reinforcing must be removed to accommodate plumbing, make sure that the architect is notified so that an alternate solution for reinforcement can be identified and implemented.
- Coordinate plumbing plans with the architectural plans to identify conflicts between plumbing and reinforcing before construction begins.

Advisory

Reinforcing must be provided in all bathrooms and is only required in powder rooms when it is the only toilet facility on the primary entry level of a multi-story dwelling unit located in an elevator building.



Requirement 7:

Usable kitchens and bathrooms

Usable Kitchens

Usable kitchens include clear floor space positioned at fixtures and proper clearance between opposing elements.

Clearance required between opposing elements in kitchens varies depending on the layout and the placement of the sink and/or range/cooktop:

- U-shaped kitchens with a sink or cooktop/range located at the base of the U must accommodate no less than 60 inches of clearance between opposing elements to accommodate space in which turning space can be positioned.
 - If a sink is located at the base of the U and it includes knee space below; or, if a removable base cabinet is provided below the sink, then the requirement for clearance between opposing elements is reduced to 40 inches. This measurement is taken from the face of an appliance to the opposite counter top edge and excludes hardware and handles.
- Other kitchen layouts, such as galley kitchens, must accommodate no less than 40 inches between opposing elements.



Common Compliance Oversight: Appliance Obstructions

In U-shaped kitchens with a sink or cooktop/range located at the base of the U, ranges/cooktops and/or refrigerators often protrude into the space required to accommodate an unobstructed turning space.

The distance between opposing elements in kitchens other than those which are U-shaped must be no less than 40 inches. This distance is often reduced to less than the required minimum of 40 inches between the face of a refrigerator and the opposing counter top edge or appliance.

Where elements are opposing outside of the kitchen space, such as the side of an appliance which opposes a wall at a kitchen entrance; or, between walls at a kitchen entrance, then only a minimum 36-inch accessible route is required in this location.

Possible Solutions:

- Specify a range and a refrigerator which, when installed, will not encroach into the turning space required in U-shaped kitchens.
- Do not design kitchen layouts with a 60-inch diameter turning circle shown flush up against the face of the refrigerator and/or range. Consider the actual depth of the appliance specified and determine whether, when installed, it will encroach into turning space.
- The 40-inch clearance is required between opposing elements which project into kitchens other than those which are U shaped. Consider the actual depth of appliances.
- Be sure to consider when a 36-inch versus a 40-inch clearance between opposing elements is required.
- When plans include “stud-to-stud” dimensioning, consider the thickness of finished materials when specifying clearance.
- Install ranges and refrigerators as flush as possible to the back wall to avoid any protrusions into the minimum clearance required.
- An improperly placed outlet behind an appliance often prevents an appliance from being positioned as close as possible to the back wall once it is “plugged in.” Consider recessing the outlet behind appliances. Consider manufacturer’s installation recommendations.
- The space behind the back of the range and the wall created by the installation of anti-tip devices can cause the range to protrude into the required turning space.
- If the range or refrigerator protrudes into the turning space, consider the following:



- o Turn studs located behind the refrigerator to create a shallow recess into which the refrigerator can be positioned. Where turning studs will not achieve compliance, create a recess into which the refrigerator can be positioned.

- o Replace deep appliances with shallower models.

Advisory

Value engineering can take place after a kitchen is designed and appliances are selected. When value engineering appliances, be careful to select models which will not encroach into the required minimum clearance.



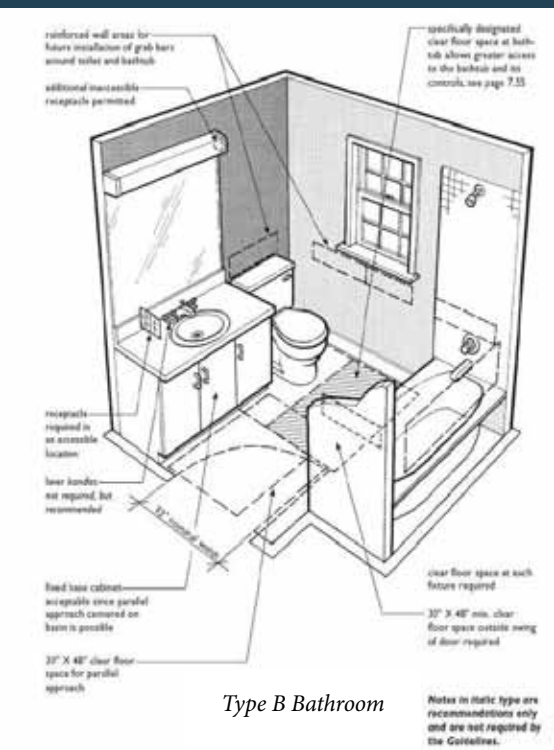
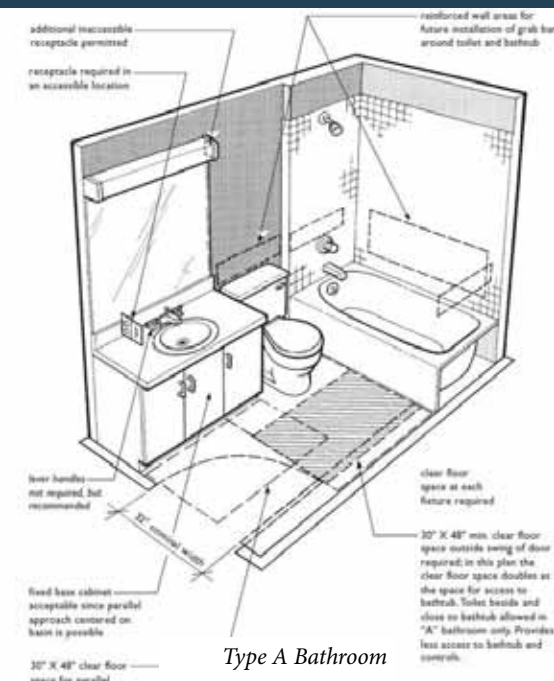
Usable Bathrooms

Usable bathrooms are those which permit a person to enter, close the door, use the fixtures and exit.

Requirement 7 permits a choice of two bathroom designs: Specification A and Specification B.

When opting for the Specification A design, all bathrooms in the dwelling unit must meet the Specification A criteria, and all fixtures within each bathroom must be served by proper clearance. When opting for the Specification B design, then one bathroom in the dwelling unit must meet the Specification B criteria, only one fixture of each type within the Specification B bathroom must be served by proper clearance and all other bathrooms are exempt from fixture clearance required by Requirement 7 (usable bathrooms). However, the other bathrooms are still subject to Requirements 3 (usable doors), Requirement 4 (along an accessible route), Requirement 5 (light switches and outlets in accessible locations) and Requirement 6 (reinforced walls).

Common Compliance Oversight: Lack of Centered Clear Floor Space at Sinks



Clear floor space at bathroom sinks is often not centered, as required.

Possible Solutions:

- When designing for a side approach at bathrooms sinks; ensure that the 48-inch long side of the 30-inch by 48-inch clear floor space is centered on the sink bowl. Similarly, when designing for a front approach; ensure that a removable base cabinet is provided (or removed) and that the 30-inch long side of the 30-inch by 48-inch clear floor space is centered on the sink bowl.

- Ensure that the toilet does not obstruct the centered side approach.
- Ensure that walls adjacent to sinks do not project beyond the front edge of sink tops and obstruct centered clear floor space.
- Pedestal sinks are not permitted when the sink must be served by a front approach.

- If a centered side approach is not possible when finished materials are installed, consider accommodating a centered front approach. To support a front approach, base cabinets must be removable (or removed), knee clearance must be available below sinks when cabinets are removed, the floor and wall below the sink must be finished and exposed plumbing must be insulated.

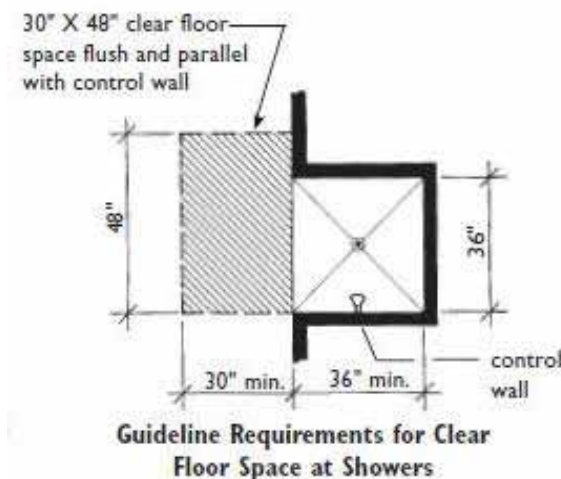
- Do not permanently install base cabinets when they are designed to be "removable."

Common Compliance Oversight: Lack of Clear Floor Space at Showers

The clear floor space at showers required to be usable is often not provided flush with the wall on which the shower controls are located.

Possible Solutions:

- Coordinate architectural plans with plumbing plans. Ensure that the control wall location is the same on both plans.
- Ensure that when the clear floor space is properly positioned at showers that it remains unobstructed by finished material.
- When specifying a shower insert or a custom tiled shower, the clear floor space must be designed to be flush with the finished material, which is the face of the shower insert or the tiled wall surface.

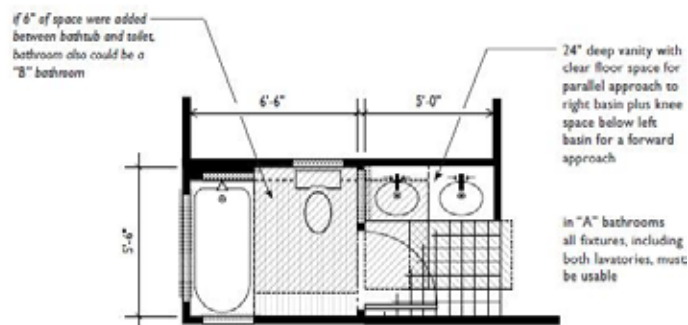
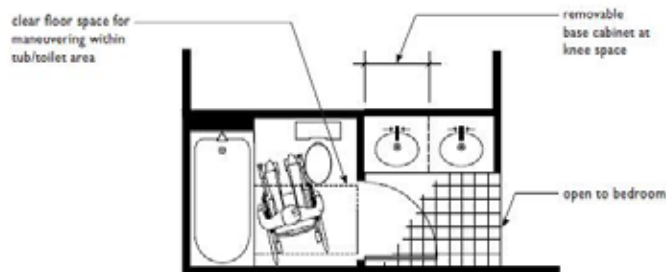


Common Compliance Oversight: Lack of Clearance at All Fixtures in Specification A Bathrooms

When opting for the Specification A bathroom design, all fixtures within the bathroom are required to be provided with required clearance. Often, only one fixture of each type accommodates proper clearance.

Possible Solutions:

- Ensure that when two bathroom sinks are included in a Specification A bathroom, both are provided with centered clear floor space.
- Ensure that when a bathtub and a separate shower are included in a Specification A bathroom, both are provided with properly positioned clear floor space.



Advisory

In order to accommodate usability of the bathroom sink, clear floor space must be centered.

When the bathroom sink is located next to a wall, ensure that the distance between the wall and the center of the sink bowl is no less than 24 inches when a centered side approach is intended; and, no less than 15 inches, when a front approach is intended.

Modifying plumbing in showers is a costly post construction fix. Be careful to coordinate architectural plans with plumbing plans. Carefully select the control wall and ensure that clear floor space remains unobstructed.

When opting for the Specification A design, there is no maximum height requirement for the top of the bathroom sink(s). When opting for the Specification B design, the sink top is subject to a maximum height of 34 inches AFF.

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