

521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 42.00: GROUP I BATHROOMS

42.1 GENERAL

In *Group 1 dwelling units*, (see 521 CMR 9.2, *Applicability*) *bathrooms* and *half bathrooms* shall comply with the following:

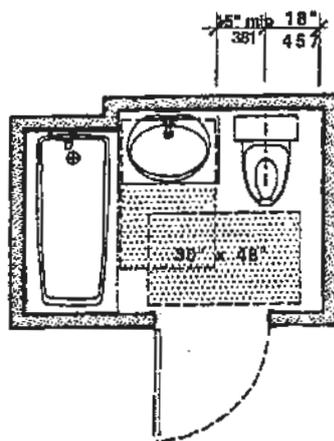
42.1.1 Number: If more than one *bathroom* is provided, whether a full bath or *half bath*, and one *bathroom* is a *captive bathroom* (a *bathroom* only entered through a *bedroom*) then both must comply unless the *captive bathroom* has two entries, one from the *bedroom* and one from the *corridor*, then only the *captive bathroom* is required to comply. If two common *bathrooms* are provided, then only one full *bathroom* must comply. If two *captive bathrooms* are provided, then both must comply.

42.2 CLEAR FLOOR SPACE:

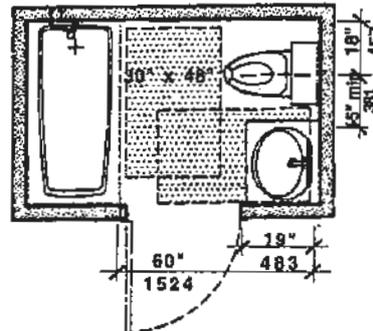
Shall be as defined in 521 CMR 6.4, *Clear Floor or Ground Space for Wheelchairs*. *Clear floor space* shall be available at each fixture as shown below to enable users to reach fixture controls and to transfer out of a wheelchair. When a *bathroom* is adapted, the *clear floor space* must be able to be made free of obstructions, other than those shown in the diagram. The *clear floor space* for one fixture may overlap the *clear floor space* for other fixtures. The *clear floor space* for the tub or the water closet is measured from the closest edge of that fixture. The *clear floor space* for the sink may extend a maximum of 19 inches (19" = 483mm) under the sink. *Wing walls* may not intrude on the minimum *clear floor space*.

42.3 MANEUVERING SPACE:

Shall be available so that, at a minimum, a person using a wheelchair can enter, close the door, use each of the fixtures, reopen the door, and exit. See Fig. 42a and 42b.



Maneuvering Space
Figure 42a



Maneuvering Space
Figure 42b

42.4 DOORS

Shall be capable of complying with 521 CMR 26.5, *Width through* 521 CMR 26.11, *Door Hardware*.

42.4.1 Operation: Doors may swing into the *bathroom* if the swing of the door does not impede *clear floor space*. If the door impedes the *clear floor space*, the doors shall be capable of being adapted to swing out, fold or slide.

42.5 WATER CLOSETS

Shall comply with the following:

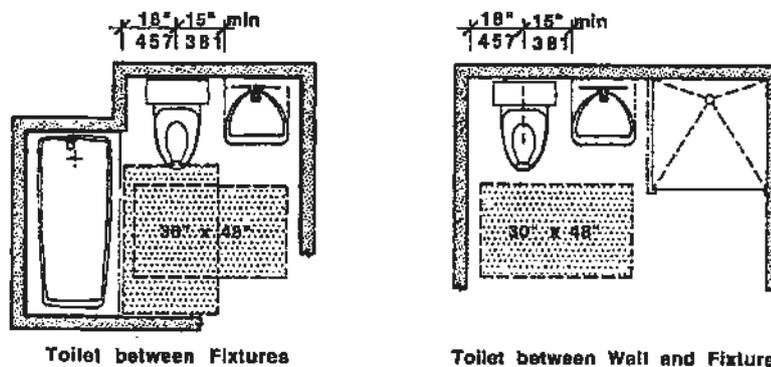
42.5.1 *Clear Floor Space*: As defined in 521 CMR 42.2, *Clear Floor Space*, shall be provided or shall be capable of being provided without *structural change* in at least one of two specific locations at the water closet. One shall be beside the water closet with its short edge parallel to the wall behind the water closet. The other shall be in front of the water closet with its long edge parallel to the wall behind the water closet.

521 CMR: ARCHITECTURAL ACCESS BOARD

42.00: continued

42.5.2 Location:

- a. When a water closet is located between a wall and a fixture, its centerline shall be 18 inches (18" = 457mm) from the wall. If the *clear floor space* is provided in front of the water closet, the centerline of the water closet shall be a minimum of 15 inches (15" = 381mm) from the closest edge of the fixture. See Fig. 42c.



Toilet Locations
Figure 42c

- b. When a water closet is located between two fixtures, its centerline shall be 18 inches (18" = 457mm) from a bathing fixture and a minimum of 15 inches (15" = 381mm) from other types of fixtures. See Fig. 42c.

42.5.3 Wall reinforcement: Walls adjacent to and behind the water closet shall be capable of structurally supporting the future installation of grab bars from 32 to 38 inches (32" to 38" = 813mm to 965mm) above the floor. The back wall shall have reinforcement from the interior corner to a distance of six inches (6" = 152mm) beyond the widest part of the water closet. The side wall shall have reinforcement from the interior corner to a distance of six inches (6" = 152mm) beyond the front edge of the water closet, unless interrupted by a door or other fixture, then the reinforcement shall be installed as far as possible.

When the water closet is located between two fixtures, the wall reinforcement behind the water closet shall be extend at least six inches (6" = 152mm) beyond the widest part of the water closet.

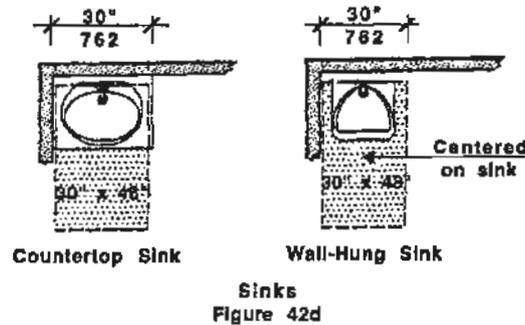
42.6 SINKS

At least one sink in a *bathroom* must meet the following:

- 42.6.1 Vanity Cabinets: If a cabinet is provided under a sink, it shall be capable of being removed without structural change.
- 42.6.2 Knee Space Width: The sink shall have or be capable of having a knee *space* of 30 inches (30" = 762mm) in width.
- 42.6.3 Knee Space Depth: The front edge of the sink fixture, or the countertop in which a sink is located, shall be a minimum of 19 inches (19" = 482mm) from the back wall or shall be capable of being relocated to create a *space* of that depth under the sink.
- 42.6.4 Height: The sink shall be capable of being relocated without structural change.

42.00: continued

- 42.6.5 *Clear Floor Space:* Shall be provided at the sink, as defined in 521 CMR 42.2, **Clear Floor Space** and shall be perpendicular to the face of the sink and may extend under the sink. See Fig. 42d.



42.7 BATHING FIXTURES

If more than one bathing fixture is provided in a *bathroom*, at least one must meet the requirements of 521 CMR 42.

42.7.1 Bathtubs shall comply with the following:

- a. **Size:** Bathtubs shall be at least a nominal 60 inches (60" = 1524mm) long.
- b. **Clear Floor Space:** At the bathtub, as defined in 521 CMR 42.2, **Clear Floor Space** shall be parallel to the face of the tub.
- c. **Wall Reinforcement:** All tub walls shall be capable of structurally supporting the future installation of grab bars from six inches (6" = 152mm) above the tub rim to a height of 48 inches (48" = 1219mm) above the tub bottom and shall extend the length and width of the tub.
- d. **Door Enclosure:** Tracks for sliding doors or enclosures mounted on the rim of a bathtub must be capable of removal to provide a smooth tub rim for transfer.

42.7.2 Showers shall comply with the following:

- a. **Size:** Shower stalls shall be a minimum, nominal dimension of 36 inches by 36 inches (36" x 36" = 914mm x 914mm).
- b. **Minimum Clear Floor Space:** At the shower, as defined in 521 CMR 42.2, **Clear Floor Space** shall be located parallel to and centered on the shower stall opening.
- c. **Wall Reinforcement:** All shower walls shall be capable of structurally supporting the future installation of grab bars, seats, etc., from a height of six inches (6" = 152mm) to 48 inches (48" = 1219mm) above the floor and shall extend the full width and length of the shower stall. Grab bars shall not be located behind the seat.
- d. **Door:** The opening of the shower stall must be 32 inches (32" = 813mm) wide. If a shower door is provided, it shall be capable of swinging open 180 degrees or capable of being removed.
- e. **Seat:** If a wall mounted seat is provided, it shall be located on a wall adjacent to the opening. The seat shall be mounted with the edge as close as possible to the door opening to allow a safe transfer.
- f. **Hardware Location:** Mixing valves shall be mounted on the wall opposite the seat. The centerline of the shower controls shall be located between 38 inches and 48 inches (38" to 48" = 965mm to 1219mm).
- g. Where curbs are provided, they shall not exceed four inches (4" = 102mm) in height.

42.7.3 Soap Tray shall not have a hand hold feature unless it can support 250 lbs for five minutes. Soap dispensers, holders, etc., shall be located within the *zone of reach* from the seat.

42.7.4 Prefabricated Units: In prefabricated showers and tubs, structural reinforcement for grab bars must be in full contact with the surface of walls of the unit on which grab bars may be mounted as described in 521 CMR 42.7.1 (c) and 521 CMR 42.7.2 (c).

521 CMR: ARCHITECTURAL ACCESS BOARD

42.00: continued

42.8 OUTLETS AND CONTROLS
Shall comply with **521 CMR 39.00: CONTROLS.**

42.9 ALARMS
Shall comply with **521 CMR 40.00: ALARMS.**

521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 43.00: GROUP 1 KITCHENS

43.1 GENERAL

In all *Group 1* Dwelling units, kitchens shall be designed so that when a unit is adapted a person in a wheelchair has access to the sink, cooking surface, refrigerator, and a food preparation surface and can turn around without having to leave the kitchen.

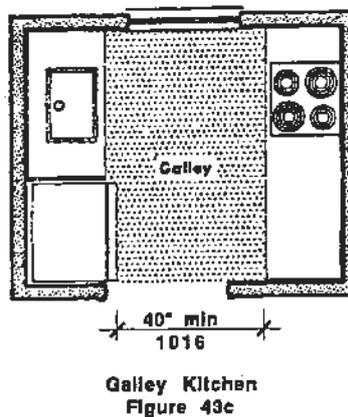
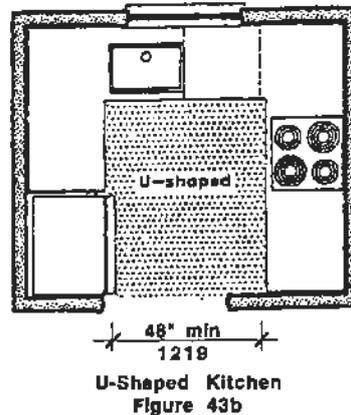
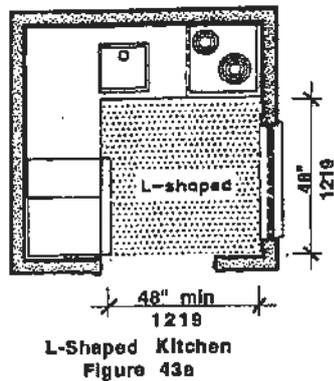
43.2 CLEAR FLOOR SPACE:

Shall be measured at the face of the base cabinets or appliances, (excluding cabinet hardware and appliance hardware) and shall be provided at the time of first occupancy as follows:

43.2.1 L-shaped kitchens shall have a minimum *clear floor space* of 48 inches by 48 inches (48" x 48" = 1219mm x 1219mm). See Fig. 43a.

43.2.2 U-shaped kitchens shall provide a minimum *clear floor space* of 48 inches (48" = 1219mm) between opposing base cabinets or appliances. See Fig. 43b.

43.2.3 Galley kitchens shall provide a minimum *clear floor space* of 40 inches (40" = 1016mm) between opposing base cabinets or appliances. See Fig. 43c.



43.3 SINKS

Shall comply with the following:

43.3.1 Sink Cabinet: The base cabinet under the sink shall be capable of being removed to provide a knee-space of 30 inches (30" = 762mm) in width.

43.3.2 Sink Depth: The sink bowl shall not exceed 6½ inches (6½" = 165mm) in depth. Where more than one bowl is provided, only one bowl must meet this requirement.

521 CMR: ARCHITECTURAL ACCESS BOARD

43.00: continued

43.4 COOKING UNITS

Shall comply with the following to ensure that both burners and ovens can be made functional and safe for a person in a wheelchair.

43.4.1 **In-Counter cooktops:** If a cooktop is provided, its base cabinet shall be capable of being removed to provide future knee-space the width of the cooktop but not less than 30 inches (30" = 762mm) wide. Cooktops shall have controls located at the front or side of the unit.

43.4.2 **Wall Ovens:** If a wall oven is provided, the floor of the wall oven shall be located 30 inches (30" = 762mm) above the floor.

43.5 WALL CABINETS

Walls shall be capable of structurally supporting wall cabinets at any location from 42 inches to 54 inches (42" to 54" = 1067mm to 1372mm) from the floor to the bottom of the inside of the cabinet.

43.6 BASE CABINETS

Each base cabinet shall be capable of being removed to provide knee-space for persons using wheelchairs.

43.7 REFRIGERATORS

Space shall be provided so that the refrigerator can be located so that its doors can be opened to 180 degrees. If doors cannot be opened to 180 degrees, a minimum of 30 inches (30" = 762mm) of counter *space* next to the refrigerator shall be provided.

43.7.1 Where refrigerators are provided with less than nine cubic feet of capacity, 521 CMR 43.7, Refrigerators shall not apply.

43.8 OUTLETS AND CONTROLS

Shall comply with 521 CMR 39.00: CONTROLS.

43.9 ALARMS

Shall comply with 521 CMR 40.00: ALARMS.

521 CMR: ARCHITECTURAL ACCESS BOARD

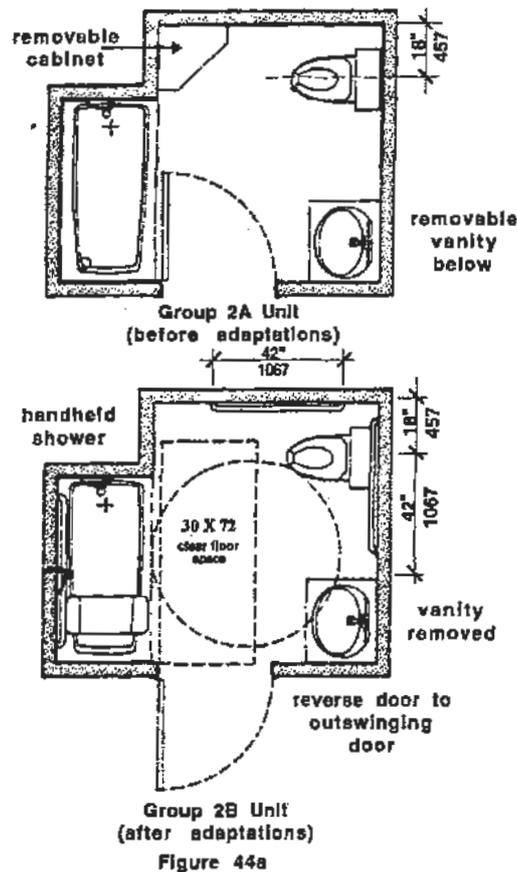
521 CMR 44.00: GROUP 2 BATHROOMS

44.1 GENERAL

In all *dwelling units* required to be *Group 2A* units, (see 521 CMR 9.4 *Group 2A Dwelling Units*) all *bathrooms* and *half bathrooms* shall comply with 521 CMR 44, exclusive of the bold and italicized text which refer to *Group 2B* units. In *facilities* required to have *Group 2B bathrooms*, such as hotels, motels, inns and health facilities, the *bathroom* shall comply with 521 CMR including the bold and italicized text which refer to *Group 2B* units.

44.2 WHEELCHAIR TURNING SPACE

Bathrooms shall have or be capable of having wheelchair turning space which complies with 521 CMR 6.3, *Wheelchair Turning Space* without coming into contact with any fixtures. See Fig. 44a.



44.3 DOORS

Shall comply with 521 CMR 26.5, *Width* through 521 CMR 26.11, *Door Hardware*. Doors shall swing out, fold or slide. Doors may swing into the *bathroom* only if the door does not impede the wheelchair turning space.

44.4 WATER CLOSETS

Shall comply with the following:

- 44.4.1 Location: The centerline of the water closet shall be located 18 inches (18" = 457mm) from the nearest side wall and at least 42 inches (42" = 1067mm) from the farthest side wall or the closest edge of an adjacent fixture. There shall be 42 inches (42" = 1067mm) clear from the front edge of the water closet to the nearest wall or fixture.

521 CMR: ARCHITECTURAL ACCESS BOARD

44.00: continued

44.4.2 Height: The top of the water closet seat shall be 15 inches to 19 inches (15" to 19" = 381mm to 483mm) above the floor.

In Group 2B bathrooms, the water closet seat shall be 17 inches to 19 inches (17"-19" = 427mm to 483mm) above the floor.

44.4.3 Operation: The flush activator shall be operable with a closed fist and shall not require grasping, pinching, or twisting of the wrist. Water closet flush control shall be located on the *accessible* side of the water closet.

44.4.4 Wall Reinforcement: Walls adjacent to and behind the water closet shall be capable of structurally supporting the future installation of grab bars from 32 to 38 inches (32" to 38" = 813mm to 965mm) above the floor. The back wall shall have reinforcement from the interior corner to a distance of six inches (6" = 152mm) beyond the widest part of the water closet. The side wall shall have reinforcement from the interior corner to a distance of six inches (6" = 152mm) beyond the front edge of the water closet, unless interrupted by a door or other fixture, then the reinforcement shall be installed as far as possible.

In Group 2B bathrooms, two grab bars, one 42 inches (42" = 1067mm) long and one 36 inches (36" = 914mm) long shall be installed at the water closet between 33 inches (33" = 838mm) and 36 inches (36" = 914mm) above and parallel to the floor. The 42 inch (42" = 1067mm) grab bar shall be mounted on the side wall closest to the water closet, no more than 12 inches (12" = 305mm) from the back wall. The 36 inch (36" = 914mm) grab bar shall be mounted on the back wall six inches (6" = 152mm) from the interior corner and may be located up to three inches (3" = 76mm) above the top of the water closet tank.

44.4.5 Toilet Paper Dispensers: The toilet paper dispensers shall be located on the side wall closest to the water closet. The centerline of the roll shall be set at a minimum height of 19 inches (19" = 483mm) above the floor. Dispensers that control delivery or that do not permit continuous paper flow are not allowed.

44.5 SINKS

Shall comply with the following:

44.5.1 *Adaptability:* The sink, its plumbing, and the walls adjacent to the sink shall be designed so that the sink can be relocated vertically and so that the sink installation meets the definition of *structural strength*.

44.5.2 Vanity Cabinets: Where a cabinet or vanity is provided under a sink, it shall be removable or replaceable to provide a knee space that complies with 521 CMR 44.5.4 and 44.5.5.

In Group 2B bathrooms, base cabinets can be used only if kneespace is also provided.

44.5.3 Height: The sink shall be capable of being relocated vertically, in the future, without requiring *structural change* to the walls of the *bathroom*. A sink with kneespace shall be installed or be capable of being installed, with at least 27 inches (27" = 686mm) of clearance from the floor to the bottom of the sink or counter apron.

In Group 2B bathrooms, the sink rim or counter surface shall be installed at a height of 34 inches (34" = 864mm) from the floor and there shall be at least 29 inches (29" = 737mm) of clearance from the floor to the bottom of the sink or counter apron.

44.5.4 Kneespace width: The sink shall have or be capable of having, without *structural change*, a knee space of 30 inches (30" = 762mm) in width, centered on the sink.

In Group 2B bathrooms, a kneespace of 30 inches (30" = 762mm) in width must be provided.

44.00: continued

- 44.5.5 Kneespace depth: The front edge of the sink or the front edge of the countertop in which a sink is located, shall be a minimum of 22 inches (22" = 559mm) from the back wall or be capable of being relocated to create a space 22 inches (22" = 559mm) deep from the back wall to the front edge of the sink.

In Group 2B bathrooms, the front edge of the sink or the front edge of the countertop in which a sink is located, shall be a minimum of 22 inches (22" = 559mm) from the back wall.

- 44.5.6 Piping: All piping under the sink shall be offset to the back wall so that persons in wheelchairs have maximum possible kneespace.

In Group 2B bathrooms, the hot water and waste pipes under the sink shall be offset to the back wall and insulated.

- 44.5.7 Hardware: Faucets shall be operable with a closed fist and shall not require grasping, pinching, or twisting of the wrist.

44.6 BATHING FIXTURES

If more than one bathing fixture is provided in a *dwelling unit*, one shall be a shower unit complying with 521 CMR 44.6.2. If a jacuzzi or whirlpool tub is the only bathing facility, it must meet the requirements of 521 CMR 44.6.1. Where one bathing fixture is provided, it may be either a shower unit or a bathtub.

- 44.6.1 Bathtubs shall comply with the following:

- a. Fixtures: Bathtubs shall be a minimum, nominal dimension of 60 inches (60" = 1524mm) long. The rim shall be between 16 and 18 inches (16" and 18" = 406mm and 457mm) above the floor.
- b. Minimum floor area: A clear floor area 30 inches (30" = 762mm) wide and at least 72 inches (72" = 1829mm) long shall be provided adjacent to the tub. At least 12 inches (12" = 305mm) of the clear floor area length shall extend beyond the drain end of the tub if the tub is 60 inches (60" = 1524mm) long.
- c. Wall reinforcement: All walls of the tub shall have structural reinforcement to allow the future installation of grab bars at any location from the rim of the tub to a height of 60 inches (60" = 1524mm) above the tub bottom.

In Group 2B bathrooms, two grab bars, 48 inches (48" = 1219mm) long, shall be installed centered on the long wall and parallel to the floor. One shall be mounted at a height of 21 inches (21" = 533mm) and one at a height of 36 inches (36" = 914mm) above the floor.

- d. Tub material: Plastic or fiberglass tubs shall be structurally capable of accepting the installation of a lift that clamps onto the rim.
- e. Hardware: Faucets shall be operable with a closed fist and shall not require grasping, pinching, or twisting of the wrist.
- f. Hardware location: Faucets and mixing valves shall be centered horizontally on the long wall of the tub, 28 inches (28" = 711mm) above the floor. The tub spout shall be located on the end wall above the drain and a shower head may be located on either the end wall or long wall. If hardware is installed in locations other than those specified, piping shall also be provided and capped in the wall.
- g. Hand-held showers: A hand-held shower head with a flow regulator, attached to a 60 inch (60" = 1524mm) long flexible hose and an adjustable mounting bar, shall be provided or be capable of being installed on the long wall of the tub.

In Group 2B bathrooms, a tub seat which is portable or permanent shall be provided.

In Group 2B bathrooms, a hand held shower head attached to a 60 inch (60" = 1524mm) long flexible hose and an adjustable mounting bar, 36 inches (36" = 914mm) long, shall be installed on the long wall of the tub. The bottom of the mounting bar shall be located at 40 inches (40" = 1016mm) above the tub bottom.

521 CMR: ARCHITECTURAL ACCESS BOARD

44.00: continued

- h. Door enclosures: Tracks for sliding doors or enclosures shall not be mounted on the rim of the bathtub unless they can be removed.

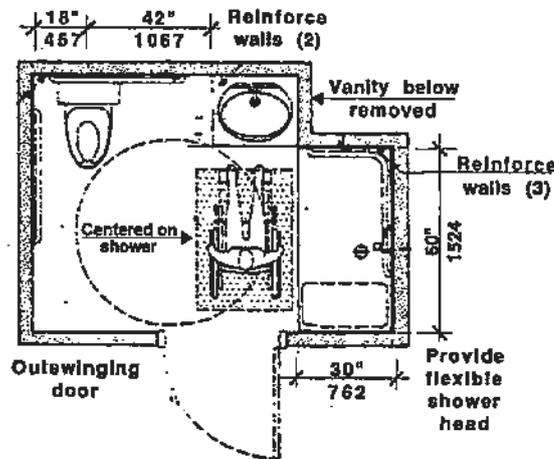
In Group 2B bathrooms, sliding doors shall not be used.

- i. Soap Trays: Soap trays shall not have a hand-hold feature and shall be installed or be capable of being relocated with a centerline no higher than 48 inches (48" = 1219mm) above the floor.

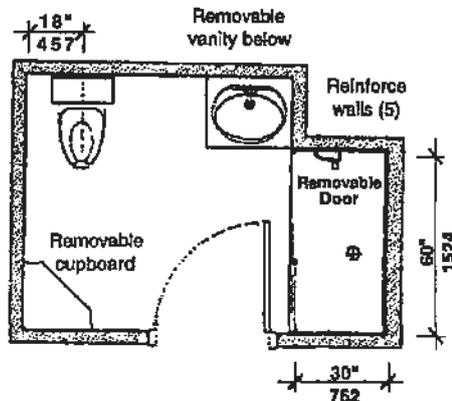
In Group 2B bathrooms, soap trays shall be installed no higher than 48 inches (48" = 1219mm) above the floor to the centerline of the soap tray.

44.6.2 Showers shall comply with the following:

- a. Fixture size: The shower shall be the wheel-in type with a minimum, nominal size of 30 inches by 60 inches (30" x 60" = 762mm x 1524mm). The long side shall be fully open. In the alternative, the stall may be 36 by 60 inches (36" x 60" = 914mm x 1524mm) with a 24 inch (24" = 610mm) wing wall on the 60 inch (60" = 1524mm) side. The slope of the shower floor shall not exceed 2%. The curb shall have no more than a 1/2 inch (1/2" = 13mm) maximum lip, beveled at a slope no steeper than 1:2. See Fig. 44b.



Group 2B Bathroom w/shower
Figure 44b



Group 2A Bathroom w/shower
Figure 44c

44.00: continued

- b. Wall reinforcement: All walls of the shower shall have structural reinforcement to allow the future installation of a seat and grab bars, at any location from the floor to a height of 60 inches (60" = 1524mm) above the floor.

In Group 2B bathrooms, one grab bar 48 inches (48" = 1219mm) long shall be installed on the long wall, at a height of 36 inches (36" = 914mm) above the floor.

- c. Seat: A hinged, padded shower seat shall be installed or be capable of being installed on a wall adjacent to the opening. The seat shall be mounted with the edge as close as possible to the opening to provide a safe transfer. The top of the seat shall be 17 to 19 inches (17" to 19" = 432mm to 483mm) above the shower floor.

In Group 2B bathrooms, a hinged, padded shower seat shall be installed and mounted as specified above. The seat shall be a minimum of 16 inches (16" = 406mm) deep by 24 inches (24" = 610mm) long. Grab bars shall not be located behind the seat.

- d. Hardware: Faucets shall be operable with a closed fist and shall not require grasping, pinching, or twisting of the wrist.
- e. Hardware location: Mixing valves shall be centered horizontally on the long wall. The centerline of the control shall be mounted 38 inches to 48 inches (38" to 48" = 965mm to 1219mm) above the shower floor.
- f. Hand held shower: A hand held shower head attached to a 60 inch (60" = 1524mm) long flexible hose and an adjustable mounting bar shall be provided or be capable of being installed in the shower.

In Group 2B bathrooms, a hand held shower head attached to a 60 inch (60" = 1524mm) long flexible hose and an adjustable mounting bar, 36 inches (36" = 914mm) long shall be installed in the shower on the long wall adjacent to the seat. The bottom of the mounting bar shall be located at 40 inches (40" = 1016mm) above the shower floor.

- g. Soap tray: Shall not have a hand-hold feature unless it can support 250 lbs for five minutes. If provided, it shall be installed or be capable of being relocated with a centerline no higher than 48 inches (48" = 1219mm) above the shower floor.

In Group 2B bathrooms, soap trays shall be installed no higher than 48 inches (48" = 1219mm) above the floor to the centerline of the soap tray.

44.7 GRAB BARS

Grab bars shall be non-rusting and slip resistant, shall be between 1¼ inches and 1½ inches (1¼" to 1½" = 32mm to 38mm) in outside diameter, and shall be located 1½ inches (1½" = 38mm) clear from the wall. Grab bars shall also meet the definition of *structural strength*.

44.8 MIRRORS

Shall comply with the following:

- 44.8.1 A mirror over a sink shall be installed at or be capable of being relocated to a height of 40 inches (40" = 1016mm) from the floor to the bottom edge of the mirror's reflecting surface.
- 44.8.2 The top of the mirror shall be at least 72 inches (72" = 1829mm) above the floor.

In Group 2B bathrooms, a mirror shall be installed with the bottom no more than 40 inches (40" = 1016mm) above the floor and the top no less than 72 inches (72" = 1829mm) above the floor.

44.9 MEDICINE CABINETS

If medicine cabinets are provided, one medicine cabinet shall be installed or be capable of being relocated so that the inside bottom surface is at a height of 40 inches (40" = 1016mm) above the floor. If the medicine cabinet is also the only mirror, the bottom of the mirror shall be no higher than 40 inches (40" = 1016mm) above the floor.

521 CMR: ARCHITECTURAL ACCESS BOARD

44.00: continued

In Group 2B bathrooms, the medicine cabinet shall be installed with its inside bottom surface at a height of 40 inches (40" = 1016mm) above the floor.

44.10 OUTLETS AND CONTROLS

Shall comply with 521 CMR 39.00: CONTROLS.

44.11 ALARMS

Shall comply with 521 CMR 41.00: ALARMS.

521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 45.00: GROUP 2 KITCHENS

45.1 GENERAL

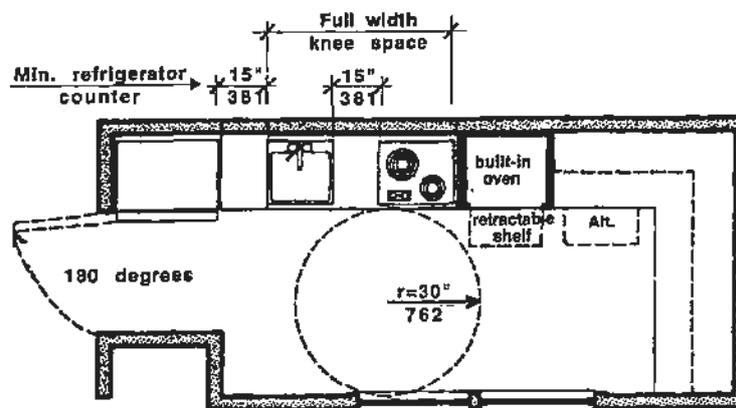
In all dwellings required to be *Group 2A* units (see 521 CMR 9.4 *Group 2 Dwelling Units*) all kitchens shall comply with 521 CMR 45, exclusive of the bold and italicized text which refers to *Group 2B* units. In *facilities* required to provide *Group 2B* units, such as hotels, motels, and inns, the kitchen shall comply with 521 CMR 45 plus the bold and italicized text that refers to *Group 2B* units.

45.2 CLEAR FLOOR SPACE:

A *clear floor space* complying with 521 CMR 6.4, *Clear Floor or Ground Space for Wheelchairs* shall be provided in front of those appliances which have no kneespace including but not limited to: refrigerators and wall ovens.

45.3 WHEELCHAIR TURNING SPACE

Shall comply with 521 CMR 6.3, *Wheelchair Turning Space*, to permit a person using a wheelchair to turn around without coming into contact with any fixtures. In addition, when a sink and a cooktop are located 15 inches (or less) ($15'' = 381\text{mm}$) apart, the counter shall provide or shall be capable of providing continuous *clear kneespace* at least 29 inches ($29'' = 737\text{mm}$) in height. See Fig. 45a.



Group 2 Kitchen
Figure 45a

45.4 SINKS

Shall comply with the following:

- 45.4.1 Sink cabinet: If a base cabinet is provided under the sink, it shall be removable to provide a kneespace that complies with 521 CMR 45.4.2 and 45.4.3.

In Group 2B units, base cabinets shall not be installed unless kneespace is provided.

- 45.4.2 Kneespace: A *clear kneespace* shall be provided or be capable of being provided under the sink, 19 inches ($19'' = 482\text{mm}$) deep and at least 30 inches ($30'' = 762\text{mm}$) wide.

In Group 2B units, kneespace shall be provided.

- 45.4.3 Height: The sink shall be capable of being relocated vertically in the future, without structural change to the walls of the kitchen.

In Group 2B units, the kitchen sink shall be located so that there is 27 inches ($27'' = 685\text{mm}$) from the floor to the underside of the sink.

- 45.4.4 Countertop: A counter space at least 15 inches ($15'' = 381\text{mm}$) wide shall be provided on one side of the sink, at the same height as the sink. This may overlap with one of the 15 inch ($15'' = 381\text{mm}$) spaces required in 521 CMR 45.5.4.

521 CMR: ARCHITECTURAL ACCESS BOARD

45.00: continued

In Group 2B units, the countertop shall be set at 34 inches (34" = 863mm) above the floor to the top of the counter.

45.4.5 Sink depth: Sink bowls shall not exceed 6½ inches (6½ = 165mm) in depth and shall have drains offset to the rear.

45.4.6 Piping: Water pipes and drain traps shall be located as close to the rear wall of the kneespace and as high off the floor as possible to provide maximum kneespace. If there is no base cabinet under the sink, pipes and traps shall be insulated or covered.

45.4.7 Disposals: If a garbage disposal has a remote switch, it shall be located on the front face (apron) of the counter located to the left or right of the sink but not in front of the sink.

45.4.8 Sink Hardware: Faucets shall be operated by a single lever. A spray hose shall be provided or a knockout provided on the sink for the future installation of a spray hose.

45.5 COOKTOPS

Standard ranges shall not be the only cooking surface. Cooktops shall be provided and shall comply with the following:

45.5.1 Base cabinets: If a base cabinet is provided under the cooktop, it shall be removable to provide kneespace that complies with 521 CMR 45.5.2 and 45.5.3.

In Group 2B units, base cabinets shall not be installed unless kneespace can be provided.

45.5.2 Kneespace: A clear kneespace shall be provided or be capable of being provided under the cooktop, 19 inches (19" = 482mm) deep and at least 30 inches (30" = 762mm) wide.

In Group 2B units, kneespace shall be provided.

45.5.3 Height: The cooktop shall be capable of being relocated vertically in the future, without structural change to the walls of the kitchen.

In Group 2B units, the kitchen cooktop shall be located so that there is 29 inches (29" = 737mm) from the floor to the underside of the cooktop.

45.5.4 Countertop: A counter space at least 15 inches (15" = 381mm) wide shall be provided on one side of the cooktop, at the same height as the cooktop. This may overlap with one of the 15 inch (15" = 381mm) spaces required in 521 CMR 45.4.4.

45.5.5 Controls: Cooktop controls shall be located at the front or side of the appliance. Exhaust hood: if the controls for a hood are located higher than 54 inches (54" = 1372mm) above the floor, a switch shall be provided at the front face (apron) of counter.

45.6 OVENS

All microwave ovens, if built-in, and at least one conventional oven shall comply with the following:

45.6.1 Height: The floor of the oven shall be 30 inches (30" = 762mm) above the floor.

45.6.2 Oven type: The oven shall be self-cleaning or continuous cleaning.

45.6.3 Control location: Oven controls shall be located within the zone of reach as defined by 521 CMR.

45.6.4 Where a bottom-hinged oven door is provided, a retractable "bread board" type shelf shall be provided in the counter immediately adjacent to the oven door. Where a side-hinged oven is provided, the retractable "bread board" type shelf shall be provided directly under the oven.

521 CMR: ARCHITECTURAL ACCESS BOARD

45.00: continued

45.7 WALL CABINETS

Walls shall be capable of structurally supporting wall cabinets so that the inside bottom surface of the cabinet is capable of being located between 42 inches (42" = 1067mm) and 54 inches (54" = 1372mm) above the floor.

In Group 2B units, the wall cabinets shall be mounted so that the inside bottom surface of the cabinet is no higher than 48 inches (48" = 1219mm) from the floor.

45.8 BASE CABINETS

Shall comply with the following:

45.8.1 Each cabinet shall be capable of being removed to provide *clear* kneespace for persons using wheelchairs.

45.8.2 Corners: Cabinets located at the inside corner of an L-shaped counter shall have or be capable of providing a built-in lazy susan.

45.8.3 Drawers: At least one base cabinet shall provide a drawer or drawers.

45.9 CABINET HARDWARE

Shall comply with the following:

45.9.1 Type: Opening devices shall not require twisting, pinching or grasping to operate.

45.9.2 Location: Cabinet opening devices shall be located at the tops of base cabinet doors and at the bottom of wall cabinet doors.

45.10 REFRIGERATORS

When the refrigerator is provided with the unit, it may be combination refrigerator-freezers with two doors side by side, or may be two door freezer-above-the-refrigerator units, provided the floor of such freezer is no higher than 44 inches (44" = 1118mm) above the floor, and shall be self-defrosting.

45.10.1 Location: The refrigerator shall be located so that its doors are capable of being opened 180 degrees and so that it meets minimum *clear floor space* and *zone of reach* requirements in 521 CMR 6.3, Wheelchair Turning Space, 521 CMR 6.5, Forward Reach and 521 CMR 6.6, Side Reach.

45.10.2 Counterspace: A counter *space* at least 15 inches (15" = 381mm) wide shall be provided on one side of the refrigerator. This may overlap with one of the 15 inch spaces (15" = 381mm) required in 521 CMR 45.4.4 or 45.5.4.

45.11 OUTLETS AND CONTROLS

Shall comply with the applicable parts of 521 CMR 39.00: CONTROLS.

45.12 ALARMS

Shall comply with the applicable parts of 521 CMR 40.00: ALARMS.

NON-TEXT PAGE

521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 46.00: GROUP 1 BEDROOMS

46.1 BEDROOMS IN GROUP 1 UNITS

Group 1 units shall provide or be capable of providing, wheelchair turning *space* as defined in **521 CMR 6.3, Wheelchair Turning Space**, *clear* of the door swing, at one side of the bed in the primary bedroom (based on a full size bed). Where more than one bedroom is provided, an additional bedroom shall also provide or be capable of providing wheelchair turning *space* (based on one twin size bed).

46.2 DOORS:

Doors to all bedrooms required to comply under **521 CMR 46.1**, shall comply with **521 CMR 26.00: DOORS AND DOORWAYS**.

46.3 CLOSETS

All closets in bedrooms required to be *accessible* shall comply with **521 CMR 9.5.8, Closets**.

46.4 ELECTRICAL OUTLETS AND CONTROLS

Shall comply with **521 CMR 39.00: CONTROLS**.

46.5 ALARMS

Shall comply with **521 CMR 40.00: ALARMS**.

NON-TEXT PAGE

521 CMR: ARCHITECTURAL ACCESS BOARD

521 CMR 47.00: GROUP 2 BEDROOMS

47.1 **BEDROOMS IN GROUP 2 UNITS**

Group 2A units shall provide or be capable of providing wheelchair turning space in compliance with 521 CMR 6.3, **Wheelchair turning space**. Said wheelchair turning space shall be or capable of being *clear* of the door swing and located at one side of the bed in the primary bedroom (based on a full size bed). Where more than one bedroom is provided, an additional bedroom shall also provide or be capable of providing such wheelchair turning space (based on one twin size bed).

In Group 2B units, the bedrooms shall provide wheelchair turning space in compliance with 521 CMR 6.3, Wheelchair Turning Space. Said wheelchair turning space shall be provided, clear of the door swing and located at one side of the bed in the primary bedroom, (based upon a full size bed). Where more than one bedroom is provided, an additional bedroom shall also provide such wheelchair turning space (based on one twin size bed).

47.2 **DOORS**

Doors to all bedrooms shall comply with 521 CMR 26.00: **DOORS AND DOORWAYS**.

47.3 **CLOSETS**

All closets in bedrooms required to be *accessible* shall comply with 521 CMR 9.5.9, **Closets**.

47.4 **ELECTRICAL OUTLETS AND CONTROLS**

Shall comply with 521 CMR 39.00: **CONTROLS**.

47.5 **ALARMS**

Shall comply with 521 CMR 40.00: **ALARMS**.

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