

HOME MODIFICATIONS

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Home Safety Checklist

Created in partnership with the Administration on Aging

Use this list to identify fall hazards and accessibility issues of the homeowner and family members. Home modification strategies on the reverse side of this page can help prioritize your work. Underline or use a highlighter to note problems and add comments.

1. EXTERIOR ENTRANCES AND EXITS

- Note condition of walk and drive surface; existence of curb cuts
- Note handrail condition, right and left sides
- Note light level for driveway, walk, porch
- Check door threshold height
- Note ability to use knob, lock, key, mailbox, peephole, and package shelf
- Do door and window locks work?

2. INTERIOR DOORS, STAIRS, HALLS

- Note height of door threshold, knob and hinge types; clear width door opening; determine direction that door swings
- Note presence of floor level changes
- Note hall width, adequate for walker/wheelchair
- Determine stair flight run: straight or curved
- Note stair rails: condition, right and left side
- Examine light level, clutter hazards
- Note floor surface texture and contrast

3. BATHROOM

- Are basin and tub faucets, shower control and drain plugs manageable?
- Are hot water pipes covered?
- Is mirror height appropriate, sit and stand?
- Note ability reach shelf above, below basin
- Note ability to step in and out of the bath and shower
- Can resident use bath bench in tub or shower?
- Note toilet height; ability to reach paper; flush; come from sit to stand posture
- Is space available for caregiver to assist?

4. KITCHEN

- Note overall light level, task lighting
- Note sink and counter heights
- Note wall and floor storage shelf heights
- Are undersink hot water pipes covered?
- Is there under counter knee space?
- Is there a nearby surface to rest hot foods on when removed from oven?
- Note stove control location (rear or front)

5. LIVING, DINING, BEDROOM

- Chair, sofa, bed heights allow sitting or standing?
- Do rugs have non-slip pad or rug tape?
- Chair available with arm rests?
- Able to turn on light, radio, TV, place a phone call from bed, chair, and sofa?

6. LAUNDRY

- Able to hand-wash and hang clothes to dry?
- Able to access automatic washer/dryer?

7. TELEPHONE AND DOOR

- Phone jack location near bed, sofa, chair?
- Able to get phone, dial, hear caller?
- Able to identify visitors, hear doorbell?
- Able to reach and empty mailbox?
- Wears neck/wrist device to obtain emergency help?

8. STORAGE SPACE

- Able to reach closet rods and hooks, open bureau drawers?
- Is there a light inside the closet?

9. WINDOWS

- Opening mechanism at 42 inches from floor?
- Lock accessible, easy to operate?
- Sill height above floor level?

10. ELECTRIC OUTLETS AND CONTROLS

- Sufficient outlets?
- Outlet height, wall locations
- Low vision/sound warnings available?
- Extension cord hazard?

11. HEAT, LIGHT, VENTILATION, SECURITY, CARBON MONOXIDE, WATER TEMP CONTROL

- Are there smoke/CO detectors and a fire extinguisher?
- Thermometer displays easily readable?
- Accessible environmental controls?
- Pressure balance valve available?
- Note rooms where poor light level exists
- Able to open windows; slide patio doors?
- Able to open drapes or curtains?

COMMENTS:

HELP PREVENT FALLS: Use this list to prioritize work tasks. Leave a copy of this list with the family so they can make further improvements.

1. EXTERIOR ENTRANCES AND EXITS

- Increase lighting at entry area
- Install stair rails on both sides
- Install door lever handles; double-bolt lock
- Install beveled, no step, no trip threshold
- Remove screen or storm door if needed
- Create surface to place packages when opening door
- Install peephole on exterior door
- Repair holes, uneven joints on walkway
- Provide non-slip finish to walkway surface
- Add ramp

2. INTERIOR DOORS, HALLS, STAIRS

- Create clear pathways between rooms
- Apply color contrast or texture change at top and bottom stair edges
- Install door lever handle
- Install swing-clear hinges to widen doorway. Minimum width: 32 inches
- Install beveled thresholds (max 1/2 inch)
- Replace or add non-slip surface on steps
- Repair or install stair handrails on both sides

3. BATHROOM

- Install swing-clear hinges to widen doorway. Minimum width: 32 inches
- Install secure wall reinforcement and place grab bars at toilet, bath and shower
- Install adjustable-height shower head
- Install non-slip strips in bath/shower
- Secure floor bathmat with non-slip, double-sided rug tape
- Elevate toilet height by adding portable seat or raising toilet base on a pedestal
- Adapt flush handle or install flush sensor
- Adapt or relocate toilet paper dispenser
- Round counter corners to provide safety
- Insulate hot water pipes if exposed
- Create sitting knee clearance at basin by removing vanity door and shelves underneath
- Install mirror for sitting or standing view
- Install good-quality non-glare lighting
- Install shower with no threshold if bathing abilities are severely limited

4. KITCHEN

- Increase task lighting at sink, stove, etc.
- Install D-type cupboard door handles
- Install adjustable shelving to increase access to upper cabinets
- Increase access to under counter storage space by installing pull-out units
- Insulate hot water pipes if exposed
- Install hot-proof surface near oven
- Install switches and outlets at front of counter

- Install pressure-balanced, temperature-regulated, lever faucets
- Create sitting knee clearance under work sites by removing doors or shelves
- Improve color contrast of cabinet and counters surface edges for those with low vision
- Add tactile and color-contrasted controls for those with low vision

5. LIVING, DINING, BEDROOM

- Widen or clear pathways within each room by rear-ranging furniture
- Secure throw and area rug edges with double-sided tape
- Improve access to and from chairs and beds by inserting risers under furniture legs
- Use side bed rail or chairs with armrests
- Install telephone jack near chair or bed
- Enlarge lamp switch or install touch-control lamp at bedside
- Install adjustable closet rods, shelving and light source for better storage access
- Install vertical pole adjacent to chair and sofa
- Raise furniture to appropriate height using leg extender products
- Install uniform level floor surfaces using wood, tile or low-pile rugs

6. LAUNDRY

- Build a counter for sorting and folding clothes
- Adjust clothesline to convenient height
- Relocate laundry appliances

7. TELEPHONE AND DOOR

- Install phone jacks near bed, sofa, and chair
- Install peephole at convenient height
- Install flashing light or sound amplifier to indicate ringing doorbell for those with visual or hearing problems
- Install mailbox at accessible height

8. STORAGE SPACE

- Install lights inside closet
- Install adjustable closet rods and shelves
- Install bi-fold or pocket doors

9. WINDOWS

- Install handles and locks that are easy to grip, placed at appropriate heights

10. ELECTRICAL OUTLETS AND CONTROLS

- Install light fixtures or outlet for lamps
- Install switches at top and bottom of stairs

11. HEAT, AIR, LIGHT, SECURITY, WATER TEMP, CARBON MONOXIDE CONTROLS

- Install smoke/CO detectors, fire extinguishers
- Increase residents' access to environmental control systems

**OTHER ACCESSIBILITY PRODUCTS TO CONSIDER
THAT ARE NOT AVAILABLE FROM RT-AFF BUT AT HOME DEPOT or LOWE'S**

ITEM	BRAND	MODEL	INTERNET #	SKU	PRICES
Hand held shower	Moen	26000SRN	304218463	1003017155	\$59.98

- 6-spray settings provide a variety of water flow options
- Easy release and return with magnetix docking system



Grab Bar with Integrated Towel Bar	Moen	LR2350DBN	2030563473	1000671537	\$38.76
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- 24 in. Grab Bar with Integrated Towel Bar
- Mounts on the wall



Grab Bar with Integrated Paper	Moen	LR2352DBN	203056348	1000673007	\$35.24
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- 12 in. Designer Grab Bar with Integrated Paper Holder
- Helps reduce clutter in bathrooms
- Multi-functional design combines convenience and style



Transfer bench	Delta	DF565	203399003	567445	\$79.99
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- Straddles side of tub allowing a bather transfer easily.



Adjustable Shower and Tub Chair	Delta	DF599	203399005	606298	\$54.98
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- Sits inside tub or shower allowing bather to sit.



ITEM	BRAND	MODEL	INTERNET #	SKU	PRICES
Shower Chair with Commode	Drive Medical	11114kd-1	205525208	N/A	\$102.23

- Can be used as a standalone commode (includes bucket).
- Or as a shower chair. Or as a frame over an existing toilet.



Toilet Safety Bar	Delta	DF575	203398995	134694	\$41.98
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- Two 9" high safety rails help persons get up and down.
- Easily attaches to the toilet



These items are available from home centers. The item numbers are from Home Depot. Go to Homedepot.com, enter internet number in search box. If a SKU number is listed, it should be available in the store. No SKU, you may need to get the item Online. It's fine to get these any other place. Larger pharmacies carry similar items.

Other suggestions that are not available from RT-AFF and where to get them

RAISED TOILETS/CHAIR HEIGHT TOILETS

Raised toilets are available for order online or pick up at home centers. There are several different makes and models of ADA-approved raised toilets. Try to get one that says "ADA Approved" and/or has a seat height of 16.5-17 inches and costs less than \$200. When selecting one make sure it is not too big as to impede opening of the bathroom door and check height of tank if there are any shelves or anything in the way. Be sure to get (if not included) wax ring, supply line, guts and seat.

LEVER-STYLE

There are several models of new faucets available at the home centers from \$25.00 up.

LEVER-STYLE DOOR HANDLES

There are several models available at the home centers from \$15-30.

NON-SLIP RUG MATS

Both Lowe's and Home Depot have them in the rug section. There are mats in various sizes. Match approximately the size of the rugs you want to secure and cut to fit. Note if the throw rugs are on hard or carpeted surfaces (the mats are different).

Guidance on Grab Bar Placement

Revised 5 Feb18

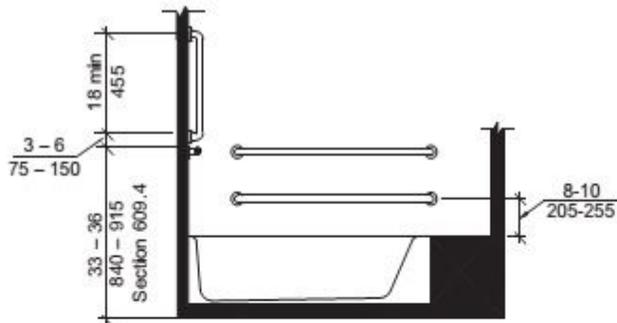
For bathtubs:

The top of horizontal grab bars on the long wall should be 33 to 36 inches above the floor and 36 to 42 inches long. If the homeowner bathes sitting in the tub, a second horizontal bar should be 8-10 inches above the rim of the tub.

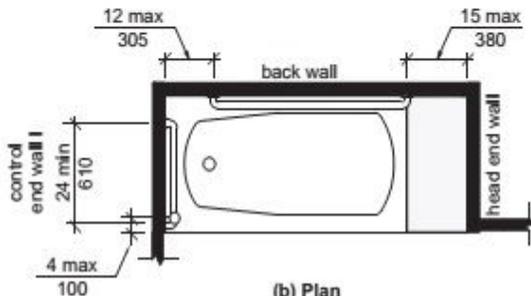
The top of horizontal grab bars on the control end should similarly be 33 to 36 inches above the floor and a minimum of 24 inches long.

Vertical grab bars for entering the bathtub need to be at least 18 inches long and mounted 3 to 6 inches above the horizontal bar — that is 36 to 42 inches above the floor, depending on the height of any horizontal grab bar.

For Bathtubs with a Permanent Seat

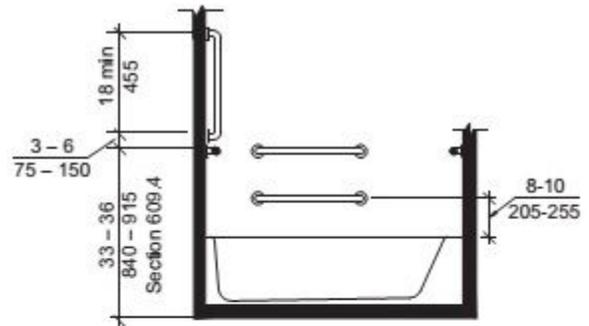


(a) Elevation

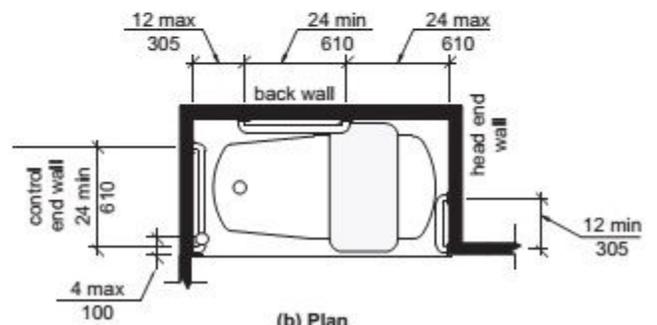


(b) Plan

For Bathtubs without Permanent Seats



(a) Elevation

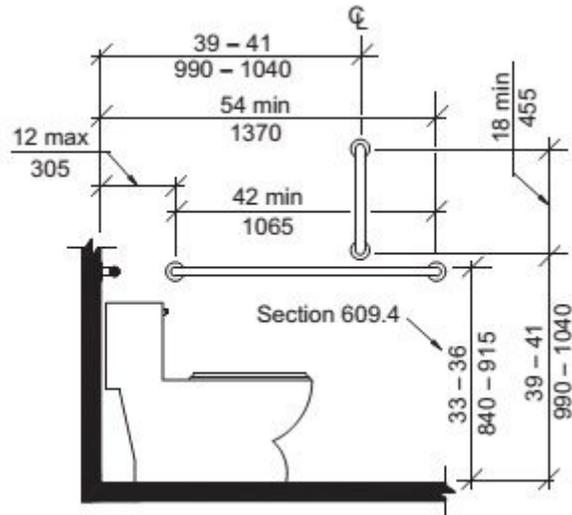


(b) Plan

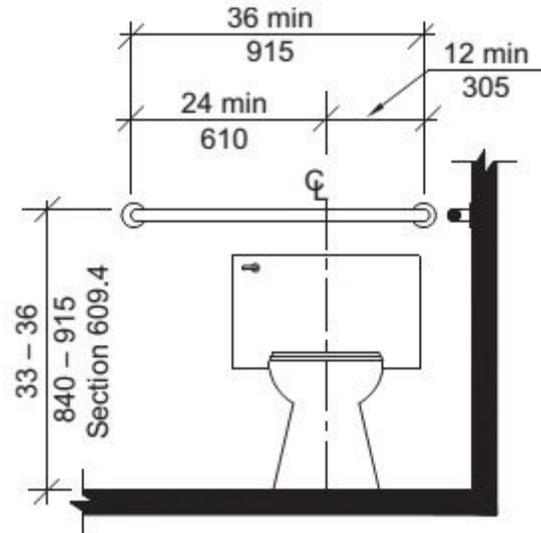
For toilets:

For toilets, the elevations are similar with horizontal grab bars at 33 to 36 inches above the floor and at least 42 inches long. Vertical grab bars should be at least 18 inches long with the bottom 39 to 41 inches above the floor.

Side Wall Grab Bar Placement



Rear Wall Grab Bar Placement



References:

Accessed on web 28 Jan18.

International Code Council 2009 A117 Accessible and Usable Buildings and Facilities, [Chapter 6 Plumbing Elements and Facilities](#)

(https://codes.iccsafe.org/public/document/ICCA117_12009/chapter-6-plumbing-elements-and-facilities).

Moen/ Professional – [Know the Code on Grab Bars](#)

(<http://pro.moen.com/news-and-insights/trade-tips/cms/article?id=140>)

All About Grab Bars

Revised Feb 2018

TWO RULES FOR SECURING GRAB BARS

1. The grab bar must be fastened securely to the wall – be rock solid.
2. The wall needs to be solid enough to support the grab bar. If it's not, repair any water damaged or deterioration to the wall before installing the grab bar.

Anchoring the grab bar to a stud is ideal, but there are good options for using hollow-wall anchors in most tile walls if a stud is not available. Note that ½" drywall alone is not sufficient for fastening a grab bar.

POSTIONING GRAB BARS AT THE RIGHT LOCATION

RT-AFF generally follows ADA guidelines about the height and location of grabs, which are summarized below. However, it's important to take into account occupants' individual needs, including:

- their height
- whether they bathe sitting in the tub or shower standing up
- whether they use a shower chair/stool
- which end they enter the tub/shower
- whether they are stronger on one side, etc.

If one of the occupants is an extremely large person, consult with RT-AFF staff.

Grab bars are generally attached horizontally inside the tub/shower area and often vertically to provide support stepping in and out. Grab bars are generally not installed at a diagonal angle. For example, if the studs are 16" apart, don't install an 18" grab bar at an angle to hit the studs at each end. Instead, place the grab bar horizontally and use a hollow-wall anchor at one end. (Also note that RT-AFF has 16" and 32" grab bars, which may align better with studs than other lengths.)

TOOLS AND MATERIALS. YOU WILL NEED

The tools, materials, and techniques used depend on the wall, its substrate, and what options you have for fastening the grab bar, most importantly whether a stud is available to fasten the grab bar at one or both ends, and, if not, whether there is enough space to use a hollow-wall anchor.

- Masking or painters' tape
- Drill, preferably a hammer drill
- Phillips head screw driver
- 1/16" drill bit
- Stud finder
- Level
- Sharpie
- Hammer

The Mini Grab Bar Installation Kit Rebuilding Together loans our House Captains includes:

<ul style="list-style-type: none"> - ¼” and ½” tile bits - A supply of SnapToggles - Alcohol pads - Rags - Tube of white silicon caulk 	<ul style="list-style-type: none"> - A supply of 3/16"-24 (#10-24) screws - Wire probe to test pilot holes - Safety glasses
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Optional but helpful items:

<ul style="list-style-type: none"> - Rubber mallet - Drop cloth - Scotch tape - ½” oak dowels 	<ul style="list-style-type: none"> - Long phillips bit or extension for drill - Shop vac - Hacksaw blade - Construction adhesive
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WHAT METHOD TO USE

<u>If</u>	<u>Use</u>
You can find studs	Method 1
You can't find stud at one or both ends	Method 2
You can expose the wall from behind	Method 3
You are doing a total bathroom remodel	Method 4
You are installing into vinyl or fiberglass	Method 5

OOPS! Now what should I try?

METHOD 1- STUDS

At least two 2” stainless steel screws on each end must hit solid wood.

Grab bars are usually mounted on tile in bathrooms. (See Method 5 if a plastic or fiberglass tub surround is present.)

1. Position the grab bar at the approximate desired location on the wall and check whether both ends lie flat against the tile. Try to avoid places where a pipe or wire is likely to run. For example, using a 24” grab at the control end of a shower usually provide ample clearance for water lines from the faucet to the shower head.
2. Find the studs with a stud finder or by tapping on the wall for a solid sound. It is usually easier to run a stud finder on the flat wall above the tiles than on the tiles themselves (and assume the stud is vertical). If the tile does not extend all the way to the ceiling, you can use a small nail and hammer for confirmation. It's easy to caulk nail holes in the drywall above the tile with silicon caulk.
3. Confirm you are in the stud at one end by drilling a pilot hole with a 1/8” (or smaller) tile bit behind where the grab bar flange will go, preferably in a grout line between the tiles. A hammer drill makes drilling through tile much easier. Be sure and fill the unused holes with caulk after you are done. Then use a hammer and nail to confirm you've hit the stud through the pilot hole. HINT: if the drill bit wanders, stick on Scotch Tape to help the bit get started.

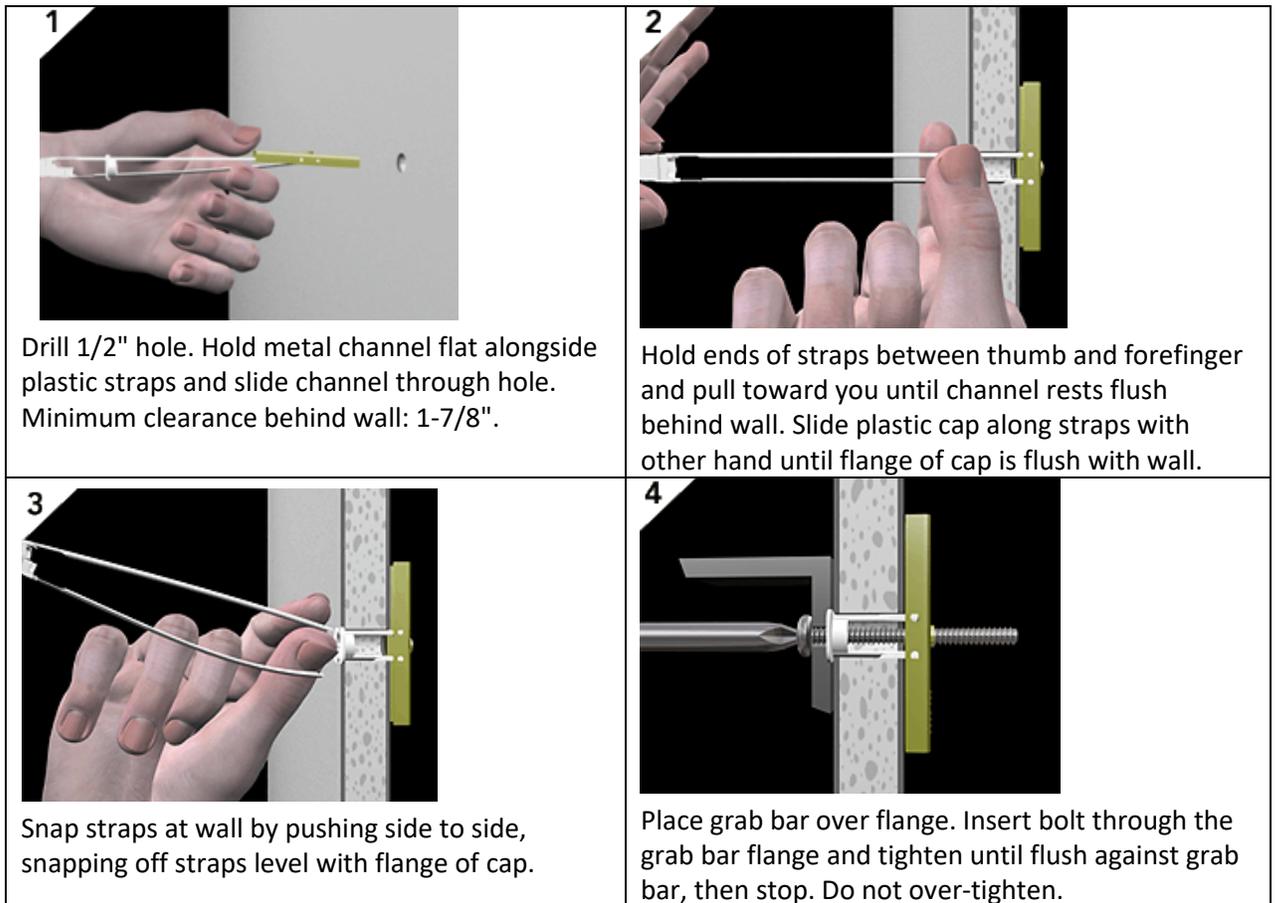
4. If you are satisfied a stud is present, carefully position the grab bar, making sure it's level, and use a Sharpie to mark two holes in the flange at each end. Then drill a pilot hole at the other end to determine whether a stud is present. If you have a stud at each end, then drill use a 1/4" tile bit to drill two holes at each end for the 2" stainless steel screws.
5. Apply silicon caulk to the back of the flange to protect against moisture intrusion.
6. Secure the grab bar using stainless steel screws that are at least 2" long. Don't use screws that will rust. After securing the grab bars, caulk over the screw heads and all around the round mounting bracket with silicone caulk before attaching the cover. Hint: if the cover is stuck on the grab bar mounting bracket before it is installed, tap the edge of the bracket from the back side with a hammer.
7. Use the "gorilla test". Grab the bar with both hands and yank on it with all your might. It shouldn't budge.

METHOD 2 - CAN'T FIND A STUD AT ONE OR BOTH ENDS

If a stud is not present at one or both ends, you'll probably need to use a hollow-wall fastener. To anchor into hollow walls, such as tile on drywall, RT-AFF recommends using at least two 3/16" heavy duty SnapToggles at each end of the grab bar.

If a stud is not present at one or both ends, it's very important to drill a pilot hole with a 1/8" or smaller tile bit and then use a wire, such as a coat hanger or paperclip, to explore how much room there is in the wall cavity, both depth and width.

- SnapToggles require 1 7/8" clearance behind the wall to have room to open
- Snap Toggles also require about 1/2" horizontal clearance, so if your pilot hole is right against a stud, you will need to adjust the grab bar enough for the SnapToggle to miss the stud (or the other direction to fasten into the stud with screws).



Source: <http://www.toggler.com/pdf/toggle.pdf>

1. Once you have drilled pilots and used a wire probe to confirm adequate clearance for SnapToggles, carefully position the grab bar and use a Sharpie to mark at least two holes in the flange at each end.
2. Using these marks, drill two holes at each end with a tile bit: Use a 1/2" tile bit for SnapToggles, and a 1/4" inch tile bit if one end aligns with a stud.
3. Insert and seat the SnapToggles as illustrated above. Before putting up the grab bar, it's helpful to screw in the 3/16"-24 machine screw into the SnapToggle with your fingers to ensure the threads align – or to learn whether the angle of the screw may not be quite square.
4. Apply silicon caulk to the back of the flanges.
5. Fasten the grab bar at each end, using 3/16"-24 machine screws for the SnapToggles. Be gentle in starting the screws so as not to break the plastic. Tighten the screws snugly, but avoid over-tightening, which could crush the drywall. Using a Phillips screwdriver instead of a drill provides a good feel for how much to tighten.
6. Seal the heads of the screws with silicone caulk. Install the cover plate.

METHOD 3 - USING WOOD BLOCKING BEHIND THE WALL

If studs are not present but you can access the backside of the wall, such as cutting out a section of drywall in a closet behind a shower, installing wood backing provides a solid foundation for screws to anchor a grab bar.

1. Use a pilot hole or measurements to decide whether this option makes sense by locating on the back side of the wall where the grab bar needs to be anchored.
2. Cut out a section of drywall at the right height between two studs. When cutting the drywall make your vertical cut in the middle of a stud so it will be easier to replace.
3. Drill pilot holes at each end of the grab bar to confirm the location of the blocking to be installed. Cut a 2x8 to the length equal to the distance between the studs and toe screw this blocking into place for each end of the grab bar.
4. Position the grab bar and mark two holes at each end with a Sharpie. Drill these holes with a ¼" tile bit.
5. Apply silicon caulk to the back of the grab bar flanges.
6. Secure the grab bar using stainless steel screws that are at least 2" long. Don't use screws that will rust. After securing the grab bars, caulk over the screw heads and all around the round mounting bracket with silicone caulk before attaching the cover.
7. Go to the back of the wall and verify the screws bit into the blocking.
8. Close and repair the wall you opened up.

METHOD 4 – FOR A COMPLETE BATHROOM REMODELING

If you are doing a total bathroom remodel or rebuilding a failing wall, install a substrate or blocking to provide a solid foundation to anchor grab bars. Options include:

- Install ¾" plywood to the wall studs throughout the bathtub area before putting up the drywall or cement board and tile. This will provide suitable support for grab bars in any location.
- Install 2x8 blocking between the studs where grab bars will be installed, before you put up the drywall or cement board and tile.

METHOD 5 - Installing Grab Bars into fiberglass or vinyl shower enclosures

PLEASE BE ADVISED THAT THIS IS METHOD IS CHALLENGING, CONSULT RT-AFF STAFF

If the vinyl or fiberglass surround is tight against the wall behind, you can treat it just like tile, using either screws to anchor into studs or SnapToggles as a hollow-wall fastener.

If the tub has a vinyl or fiberglass enclosure that stands off the wall 7/8" – 2", you can use a Solid Mount to anchor the grab bar to studs. Solid Mounts can only be anchored to a stud and require drilling a 2" hole in the fiberglass or vinyl. So, it is vital to confirm that a stud is present for each end of the grab bar.



What's included:

- 2 each mounting plates with threaded cup.
- 2 each threaded mounting shaft.
- 2 each lag bolt.
- 6 each self-tapping screws.
- 2 each fender washer.
- Solid Mount detailed installation instructions.

Tools you'll need:

- Drill.
- Phillips head screw driver.
- 5/32" & 3/8" drill bit.
- 2"-hole saw.
- Stud finder.
- Level.
- Hacksaw.
- 1/2" socket & ratchet.

Locate the existing studs:

1. Use a stud finder to locate the existing studs above the fiberglass showerwall.
2. Mark the center of each stud.
3. Use a level and draw a vertical line on the fiberglass wall to show the stud center lines.

Tip: Although an electronic stud finder can make it easier, there are other methods of locating the studs. Tap the wall until you hear a solid sound. Use a nail to penetrate the wall board above the fiberglass to insure the stud location. Missed it? Keep trying, wall board is easy to repair.

INSTALLATION INSTRUCTIONS FOR THE "SOLID MOUNT"**Determine Location of Studs**

1. By using a stud finder or nail locate the existing studs at the wallboard above the fiberglass shower wall where the grab bar is to be installed. Mark the center of each stud.
2. Using a level, draw a vertical line on the fiberglass wall to show the stud centerlines.

Determine Location of Mounting Bracket

1. Align center of the mounting flanges on the end of the grab bar with the stud centerline.
2. Keeping the grab bar in place, draw a circle around one end of the mounting flange.

Installation of Mounting Brackets

1. Mark the center of the drawn circle.
2. Using the center mark from step 1, drill a 1/8" hole to verify stud location. With the stud location verified, drill a 2" hole in the fiberglass wall with a 2"-hole saw.
3. Measure the distance from the stud to the outer surface of the fiberglass wall to determine where to cut the threaded mounting shaft. Cut the threaded mounting shaft to size. (7/8" to 1-1/8" cut off all spacers, 1-1/8" to 1-3/8" cut off 3 spacers, 1-3/8" to 1-5/8" cut off 2 spacers, 1-5/8" to 1-7/8" cut off 1 spacer, 1-7/8" to 2-1/8" leave all spacers).
4. Using a 3/16" drill bit, drill a starter hole into the center of the stud making sure you are centered in the 2" hole and the stud.
5. Insert the lag bolt with washer into the threaded mounting shaft then into the starter hole and tighten.
6. Apply a bead of silicon caulking around the 2" hole. Screw the mounting bracket onto the threaded shaft that is attached to the stud. Tighten the mounting bracket down until it makes contact with the fiberglass shower wall. Wipe off any excess silicon.

7. Hold one end of the grab bar on the installed mounting bracket and align the center of the other end of the grab bar mounting flange with the stud centerline on the fiberglass wall.
8. Keeping the grab bar in place, draw a line around the mounting flange to show location of the next mounting bracket.
9. Repeat steps 1 through 6 for the other grab bar flange.

Installation of the Grab Bar to the Mounting Brackets

1. Hold the grab bar against both mounting brackets and mark the screwholes.
2. Using a 5/32" drill bit, drill all the marked holes. While holding the grab bar in place secure the grab bar to the mounting plates using the self-tapping screws provided. **HAND TIGHTEN ONLY! (No Power Tools)! Once screws have been installed, DO NOT REMOVE THEM AND INSTALL IN THE SAME HOLES!**

OOPS!!! – NEED HELP? See hints below

- **I marked the holes in the flanges carefully but now they don't align with the holes I drilled in the tile. What happened?**
Try flipping the grab bar 180 degrees, because the flanges may not be symmetrical.
- **I can't get the cover off the flange.**
Check whether the cover attaches to the flange with three "dimples" or by turning to engage three metal tabs. If it has tabs, just rotate the flange to disengage them. If the flange has dimples, strike the edge of the cover with a hammer or something hard, and it should pop off in a few blows. Be careful, the edges may be sharp.
- **I can't get the cover back on the flange.**
Check the orientation, because some covers are not round and must be rotated to align with the flange. Check whether the cover attaches by turning to engage tabs or with "dimples" that clamp onto the flange. If the cover has dimples, you may need to rap the cover to seat it on the flange. If all else fails, you can apply silicon caulk to the inside of the cover to adhere it to the flange – and clean up what oozes out.
- **I drilled one of the holes in the wrong place.**
All holes need to be filled with silicon caulk to prevent moisture intrusion. Usually you can repair a hole with caulk or grout. Sometimes, you may have to break out the old tile and replace with a new one, as close to the original color as possible.
- **I can only get one screw to hit a stud.**
If you can't reposition the grab bar to get two screws into the stud, try using a SnapToggle to anchor the second screw.
- **I got one end of the grab bar on OK but the other end doesn't quite match up.**
Usually the holes in the flange provide enough room to make minor adjustments. Loosen the first end try to get the screws started at the same time at both ends. If this fails, you may need to drill additional holes. Be sure to fill holes with silicon caulk and caulk the back of the flange to prevent moisture intrusion.

- **The 3/16"-24 screws I have aren't long enough for the SnapToggle to go in far enough to open.**
 Call a RT-AFF staff person for assistance. RT-AFF stocks longer machine screws for Toggles.
- **I don't have enough room behind the wall for a SnapToggle**
 If you don't have at least 1 3/4" depth for SnapToggles to have clearance to open, there are two options? First, try drilling more deeply into the wall behind the cavity with a 1/2" masonry bit and a hammer drill. For example, cinder block is pretty easy to drill.

 - If that fails, consider cutting 1/8" – 1/4" off the end of the wings of the SnapToggle to allow it to open in the space available.
 - If that doesn't work, consider using a 1/2" oak dowel (see immediately below).
- **There's wire mesh and masonry behind the tile.**
 Usually you can drill through masonry on wire mesh with a tile bit or masonry bit. If there's a cavity deep enough cavity behind this substrate, you may still be able to use a SnapToggle with a longer screw (call RT-AFF staff). If the wire mesh and masonry extends 2-3 inches behind the tile, drill a 1/2" hole with a tile or masonry bit several inches deep. Then put construction adhesive in the hole and on a 1/2" oak dowel, and drive the dowel into the hole with a hammer and cut off the protruding end flush with the tile with a hacksaw blade. Then mark the end of the dowel with a Sharpie, predrill a hole, and anchor the grab bar into the dowel with a stainless steel screw at least 2" long.
- **I drilled into the wall and it is all crumpling and not stable.**
 You cannot install a grab bar in this situation. Do your best to repair any damage caused by this process.
- **I can't drill through the tile.**
 Using a hammer drill is much more effective than a regular drill. Experiment with different kinds and sizes of bits – and different brands. Start with a smaller bit and then enlarge the hole. Dip the bits in water to cool them off. Some tile is so hard you will may go through several bits for each grab bar.
- **You can see part of the drilled hole after the grab bar is installed.**
 Fill it with caulk.