



Grab rails

A guide to selection and installation

Grab rails help people to keep their balance. They provide support, can aid 'transfer' movements such as getting onto and off seats, or are placed in areas where a slip or fall is considered a high risk. Common uses include assisting people to get onto and off the toilet or into and out of a bath, offering stability and support in the shower, and helping with walking up or down a step. Grab rails differ in use from hand rails which are often put where they provide guidance and stability along large changes in levels, such as stairways or ramps.



When selecting and positioning a grab rail it is important to consider the environment in which it will be installed, its intended purpose, the individual abilities, needs and physical characteristics of the user, and relevant standards and legislation. Correct installation is important to ensure safety of the user and effectiveness of the rail.

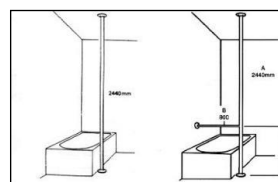
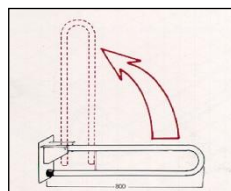
Australian Standard AS 1428.1-2009 *Design for access and mobility* gives guidelines for the suggested placement and specification of grab rails. The National Construction Codes 2012 (Building Code of Australia), and the Disability (Access to Premises - Buildings) Standards 2010 outline specific regulations for public buildings. The application of Australian Standards is not mandatory in a private dwelling. However, they have generally been adopted as the accepted guide to best practice for home modifications.

Although Australian Standards set out *minimum* technical specifications, they may not be suitable for all individual situations and deviation from them may be required. To help you to arrive at an effective long-term solution, it is recommended that you consult an occupational therapist. ILC Tas has details of occupational therapists in your local area.

Grab rail features to consider

- **Construction:** A grab rail should withstand the force applied to it. Rails that comply with Australian Standards (AS) specifications should have this written on the packaging, or it may be listed in the supplier catalogue. The AS logo is a good indication that the rail has been made to a high standard. Consideration should be given to the construction of the rail, how it is joined together and the thickness of the rail tubing. This will help determine the strength of the rail and how much force can be applied through it.
- **Material:** Grab rails are available in a variety of materials including stainless steel, aluminium, brass, plastic and galvanized tubing. In a wet area it is important to use materials that do not rust, such as stainless steel or aluminium. You should also examine the seals around screw holes as leakage can cause rusting of a rail. Some materials retain temperatures and may not be suitable in very hot or cold environments. A metal grab rail can conduct electricity, particularly if it is being installed in an area, such as a bathroom, where water is present. To avoid safety hazards the grab rail can be earthed by an electrician.
- **Finish:** The finish is important for appearance and safety reasons. Types of finish include slip resistant, satin or polished, and powder, epoxy or enamel coated. In a wet area, such as a shower, a slip resistant finish may be needed; the effect of the friction created between hand and grab rail will be that less strength is required for maintaining a firm grip on the rail. A rail that contrasts with the colour of the wall surface will be beneficial for a person with vision impairment.
- **Diameter:** If the diameter is too large the user may not be able to get a safe grip and, if too narrow, it will require more effort to maintain a firm hold and cause strain on the hand. Optimally, the hand should encircle and be in complete contact with the rail. The Australian Standard recommends that the outside diameter of a grab rail be 30-40mm, but this may not always suit the needs of individual users. A 32mm diameter is often recommended and alternative diameter rails are available.
- **Length:** Grab rails are available in standard lengths of 300mm, 450mm 600mm and 900mm. The length can also be customised to fit stud positions in a wall or the specific needs of the user.

- **How grab rails are mounted:**



Most grab rails are designed to be permanently fixed at both ends to the structures of the wall. Rails can be safely attached in any position on brick or cement walls. They should be fixed at each end to the studs in walls with timber or metal framework. When correctly installed, rails should be strong enough to support a person's weight, although additional reinforcement may be recommended for a heavy-weight user. They should not rotate in their fixings. Rails that fold up or swing away from the wall may be useful in situations where the rail needs to be removed for transfers, e.g. on/off the toilet.

Some grab rails can be attached to the floor or to the ceiling, as an alternative option where there is no suitable wall nearby, for example to assist a person to get out of the bath, or in a room such as a caravan or mobile home where the walls are not strong enough for attached rails.

Grab rails can be incorporated into bathroom fittings for additional stability. A towel rail can be replaced with a hand rail, and a grab rail can be used for attachment of a hand held shower hose.

- **Temporary grab rails:** Temporary rails may provide an effective solution when permanent rails are not possible. However they should be used with caution as they can be unsafe if used or installed incorrectly. Ideally, they should only be used if recommended by an occupational therapist. All temporary rails should be checked prior to each use to ensure correct attachment, as described in the manufacturer's instructions.

Suction rails are for short-term stabilising use and are not designed to support a user's full body weight. The strength of the suction rail will depend on the surface to which it is being adhered and, if attached to bathroom tiles, the rail will only be as strong as the glue sticking the tiles to the wall. Suction grab rails can damage surfaces and if a surface area breaks away this can cause injury to the user. When using a suction rail it is important to check the manufacturer's recommended load capacity, frequently check the suction strength and reposition it if necessary.



As with suction rails, safety issues associated with clamp-on rails that attach to the side of a bath should be considered. These rails are not fixed and the direction and amount of force applied may alter their stability. They can damage a bath, depending on its shape and the material it is made of.



Positioning a grab rail

The Australian Standard (referred to previously) provides guidelines regarding the location of grab rails in different environments, such as the height and distance of rails from a toilet or their position in a shower. However, it is important to tailor the position of the rail to the user's needs. Grab rail location and direction needs to take into consideration the user's ability and, in particular, their strength, range of movement and size (height and arm reach), the local environment and the intended purpose of the rail. In private homes grab rails can be fitted in any location, with appropriate support, where they provide the best assistance and help the user to feel safe and comfortable. They should be positioned so that a wash basin, taps, toilet-roll holder and towel rail will not be used for support.

Grab rails should be positioned close enough to be reached, and high enough to provide support, so that the user can safely gain momentum with stability. The direction of the rail will depend on its purpose. For example:

- Horizontal rails can assist people when pushing up from or lowering down to a seated position, e.g. from a toilet. They can also be used as a balance support when standing, e.g. in a shower.
- Vertical rails can assist people when pulling up from a seated position, or walking up a single step.
- L-shaped rails combining horizontal and vertical rails allow a person to push, pull or use a combination of actions.
- A rail can be positioned at a diagonal angle. This allows the rail to be used as a forearm support for a person who may have painful hands or wrists, or to enable them to maintain contact with the rail when moving from a sitting to a standing position. A 45° angle is commonly used in combination with a horizontal rail alongside a toilet to assist with standing up.

It is important that grab rails are installed in a position that allows the user to sustain a firm and effective grasp of the rail. The most desirable position is one that reduces the risk of injury, maximises grip strength and decreases the effort and energy required to maintain grasp of the rail during an activity. Optimal positioning should allow the wrist to stay in line with the forearm, minimise sideways movement of the wrist, permit complete encircling of the grab rail with the fingers and encourage good body alignment in relation to the rail. An occupational therapist can assist with determining the correct position of a rail for the person who will use it.

Installing a fixed grab rail

Grab rails are often required to withstand considerable force (1100N of force in any direction). The way in which a grab rail is fixed into the wall will determine the amount of force that can be applied through the rail. Factors to consider when installing a grab rail include:

- **What material the wall is made of:** Brick, timber frame or plaster board will all require different methods of installation. Walls clad in tiles require use of a masonry drill bit to avoid shattering or cracking the tiles. Some walls are not suitable for grab rail installation as they may not be able to bear the stress of someone's full weight. Consult a qualified builder if you are unsure about the suitability of walls for grab rail installation.
- **Where the studs are located in the wall:** Grab rails should be fully supported at all fixing points and there should be at least two points of fixture to studs at each end of the rail. Additional fixtures and wall reinforcement may be necessary for a heavy-weight user.
- **Type of fitting and mounting:** Consultation with a qualified builder is recommended regarding the installation of grab rails to ensure that the correct fixings are used for specific types of walls. Fixings can be exposed, concealed by a cover plate or vandal proof, and the number of fixing holes to attach screws can vary between rails.
- **Clearance from the wall:** The distance from the wall to the grab rail is important to consider as it needs to allow room for finger clearance as well as provide room for the hand to move along the top of the rail without obstruction. The Australian Standard (referred to previously) recommends that the distance between grab rail and wall should be 50-60mm with a 600mm unobstructed clearance above the rail. There should also be no obstruction along the top 270° arc of horizontal and angled grab rails, and for the full length of vertical grab rails.

Safety considerations

It is important to check rails and fittings regularly for any signs of rust, insecure attachment, rotation in the fitting, and change of shape.

Consider the amount of weight a person will put through the grab rail and their ability to grasp the rail safely. The size and strength of the grab rail needs to be appropriate for the person using it. Particular attention should be paid to this aspect of grab rail selection and installation if the user is a heavy person.

There is additional information available on the internet

Factsheets at www.homemods.info (search 'grab rail') include

'Consumer Factsheet: Looking at installing your own grabrail? Here are some issues to consider'

Contact ILC Tas for more information



Ring **1300 885 886** to speak to a health professional.



Visit our website www.ilctas.asn.au or email us ilc@ilctas.asn.au



Make an appointment to visit our centre at 275 Wellington Street, South Launceston.

Ring us to find out when we will be visiting your area

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