



# Grabrails: a Selection & Installation Guide

Grab rails help people to keep their balance. They provide support, can aid 'transfer' movements such as getting on and off seats, or are placed in areas where a slip or fall is considered a high risk. This booklet will provide some things to consider when selecting and installing grab rails in your home.

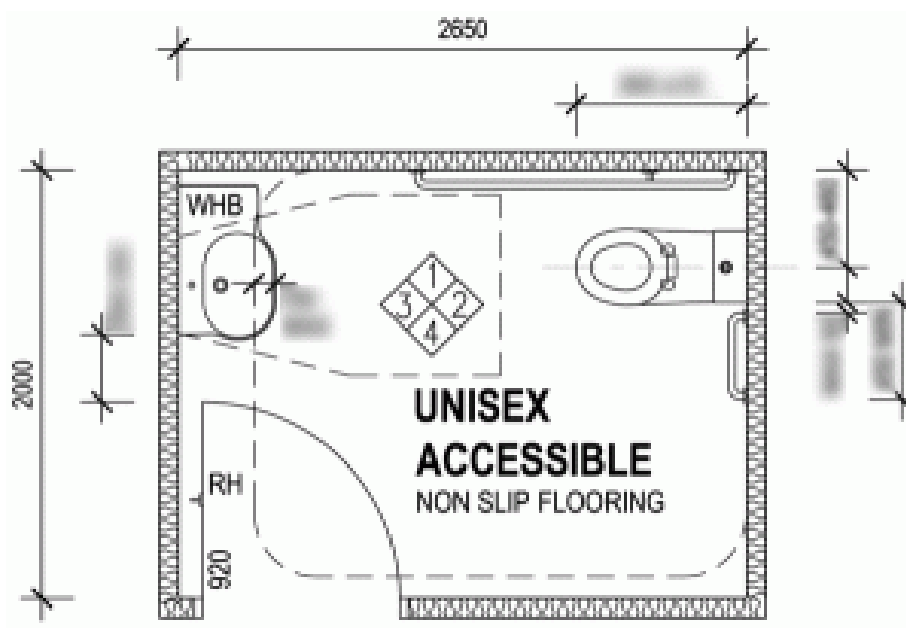


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Launceston, Hobart, Ulverstone

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.

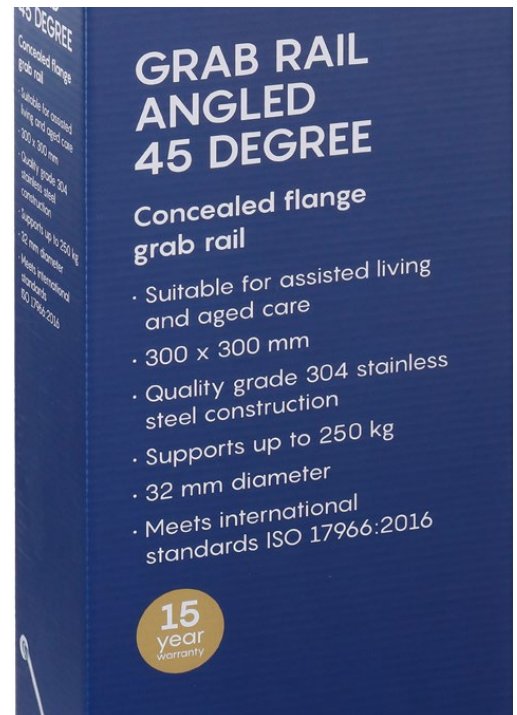
Australian Standard AS 1428.1–2021 *Design for access and mobility* gives guidelines for the suggested placement and specification of grab rails. The National Construction Codes 2019 (Building Code of Australia), and the Disability (Access to Premises - Buildings) Standards 2013 outline specific regulations 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. 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.



# Features to consider

## Construction

A grab rail should withstand the force applied to it. Rails that comply with Australian Standards (AS) specifications should withstand a force of 1100 Newtons or approximately 112kg. This should be 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, aluminum, brass, plastic and galvanized tubing. In a wet area, it is important to use materials that do not rust, such as stainless steel or aluminum. 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.



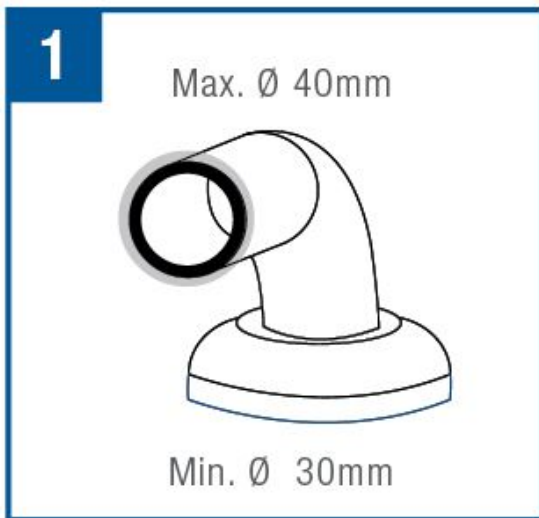
# Finish

The finish is important for appearance and safety reasons. Types of finish include slip resistant, satin or polished, 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 your hand and the grab rail may require less strength to maintain a firm grasp. A rail that contrasts with the colour of the wall surface will be beneficial for a person with vision impairment.



# Diameter

Optimally, the hand should encircle and be in complete contact with the rail. 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. The Standard recommends that the diameter of a grab rail should be 30-40mm.



# 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.



## Installing a fixed grab rail

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 grab rail, and a grab rail can be used for the attachment of a handheld shower hose.

## Temporary grab rails

Temporary rails may provide a 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 and load capacity as described in the manufacturer's instructions.

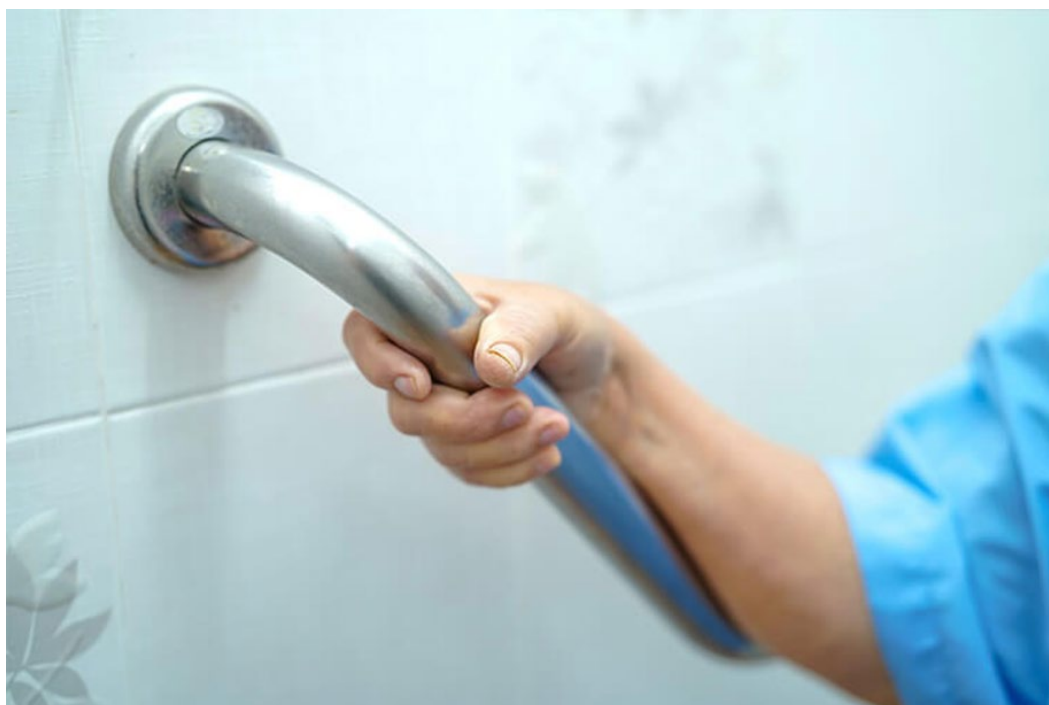
Suction rails are for short-term stabilising use and are not designed to support a user's full body weight. The strength of the suction rail will depend on the surface to which it is being adhered to. Suction grab rails can damage surfaces and if a surface area breaks away, this can cause injury to the user.



As with suction rails, safety issues associated with clamp-on rails 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

Grab rail location and direction needs to take into consideration the user's ability and in particular, their strength, range of movement (arm reach), size and height, the environment and the intended purpose of the rail. In private homes, grab rails can be fitted in any location with appropriate support (i.e. studs) and where they provide the best assistance to feel safe and comfortable. They should be positioned so that a wash basin, tap, toilet-roll holder and towel rail will not be used for support.



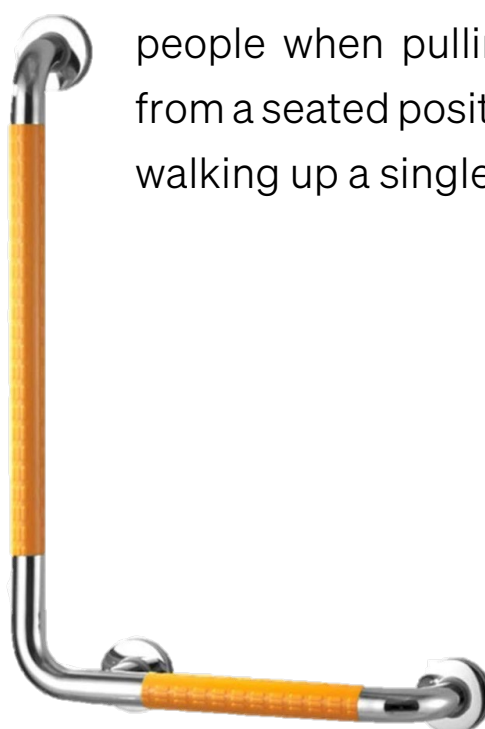
It is important that grab rails are installed in a position that allows the user to sustain a firm and effective grasp. The most desirable position is one that reduces the risk of injury, maximises grip strength and decreases the effort and energy required to maintain a grasp during an activity. Optimal 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.

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 such as from a toilet. They can also be used as a balance support when standing such as in a shower.



- L-shaped rails combine horizontal and vertical rails to allow a person to push, pull or use a combination of actions.



- Vertical rails can assist people when pulling up from a seated position or walking up a single step.



- Angled rails allow 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.



## Things to consider:

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 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.
- **Where the studs are located in the wall:** Grab rails should be fully supported at all fixing points and have at least two points fixed 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:** Fittings can be exposed, concealed by a cover plate or vandal proof, and the number of fitting holes to attach screws can vary between rails. The correct fitting should match the specific type of wall it is installed into.
- **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 and provide room for the hand to move along the top of the rail without obstruction. The Australian Standard 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.

## Things to consider

People with visual impairment or dementia require features that highlight the grab rail location and its function. Grab rails that are bright in colour, do not glare against room lighting and contrast the background support safer living.



# More Information

For advice about assistive technology and equipment, contact ILCT.

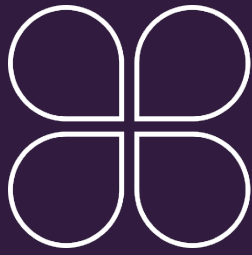
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