



## Information Sheet

### Grab Rails

Grab rails are used to assist with balance and support, as an aid to assist with transfers, or in areas where a slip or fall is considered a high risk. Common areas of use include assisting individuals with transfers on and off the toilet or in and out of a bath, providing stability and support in the shower or assisting with mobilising up and down a single step. Grab rails differ in use from hand rails which are more commonly used for guidance and stability when negotiating large changes in levels, such as alongside a staircase.



When selecting and positioning a grab rail it is important to consider the environment where the rail will be installed, the intended purpose of the rail, the individual functional capacity and needs of the user, and the relevant standards and legislation.

The Australian Standard *1428.1 – 2009 Design for Access and Mobility* provides guidelines for the suggested placement and specification of grab rails. While the Building Code of Australia outlines specific regulations for public buildings the application of Australian Standards is not mandatory in a private dwelling; however, these standards have generally been adopted as accepted best practice for home modifications.

Australian Standards set out minimum technical specifications that may not be suitable for all individual situations and deviation may be required. To create an effective long-term solution it is best to talk with an occupational therapist.

### Features of grab rails to consider

#### Construction

A grab rail must be designed to withstand the force applied to it. 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 galvanised tubing. If using the rail in a wet area it is important to consider materials that do not rust such as stainless steel or aluminium. Some materials retain temperatures and may not be suitable in very hot or cold environments.

If installing a metal grab rail consider its ability to conduct electricity, particularly if the rail is being installed in bathroom or area where water is present. To avoid safety hazards the grab rail can be earthed by a tradesperson.

## **Finish**

Types of finishes available include slip-resistant, satin, powder-coated, epoxy-coated, enamel-coated and polished. The finish on the grab rail is important for both aesthetic and safety considerations.

If the rail is being installed in a wet area, such as a shower, a slip-resistant finish may need to be considered. A slip-resistant finish will create more friction between the hand and the grab rail requiring less strength to maintain a firm grip on the rail.

For people with a visual impairment it may be necessary to use a rail that contrasts against the colour of the wall surface.

## **Diameter of the grab rail**

This is very important for user safety and wellbeing. If the diameter of the grab rail is too large, the user may not be able to get a safe grip. If the diameter is too narrow, it will take more effort and strain on the user's hand to maintain a firm hold.

Optimal rail diameter should allow the user's hand to encircle and be in complete contact with the rail when gripping. Australian Standards recommends that the outside diameter of a grab rail be between 30 and 40 millimetres, although this may not always suit the needs of each individual user. A grab rail with a 32 millimetre diameter is often recommended although rails are readily available in a range of alternative diameters such as 25 millimetres or 38 millimetres.

## **Length of the grab rail**

Grab rails are available in common standard lengths of 300 millimetres, 450 millimetres, 600 millimetres and 900 millimetres. The length of grab rails can also be individually customised to fit the studs in a wall or the specific needs of the user.

## **How the grab rail is mounted**

Most grab rails are designed to be permanently fixed at both ends to the structures of the wall. This makes them strong enough to take a person's weight. Rails that fold up or swing away from the wall may be useful in situations where the rail needs to be removed for transfers (such as transfer on or off the toilet).

Some grab rails can be mounted to the floor or ceiling as an alternative where there is no practical wall nearby (for example, to assist getting out of the bath or in a room where the walls are not strong enough, such as in a caravan or temporary home).

Suction rails are available for short-term stabilising use only and are not designed to hold or support a user's full body weight. The strength of the suction grab rail will depend on the surface it is being adhered to (for example if attached to bathroom tiles the grab rail will only be as strong as the glue sticking the tiles to the wall). When using suction rails it is important to check the manufacturer's recommended load capacity as well as frequently check the suction strength and reposition as required.

Clamp-on grab rails that attach to the side of a bath are also available. Again, safety issues should be considered as the rails are not fixed and the direction and amount of force applied to the rail may alter its stability.

All temporary rails should be checked prior to each use to ensure correct attachment as per the manufacturer's instructions.

Grab rails can be incorporated into bathroom fittings for additional stability, for example replacing a towel rail with a hand rail or attaching a hand-held shower hose to a grab rail.

## Positioning of a grab rail

Australian Standards provides guidelines regarding the location of grab rails in different environments (for example the height and distance of rails from a toilet or in a shower). However, it is important to tailor the position of the rail to the user's individual needs. The location and direction of a grab rail needs to take into consideration the user's functional capacity and body mechanics (hand strength, range of movement in joints), their size (height and arm reach), the local environment and the intended purpose of the rail.

Grab rails should be positioned close enough to reach, and high enough to provide support to gain the required momentum and stability. The direction of the grab rail should also depend on the purpose of the rail. For example:

- ▶ Horizontal grab rails can assist individuals pushing up or lowering down to a seated position (such as from a toilet). They can also be used as a balance support when standing (for example whilst in a shower).
- ▶ Vertical grab rails can assist individuals pulling up from a seated position or climbing up a single step.
- ▶ L-shaped grab rails combine the horizontal and vertical grab rail allowing an individual to push, pull or a combination of both.
- ▶ Grab rails can be positioned on an angle. This allows the rail to be used as a forearm support for people who may have painful hands or wrists. An angled grab rail enables a user to maintain contact with the rail when moving from a sitting to a standing position. A 45 degree angle rail is commonly used in combination with a horizontal rail alongside a toilet to assist in standing.

It is important that grab rails are installed in a position that allows the user to sustain a firm and successful 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 a grasp of the grab rail during an activity. Optimal positioning should allow the wrist to align with the forearm, minimise wrist deviation, permit complete circulation of the grab rail with the fingers and encourage good body alignment in relation to the rail.

## Installing a fixed grab rail

Grab rails are often required to withstand considerable force. 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. Things to consider when installing a grab rail include:

### The material the wall is made of

Brick, timber frame or plaster board will all require different methods of installation. Some walls are not suitable for grab rail installation as they may not be able to take the stress of a person's full weight.

### Where the studs are located in the wall

If practical, it is suggested that at least one end of a grab rail be fixed into a wall stud to increase rail strength.

### Type of fitting and mounting

It is recommended that a builder be consulted for the installation of grab rails to ensure that the correct fittings are used for specific types of walls. Fixings can be

exposed, concealed or vandal-proof and the number of fixing holes to attach screws and so on 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 grab rail without obstruction.

Australian Standards recommends that the distance between the grab rail and wall should be 50 to 60 millimetres with a 600 millimetre unobstructed clearance above the rail, a minimum of 50 millimetre unobstructed clearance below the rail except at fixing points and 270 degrees on the top section of the rail with no obstructions.

### Safety considerations

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

Consideration must be given to the size and strength of the grab rail so that it is appropriate for the person using it. Consider the amount of weight an individual will put through the grab rail and their ability to grasp the rail safely.

### Contacting the Independent Living Centre

For further information or to make an appointment to visit the display please contact the Independent Living Centre.

The Independent Living Centre offers free advice on equipment and techniques to help you with everyday tasks.

Independent Living Centre  
11 Blacks Road  
Gilles Plains SA 5086  
Phone: 1300 885 886 (SA & NT callers only) or 8266 5260  
Fax: 8266 5263  
Email: [ilcsa@dfc.sa.gov.au](mailto:ilcsa@dfc.sa.gov.au)  
Website: [www.sa.gov.au/disability/ilc](http://www.sa.gov.au/disability/ilc)

Accessible off street parking is available.

Bus routes:  
From the city T500/T501 or 207/208 to Stop 28 Sudholz Road  
Timetable information: 8210 1000

