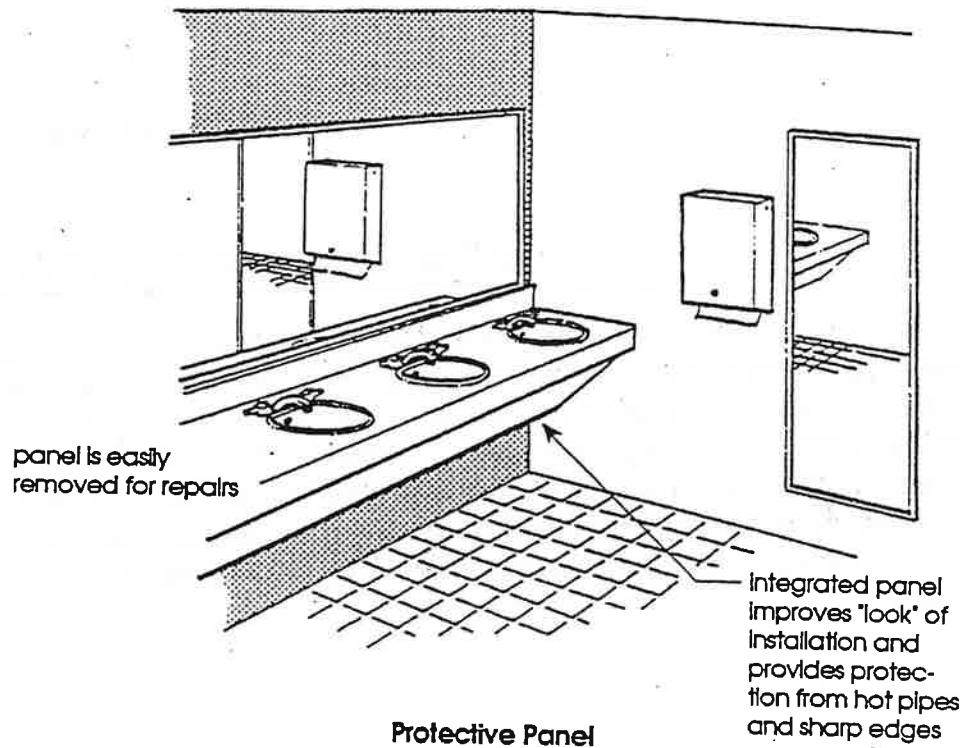


Solution 2 Install Protective Panel at Countertop Lavatories

The supply pipes and drains for lavatories located in countertops can frequently be hidden with a panel which both protects wheelchair users and improves the aesthetic quality of the installation. Many cabinet manufacturers offer countertops with lavs which meet the UFAS requirements for knee and toe space. Existing installations can often be modified to include protective panels. The panels should be removable to allow for easy repair.



Lavatory Faucets

Basic Design Considerations

UFAS requires that controls at lavatories meet the operating requirements established in 4.27.4 of Controls and Operating Mechanisms, page 45. The faucets may be lever-operated, push-type, or electronically controlled provided they are operable with one hand and do not require gripping, twisting, or excessive force to operate. Self-closing valves are allowed if the faucet remains open for at least 10 seconds.

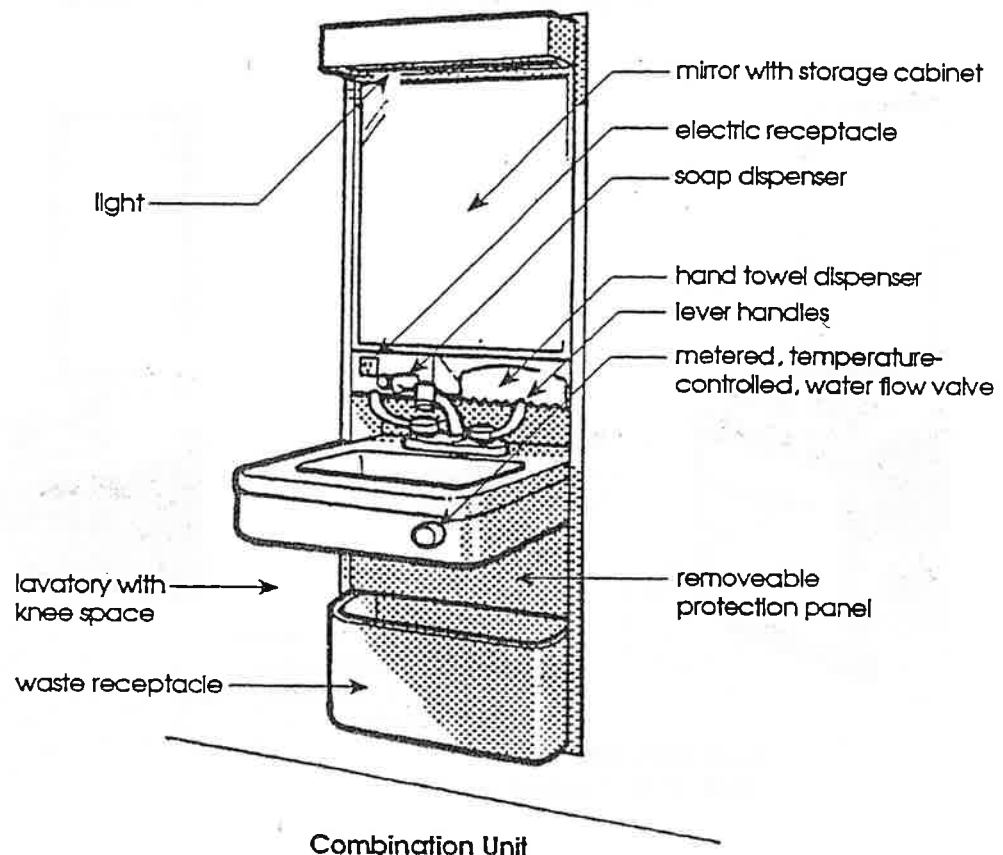
Clear Floor Space at Lavatories

Basic Design Considerations

Clear floor space is required at lavatories to allow for a forward approach to the fixture. The space must adjoin an accessible route and be 30 inches by 48 inches minimum which may extend under the lavatory a maximum of 19 inches. If a lavatory is mounted in an alcove, between walls or partitions which are greater than 24 inches in length, then the clear floor space must be widened to 36 inches. With the exception of very small rest rooms, most multi-fixture, public toilet rooms generally provide adequate clear floor space in front of lavatories.

Problem**Insufficient Clear Floor Space****Solution****Modify Immediate Surroundings or Relocate Lavatory**

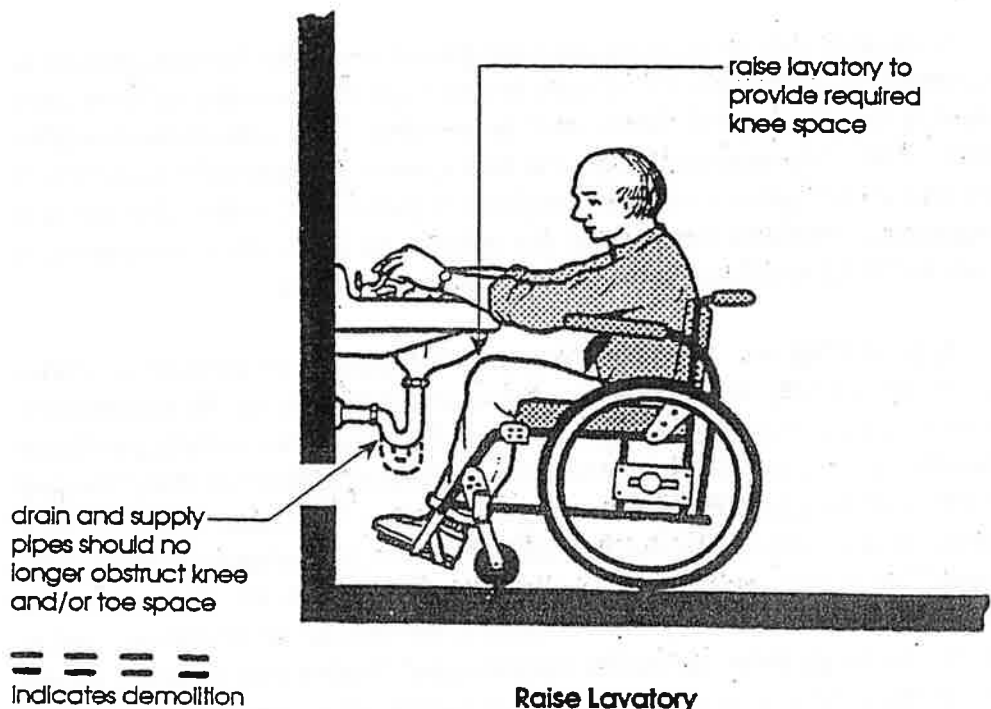
In some situations, it may be possible to modify the immediate surroundings by relocating partitions to create the required clear floor space. When this is not possible, it may be necessary to relocate the lavatory. If an accessible toilet stall is planned and space for a side transfer is included, it is advantageous to include a lav in the stall (see Toilet Rooms, Unit Five). Combination lav fixtures which include lights, mirrors, usable faucets, soap dispensers, and trash receptacles are excellent compact alternatives when space is limited.



Other types of lavatories, by virtue of their designs, do not meet the UFAS requirements. Pedestal type and corner wall-hung fixtures may not provide sufficient knee space. Lavatories mounted in vanity base cabinets also do not provide the required knee space. In some instances, it may be possible to modify an existing installation to meet the UFAS requirements while other times, the actual design of the fixture may preclude compliance, and a new fixture will need to be installed.

Problem**Lav Too Low and/or Appropriate Knee Space Not Provided****Solution 1****Mount Existing Lav in Higher Position or Replace Lav**

Many renovations require raising the height of the lav because for many years the "standard" height for lavs was 31 inches above the floor. In some cases, it may be possible to rehang the lavatory and reconfigure the plumbing to provide proper knee space. This renovation may involve raising the fixture hanger and extending or moving the water supply lines and the drain pipe. If the lav design, because of the apron depth or location of the drain, precludes the provision of proper knee and toe space, it may be necessary to replace it.



Introduction

As with other building elements and features, lavatories and mirrors must be designed and installed to provide adequate space for users to approach and maneuver about the fixtures. Additionally, in the case of lavatories, the controls must be easy to reach and operate. For the most part, the requirements for use by people with disabilities do not differ significantly from those of other users. Proper installation involves several features including the provision of appropriate clear floor space adjacent to an accessible route, sufficient knee space, and usable controls. In addition, for the safety of wheelchair users, a protective covering must be provided at lavatories when waste and hot water lines are exposed.

The scoping requirements for lavatories and mirrors are described in UFAS Subsections 4.22.6 and 4.23.6 under Toilet Rooms and Bathing Facilities, page 44. As with other toilet room fixtures, UFAS requires that, if lavatories and mirrors are provided, at least one of each must be accessible. The accessible lavatory can be included as part of a "unisex" toilet room if alterations to existing toilet rooms are structurally impracticable.

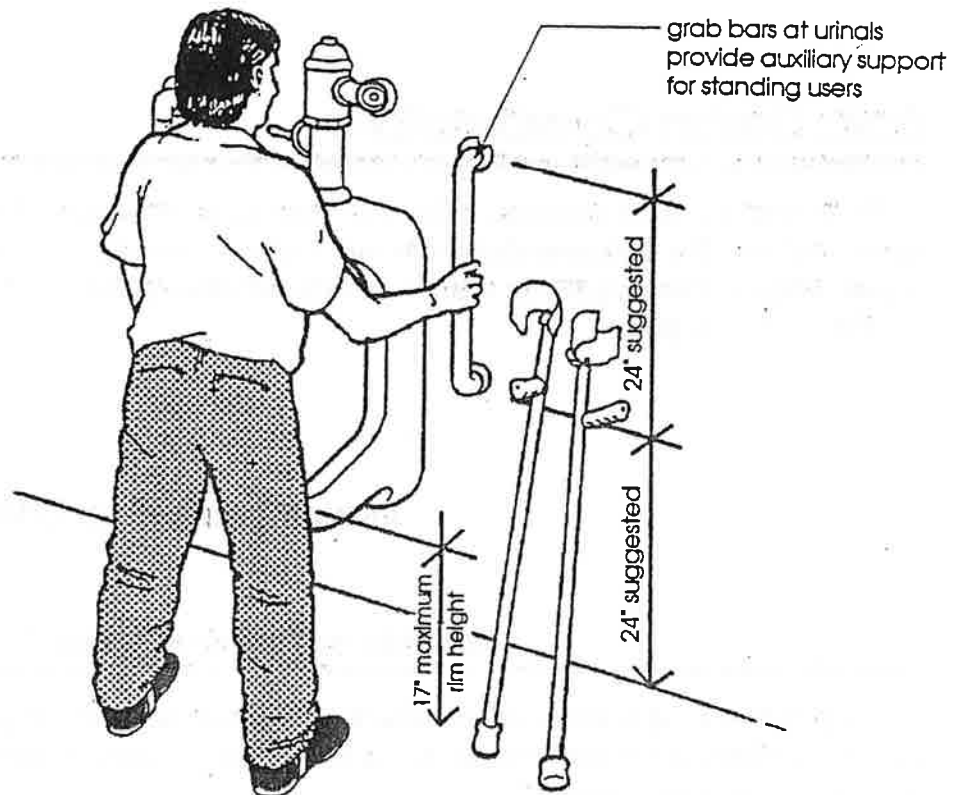
Mounting Height and Knee Clearances for Lavatories

Basic Design Considerations

Mounting Height and Knee Clearance. UFAS requires that the front edge of the lavatory be a minimum of 17 inches from the back wall. Lavatories must be mounted with the rim or counter surface a maximum of 34 inches and the bottom of the apron a minimum of 29 inches above the finished floor. Additionally, a 27 inch minimum vertical knee space must be allotted below the lav which may slope down and back a minimum of 8 inches from the front edge of the apron. From this point, the knee space further slopes down and back a minimum of 3 inches to a point at least 9 inches above the floor. The drain and pipes may occupy space from this line back to the wall, provided toe space, a maximum of 6 inches deep and a minimum of 9 inches high, is left unobstructed. The provision of knee and toe space is necessary for wheelchair users to make a close front approach to the lavatory without their knees or chairs bumping the lavatory and pipes and without foot rests hitting the wall.

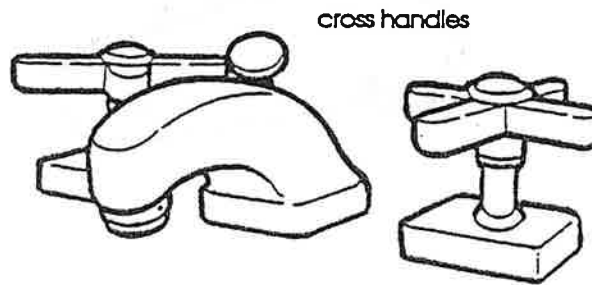
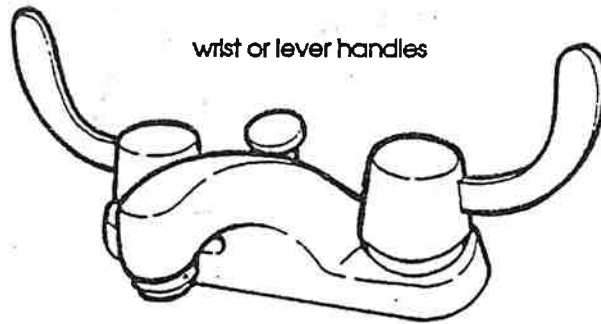
**Practical Plus**

Some state codes require the installation of vertical grab bars on both sides of urinals. These grab bars are designed to serve as auxiliary support for ambulatory men who use a mobility aide such as crutches, leg braces, canes, and walkers, or wheelchair users who prefer to stand with support. As with all grab bar installations, the general issues of location, secure mounting, appropriate size, and spacing must always be considered.

**Grab Bars at Urinal**

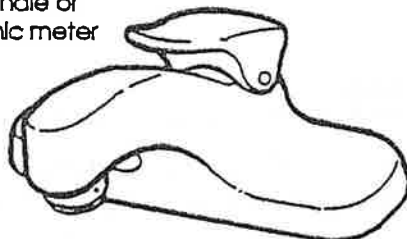
An additional requirement of some state codes is that the faucets be located no more than 17 inches from the front edge of the lav. Although not included in UFAS, the intent of this specification is to ensure that the faucets are easy to reach. Some of the "accessible/elongated" models will not meet this requirement and cannot be installed under codes containing this requirement. Some state and local codes specify temperature maximums for hot water and include requirements that the hot water faucet be located on the left-hand side and the cold water faucet be located on the right-hand side, as is common practice. As a rule, if both temperature and volume can be controlled by one hand, the control is probably acceptable.

Examples of Acceptable Faucets



push handle or
electronic meter

self closing valves
must remain open a
minimum of 10 seconds



Basic Design Considerations

Mirrors

To be usable by most people, including children, people of short stature, and those using wheelchairs, UFAS requires that the lower edge of the reflecting surface be not more than 40 inches above the floor. This height was established for mirrors which are typically installed on the wall behind the lavatory. Some state codes are more stringent than UFAS and require lower edges at 38 inches.

Several manufacturers offer supposedly useful, fixed- and/or adjustable- tilt mirrors which provide short users with an oddly distorted image of themselves and standing people with a view of their legs and feet. A more universally usable solution is a full length mirror installed nearby which gives all users a full view of themselves. The UFAS Appendix suggests that, if mirrors are to be used by standing people, the top most edge should be at least 74 inches high.

Inappropriate Mirror Height

Problem

Lower Existing Mirror or Install Full Length Mirror

Solution

Frequently, existing mirrors can be lowered to the required height without much difficulty. If existing mirrors are mounted to the doors of a medicine or storage cabinet, it may be difficult to lower the mirrored doors further without conflicting with faucets or faucet controls. If the lavatory installation prohibits lowering the mirror, then it may be best to simply add a full length mirror nearby.



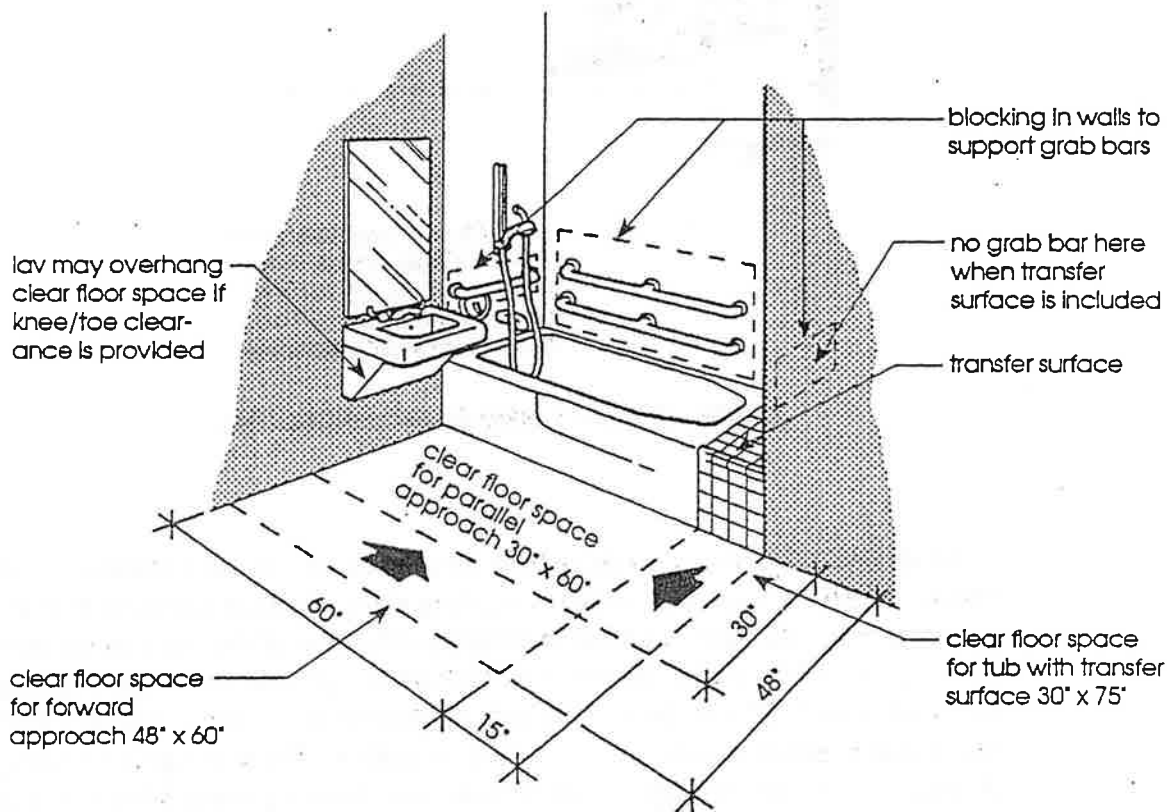
Universally Usable Full Length Mirror

Reference Index to UFAS Document

Lavatories and Mirrors

Primary References	UFAS page #	Secondary References	UFAS page #
4.19.1 General/Location	40	4.1 Scope & Technical Requirements for Toilet Rooms	5-6
		4.1.5(3) Additions	11
		4.1.6(3)(c)(i) Alterations	12
		4.1.6(3)(c)(ii) Alterations	12
		4.1.6(4)(e) Alterations	13
		4.1.7(2)(c) Historic Preservation	14
		4.22.6 Toilet Rooms/Lavatories and Mirrors	44
		4.23.6 Bathing Facilities/Lavatories and Mirrors	44
4.19.2 Height and Clearances	40		
4.19.3 Clear Floor Space	40	4.2.4 Clear Floor or Ground Space for Wheelchairs	14
4.19.4 Exposed Pipes and Surfaces	40		
4.19.5 Faucets	40	4.27.4 Controls and Operating Mechanisms	45
4.19.6 Mirrors	40	A4.19.6 Mirrors	65

Floor Space. UFAS describes floor space in terms of a wheelchair user's approach to the bathtub fixture and the type of seat installed. If space for a parallel approach is planned, it should be a minimum of 30 inches by 60 inches for an in-tub seat and 30 inches by 75 inches minimum if the seat is included at the head of the tub. If a forward approach is planned, a minimum space of 60 inches by 48 inches should be allowed. The lavatory can overhang the clear floor space provided proper knee and toe space are allocated under the lav and it is located so it does not interfere with access to the seat.



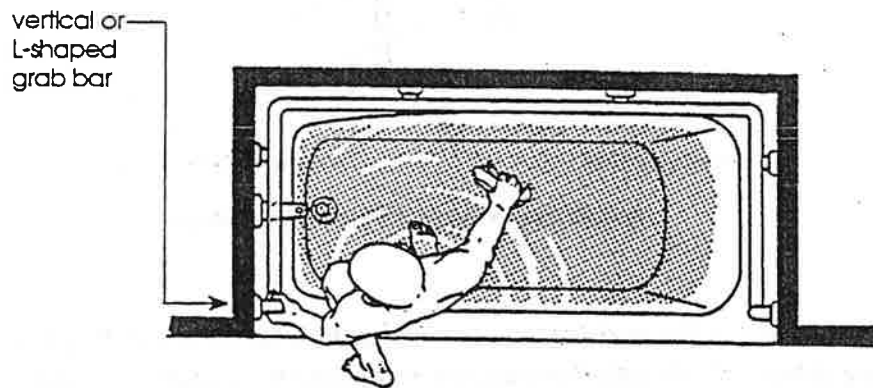
toilet fixture may not occupy clear floor space required at tub

Maneuvering Space at Bathtubs

Practical Plus

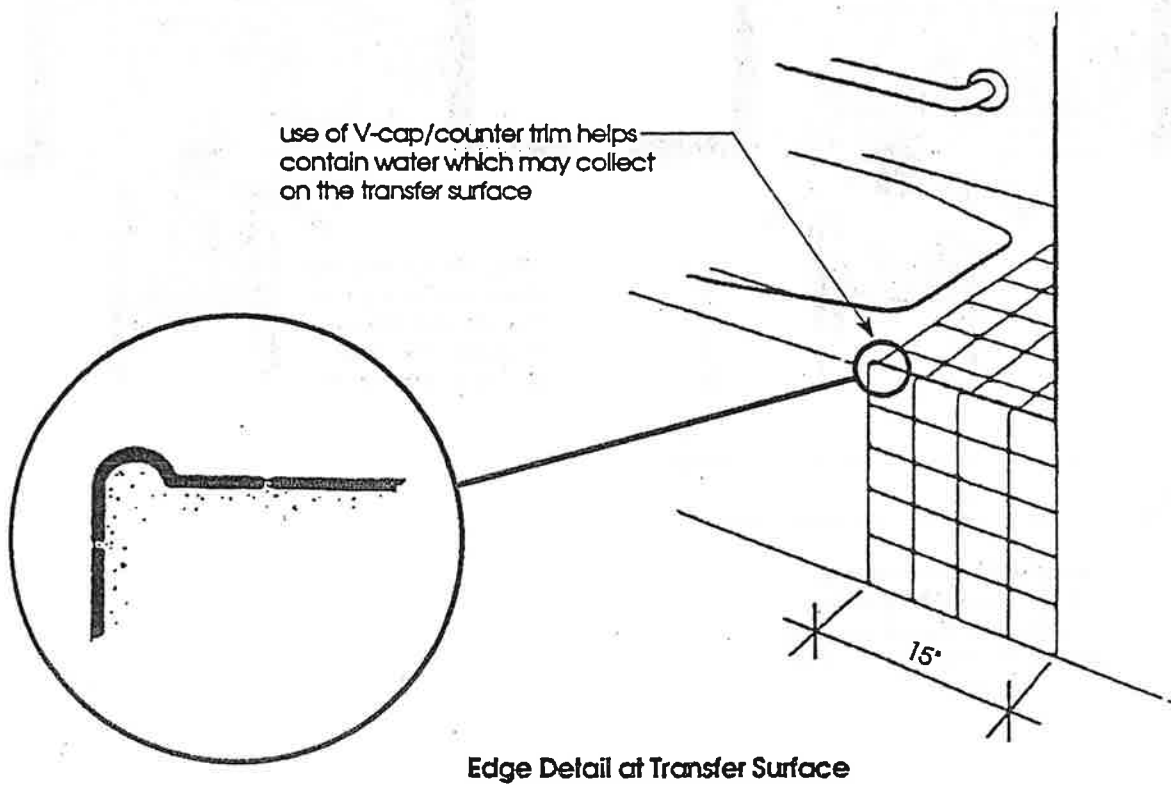


A vertical or L-shaped grab bar near the controls on the outside edge of the tub surround can provide support for ambulatory users as they step over the rim of the tub. It may also serve to provide support to standing users who may bend over to adjust the controls while showering.



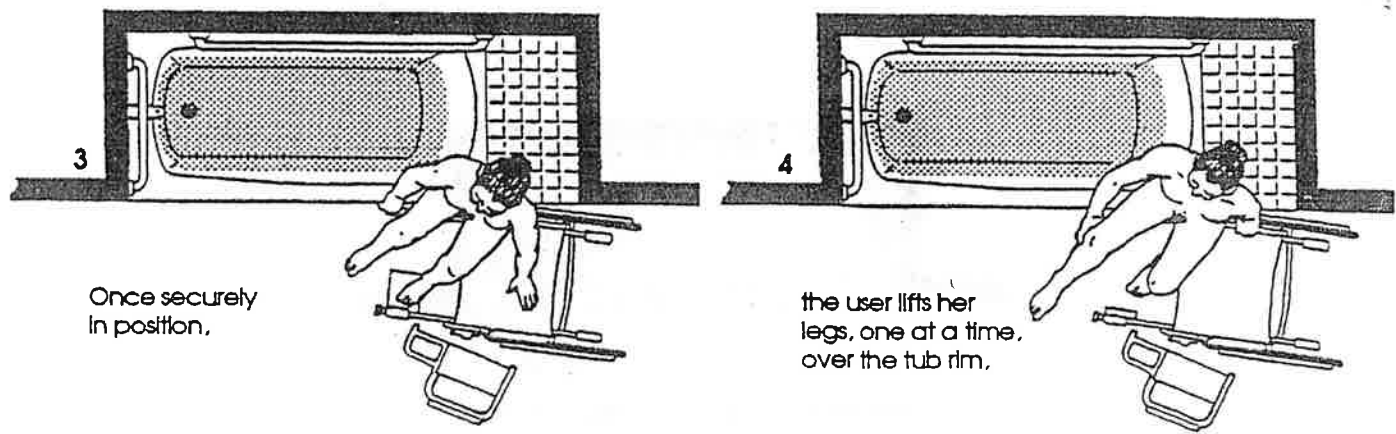
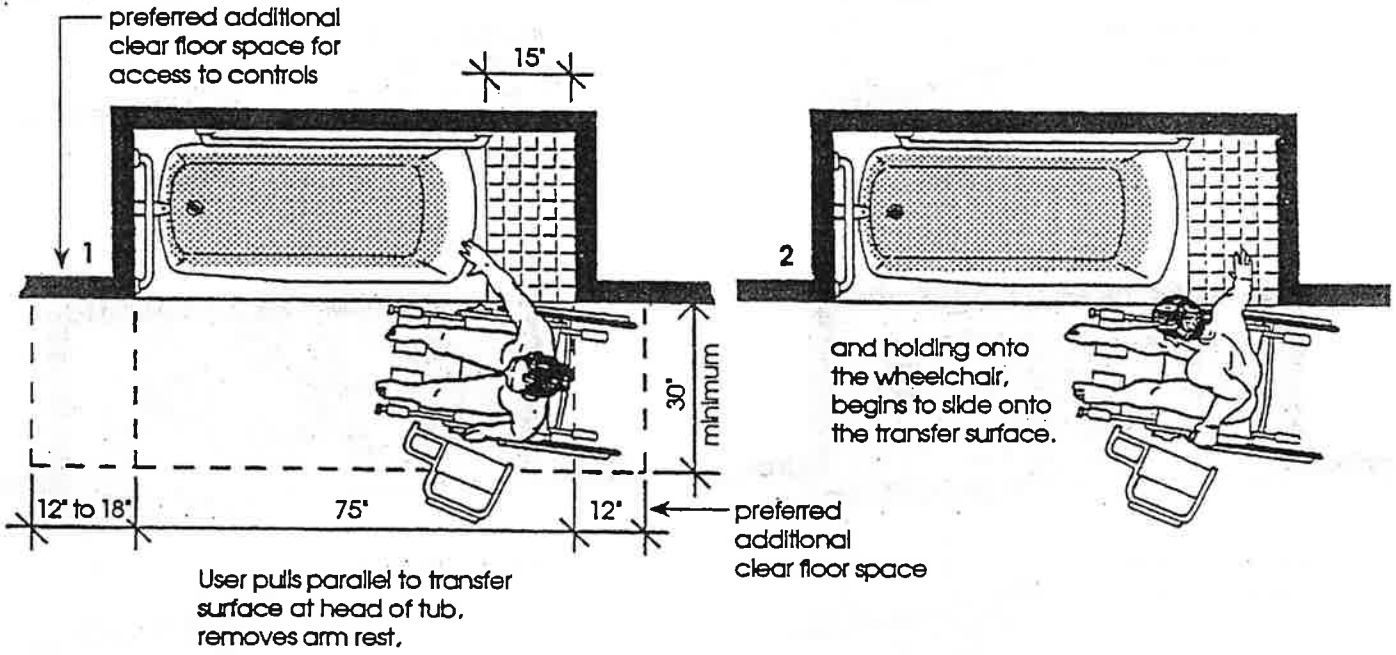
Vertical Grab Bar Provides Support for Ambulatory Users

In-tub Seat or Transfer Surface. Portable in-tub seats which can be readily installed and easily removed allow the tub fixture to be used in a variety of ways. With the seat removed, the tub is available for standing showers and soaking baths. When the seat is installed, wheelchair users and others, who may be unsteady on their feet in a wet environment, can sit down while showering. Some hydraulically-powered seats provide users with the option of being lowered into the tub for a soaking bath. Seats which include a small transfer surface outside the tub are generally easier for people to use because they eliminate the need for the user to balance on the rim of the tub before transferring to the seat. Since a small free-standing stool rarely offers sufficient stability, UFAS requires that seats comply with the specifications of 4.26.3 Structural Strength for Tub and Shower Seats, page 45. For sanitary reasons, the surface of the seat should be impervious to water and easy to clean. When not installed, the seat should be stored in an accessible cabinet nearby.

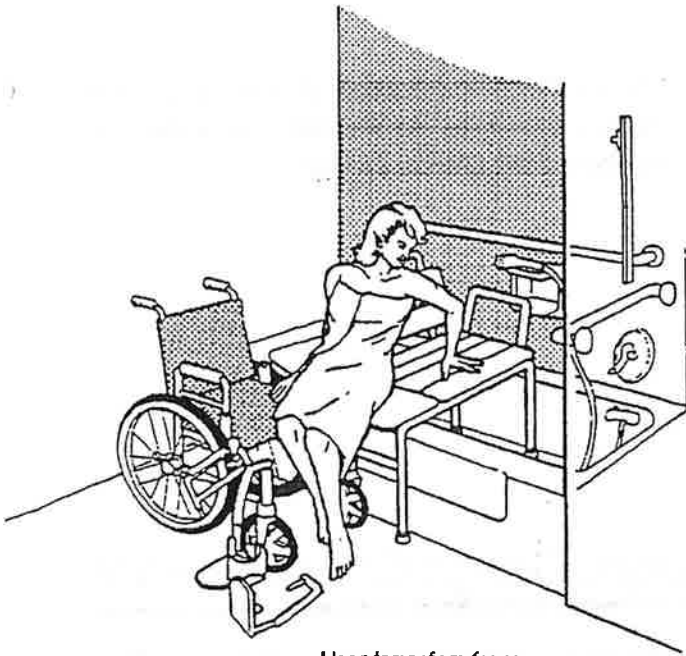


Tub Enclosure. UFAS requires that, if tub enclosures are included, they must not obstruct controls or interfere with transfers. Enclosures which require tracks mounted to the tub rim are not allowed. Shower curtains are probably the most versatile and frequently used enclosure as they can be easily moved out of the way when necessary and replaced when damaged.

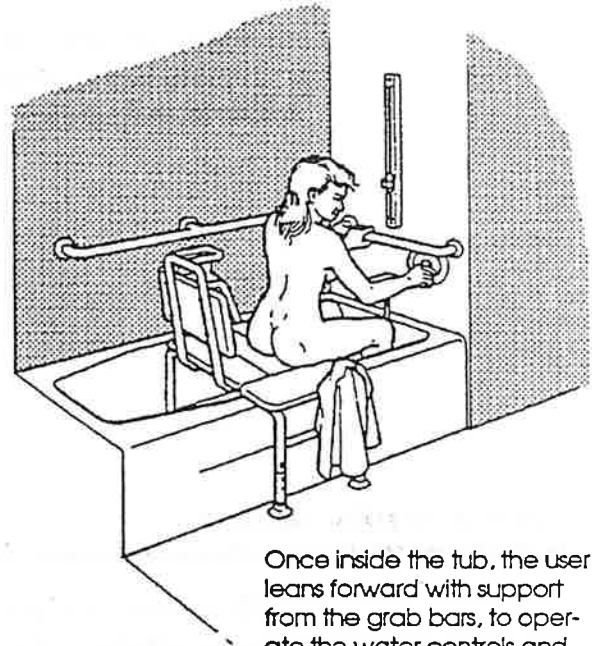
Parallel Approach to Transfer Surface



continued on next page



User transfers from wheelchair to tub seat.



Once inside the tub, the user leans forward with support from the grab bars, to operate the water controls and the shower unit.

Parallel Approach and Transfer to Tub Seat

Existing Tub Features/Installation Doesn't Comply

Problem

Modify Existing Tub or Replace It

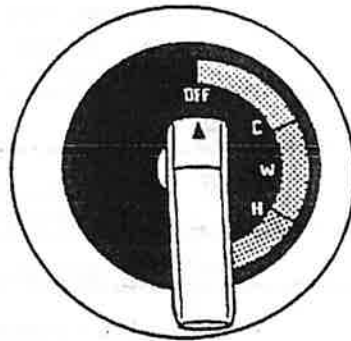
Solution

If the existing tub doesn't comply with one or several of the UFAS requirements, steps should be taken to bring it into compliance. The most frequent and demanding problems with existing tubs are the lack of grab bars, and controls located in the wrong place. In both instances, walls must be opened up so plumbing can be moved and additional blocking installed to support grab bars. This process is rather time consuming and complicated. If the necessary renovations are very extensive and exterior walls must be removed, it may be possible to replace the existing tub with a new one-piece molded fixture, complete with built-in grab bars and removable seat. However, in most renovations, it is not possible to bring the one-piece units through existing construction, and multi-part fixtures must be used. Regardless of the type of fixture used, ample supports must be provided in the wall to anchor the grab bars (see Unit Three, Performance Specifications - Installation of Grab Bar Supports for more detail).

Practical Plus

☆☆☆

Thermostatically controlled faucets which can be preset at a maximum temperature improve safe use for all users. These anti-scald devices are particularly helpful to disabled users who may have limited ability to detect hot and cold.



for safety, scald proof valves should be used

lever handles are easy for everyone to operate

Thermostatically Controlled Valve

Controls Not Offset to Outside of Tub and/or Shower Unit Not Included

Problem

Move Controls

Solution

If the controls are not offset to the outside of the tub, they will need to be moved. In substantial renovations, often involving the addition of blocking for grab bars, the movement of the controls can be easily accomplished while the wall is disassembled. Many shower units will also require some addition of blocking to support the slide mounting bracket. The manufacturer's installation instructions should be followed to ensure that the unit is properly secured.

Introduction

In addition to bathtubs, UFAS provides specifications for two other bathing fixtures, transfer showers and roll-in showers. The transfer shower contains a seat which allows users to sit while showering. The seat may be designed to fold up against the wall to allow users to stand while showering. The roll-in shower allows users to roll into the shower using a wheelchair. Additional features including grab bars, maneuvering space, appropriate controls, hand-held shower units, and minimal curbs for transfer showers, which make showers easier and safer to use for everyone, are also described in UFAS.

Transfer and roll-in showers which meet the UFAS specifications are fabricated from a variety of materials including, acrylic, plastic, and fiberglass. Several fixture manufacturers carry these molded units, which come complete with built-in grab bars and fixed or fold-up seats in the transfer showers. Custom-designed showers can also be constructed from tile or fiberglass panels to suit the requirements of a specific location.

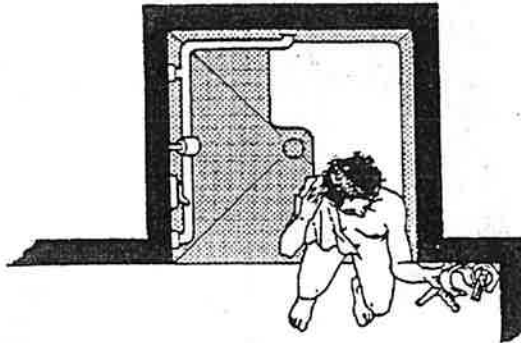
In new construction, additions, and renovations (including historic properties), UFAS requires that, if tubs or showers are provided, then at least one accessible tub or one accessible shower must be provided. Some state codes are more stringent than UFAS and require both accessible tubs and showers if both are provided. Additional information on showers and bathroom layout can be found in Unit Five, Bathing Facilities and Shower Rooms.

Basic Design Considerations

Transfer Shower Features

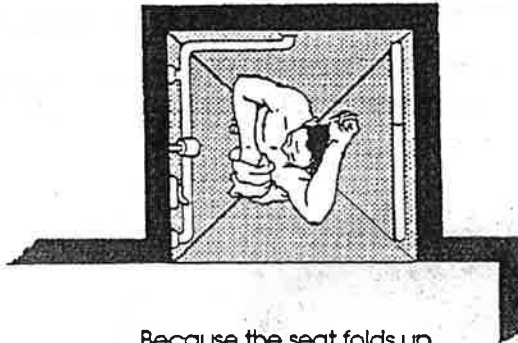
Transfer showers are a fixed size of 36 inches by 36 inches (inside dimension). It is the particular size of the stall in combination with the specific configuration of the seat and controls that makes the shower safe and easy to use. When properly designed and installed, these showers facilitate transfers from wheelchairs, allow seated people to sit comfortably in the corner with support from walls on two sides, provide grab bars for support when transferring or leaning forward to operate the controls, and include controls which are easy to use. Transfer showers can also be used for standing showers by ambulatory people if folding seats are provided.

Use of the 36" x 36" Transfer Shower



The seat in a transfer shower provides bathing ease for someone who walks with difficulty or who may not be able to stand to shower.

Crutch User



Because the seat folds up, the stall works as a conventional 36" x 36" shower stall.

Standing User

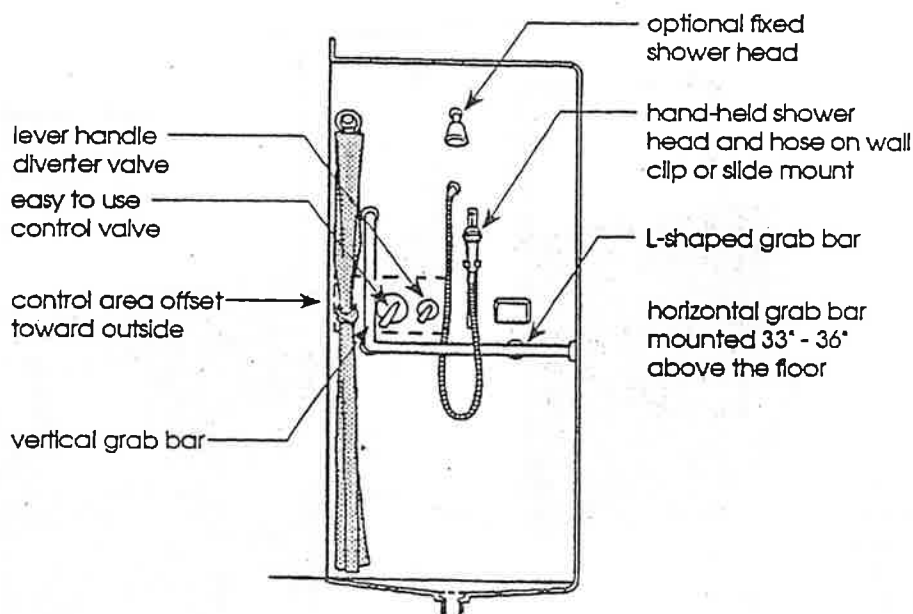
Floor Space. A transfer shower requires the clear floor space outside the shower to be a minimum of 36 inches by 48 inches. The 48 inch length is offset to one side to provide access to the shower seat for wheelchair users allowing them to align the edge of the wheelchair seat with the edge of the shower seat.

Grab Bars and Shower Seat. Grab bars must be provided on the wall of the shower stall next to and forward of the seat and along the wall directly across from the seat but never on the wall behind the seat. The seat can be fixed in place or designed to fold up against the wall. The seat must be 17-19 inches from the floor, extend the full depth of the shower stall, and be securely mounted on the wall across from the controls as shown in UFAS Figures 35, 36, and 37, pages 42 and 43. The grab bars and shower seat must comply with UFAS 4.26 Handrails, Grab Bars, and Tub and Shower Seats, page 45 (see Unit Three, Performance Specifications - Installation of Grab Bar Supports for more detail).

Practical Plus



A separate vertical or vertical extension of the L-shaped grab bar, near the controls on the outside edge of the shower stall, can provide support for ambulatory users as they step into the shower. It may also serve to provide support to standing users who may be unsteady on their feet while showering.



Additional Vertical Grab Bar Provides Support for Ambulatory User