



Universal Design and Visitability Manual

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Universal Design and Visitability Manual

Introduction

This manual is intended to help Developers awarded financing in the Universal Application Cycle of the Florida Housing Finance Corporation to comply with the Universal Design and Visitability Features as required in Part III.B.2 of the Universal Application. It is also intended to help comply with the Optional Universal Design and Visitability Features in Part III.B.3 of the Universal Application.

The manual is divided into two parts. Part A addresses required Universal Design and Visitability features in all Developments that involve any New Construction units. Part A is divided into three sections:

1. Required Features in New Construction Units
2. Optional Features in New Construction Units
3. Additional Required Features in Elderly Developments

Part B addresses Florida Housing's approach to required Universal Design and Visitability features in all rehabilitation units. It is also divided into three sections:

1. Required Features in Rehabilitation Units
2. Optional Features in Rehabilitation Units
3. Required Features in Elderly Developments with Rehabilitation Units

Elderly Demographic

Requirements for Developers choosing the Elderly Demographic are stated in Part III.D.1. of the Universal Application. Please note that the required Universal Design features as outlined in Part III.B.2. of the Universal Application shall be provided in Elderly Developments.

Part A, Section 3 of the Manual entitled "Additional Required Features in Elderly Developments" addresses the features that are in addition to the required features found at Part III.B.2. and are described in the Required Features section of this Manual.

Part B of the Manual is entitled "Rehabilitation Units." This will address rehabilitation features within each of the Development Categories in the Universal Application.

Overview of the Concepts of Universal Design and Visitability

Universal Design with Visitability Features

Universal Design is any component of a dwelling unit that can be used by everyone regardless of their level of ability. Universal features are generally standard building products or features that have been designed or placed differently and/or selected for ease of use or access. For example, standard electrical receptacles can be placed higher than usual above the floor, standard but wider doors can be selected, and steps at entrances can be eliminated to make housing more universally usable.

The approach of visitability incorporates some specific Universal Design (UD) features that allow mobility impaired or wheelchair-bound persons to safely and easily enter a dwelling unit, access and use one bathroom and visit the common spaces of the dwelling unit. However, UD is broader than visitability, encouraging housing designers to think of all of the types of people who may be residents throughout the life of the property, such as elderly or disabled people. UD allows current residents to remain in their homes as they age, or experience decreased mobility, rather than being forced to move as more features become necessary to maintain independence. If included during design and planning, these features are cost-efficient and provide advantages to non-disabled consumers as well.

The Universal Design approach is different from "accessible housing."

While accessible or adaptable design requirements are aimed at benefiting only some people (those with mobility limitations), the universal design concept targets all people of all ages, sizes, and abilities. There are some features in Florida Housing's Required and Optional Universal Design and Visitability Features that will overlap with federal requirements. Nevertheless, Florida Housing's approach is to include these to achieve an overall goal of cohesive Universal Design and Visitability features in units funded with our programs. It will be noted with an asterisk (*) after the feature when a required or optional feature is also required by federal Fair Housing Act or UFAS (Uniform Federal Accessibility Standards) or both.

Note: Florida Housing uses the term "accessible" as it is used in the federal Fair Housing Act guidelines. The guidelines state: "Accessible, when used with respect to the public and common use areas of a building containing covered multifamily dwellings, means that the public or common use areas of the building can be approached, entered, and used by individuals with physical handicaps."

Part A New Construction Units

Developments that involve any New Construction units, regardless of which Development Category was selected at Part III.A.3 of the Universal Application, must include the required universal design features and visitability amenities in all of the New Construction units.

Development Categories (Part III.A.3 Universal Application) include:

- New Construction – 50 percent or more of the units are new construction;
- Rehabilitation – less than 50 percent of the units are new construction;
- Acquisition and Rehabilitation – acquisition plus less than 50 percent of the units are new construction;
- Preservation – less than 50 percent of the units are new construction;
- Acquisition and Preservation – acquisition plus less than 50 percent of the units are new construction;
- Redevelopment – 50 percent or more of the units are new construction;
- Acquisition and Redevelopment -acquisition plus 50 percent or more of the units are new construction;

For further definitions, see Rule 67-48.002 and/or 67-21.002, F.A.C.

Section 1: Required Features

Primary Entry Door

*Feature: Primary entrance doorway shall provide a clear opening not less than 32 inches. **

Primary entry door is the door that residents use to enter the dwelling unit. Primary entry door may open from a corridor or lobby or can be a private individual entry door accessed directly from the outside.

Aspects that reduce the required passage width of the door must be addressed. These factors are the installation of the hinges, the door standing in the doorway, the casing of the door, including door jambs and stops. These aspects must be adjusted to provide the necessary minimum clear width of 32 inches for the doorway.

*Feature: Primary entrance door shall have a threshold with no more than a ½-inch rise. **

If the primary entry door to a dwelling unit has direct exterior access, the landing surface outside the door must be no more than ½-inch below the interior floor of the dwelling unit. However, to prevent water damage, a threshold that uses a maximum of ¼-inch on the inside and drops ¾-inch at a slope of 1:2 inches at the exterior may be provided.

*Feature: Lever-action handles on primary entrance door. **

The primary entrance door must have a door handle lever designed for use by individuals with grasping, fine motor or upper extremity disabilities. Lever handles must be on the outside and inside of the door.

Interior Doorways

*Feature: Interior doorways shall provide a clear opening of not less than 32 inches. **

Interior Doors are doors within the dwelling unit intended for user passage and thus must be usable in terms of clear opening width. This includes all secondary exterior doors at dwelling units that open onto private decks, balconies, and patios. Sliding glass doors that are used as secondary exterior doors must have a 32-inch clear opening. The door assembly for a standard 6-foot sliding glass door must yield a 32-inch clear opening. French doors or other double-leaf doors must provide a 32-inch clear opening.

The wall thickness of all cased openings of interior doorways must be no greater than 24 inches for the width of the doorway or passage to attain the minimum of 32 inches. Cased opening is all trim used around doors to cover the gap that exists between the jambs and the walls.

Included in the requirement for interior doors also are doors between rooms, doors into walk-in closets, doors into utility/storage rooms included within the unit, and rooms within the unit that contain washers and dryers. Small closets, such as linen closets, are not required to have the 32-inch clear opening. Also not included are doors to small mechanical closets dedicated to hot water heaters and furnaces and air conditioners.

*Feature: Clear floor space of 18 inches beside the door shall be required to provide space to move out of the way of the door's swing when pulling it open. **

Front approaches to pull side of swinging doors shall have maneuvering space that extends 18 inches minimum beyond the latch side of the door and 60 inches minimum perpendicular to the doorway.

*Feature: Flush thresholds at all interior doorways. **

Within the interior of the dwelling unit, thresholds shall not be used, or they should be thin and installed flush with the flooring surface.

When a secondary exterior door exits onto decks, patios, or balcony surfaces constructed of impervious materials, such as concrete or asphalt, the accessible route may be interrupted. In this case, the outside landing surface may be dropped a maximum of 4 inches below the floor level of the interior of the dwelling unit to prevent water infiltration at door sills, as allowed in the Fair Housing Act Guidelines.

If the exterior surface is constructed of pervious material, such as a wood deck that will drain adequately, that surface must be maintained to within ½-inch of the interior floor level.

Thresholds at doorways of exterior sliding doors shall not exceed ½-inch in height.

When measuring the distance between the floor inside and the outside surface, the interior floor level must be calculated from the finished floor and not from the subfloor. If carpet is to be installed, the measurement should be calculated with a fully compressed carpet and, if present, the pad.

*Feature: Lever-action handles on all interior doors. **

All interior doors in dwelling unit must have a door handle lever designed for use by individuals with grasping, fine motor or upper extremity disabilities. Lever handles must be on both sides of the door.

General Interior Features within Dwelling Unit

*Feature: All hallways shall be at least 36 inches wide. **

Hall widths must be at least 36 inches wide to allow a person to make a 90-degree turn into or out of a 32 inch door opening. Throughout the unit, the route must be 36 inches or wider, except as it passes through the interior passage doors, where it may be reduced to 32 inches clear width.

*Feature: Carpeting and/or non-skid flooring are required in all living areas, including entrance foyer. Carpeting shall be low-pile or tight-napped. Tile, hardwood, or laminate flooring shall be non-skid and non-glossy. **

If carpet or carpet tile is used on a floor surface, then it shall be securely attached. When both carpet and padding are used, there shall be no movement or minimum movement between the floor and the pad and the pad and the carpet.

Carpet shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. The maximum pile height shall be ½-inch. Exposed edges of carpet shall be fastened to floor surfaces and have trim along the entire length of the exposed edge. Carpet edge trim shall comply with floor level requirements.

Tile, hardwood, or laminate flooring surface materials shall be specified by the manufacturer to be slip-resistant.

Bathroom

At least one bathroom must provide enough maneuvering space so that a person who uses a wheelchair or other mobility aid can enter, close and reopen the door, use the fixtures and exit. This is a requirement in the Fair Housing Act, and those guidelines provide examples of bathrooms that provide enough square footage to meet those requirements. These examples feature typical bathroom designs and range from 37 to 48 square feet.

*Feature: There shall be at least one bathroom on an accessible level of the unit with clear floor space at toilet of at least 48 inches x 56 inches. A minimum of 30 inches x 48 inches of clear floor space outside swing of door shall be provided. **

*Feature: The bathroom on an accessible level of the unit shall have clear floor space at sink of at least 30 x 48 inches. Sink and vanity cabinet must permit clear floor space. **

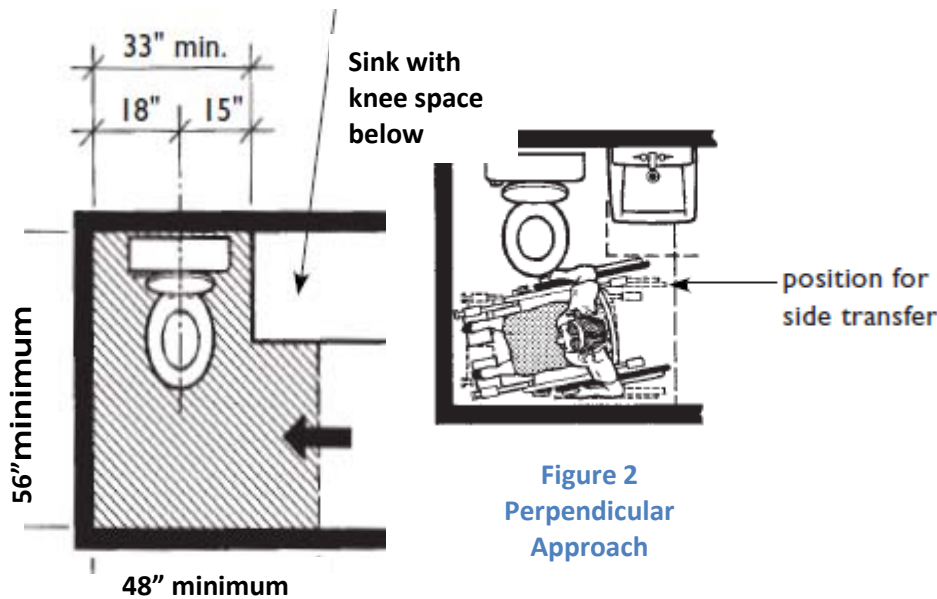
Doors may swing into the clear floor space at the bathroom fixtures, provided there is space to position a wheelchair outside the swing of the door so it can be closed. If in-swinging doors obstruct a bathroom fixture, it is possible to use offset hinges, swing the door out, or hinge door on opposite jamb. Swinging a door out of the room is a desirable Universal Design feature because it would prevent an incapacitated person from blocking the door from opening when a rescue is necessary. Please note that in bathrooms where the door swings out of the room, all the clear floor spaces at fixtures still must be provided. The user must be able to reopen the door to exit as well.

Clear Floor Space at Toilets

Clear floor space must be maintained around a toilet fixture depending upon the direction of the approach, either front or side, to allow ease of use by persons using wheelchairs. Unobstructed clear floor space is necessary to allow the wheelchair user to approach the toilet and transfer onto the fixture. Clear floor space for maneuvering space at toilet shall be at least 48 inches x 56 inches. See Figures 1 and Figure 2.

Figure 1 and Figure 2– Clear Floor Space at Toilets

In Figure 1 below, the thick black arrow pointing in toward the clear floor space is indicating the direction to the toilet by a person using a wheelchair. The required clear space of 48" x 56" space is the minimum space in which a person using a wheelchair will be able to get close enough to make a side or perpendicular approach to the toilet. The 56-inch dimension may allow some users to angle their wheelchair slightly to execute a safe transfer onto the toilet. The primary approach that can be executed in a 48 inches x 56 inches clear floor space is perpendicular, as shown in Figure 2.



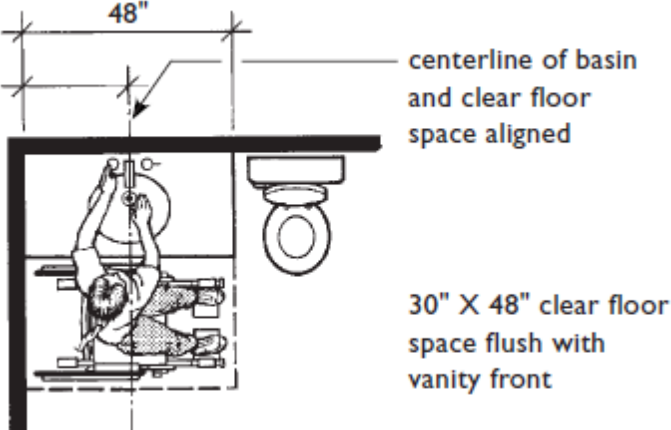
**Figure 1 48"x 56"
 Minimum Clear Floor Space**

**Figure 2
 Perpendicular
 Approach**

Centerline of toilet shall be 18 inches from sidewall. This dimension is consistent with the requirement that 18 inches be provided from the centerline of the toilet to the wall when that wall is to be equipped with a grab bar.

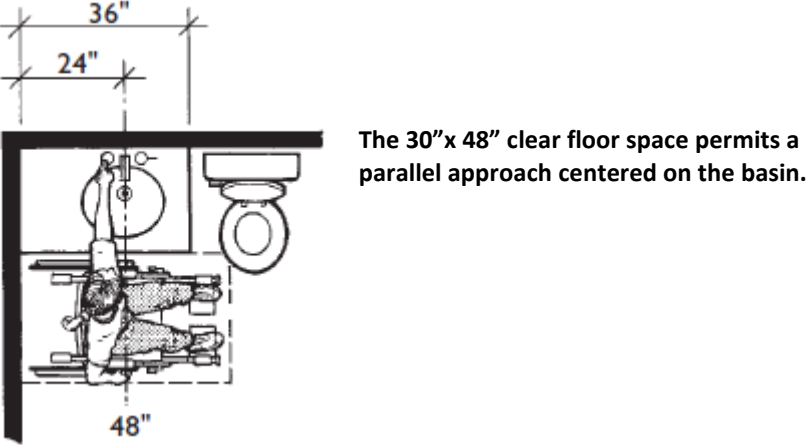
Clear Floor Space at Bathroom Sinks

A 30-inch x 48-inch clear floor space is required at the sink so a person who uses a wheelchair can get close enough to the basin and controls to use the fixture. When knee space is not provided for a forward approach, this 30-inch x 48-inch clear floor space must be parallel to the cabinet or counter front and centered on the basin. See Figure 3.



**Figure 3 Parallel
Wheelchair Approach**

To economize on floor space the basin may be offset so the length of the countertop may be less than 48 inches. In 36-inch wide countertops, the basin may be offset provided it remains centered on the required 48-inch long clear floor space. See Figure 4.



**Figure 4 Use of Offset Basin to Reduce
Length of Sink Countertop**

If a sink must be installed where space does not permit a close parallel approach with the 30-inch x 48-inch clear floor space centered on the basin, the centerline of the basin must be at least 15 inches from an adjoining wall or fixture. It must have knee space at least 30 inches wide to allow a user to execute a forward approach into clear floor space beneath the fixture. See Figure 5.

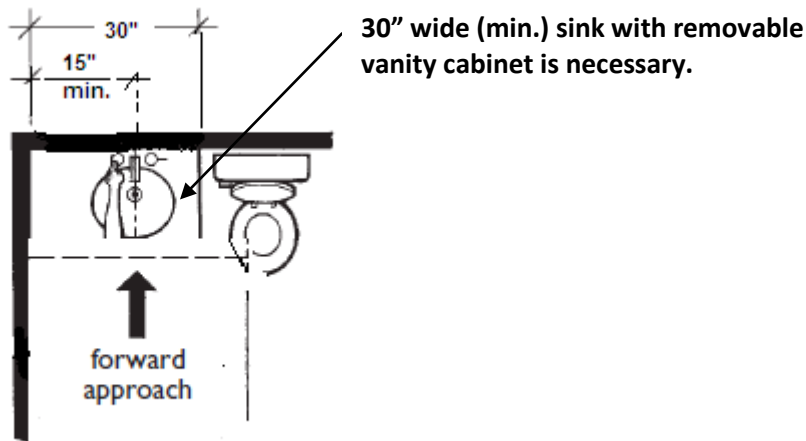


Figure 5 Knee Space Must Be Provided Because Clear Floor Space Cannot Be Centered

Sink and vanity cabinet must permit clear floor space. The required clear floor space may be achieved with a removable base cabinet. If a removable base cabinet is used, the finishes on the floor and walls in the knee space must be installed during initial construction so no additional finish work is required when the cabinet is removed.

There shall be no sharp or abrasive surfaces under sinks. Hot water and drain pipes under sinks shall be insulated or otherwise covered.

Grab Bars

*Feature: Reinforced walls for future installation of horizontal grab bars around toilets, tub/shower units, and showers.**

Reinforcing for Grab Bars at Toilets

Reinforcing at toilets should be long and wide enough so sufficient solid material is available to mount grab bars of differing lengths, mounting configurations, and designs. Fair Housing Act Guidelines specify that reinforcing should be at least six inches wide by 24 inches long, with longer reinforcing at 42 inches being preferred.

The leading edge of the reinforcing beside the toilet should be positioned at least 36 inches from the back wall to accommodate a bar that is a minimum of 24 inches long. If the

reinforcing starts 6 inches from the back wall then the 24 inches of reinforcing should be increased to 30 inches minimum. Whenever a toilet is next to a wall that allows for a longer area of reinforcing (42 inches is preferred), the longer area should be reinforced.

Toilets positioned beside a wall offer the highest degree of safe use since a grab bar can be mounted to the side of the toilet. The measurement from the centerline of the toilet to the wall must be 18 inches to accommodate a grab bar and the shoulders of a person seated on the toilet. See Figure 6.

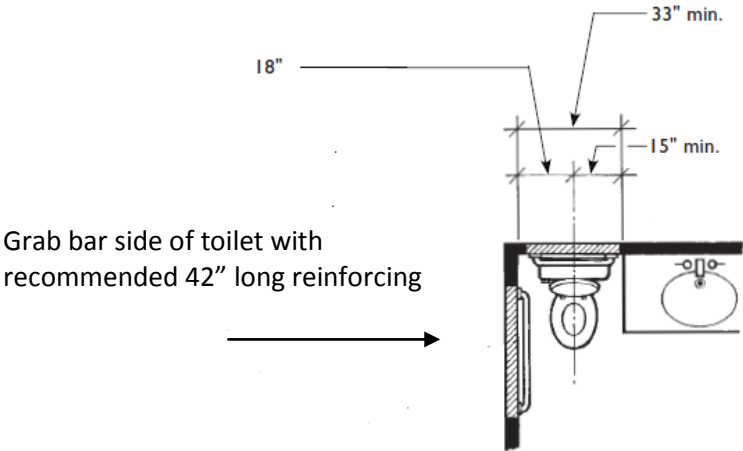


Figure 6 Toilet Placement at Adjoining Walls and Fixtures

In small bathrooms where the door is located in the side wall immediately adjacent to the toilet, reinforcing shall be at least 24 inches long. See Figure 7.

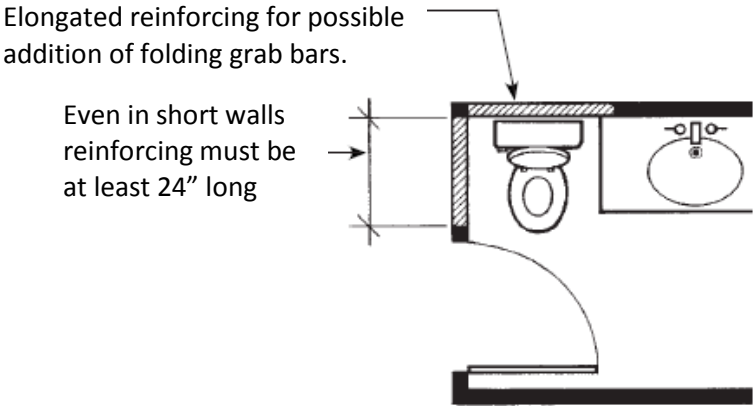


Figure 7 Reinforcing beside Toilet Shorter Because Door is Located on Same Wall

Reinforcing for Grab Bars at Tub/Shower Units

Areas should be reinforced at the head and foot of tub, and on the long wall, to provide full support for mounting plates and horizontal bars. Reinforcing should be placed at the foot (control end) of the tub at the position of 33" above the finished room floor. The back (long) wall shall have a reinforced area that will support a grab bar of a minimum 24 inches in length located 12 inches maximum from the foot of the tub and 24 inches (maximum from the head of the tub. See Figure 8.

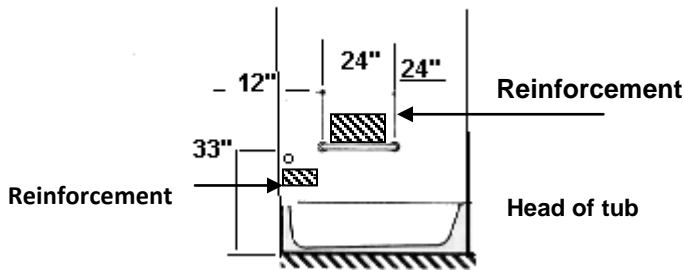


Figure 8 Reinforcing at Bathtubs

Faucets

Feature: Lever handles on all faucets. All faucets must have anti-scald feature.

Sink, bathtub, and tub/shower controls shall be either single faucet or double faucet levers that do not require a strong grip to operate.

Anti-scald features

Sink, bathtub, and tub/shower combinations shall have balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of Standard ASSE 1016 (American Society of Sanitary Engineering) and shall be installed at the point of use. Shower and tub-shower combination valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions. In-line thermostatic valves shall not be utilized for compliance with this section. This is in accordance with Florida Building Code, Section 424.3.

Kitchen

Feature: Lever handles on all faucets. All faucets must have anti-scald feature.

Kitchen sink faucets shall be either single faucet or double faucet levers that do not require a strong grip to operate.

Anti-scald features

Sink faucets in the kitchen shall have balanced-pressure, thermostatic or combination balanced-pressure/thermostatic valves that conform to the requirements of Standard ASSE 1016 (American Society of Sanitary Engineering) and shall be installed at the point of use. Kitchen faucet valves required by this section shall be equipped with a means to limit the maximum setting of the valve to 120°F (49°C), which shall be field adjusted in accordance with the manufacturer's instructions. In-line thermostatic valves shall not be utilized for compliance with this section. This is in accordance with Florida Building Code, Section 424.3.

Utility Features

*Feature: Mid-point on light, fan switch plates, and thermostats shall be not more than 48 inches above finished floor level. **

The required measurement of 48" is based on the Fair Housing Act guidelines for the reach ranges of seated people. There must be a clear floor space of 30 inches x 48 inches perpendicular to the wall, adjoining a 36-inch wide accessible route to allow a forward or parallel approach by a person using a wheelchair to operate controls.

Thermostats and other controls that must be read shall be mounted at or lower than 48 inches above the finished floor level to ensure that a person in a wheelchair will be able to see the controls.

Feature: Switches for lights and fans shall be toggle, rocker, and/or touch-sensitive.

Toggle switches, rocker switches, and touch sensitive switches that require little force and do not require gripping, twisting or fine finger dexterity shall be provided.

Feature: Mid-point on electrical outlets, phone jacks, and data ports shall be located no less than 18 inches above finished floor level with exception of those electrical outlets, phone jacks and data points around cabinetry and electrical outlets for major appliances such as stoves, refrigerators, and washers and dryers.

The required mid-point measurement of 18 inches allows an elderly person or a person in a wheelchair to easily reach the outlet to plug or unplug a device.

Feature: There shall be at least one four-plex electrical outlets in all bedrooms for electrical equipment such as computers, printers, radios and medical/personal care equipment.

Feature: Electrically-wired door bell accessible to a seated person at the entrance of unit, not more than 48" from finished floor of primary entry door.

The required measurement of 48" is based on the Fair Housing Act guidelines for the reach ranges of seated people. There must be a clear floor space of 30 inches x 48 inches perpendicular to the wall, adjoining a 36-inch wide accessible route to allow a forward or parallel approach by a person using a wheelchair to operate the door bell.

Feature: Lighting inside and outside of primary entrance door.

Lighting inside and outside of primary entry door is required. The lighting shall illuminate the lockset and handles of primary entry door and be of a general illumination that provides for seeing visitors at night.

Feature: All living spaces, including hallways, within the unit shall be equipped with overhead lighting operated by a wall switch.

Living space in a dwelling unit is determined to be the habitable space for living, sleeping, eating, or cooking. These spaces within the unit shall have overhead lighting. Habitable space does not include bathrooms, toilet rooms, closets, storage or utility spaces and similar areas.

Section 2: Optional Features in New Construction Units

The Optional Features are a list of features that can be chosen to achieve scoring points in Florida Housing's Universal Application. To be eligible for scoring points, **all** items on this list shall be included in at least 15 percent of New Construction units. Developers will not be allowed to choose individual items from the list. The inclusion of these features in at least 15 percent of units is in addition to the federal requirement that five percent of all units be fully handicapped accessible. The features on this list are in addition to Florida Housing's Required Universal Design and Visitability Features. These must be provided in at least 15 percent of the New Construction units regardless of the Development Category selected at Part III.A.3 of the Universal Application.

General Interior Features within Dwelling Unit

Feature: Hallways shall be at least 40" wide.

Hallways shall be a minimum clear width of 40 inches, except through doorways, which shall have a minimum of 32 inches clear width.

Feature: Turning space in living room and one bedroom shall be at least 60 inches in diameter. (5 feet)

There shall be a minimum of 60 inches diameter of unobstructed space in living room and one bedroom in order to provide adequate maneuvering and turning space for a person using a wheelchair or walker.

Bathroom

*Feature: If the accessible bathroom has a bathtub/shower combination, clear floor space of at least 30 x 48 inches shall be provided. **

The following comments address fixtures that are a combination of bathtub and shower. It does not cover showers that are separate bathing fixtures.

Clear floor space of at least 30 inches x 48 inches outside swing of door as it is closed shall be provided at bathtub/shower fixtures. This clear floor space allows space for a parallel approach to the bathtub, as well as access for transferring into and out of the bathtub.

Grab Bars at each Bathtub/Shower

Feature: Horizontal grab bars in place around each tub and/or shower, the installation of which meets or exceeds the Universal Federal Accessibility Standards.

Horizontal grab bars shall be in place around each tub and/or shower. Grab bars can be of any design that meets the UFAS standards. There are many attractive designs on the market for grab bars that do not look “institutional.”

The UFAS standards for the size, spacing, and structural strength of the required grab bars are noted in the section below.

UFAS 4.26.2 - Size and Spacing of Grab Bars:

The diameter or width of the gripping surfaces of a handrail or grab bar shall be 1-1/4 inch to 1-1/2 inch, or the shape shall provide an equivalent gripping surface. If handrails or grab bars are mounted adjacent to a wall, the space between the wall and the grab bar shall be 1-1/2 inch.

UFAS 4.26.3 - Structural Strength:

The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

- (1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (pound-force) shall be less than the allowable stress for the material of the grab bar or seat.
- (2) Shear stress induced in a grab bar or seat by the application of 250 lbf shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
- (3) Shear force induced in a fastener or mounting device from the application of 250 lbf shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
- (4) Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal and the supporting structure.
- (5) Grab bars shall not rotate within their fittings.

Feature: Height of toilet in an accessible bathroom must be 17 inches to 19 inches.

Toilet in an accessible bathroom must be between 17 and 19 inches, measured from the floor to the top of the toilet seat.

Feature: All cabinet drawer and door handles in kitchen and bathroom shall be looped or D-Shaped type.

All cabinet and door handle hardware shall be looped or D-pull type. All such items shall operate easily using a single closed fist. See Figure 10.

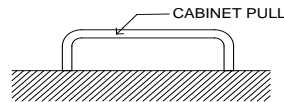


Figure 10

Kitchen

*Feature: Kitchens must have at least 30 inches x 48 inches clear floor space at each fixture and appliance. Clear floor space must be positioned either parallel or perpendicular to and centered on the fixture or appliance. **

Clear floor space of 30 inches x 48 inches is required to allow space to execute parallel approaches to ranges, cooktops, and sinks. These approaches are less difficult and safer than a forward approach. The clear floor space for a parallel approach to the range, cooktop, and sink must be centered on the appliance, or in case of the sink, on the bowl.

Clear floor space of 30 inches x 48 inches for a parallel, perpendicular, or a forward approach to the refrigerator shall be provided. This clear floor space for at least one type of approach shall be centered on the refrigerator. This applies to side-by-side and over/under refrigerator/freezer models.

Dishwashers, trash compactors, wall-mounted ovens, and microwave ovens must have either a parallel or perpendicular clear floor space of 30 inches x 48 inches adjacent to the appliance.

Feature: At least one section of kitchen countertop shall provide a clear continuous work surface.

Countertops should be as continuous as possible so that dishes or containers can be slid between workstations. This arrangement is preferable because it is difficult for wheelchair users to move items between unconnected counters.

*Feature: Kitchen sink shall have knee clearance of at least 27 inches high and 30 inches wide. **

Clear knee space at kitchen sink shall be at least 27 inches high and 30 inches wide. Knee space may be achieved with a removable base cabinet. Floor, walls, and cabinet faces of knee space shall be finished during initial construction so no other work is necessary when

the base cabinet is removed. There shall be no sharp or abrasive surfaces under sinks. Hot water and drain pipes under sinks shall be insulated or otherwise covered.

Feature: In at least one of the kitchen's bottom or base cabinets, there shall be a large drawer that has full extension drawer slides.

Full-extension drawer slides shall allow the rollout to extend completely past the cabinet front so all the contents can be accessed.

The measurements for this feature will depend on the size of the base cabinet being installed. Nearly all standard base cabinets are 23-1/4 inches deep from the inside of the face frame to the back of the cabinet. So in most cases, a 22-inch long rollout drawer and carrier sides will be sufficient. If shallower cabinets are used, subtract whatever is necessary. The full-extension drawer slides shall have a weight rating that will be sturdy enough for the drawer to be used to store canned goods or cooking pans. In the case of a 22-inch full-extension side-mount drawer slides, a 90-lb. weight rating is sufficient for this use.

Rather than give specific measurements, the term "large drawer" was chosen to describe what is required for this feature. In at least one base cabinet, one drawer shall be wide enough to allow convenient storage of items such as large skillets. See Figure 11 for an example. This example is a recommendation only.



Figure 11 Example of a large drawer with full extension drawer slides

Feature: All cabinet drawer and door handles in kitchen and bathroom shall be looped or D-Shaped type.

All cabinet and door handle hardware shall be looped or D-pull type. All such items must operate easily using a single closed fist. See Figure 12.

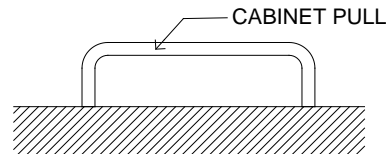


Figure 12

Utility Features

Feature: Electrically wired smoke detector alarms shall be provided. The smoke detectors shall have battery backup feature. A smoke detector, wired into the building's electrical system, with a visual alarm component shall be provided upon request by a hearing impaired tenant. Landlords shall notify deaf or hearing-impaired tenants of the availability of smoke detectors with visual alarm.

The smoke detector shall be designed to give reliable early warning of the presence of smoke by audible alarm. The detector shall be hard-wired, which means wired into the electrical system, and be equipped with battery backup for added safety during power outages. The audible horn on smoke detector must emit loud, high pitched sounds when it senses smoke. It must be tested and rated by UL (Underwriters Laboratories).

New tenants shall be asked, in writing, at the time of rental, whether visual smoke detectors will be needed. Upon request, the landlord or proprietor shall provide visual a smoke detector with strobe light which has an effective intensity of at least 170 candelas, to any deaf or hearing-impaired occupant at any time during their occupancy.

Section 3: Additional Required Features in Elderly Developments

Requirements for Applicants choosing the Elderly Demographic are stated in Part III.D.1. of the Universal Application Instructions. Please note that the required Universal Design features as outlined in Part III.B.2. of the Universal Application Instructions shall also be provided in Elderly Developments.

Required features in Elderly Developments, in addition to the required features at Part III.B.2. of the Universal Application Instructions, are as follows:

In 15 percent of the new construction units:

- Roll-in Showers – Five percent of the overall requirement for roll-in showers may be met with walk-in type shower stalls with permanently affixed seat which meet or exceed the Uniform Federal Accessibility Standards (UFAS); See the applicable UFAS requirement below.

In 100 percent of the new construction units:

- Horizontal grab bars in place around each tub and/or shower, the installation of which meets or exceeds UFAS 4.34.5. (See UFAS 4.34.5 below);
- Horizontal grab bars in place around each toilet, the installation of which meets or exceeds UFAS 4.34.5.
- Roll-out shelving or drawers in all bottom bathroom vanity cabinets.
- Adjustable shelving in master bedroom closets (style of shelving must be re-adjustable by resident.)
- Roll-out shelving or drawers in at least one bottom kitchen cabinet.

The following section addresses the features for Elderly Developments that are in addition to the required features found at Part III.B.2 (described in Part A: Required Features section of this manual).

Please note that these required features apply to any New Construction units regardless of the Development Category selected in the Application (Part III.A.3).

Bathrooms – Elderly Developments

Feature: Roll-in Showers

Developments that are classified as Elderly are required to provide roll-in showers in 15 percent of the New Construction units. Five percent of the overall requirement for roll-in showers may be met with walk-in type shower stalls with permanently affixed seats which meet or exceed the UFAS standards.

Applicable UFAS requirements follow:

UFAS 4.34.5 Bathrooms /Showers

Showers: If a shower is provided, it shall have the following features:

Size and clearances

Shower Stall

- The shower stall shall be 36 inches by 36 inches or,
- The shower stall shall fit into the same space as a standard 60 inch long bathtub.

Clear Floor Space

- The clear floor space shall be a minimum of 48 inches in length by a minimum of 36 inches width and allow for a parallel approach. The clear floor space shall extend one foot beyond the shower wall on which the seat is mounted.

Shower Seat: The seat shall be 17 inches to 19 inches high measured from the bathroom floor and shall extend the full depth of the stall. The seat shall be on the wall opposite the controls. The structural strength of seats and their attachments shall comply with UFAS 4.26.3 (see 4.26.3 below). Seats shall be mounted securely and shall not slip during use.

Controls: In the shower stall, all controls, faucets, and the shower unit shall be mounted on the side wall opposite the seat. A shower spray unit with a hose at least 60 inches long that can be used as a fixed shower head at various heights or as a hand-held shower shall be provided.

Bathtub and Shower Enclosures: Enclosures for bathtubs or shower stalls shall not obstruct controls or transfer from wheelchairs onto shower or bathtub seats. Enclosures on bathtubs shall not have tracks mounted on their rims.

Clear Floor Space: Clear floor space at fixtures may overlap.

Grab bars in Elderly Developments

UFAS Standard 4.34.5 states that if provided, grab bars shall comply with UFAS 4.26. (see below)

UFAS 4.26.2 - Size and Spacing of Grab Bars:

The diameter or width of the gripping surfaces of a handrail or grab bar shall be 1-1/4 inch to 1-1/2 inch, or the shape shall provide an equivalent gripping surface. If handrails or grab bars are mounted adjacent to a wall, the space between the wall and the grab bar shall be 1-1/2 inch.

UFAS 4.26.3 - Structural Strength:

The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

(1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (pound-force) shall be less than the allowable stress for the material of the grab bar or seat.

(2) Shear stress induced in a grab bar or seat by the application of 250 lbf shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.

(3) Shear force induced in a fastener or mounting device from the application of 250 lbf shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.

(4) Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal and the supporting structure.

(5) Grab bars shall not rotate within their fittings.

Feature: Roll-out shelving or drawers in all bottom bathroom vanity cabinets

Roll out shelving or drawers in bottom of all bathroom vanity cabinets shall have full extension drawer slides, which allow the rollout to extend completely past the cabinet front so all the contents can be accessed.

Bedroom Closet

Feature: Adjustable shelving in master bedroom closets (style of shelving must be re-adjustable by resident.)

The rod and shelf shall be adjustable from 4'-0" to 5'-6" above the finished floor in all dwelling units.

Kitchen

Feature: In at least one of the kitchen's bottom or base cabinets, there shall be a large drawer that has full extension drawer slides.

Full-extension drawer slides shall allow the rollout to extend completely past the cabinet front so all the contents can be accessed.

The measurements for this feature will depend on the size of the base cabinet being installed. Nearly all standard base cabinets are 23-1/4 inches deep from the inside of the face frame to the back of the cabinet. So in most cases, a 22-inch long rollout drawer and carrier sides will be sufficient. If shallower cabinets are used, subtract whatever is necessary. The full-extension drawer slides shall have a weight rating that will be sturdy enough for the drawer to be used to store canned goods or cooking pans. In the case of a 22-inch full-extension side-mount drawer slides, a 90-lb. weight rating is sufficient for this use.

Rather than give specific measurements, the term “large drawer” was chosen to describe what is required for this feature. In at least one base cabinet, one drawer shall be wide enough to allow convenient storage of items such as large skillets. See Figure 13 for an example. This example is a recommendation only.



Figure 13 Example of a large drawer with full extension drawer slides

Part B Rehabilitation Units

Part B addresses Florida Housing's approach to visitability and universal design features in rehabilitation units. The Universal Application requires Developments that involve any rehabilitation units to include visitability and universal design features in all of the rehabilitation units. This is regardless of the Development Category chosen.

Development Categories (Part III.A.3 Universal Application) include:

- New Construction – 50 percent or more of the units are new construction;
- Rehabilitation – less than 50 percent of the units are new construction;
- Acquisition and Rehabilitation – acquisition plus less than 50 percent of the units are new construction;
- Preservation – less than 50 percent of the units are new construction;
- Acquisition and Preservation – acquisition plus less than 50 percent of the units are new construction;
- Redevelopment – 50 percent or more of the units are new construction;
- Acquisition and Redevelopment -acquisition plus 50 percent or more of the units are new construction;

For further definitions, see Rule 67-48.002 and/or 67-21.002, F.A.C.

The applicable visitability and universal design features for each Development will be based on the feasibility and viability for the type or level of rehabilitation in accordance with a capital needs assessment performed during the credit underwriting process.

Section 1: Required Features in Rehabilitation Units

Based on the determination by the capital needs assessment, the required features as described in this manual in Part A, Section 1 Required Features shall be provided in all of the Rehabilitation units. Please see Part A, Section 1 for the specifications for each feature.

Section 2: Optional Features in Rehabilitation Units

The Optional Features are a list of features that can be chosen to achieve scoring points in Florida Housing's Universal Application. To be eligible for scoring points in Developments with Rehabilitation units, Developers must provide as many of the optional Visitability and Universal Design features as feasible, based on the capital needs assessment, in at least 15 percent of the Development's rehabilitation units. Developers will not be allowed to choose individual items from the list. The inclusion of these features in at least 15 percent of units is in addition to the federal requirement that five percent of all units be fully handicapped accessible. The features on this list are in addition to Florida Housing's Required Universal Design and Visitability Features. They must be provided in these units regardless of the Development Category selected at Part III.A.3 of the Universal Application. See Part A, Section 2 Optional Features for the specifications for each feature.

Section 3: Rehabilitation Units in Elderly Developments

If the Elderly Development includes any rehabilitation units, regardless of the Development Category selected at Part III.A.3 of the Universal Application, the following features must be provided in the rehabilitation units of Elderly Developments:

In 10 Percent of the rehabilitation units:

- Roll-in Showers – Five percent of the overall requirement for roll-in showers may be met with walk-in type shower stalls with permanently affixed seat which meet or exceed the Uniform Federal Accessibility Standards (UFAS); See the applicable UFAS requirement below.

In 100 percent of the rehabilitation units:

- Thermostat placed at 48" maximum height.
- Carpeting and/or non-skid flooring in all living areas, including entrance foyer.
- Carpeting shall be low pile or tight-napped and tile, hardwood, or laminate flooring shall be non-skid and non-glossy.
- 36" entrances on all exterior doors.
- All wall electrical outlets placed between 18" and 48" above the floor.
- Scald control valves on all bathtub and shower faucets.
- Entrance door must have two peepholes, one at standing eye level and one at seated eye level, not more than 43 inches from bottom of door.
- Switches for each light and each fan throughout the unit shall be toggle, rocker and/or touch-sensitive.
- Adjustable shelving in master bedroom closets (style of shelving must be re-adjustable by resident).
- Lever-action handles on all doors in units and public areas.
- Horizontal grab bars in place around each tub and/or shower, the installation of which meets or exceeds the Universal Federal Accessibility Standards (UFAS 4.34.5) See UFAS 4.34.5 below.
- Horizontal grab bars in place around each toilet, the installation of which meets or exceeds the Universal Federal Accessibility Standards (UFAS 4.34.5).
- Roll-out shelving or drawers in all bottom bathroom vanity cabinets.
- Roll-out shelving or drawers in at least one bottom kitchen cabinet.

UFAS 4.34.5 Bathrooms /Showers

Showers: If a shower is provided, it shall have the following features:

Size and clearances

Shower Stall

- The shower stall shall be 36 inches by 36 inches or,
- The shower stall shall fit into the same space as a standard 60 inch long bathtub.

Clear Floor Space

- The clear floor space shall be a minimum of 48 inches in length by a minimum of 36 inches width and allow for a parallel approach. The clear floor space shall extend one foot beyond the shower wall on which the seat is mounted.

Shower Seat: The seat shall be 17 inches to 19 inches high measured from the bathroom floor and shall extend the full depth of the stall. The seat shall be on the wall opposite the controls. The structural strength of seats and their attachments shall comply with UFAS 4.26.3 (see 4.26.3 below). Seats shall be mounted securely and shall not slip during use.

Controls: In the shower stall, all controls, faucets, and the shower unit shall be mounted on the side wall opposite the seat. A shower spray unit with a hose at least 60 inches long that can be used as a fixed shower head at various heights or as a hand-held shower shall be provided.

Bathtub and Shower Enclosures: Enclosures for bathtubs or shower stalls shall not obstruct controls or transfer from wheelchairs onto shower or bathtub seats. Enclosures on bathtubs shall not have tracks mounted on their rims.

Clear Floor Space: Clear floor space at fixtures may overlap.

Grab bars in Elderly Developments

UFAS Standard 4.34.5 states that if provided, grab bars shall comply with UFAS 4.26. (See below)

UFAS 4.26.2 - Size and Spacing of Grab Bars:

The diameter or width of the gripping surfaces of a handrail or grab bar shall be 1-1/4 inch to 1-1/2 inch, or the shape shall provide an equivalent gripping surface. If handrails or grab bars are mounted adjacent to a wall, the space between the wall and the grab bar shall be 1-1/2 inch.

UFAS 4.26.3 - Structural Strength:

The structural strength of grab bars, tub and shower seats, fasteners, and mounting devices shall meet the following specification:

- (1) Bending stress in a grab bar or seat induced by the maximum bending moment from the application of 250 lbf (pound-force) shall be less than the allowable stress for the material of the grab bar or seat.
- (2) Shear stress induced in a grab bar or seat by the application of 250 lbf shall be less than the allowable shear stress for the material of the grab bar or seat. If the connection between the grab bar or seat and its mounting bracket or other support is considered to be fully restrained, then direct and torsional shear stresses shall be totaled for the combined shear stress, which shall not exceed the allowable shear stress.
- (3) Shear force induced in a fastener or mounting device from the application of 250 lbf shall be less than the allowable lateral load of either the fastener or mounting device or the supporting structure, whichever is the smaller allowable load.
- (4) Tensile force induced in a fastener by a direct tension force of 250 lbf plus the maximum moment from the application of 250 lbf shall be less than the allowable withdrawal and the supporting structure.
- (5) Grab bars shall not rotate within their fittings.