Arkansas

USABILITY

STANDARDS

in Housing:

guidance manual for designing & constructing inclusive, functional dwellings
Arkansas Usability Standards in Housing:  
Guidance Manual for Designing and Constructing Inclusive, Functional Dwellings  
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Edited by:  
Korydon Smith

With consultation and contributions from:  
Edward Steinfeld  
Diane Sprague  
G. Scott Danford  
Eva Kultermann  
Susan Mack  
Brent Williams

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- University of Arkansas for Medical Sciences, Partners for Inclusive Communities  
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Part 1: Introduction

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Basic Definitions 1.05

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OVERVIEW:
With the changing demographics of the United States (and much of the world)—i.e. the aging of the "baby-boom" generation and the increased prevalence of various disabilities—there has become an increasing importance (and demand) to develop affordable, user-friendly housing. The design and construction of inclusive housing has become most significant in the South and states such as Arkansas, where the aforementioned economic and demographic effects are most pronounced. This document serves as a guide for local, regional, and state governments, agencies, and housing authorities and for designers, developers, builders, architects, and engineers working with these organizations for designing and constructing more accessible, usable housing. This guide may be adopted or utilized (in part or in whole) by any of these organizations or individuals as a means to positively affect the quality of housing in the state of Arkansas.
HOW TO USE THIS DOCUMENT:
The Usability Standards contained herein provide guidance for designing and constructing more ergonomic, universally functional housing. The usability standards listed below are organized according to the traditional functions that take place within the home (e.g., sleeping, food preparation, etc.). Each category contains two components: (1) Levels of Usability (top) and (2) Usability Criteria (left). There are four types of usability: (a) mobility, (b) operability, (c) perceptibility, and (d) security. To the right of each usability criteria is a continuum of achievement levels—Level 1: Visitable through Level 5: All-Inclusive—where the usability standard is specified. The diagram below illustrates the two basic facets of the Usability Standards.

### Arkansas Usability Standards in Housing

<table>
<thead>
<tr>
<th>Mobility within bathroom</th>
<th>Operability of fixtures</th>
<th>Perceptibility of plumbing fixtures</th>
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<tbody>
<tr>
<td>Each “visitable” toileting space contains an area enabling diverse occupants to rest and to turn 180 degrees.</td>
<td>Sink fixture in “visitable” toileting space or adjacent “visitable” space a) is operable with a closed flat and b) requires a minimum effort of operation.</td>
<td>All plumbing fixtures in “visitable” bathing and/or toiletting spaces a) are operable with a closed flat and b) require a minimum effort of operation.</td>
<td>All plumbing fixtures in “visitable” bathing and/or toiletting spaces a) are operable with a closed flat and b) requires a minimum effort of operation.</td>
</tr>
<tr>
<td>Configuration of “visitable” toileting space or adjacent “visitable” space enables side approach to and use of sink for diverse occupants.</td>
<td></td>
<td>All cabinetry/fixtures in “visitable” bathing and/or toiletting spaces a) is operable with a closed flat or a flat open hand and b) requires a minimum effort of operation.</td>
<td>All cabinetry/storage in all bathing and/or toiletting spaces a) is operable with a closed flat or a flat open hand and b) requires a minimum effort of operation.</td>
</tr>
</tbody>
</table>

### Bathing & Toileting Spaces

<table>
<thead>
<tr>
<th>Level 1: Visitable</th>
<th>Level 3: Livable</th>
<th>Level 5: All-Inclusive</th>
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<tbody>
<tr>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
</tr>
<tr>
<td>Every bathing and/or toiletting space contains an area enabling diverse occupants to rest and to turn 180 degrees.</td>
<td>All plumbing fixtures are operable with a closed flat and b) require a minimum effort of operation.</td>
<td>All plumbing controls (e.g. sinks and bathing fixtures) provide intuitive visual and tactile cues.</td>
</tr>
<tr>
<td>Configuration of each bathing and/or toiletting space enables front and side approach to and use of sink for diverse occupants.</td>
<td>Cabinetry, fixtures, and assistive devices can be reconfigured to facilitate diverse operation and structural adaptation or choice of additional components.</td>
<td>All plumbing fixtures in all bathing and/or toiletting spaces provide security against scalding.</td>
</tr>
</tbody>
</table>
# Arkansas Usability Standards in Housing

## How to Use this Document

### ORGANIZATION OF THE DOCUMENT

<table>
<thead>
<tr>
<th>DOCUMENT TITLE</th>
<th>SECTION NAME OR ROOM TYPE</th>
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<tbody>
<tr>
<td>Level 1: Visible</td>
<td>Level 3: Visible</td>
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<tr>
<td>Mobility within bathroom.</td>
<td>Each “visible” toilet space contains an area enabling diverse occupants to rest and to turn 180 degrees.</td>
</tr>
<tr>
<td>Configuration of “visible” toilet space or adjacent “visible” space enables side approach to and use of sink for diverse occupants.</td>
<td>Each “visible” bathing and/or toilet space contains an area enabling diverse occupants to rest and to turn 180 degrees. 3.20, 3.21, 3.22, or 3.23</td>
</tr>
<tr>
<td>Configuration of “visible” bathing and/or toilet space enables front and side approach to and use of all plumbing fixtures for diverse occupants. 3.30, 3.31, 3.32, 3.33, or 3.34</td>
<td>Every bathing and/or toilet space contains an area enabling diverse occupants to rest and to turn 180 degrees.</td>
</tr>
<tr>
<td>Configuration of each bathing and/or toilet space enables front and side approach to and use of sink for diverse occupants.</td>
<td></td>
</tr>
<tr>
<td>Operability of fixtures.</td>
<td>Bath fixture in “visible” space or adjacent “visible” space is operable with a closed flat and b) requires a minimum effort of operation.</td>
</tr>
<tr>
<td>All cabinet/storage in “visible” bathing and/or toilet spaces a) is operable with a closed flat or a flat open hand and b) requires a minimum effort of operation. 3.24</td>
<td>Cabinetry, fixtures, and assistive devices can be reconfigured to facilitate diverse occupants. 3.24</td>
</tr>
<tr>
<td>All plumbing fixtures are operable with a closed flat and b) require a minimum effort of operation. 3.24</td>
<td></td>
</tr>
<tr>
<td>Perceptibility of plumbing fixtures.</td>
<td></td>
</tr>
<tr>
<td>Security of plumbing fixtures.</td>
<td>All plumbing fixtures in “visible” bathing and/or toilet spaces provide security against scalding. 3.25</td>
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### USABILITY STANDARDS

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## ORGANIZATION OF THE USABILITY STANDARDS

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<td>Room</td>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
<td>Bathing &amp; Toileting Spaces</td>
</tr>
<tr>
<td>Sink fixture in “visible” bathing space or adjacent “visible” space</td>
<td>All sinks shall be operable with a closed fist or a flat open hand and shall require a minimum effort of operation.</td>
<td>All sinks shall be operable with a closed fist or a flat open hand and shall require a minimum effort of operation.</td>
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<td>All sinks shall be operable with a closed fist or a flat open hand and shall require a minimum effort of operation.</td>
</tr>
<tr>
<td>Security of fixtures</td>
<td>All plumbing fixtures in “visible” bathing and/or toileting spaces provide security against scalping.</td>
<td>All plumbing fixtures in “visible” bathing and/or toileting spaces provide security against scalping.</td>
<td>All plumbing fixtures in “visible” bathing and/or toileting spaces provide security against scalping.</td>
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<td>All plumbing fixtures in “visible” bathing and/or toileting spaces provide security against scalping.</td>
</tr>
<tr>
<td>Accessibility features</td>
<td>All accessibility features in “visible” bathing and/or toileting spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.</td>
<td>All accessibility features in “visible” bathing and/or toileting spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.</td>
<td>All accessibility features in “visible” bathing and/or toileting spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.</td>
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<td>All accessibility features in “visible” bathing and/or toileting spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.</td>
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<tr>
<td>Configuration of “visible” bathing space or adjacent “visible” space enables front and side approach to and use of sink for diverse occupants.</td>
<td>Configuration of “visible” bathing space or adjacent “visible” space enables front and side approach to and use of sink for diverse occupants.</td>
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<td>Configuration of “visible” bathing space or adjacent “visible” space enables front and side approach to and use of sink for diverse occupants.</td>
<td>Configuration of “visible” bathing space or adjacent “visible” space enables front and side approach to and use of sink for diverse occupants.</td>
</tr>
</tbody>
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### Levels of Usability

- **Level 1: Visible**
- **Level 2: Accessible**
- **Level 3: Visible**
- **Level 4: Accessible**
- **Level 5: All-Inclusive**

### Usability Standards with Referenced Examples

- **Mobility Criteria**
  - Room
  - Sink fixture in “visible” bathing space or adjacent “visible” space
  - Security of fixtures
  - Accessibility features
  - Configuration of “visible” bathing space or adjacent “visible” space

- **Usability Criteria**
  - Bathing & Toileting Spaces

- **Usability Standards**
  - All sinks shall be operable with a closed fist or a flat open hand and shall require a minimum effort of operation.
  - All plumbing fixtures in “visible” bathing and/or toileting spaces provide security against scalping.
  - All accessibility features in “visible” bathing and/or toileting spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.
  - Configuration of “visible” bathing space or adjacent “visible” space enables front and side approach to and use of sink for diverse occupants.

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1.04
LEVELS OF USABILITY

Level 1: Visitable
Accommodates the brief stay of diverse visitors.

Level 3: Livable
Accommodates the needs of diverse visitors as well as most residents, and is easily adaptable to accommodate future needs.

Level 5: All-Inclusive
Accommodates the needs of all visitors and residents throughout their life spans with minimal adaptation.

1. Mobility.
   Can you get to it?

2. Operability.
   Can you operate it?

3. Perceptibility.
   Does it communicate with you?

   Does it provide safety/protection?
PRIMARY DEFINITIONS:
Definitions are provided below for each level of usability and each usability criterion.

LEVELS OF USABILITY

Level 1: Visitable
"Visitable" is the enabling of:
- ambulatory visitors,
- visitors utilizing assistive technologies, and
- visitors utilizing wheeled mobility devices
to:
- access, move to and through, and
- remain safe and secure in at least one connected set of spaces, including a minimum of:
  a. one visitable approach and entry,
  b. one entry-floor visitable bathroom, and
  c. one entry-floor visitable interior space (other than the entry and bathroom).
In addition, all Level 1 (or higher) standards must be fulfilled.

Level 3: Livable
"Livable" is the enabling of:
- ambulatory residents,
- residents who utilize assistive technologies,
- residents utilizing wheeled mobility devices,
- residents with a wide range of strengths and dexterities, and
- residents with diverse sensory abilities
to:
- access, move to and through,
- operate the fixtures within,
- receive and interpret sensory cues in, and
- remain safe and secure in at least one connected set of spaces, including a minimum of:
  a. a visitable and operable main entry,
  b. one livable bathroom,
  c. one livable kitchen,
  d. and one livable bedroom.
In addition, all Level 3 (or higher) standards must be fulfilled.

Level 5: All-Inclusive
"All-Inclusive" is the enabling of:
- ambulatory residents,
- residents who utilize assistive technologies,
- residents utilizing wheeled mobility devices,
- residents with a wide range of strengths and dexterities
to:
- access, move to and through,
- operate the fixtures within,
- receive and interpret sensory cues in, and
- remain safe and secure in all connected spaces of the home, including a minimum of:
  a. all approaches and entries, and
  b. all interior spaces.
In addition, all Level 5 (or higher) standards described below must be fulfilled.

1. Mobility.
   Mobility is the enabling of ambulatory occupants, users of assistive technologies, and occupants utilizing wheeled mobility devices to access and move to and through various spaces.

2. Operability.
   Operability is the enabling of users with a wide range of strengths and dexterities to properly and efficiently use fixtures, mechanisms, and controls.

3. Perceptibility.
   Perceptibility is the enabling of users with diverse sensory abilities to receive and interpret a variety of sensory cues, including visual, auditory, and tactile information.

   Security is the enabling of diverse users to remain safe and protected from injury, harm, and discomfort caused by the design of the dwelling or its immediate surrounds.
ADDITIONAL DEFINITIONS:
Definitions are provided below for terms used in this document.

All-Inclusive. Any space or feature that meets or exceeds the criteria of Level 5.

Diverse Occupants. Visitors and/or residents who may: (a) be ambulatory or non-ambulatory, or use wheeled mobility devices, (b) have motor impairments or reduced physical dexterity, (c) have cognitive or developmental disabilities, or sensory impairments, or (d) have no disabilities.

Egress. Any interior or exterior path of travel to or from any interior or exterior space.

Emergency Egress. Any means of travel that can be legally defined (by applicable national and local codes/regulations) as a safe, effective means of travel in the case of fire or other emergency.

Interior Space(s). Any environmentally-controlled space of a residence, including, but not limited to bathing, toileting, food preparation, living, eating, and sleeping spaces.

Livable. Any space or feature that exceeds the criteria of Level 3.

Main Entry. The most visually prominent and/or most proximal entry to the public right-of-way or parking.

Occupant. Any visitor, resident, or other person who temporarily or permanently inhabits a residence.

Occupants/residents of Various Heights. Visitor, residents, or other persons who temporarily or permanently inhabit a residence who (a) may be ambulatory, nonambulatory or may use wheeled mobility devices, (b) may be standing or seated, (c) may be a child or adult and male or female, and (d) may be 42-75” in height.

Parking Space. Any interior or exterior space in which the primary function is for the storage/parking of automobiles; this may be either privately owned or public.

Resident. One of the primary, permanent or semi-permanent occupants of a residence; or a person whose temporary or permanent address is at said residence. This may be an owner, a renter, or a family member/friend of the owner or renter.

Public Right-of-Way. The non-privately-owned space most proximal to an entry of a residence that is accessible to either pedestrians or vehicular traffic.

Visitable. Any space or feature that meets or exceeds the criteria of Level 1.

Visitor. Any non-resident occupant of a residence.
REFERENCES


Universal Design New York, vols. 1 & 2. Gary Scott Dandford and Beth Tauke, eds. in conjunction with the University at Buffalo Center for Inclusive Design and Environmental Access.

Part 2: Usability Standards

- **Parking, Approach & Entry** 2.01
- **Interior Spaces (general)** 2.02
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- **Miscellaneous** 2.07
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<tr>
<th>Mobility at parking/right-of-way</th>
<th>Egress from parking (or public right-of-way) to the interior of one visitable entry can be easily traversed by diverse visitors.</th>
<th>Egress from parking (or public right-of-way) to the interior of one main entry can be easily traversed by diverse visitors.</th>
<th>Egress from parking (or public right-of-way) to the interior of all entries can be easily traversed by diverse visitors.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobility to entry (approach).</td>
<td>An interior space and an exterior space, which enable diverse occupants to rest and to turn 180 degrees, are provided immediately adjacent to visitable entry.</td>
<td>An interior space and an exterior space, which enable diverse occupants to rest and to turn 180 degrees, are provided immediately adjacent to main entry.</td>
<td>An interior space and an exterior space, which enable diverse occupants to rest and to turn 180 degrees, are provided immediately adjacent to all entries.</td>
</tr>
<tr>
<td>Mobility at entry (int. &amp; ext.).</td>
<td>Visitable entry (a) is operable with a closed fist and (b) requires minimum effort for operation.</td>
<td>Main entry (a) is operable with a closed fist and (b) requires minimum effort for operation.</td>
<td>All entries (a) are operable with a closed fist and (b) requires minimum effort for operation.</td>
</tr>
<tr>
<td>Operability of entrance.</td>
<td>Visitable entry enables visual access (interior to exterior) or auditory communication (between interior and exterior occupants).</td>
<td>Main entry provides a call device that provides visual, auditory, or tactile cues to the visitor.</td>
<td>All entries enable visual access (interior to exterior) for residents of various heights.</td>
</tr>
<tr>
<td>Perceptibility of entry signals.</td>
<td>Main entry provides partial protection from the extreme weather of the region.</td>
<td>Main entry provides appropriate day- and night-time illumination.</td>
<td>All entries provide appropriate day- and night-time illumination.</td>
</tr>
<tr>
<td>Security against slipping/tripping.</td>
<td>Materials, assemblies, and transitions along approach from parking (or public right-of-way) to interior of visitable entry provides security against slipping and tripping.</td>
<td>Materials, assemblies, and transitions along approach from parking (or public right-of-way) to interior space of main entry provides security against slipping and tripping.</td>
<td>Materials, assemblies, and transitions along approach from parking (or public right-of-way) to interior space of all entries provide security against slipping and tripping.</td>
</tr>
<tr>
<td>Security from weather.</td>
<td>Main entry provides partial protection from the extreme weather of the region.</td>
<td>Main entry provides full protection from the extreme weather of the region; all other entries provide partial protection.</td>
<td>Main entry provides full protection from the extreme weather of the region; all other entries provide partial protection.</td>
</tr>
<tr>
<td>Mobility within interior.</td>
<td>Level 1: Visitable</td>
<td>Level 3: Livable</td>
<td>Level 5: All-Inclusive</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
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</tr>
<tr>
<td>Each “visitable” space contains a minimum of one area enabling diverse occupants to rest and to turn 180 degrees.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passage between each “visitable” space is enabled for diverse occupants.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operability of doors.</strong></td>
<td>All doors connecting “visitable” spaces are operable with a closed fist.</td>
<td>All doors connecting “livable” spaces are operable with a closed fist. 3.15</td>
<td>All doors are operable with a closed fist.</td>
</tr>
<tr>
<td><strong>Operability of windows.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All lighting controls along “visitable” means of egress are operable with a closed fist and a push-stick.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Operability of electrical fixtures.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All lighting controls in “livable” spaces are operable with a closed fist and a push-stick by residents of various heights. 3.16</td>
<td>All lighting controls in “livable” spaces are operable with a closed fist and a push-stick by residents of various heights. 3.16</td>
<td>All lighting and heating controls are operable with a closed fist and a push-stick by residents of various heights or are controlled by automated devices or external agencies.</td>
<td></td>
</tr>
<tr>
<td>All electrical outlets are operable by residents of various heights. 3.16</td>
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<td>All electrical outlets are operable by residents of various heights.</td>
<td></td>
</tr>
<tr>
<td><strong>Operability of storage units/spaces.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All doors and drawers to storage units and spaces in “livable” areas a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation. 3.17</td>
<td>All doors and drawers to storage units and spaces in “livable” areas a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation. 3.17</td>
<td>All doors and drawers to storage units and spaces a) are operable with a closed fist or a flat open hand and b) require a minimum effort of operation.</td>
<td></td>
</tr>
<tr>
<td><strong>Perceptibility of exterior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A minimum of one window in each living space enables residents of various heights to view out. 3.18</td>
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<td>A minimum of one window in each living space enables residents of various heights to view out.</td>
<td></td>
</tr>
<tr>
<td><strong>Perceptibility of controls &amp; alarms.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All interior materials, assemblies, and transitions provide security against slipping and tripping. 3.19</td>
<td>All interior materials, assemblies, and transitions provide security against slipping and tripping. 3.19</td>
<td>All interior materials, assemblies, and transitions provide security against slipping and tripping.</td>
<td></td>
</tr>
<tr>
<td><strong>Security against slipping/tripping.</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All interior materials, assemblies, and transitions provide security against slipping and tripping. 3.19</td>
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<td>All interior materials, assemblies, and transitions provide security against slipping and tripping.</td>
<td></td>
</tr>
</tbody>
</table>

- **Level 3: Livable**
  - Each “livable” interior space contains a minimum of one area enabling diverse occupants to rest and to turn 180 degrees. 3.09 & 3.10
  - Passage between each “livable” space is enabled for diverse occupants. 3.11, 3.12, 3.13, or 3.14

- **Level 5: All-Inclusive**
  - Every interior space (excluding storage spaces) contains a minimum of one area enabling diverse occupants to rest and to turn 180 degrees.
  - Passage between each space is enabled for diverse occupants.
### Arkansas Usability Standards in Housing

#### Bathing & Toileting Spaces

<table>
<thead>
<tr>
<th>Mobility within bathroom.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each “visitable” toileting space contains an area enabling diverse occupants to rest and to turn 180 degrees.</td>
</tr>
<tr>
<td>Configuration of “visitable” toileting space or adjacent “visitable” space enables side approach to and use of sink for diverse occupants.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operability of fixtures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sink fixture in “visitable” toileting space or adjacent “visitable” space a) is operable with a closed fist and b) requires a minimum effort of operation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceptibility of plumbing fixtures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All plumbing fixtures in “livable” bathing and/or toileting spaces a) are operable with a closed fist and b) require a minimum effort of operation. 3.24</td>
</tr>
<tr>
<td>All cabinetry/storage in “livable” bathing and/or toileting spaces a) is operable with a closed fist or a flat open hand and b) requires a minimum effort of operation. 3.24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Security of plumbing fixtures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All plumbing fixtures in “livable” bathing and/or toileting space(s) provide security against scalding. 3.22</td>
</tr>
<tr>
<td>All plumbing fixtures in all bathing and/or toileting spaces provide security against scalding.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 1: Visitable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every bathing and/or toileting space contains an area enabling diverse occupants to rest and to turn 180 degrees. 3.20, 3.21, 3.22, or 3.23</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 3: Livable</th>
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</thead>
<tbody>
<tr>
<td>All plumbing fixtures a) are operable with a closed fist and b) require a minimum effort of operation.</td>
</tr>
<tr>
<td>All cabinetry, fixtures, and assistive devices can be reconfigured to facilitate diverse arrangements w/o structural adaptation or purchase of additional components.</td>
</tr>
<tr>
<td>All plumbing controls (e.g. sinks and bathing fixtures) provide intuitive visual and tactile cues.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 5: All-Inclusive</th>
</tr>
</thead>
<tbody>
<tr>
<td>All plumbing fixtures a) are operable with a closed fist and b) require a minimum effort of operation.</td>
</tr>
<tr>
<td>All cabinetry/storage in all bathing and/or toileting spaces a) is operable with a closed fist or a flat open hand and b) requires a minimum effort of operation.</td>
</tr>
<tr>
<td>All plumbing fixtures in all bathing and/or toileting spaces provide security against scalding.</td>
</tr>
</tbody>
</table>
### Level 1: Visitable

- **Mobility within sleeping spaces.**
- **Perceptibility of alarms.**
- **Security of egress.**

A “visitable” sleeping space is provided which meets all Level 3 criteria for sleeping spaces.

### Level 3: Livable

- **Mobility within sleeping spaces.**
- **Perceptibility of alarms.**
- **Security of egress.**

All “livable” sleeping spaces contain areas enabling diverse occupants to rest and to turn 180 degrees. 3.26

Emergency alarms in “livable” sleeping space(s) provide both visual and auditory cues. 3.27

A minimum of one window in each “livable” sleeping space enables emergency egress or rescue of diverse occupants. 3.28

### Level 5: All-Inclusive

- **Mobility within sleeping spaces.**
- **Perceptibility of alarms.**
- **Security of egress.**

All sleeping spaces contain areas enabling diverse occupants to rest and to turn 180 degrees.

Emergency alarms in all sleeping space(s) provide both visual and auditory cues.

A minimum of one window in each sleeping space enables emergency egress or rescue of diverse occupants.
### Food Preparation Spaces

#### Level 1: Visitable

<table>
<thead>
<tr>
<th>Mobility within food prep spaces.</th>
</tr>
</thead>
</table>

#### Level 2: Operability of fixtures.

<table>
<thead>
<tr>
<th>Operability of electrical fixtures.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Perceptibility of plumbing fixtures.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Perceptibility of appliances.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Security against scalding.</th>
</tr>
</thead>
</table>

#### Level 3: Livable

<table>
<thead>
<tr>
<th>Work surfaces enable usability for residents of various heights. 3.33</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Cabinetry, fixtures, and assistive devices can be reconfigured to facilitate diverse arrangements w/o structural adaptation or purchase of additional components.</th>
</tr>
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<table>
<thead>
<tr>
<th>All cabinetry/storage in &quot;livable&quot; food preparation spaces a) is operable with a closed fist or a flat open hand and b) requires a minimum effort of operation. 3.34</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>All plumbing fixtures in &quot;livable&quot; food preparation spaces a) are operable with a closed fist and b) require a minimum effort of operation. 3.34</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>All lighting controls in &quot;livable&quot; spaces are operable with a closed fist and a push-stick by residents of various heights. 3.35</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>All electrical outlets are operable by residents of various heights. 3.35</th>
</tr>
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<table>
<thead>
<tr>
<th>All devoted outlet appliances provide intuitive visual and auditory or tactile cues. 3.36</th>
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<table>
<thead>
<tr>
<th>All plumbing fixtures in &quot;livable&quot; food preparation spaces provide security against scalding. 3.37</th>
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</table>

#### Level 5: All-Inclusive

<table>
<thead>
<tr>
<th>All food preparation spaces contain a minimum of one area enabling diverse occupants to rest and to turn 180 degrees. 3.29, 3.30, 3.31, or 3.32</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Configurations of all food preparation spaces enable front and side approach to and use of sink(s), appliances, and cabinetry/storage for diverse occupants.</th>
</tr>
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</table>

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<tr>
<th>All cabinetry/storage in all food preparation spaces a) is operable with a closed fist or a flat open hand and b) requires a minimum effort of operation.</th>
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<tr>
<th>All lighting and heating controls are operable with a closed fist and a push-stick by residents of various heights or are controlled by automated devices or external agencies.</th>
</tr>
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</table>

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<thead>
<tr>
<th>All electrical outlets are operable by residents of various heights.</th>
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<th>All plumbing controls (e.g. sinks and bathing fixtures) provide intuitive visual and tactile cues.</th>
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<th>All plumbing fixtures in all food preparation spaces provide security against scalding.</th>
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</thead>
<tbody>
<tr>
<td>Level 1: Visitable</td>
</tr>
<tr>
<td>-------------------</td>
</tr>
<tr>
<td><strong>Mobility</strong> at exterior.</td>
</tr>
<tr>
<td><strong>Mobility</strong> to neighborhood/vicinity.</td>
</tr>
<tr>
<td><strong>Operability</strong> of doors.</td>
</tr>
<tr>
<td><strong>Operability</strong> of exterior.</td>
</tr>
<tr>
<td><strong>Operability</strong> of exterior lighting.</td>
</tr>
<tr>
<td><strong>Operability</strong> of exterior lighting.</td>
</tr>
<tr>
<td><strong>Perceptibility</strong> of exterior controls and signage.</td>
</tr>
<tr>
<td><strong>Security</strong> against slipping/tripping.</td>
</tr>
<tr>
<td>Mobility at electrical panels.</td>
</tr>
<tr>
<td>-------------------------------</td>
</tr>
<tr>
<td>Secur<strong>ity</strong> at electrical panels.</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*Arkansas Usability Standards in Housing*

Miscellaneous
### Part 3: Examples

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
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<tr>
<td>I: Parking, Approach &amp; Entry</td>
<td>3.01 - 3.08</td>
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<tr>
<td>II: Interior Spaces (general)</td>
<td>3.09 - 3.19</td>
</tr>
<tr>
<td>III: Bathing &amp; Toileting Spaces</td>
<td>3.20 - 3.25</td>
</tr>
<tr>
<td>IV: Sleeping Spaces</td>
<td>3.26 - 3.28</td>
</tr>
<tr>
<td>V: Food Preparation Spaces</td>
<td>3.29 - 3.37</td>
</tr>
<tr>
<td>VI: Miscellaneous</td>
<td>3.38</td>
</tr>
</tbody>
</table>
Parking Space / Public Right-of-Way with Walkway, Slope 0 - 1:20

- 5' diameter tuning space at entry
- 5' diameter tuning space for every change of direction
- Slope = 0 - 1:20
- Slope = 2% max
- 8'8" min
- 11' min
- 5' min
Parking Space / Public Right-of-Way with Ramp, Slope 1:20 - 1:12

- **5' diameter tuning space**
- **12" min extension**
- **36" min**
- **5' min**
- **5' diameter tuning space for every change of direction**

**Slope:**
- **1:20 - 1:12**
- **2% max**

- **Parking Space / Public Right-of-Way**
- **5' min**
- **8'8" min**
- **11' min**

**Dimensions:**
- **4" min**
- **12" min**
- **34"-38" min**
- **<4" max**
Arkansas Usability Standards in Housing

Passageways with Doors

Parking, Approach & Entry: Mobility

Possible combinations

- **Push side**
- **Pull side**

- 54" min
- 56" min
- 50" min*
- 56" min*
- 68" min*
- 74" min*
- 48" min
- 54" min
- 60" min
- 60" min
- 42" min
- 50" min*
- 54" min*
- 68" min*

- Possible combinations

- = approach direction

- **= with minimal doorway (32") and doorbell, deadbolt, alarm panel, etc.

- Passageway width = 32" min clearance w/ door in 90° open position (typically 32" of clearance is achieved w/ the use of a nominal 36" or greater door)

- Maneuvering space with a diameter of 5' is required in all entry preparation spaces
Arkansas Usability Standards in Housing

Parking, Approach & Entry: Mobility

Recessed Doors

possible combinations
push side | pull side

44" min*

32" min

48" min

50" min*

60" min

push side
pull side

= approach direction

★ = with minimal doorway (32") and doorbell, deadbolt, alarm panel, etc.

Passageway width = 32" min clearance w/ door in 90° open position (typically 32" of clearance is achieved w/ the use of a nominal 36" or greater door)

Maneuvering space with a diameter of 5’ is required in all entry preparation spaces
Arkansas Usability Standards in Housing

Main Entrance: Door Handles

Parking, Approach & Entry: Operability

- 4” min O.C.
- 90° max handle rotation
Perceptibility of Entry Signals

- visual access to interior for residents of various heights
- auditory communication between interior and exterior
- appropriate day- and night-time illumination

- 34" max
- 15" - 48"

Arkansas Usability Standards in Housing
Arkansas Usability Standards in Housing

Parking, Approach & Entry: Security

Entry Thresholds

1:2 max slope

1/4" max

vertical change in level

beveled change in level (A)

beveled change in level (B)

Approach Surface Openings

1/2" max openings in floor surface

1/2" max before and after carpet is compressed

carpet

hard surface

carpet

1/2" max openings in floor surface

1/2" max before and after carpet is compressed

1/4" max

1/4" max
Arkansas Usability Standards in Housing

Parking, Approach & Entry: Security

Weather Protection at Entrance
Clear Floor Space for All Interior Spaces

5’ diameter clearspace connected to path of travel into/through space
Arkansas Usability Standards in Housing

Interior Spaces: Mobility

Clear Floor Space for Alcoves

*** = conditions apply where the alcove depth exceeds 24”

** = conditions apply where the alcove depth exceeds 15”

Forward Approach

Parallel Approach
Passageways without Doors

passageway width
36” min

possible combinations
push side | pull side

passageway width = 32” min clearance w/ door in 90º open position (typically 32” of clearance is achieved w/ the use of a nominal 36” or greater door)
Passageways with Doors

Arkansas Usability Standards in Housing

Interior Spaces: Mobility

Passageway width = 32" min clearance w/ door in 90° open position (typically 32" of clearance is achieved w/ the use of a nominal 36" or greater door)
Passageways with Sliding / Folding Doors

Arkansas Usability Standards in Housing

Interior Spaces: Mobility

possible combinations

= approach direction

* passageway width = 32" min clearance w/ door in 90° open position (typically 32" of clearance is achieved w/ the use of a nominal 36" or greater door)
Recessed Doors

Arkansas Usability Standards in Housing

Interior Spaces: Mobility

3.14

possible combinations
push side | pull side

passageway width = 32" min clearance w/ door in 90° open position (typically 32" of clearance is achieved w/ the use of a nominal 36" or greater door)
Arkansas Usability Standards in Housing

Interior Spaces: Operability

Interior Door Handles

90° max handle rotation
4” min O.C.
Arkansas Usability Standards in Housing

Operable Light Controls

Electrical Outlets at Varying Heights

15" min

48" max

15" min

48" max
1” min interior clearance

4” min interior clearance

Note: the maximum force required to operate storage units shall not exceed 5 lbs.
Windows at Various Heights

Arkansas Usability Standards in Housing

Interior Spaces: Perceptibility

- 34” max
- 12” min
- 60” min
Arkansas Usability Standards in Housing

Interior Spaces: Security

Door Thresholds

Floor Surfaces

1/4” max openings in floor surface

1/2” max before and after carpet is compressed

1/2” max

vertical change in level

1:2 max slope

1/2” max

beveled change in level (A)

1:2 max slope

1/4” max

beveled change in level (B)
Arkansas Usability Standards in Housing

**Water Closets**

A maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing features is required in all toileting spaces.

---

**Bathing & Toileting Spaces: Mobility**

**Water Closet Location (a)**

- **Forward Approach (a)**
  - 39” - 41”
  - 18” min
  - C.L.
- **Parallel Approach (b)**
  - 54”
  - 18” min
  - 39” - 41”
  - 33” - 36”
  - 42” min
  - 36” min
  - 12” max
  - 42” min
  - 18” min
- **Parallel or Forward Approach (b)**
  - 48” min
  - 56” min
  - 48” min
  - 18”
  - 42”

---

**Water Closet Location (b)**

- **Forward Approach (a)**
  - 66” min
  - 18”
  - 18”
  - 56” min

---

**Parallel Approach (b)**

- 48” min

---

**Parallel or Forward Approach (b)**

- 42”
- 18”
Arkansas Usability Standards in Housing
Bathing & Toileting Spaces: Mobility

Bathtub Seating

- tub controls

maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

3.21 Fixed Seating

- tub controls

Removable Seating
maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

### Showers

- **Roll-in**: maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

- **Transfer**: maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

### Bathing & Toileting Spaces: Mobility

- **Shower controls**:
  - 30" min
  - 30" min
  - 30" min
  - 36" min
  - 48" max
  - 15" max
  - 15" max

- **C.L.**:
  - 36" min
  - 48" min
  - 36" min

- **Maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures** is required for all bathing spaces.

---

**Arkansas Usability Standards in Housing**

**Bathing & Toileting Spaces: Mobility**

**Showers**

- **Roll-in**: maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

- **Transfer**: maneuvering space with a diameter of 5' which intersects the centerlines of all plumbing fixtures is required for all bathing spaces

**Shower controls**

- 30" min
- 30" min
- 30" min
- 36" min
- 48" max
- 15" max
- 15" max

**C.L.**:

- 36" min
- 48" min
- 36" min
Arkansas Usability Standards in Housing

Bathing & Toileting Spaces: Mobility

Sinks

- 9” min toe clearance
- 17” - 25”
- 11” min knee & toe clearance
- 20” max
- 8” min
- 27” min

5’ diameter maneuvering space
Shower, Bathtub or Sink Faucets: One Handle

- Shower, Bathtub or Sink Faucets: One Handle
  - 4" min clearance

- Shower, Bathtub or Sink Faucets: Two Handles
  - 180° max handle rotation
  - 90° max handle rotation
  - 3" min clearance

Storage Unit / Drawer Handles

- Storage Unit / Drawer Handles
  - 1" min interior clearance
  - 4" min interior clearance

the maximum force required to operate storage units shall not exceed 5 lbs.
water temperature less than 115° F
5' diameter clearspace connected to path of travel into/through space
Emergency Alarms Provide Visual and Auditory Cues

installed according to manufacturer's specifications and local/national fire codes; hard-wired installation recommended
Window Egress

5.7 sq. ft. minimum net clear operable opening; installed according to manufacturer’s specifications and local/national fire codes; egress hardware and ability to open outward 90° recommended.
maneuvering space with a diameter of 5’ is required in all food preparation spaces
maneuvering space with a diameter of 5' is required in all food preparation spaces
“U” Type 1

Maneuvering space with a diameter of 5’ is required in all food preparation spaces.
maneuvering space with a diameter of 5’ is required in all food preparation spaces
Arkansas Usability Standards in Housing

Food Preparation Spaces: Operability

Work Surfaces at Varying Heights

- **knee & toe clearance**
  - 8" min
  - 34" min**
  - 20" max*
  - 48" min
  - 48" max*
  - 30" min

- **9" min toe clearance**
  - 27" min
  - 17" - 25"
  - 11" min

- **17" - 25"**
  - 8" min

- **20" - 25"**
  - 9" min

* = if counter width is 20" or less, then height is 48" maximum
** = if counter width is 20" - 25", then height is 34" minimum

A maneuvering space with a diameter of 5’ is required in all food preparation spaces.
Arkansas Usability Standards in Housing

Kitchen Faucets: One Handle

- 4” min

180° max handle rotation

Kitchen Faucets: Two Handles

- 3” min

90° max handle rotation

Storage Unit / Drawer Handles

- 1” min interior clearance

- 4” min interior clearance

the maximum force required to operate storage units shall not exceed 5 lbs.
Arkansas Usability Standards in Housing

Food Preparation Spaces: Operability

Operable Light Controls

Electrical Outlets at Varying Heights

- Operable Light Controls:
  - 48" max
  - 20" max

- Electrical Outlets at Varying Heights:
  - 48" max
  - 20" - 25"
Arkansas Usability Standards in Housing

Food Preparation Spaces: Perceptibility

All Devoted Outlet Appliances Provide Intuitive Visual and Auditory or Tactile Cues

- Stove/Range controls are labeled and within easy reach
- Refrigerator/Freezer controls are labeled and within easy reach
- Dishwasher controls are labeled and within easy reach
Arkansas Usability Standards in Housing
Food Preparation Spaces: Security

Plumbing Fixtures Prevent Scalding

water temperature less than 115° F
Electric Panel

Installed by a licensed electrician to current industry standards and federal/local codes.