

## 304.3.1 Circular Turning Space

**CHANGE TYPE:** Modification

**CHANGE SUMMARY:** Within new buildings, the size of a circular turning space has been increased from the previous 60-inch requirement up to 67 inches. The amount of knee and toe space beneath an obstruction that can be included in the turning space clearance has become more limited.

**2017 STANDARD: 304.3 Size.** Turning spaces shall comply with Section 304.3.1 or 304.3.2.

### 304.3.1 Circular Space.

**304.3.1.1 New buildings and facilities.** In new buildings and facilities, the turning space shall be a circular space with a 67 inch (1700 mm) minimum diameter.

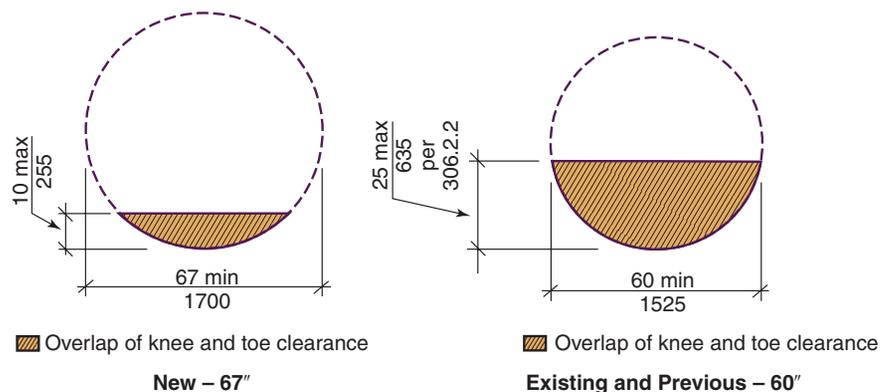
**304.3.1.1.1 Overlap.** Turning spaces shall be permitted to include knee and toe clearance complying with Section 306. Where the turning space includes knee and toe clearances under an obstruction, the overlap shall comply with all of the following:

1. The depth of the overlap shall not be more than 10 inches (255 mm), and
2. The depth shall not exceed the depth of the knee and toe clearances provided, and
3. The overlap shall be permitted only within the turning circle area shown shaded in Figure 304.3.1.

**304.3.1.2 Existing buildings and facilities.** In existing buildings and facilities, the turning space shall be a circular space with a 60 inch (1525 mm) minimum diameter.

**304.3.1.2.1 Overlap.** The turning spaces shall be permitted to include knee and toe clearance complying with Section 306.

**CHANGE SIGNIFICANCE:** This change is a part of the work of the Wheeled Mobility Task Group. This task group of the A117.1 committee analyzed the results of the anthropometric study conducted by The Center for Inclusive Design and Environmental Access (IDeA) at the University at Buffalo, SUNY, evaluating a variety of mobility device users. This study queried around 500 manual and powered wheeled mobility



device users. The results of the study indicate that the technical provisions contained in the previous edition of the A117.1 standard did not address the needs of the full range of mobility devices. By increasing the size of the circular turning space, it is expected the percentage of manual and power wheelchair users that would be accommodated will increase from 80 to 95 percent and will almost double the percentage of scooters served.

The committee's decision to approve the larger "building block" requirements, such as the turning space, was based on the growing use of powered chairs and scooters that are larger and have differing maneuvering capabilities. The committee did debate whether the standard should be changed to accommodate changes in the technologies of wheeled mobility or whether the manufacturers of the devices needed to design equipment to work within the standard. Ultimately, because scooters and many wheelchairs are getting larger and being used already, it was decided that modifying the standard to some extent in order to accommodate these larger wheeled mobility devices (WMD) was appropriate. While these increased size requirements will accommodate a larger percentage of WMDs as discussed in the previous paragraph, they will not be capable of providing full access to all users who may have equipment that has limited capabilities or is near the extreme size limits.

The requirements for new buildings also include a limitation on the amount of the turning space that may be overlapped by fixtures or elements that have knee and toe clearances beneath them. Previously the standard did not place a limit on the amount of the space that could be located beneath a fixture or element. Other than a 36-inch-wide accessible route into and out of the space, the turning space could potentially have had obstructions on two or three sides, and these obstructions could in total have extended to close to the 25-inch maximum depth allowed for knee and toe clearances. With the new provisions, the overlap is limited to being on only one side and is limited to a maximum overlap depth of 10 inches if knee and toe clearance is provided beneath the fixture.

The circular turning space requirements also contain a provision for existing buildings. It is important to recognize this new section and understand why this type of section was added at several locations throughout the standard. This issue was briefly discussed earlier with Section 107.5 and the definition for an "existing building." With the increased size requirements in several of the building block sections (e.g., Sections 304.3.1.1, 304.3.2.1 and 305.3.1) and for the accessible route (e.g., Sections 403.5.1, 403.5.2.1 and 403.5.3.1), there was a concern with how this could affect a building that was built to be compliant with the current ADA standard or a building that was built to be compliant with the previous editions of the A117.1 standard. For example, if an alteration of a primary function space was being proposed, or if a small alteration of a toilet room was undertaken, would the restroom be required to be altered to allow for the larger turning space or would the accessible route to the toilet room be expected to be altered to provide for these increased dimensions? To avoid forcing changes to be made to facilities and elements that were compliant with the earlier standards (as well as the current ADA standard), these "existing buildings" sections were added to allow the sizes from the previous A117.1 standard to be accepted. This will therefore help limit

**304.3.1** *continued* any potential negative impact that could be caused by the updated “new building” provisions.

This allowance for exempting items that were previously acceptable prior to a change in the technical requirements has occurred before but may not have been as apparent or as important. One of the easiest examples would be when the maximum height for the side reach was reduced from 54 inches to 48 inches; the previously compliant elements were allowed to remain at the higher height. With the potential greater impact that the new size requirements could impose, the committee felt it was appropriate to allow existing buildings to continue to use the previous requirements, even when they are altered, and to apply the increased sizes only on new buildings that could be designed to accommodate the new regulations.

**CHANGE TYPE:** Modification

**CHANGE SUMMARY:** Three options are allowed for T-shaped turning spaces in new construction and vary depending on the width of the arms on the T-shaped space. All of the options result in an increased size for the turning space, while existing buildings can continue to use the previous criteria.

**2017 STANDARD: 304.3.2 T-shaped space.**

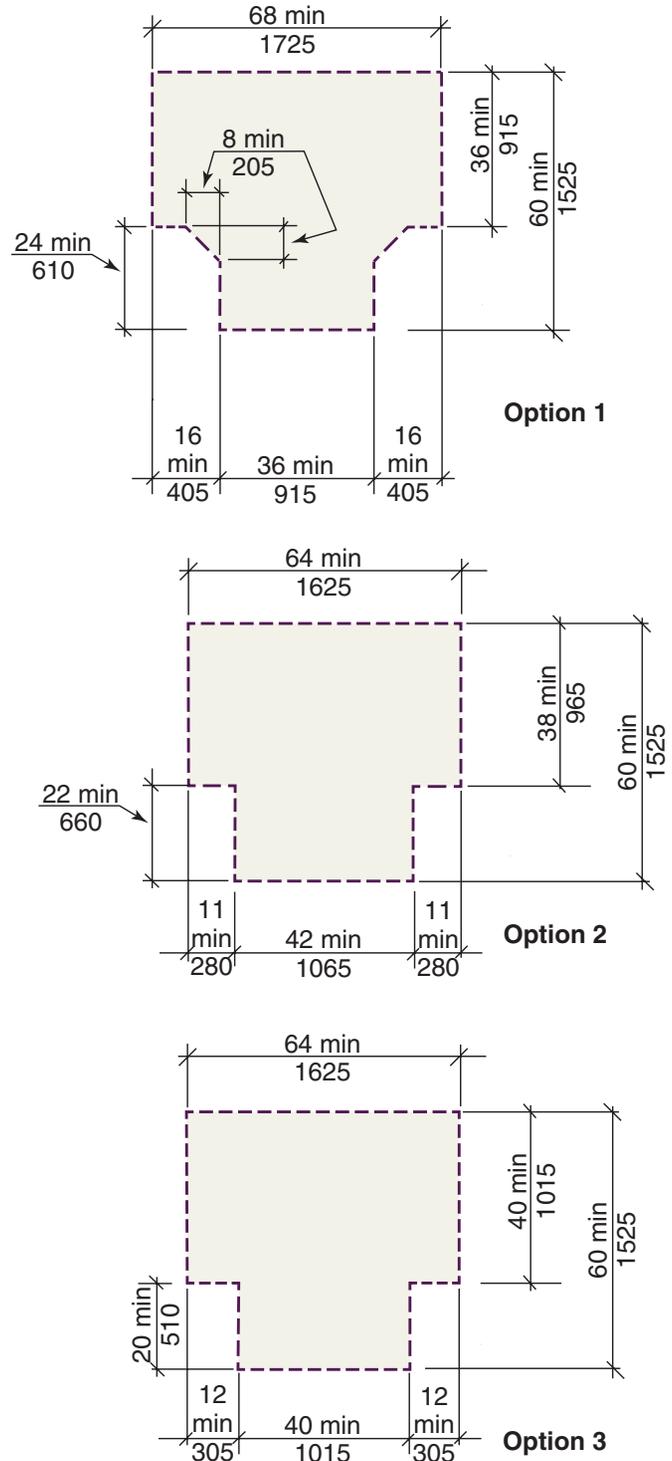
**304.3.2.1 New buildings and facilities.** In new buildings and facilities, the turning space shall be a T-shaped space complying with one of the following:

1. A T-shaped space, clear of obstruction, that fits within an area 68 inches (1725 mm) wide and 60 inches (1525 mm) deep, with two arms and one base that are all 36 inches (915 mm) minimum in width. Each arm shall extend 16 inches (405 mm) minimum from each side of the base located opposite the other, and the base shall extend 24 inches (610 mm) minimum from the arms. At the intersection of each arm and the base, the interior corners shall be chamfered for 8 inches (205 mm) minimum along both the arm and along the base.
2. A T-shaped space, clear of obstruction, that fits within an area 64 inches (1625 mm) wide and 60 inches (1525 mm) deep, with two arms 38 inches (965 mm) minimum in width and a base 42 inches (1065 mm) minimum in width. Each arm shall extend 11 inches (280 mm) minimum from each side of the base, located opposite the other, and the base shall extend 22 inches (560 mm) minimum from each arm.
3. A T-shaped space, clear of obstruction, 64 inches (1625 mm) wide and 60 inches (1525 mm) deep, with two arms and one base 40 inches (1015 mm) minimum in width. Each arm shall extend 12 inches (305 mm) minimum from each side of the base and the base shall extend 20 inches (510 mm) minimum from each arm.

304.3.2 continues

## 304.3.2

### T-shaped Turning Space



304.3.2 *continued*

**304.3.2.1.1 Overlap.** Turning spaces shall be permitted to include knee and toe clearance complying with Section 306 of either the base or one arm. For Option 1, the base or arm is the portion beyond the chamfer.

**304.3.2.2 Existing buildings and facilities.** In existing buildings and facilities, the turning space shall be a T-shaped space within a 60-inch (1525 mm) minimum square, with arms and base 36 inches (915 mm) minimum in width. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction, and the base shall be clear of obstructions 24 inches (610 mm) minimum.

**304.3.2.2.1 Overlap.** Turning spaces shall be permitted to include knee and toe clearance complying with Section 306 only at the end of either the base or one arm

**CHANGE SIGNIFICANCE:** In order to accommodate the larger wheeled mobility devices, scooters and wheelchairs, the T-shaped turning space requirements have been modified. Primarily the change is seen in Section 304.3.2.1, which will provide three options for the layout of the T-shaped space. These three options will vary depending on the overall size of the space as well as the width of the arms and leg of the T. The three options will range from a 68-inch by 60-inch space with arms and a base that are 36 inches in width and having chamfered corners, to a 64-inch by 60-inch option that relies on both of the arms and the base being increased to a 40-inch width to ease maneuvering.

Where previously the standard included the design criteria for only one size (a 60-inch by 60-inch space with 36-inch wide arms and base), the new standard allows the designer to use any of the three options depending on her or his preference and the layout of the design. The standard does not establish any preference or ranking for the three options, and any of the three would be considered acceptable and provide an adequate T-shaped turning space.

While all three options indicate this T-shaped space are to be “clear of obstructions,” a subsection addressing overlaps allows the space to include complying knee and toe clearances at either the base or at one arm. This is similar to the provisions in the previous standard (Section 304.3.2, final sentence), but instead of repeating this allowance in all three of the new options, it has been relocated to Section 304.3.2.1.1 where it only needs to be put into the standard one time.

As mentioned previously with the circular turning space, the provisions from the 2009 edition of the standard have been designated as being applicable to “existing buildings and facilities.” Section 304.3.2.2 will allow existing buildings to use the previously accepted 60-inch by 60-inch T-shaped space with both the arms and the base having a 36-inch width without chamfered corners. This section recognizes that where an existing building complies with all of the previous accessibility requirements, a small alteration that might trigger the new turning space requirements would probably provide a minimal increase in accessibility even though it could result in significant costs or structural changes. As an example, consider a building built under the A117.1-2009 standard where a primary function space is being altered. If the restrooms were fully compliant with

the 2009 standard but had used the smaller previously allowed T-shaped turning space to provide access to the lavatory, the alteration of the primary function space could impose a requirement to alter the restroom and to increase the T-shaped space to either a 68-inch width or to a 64-inch width with both the arms and the base of the space needing to be increased to either 38, 40 or 42 inches in width. Because of the potential limited improvement in access given the possible impact of compliance, the A117.1 committee members felt it was appropriate to include the existing building provision and show that they believe the previous size turning space is adequate for existing buildings.

# 305.3

## Size of Clear Floor Space

**CHANGE TYPE:** Modification

**CHANGE SUMMARY:** This change increases the length of a clear floor space from 48 inches to 52 inches in order to accommodate more wheeled mobility devices and ensure access is provided at various elements. The increased length is required for new buildings while existing buildings may continue to use the previously allowed 48 inch length.

**2017 STANDARD:**

### SECTION 305 CLEAR FLOOR SPACE

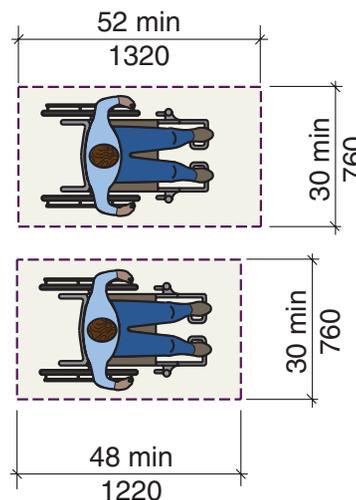
**305.3 Size.**

**305.3.1 New buildings and facilities.** In new buildings and facilities, the clear floor space shall be 52 inches (1320 mm) minimum in length and 30 inches (760 mm) minimum in width.

**305.3.2 Existing buildings and facilities.** In existing buildings and facilities, the clear floor space shall be 48 inches (1220 mm) minimum in length and 30 inches (760 mm) minimum in width.

**CHANGE SIGNIFICANCE:** The standard has modified the size of the clear floor space provisions to help accommodate many of the larger wheeled mobility devices that are currently in use. As discussed with several of the previous changes, the application of the increased sizes has been limited to new buildings and facilities, and the previously existing provisions have been designated and considered acceptable for “existing buildings.”

While the change in length from 48 inches to 52 inches in this one section may not seem significant, because this clear floor space is a “building block” requirement from Chapter 3 of the standard and is used for items throughout the standard, the impact is much larger. Based on the research



The top graphic is for New Buildings and the bottom graphic is for Existing Buildings.

submitted to the A117.1 committee, the existing 48-inch length for the clear floor space will be inadequate for 22 percent of occupied wheeled mobility devices (WMDs) and for about 12 percent of unoccupied WMDs. This need for increased length is typically associated with the use of scooters, power wheelchairs or wheelchairs that recline. According to the information submitted to the committee, increasing the clear floor space length to 52 inches will accommodate more than 95 percent of the unoccupied and 89 percent of the occupied WMDs.

Because this is a “building block” requirement, the increased size for the clear floor space will be applicable in a number of locations throughout the standard. This includes not only sections where the code has specifically revised the requirements to indicate that the 52-inch dimension is applicable but also to any section that simply references the clear floor space provisions of Section 305.

Some of the sections where this change in length for the clear floor space will affect the application of the standard include Sections 403.5.1, Exception 1, requiring a minimum 52-inch clearance between reduced width segments on an accessible route; Section 403.5.2 for clear width around 180-degree turns; Section 404.2.3.2 for the push side clearance for a front approach on a door; Section 409.4.1.1 for elevator car dimensions for a private residence elevator; Section 410.5.1.1 for size requirement for platform lifts; Section 608.2.1.2.1 for the clearance adjacent to a transfer shower; Section 802.4.1 for a wheelchair space in assembly seating; Section 805.2.2 for bus boarding and alighting areas; Section 1007.3.2.1 for the space associated with the golf club reach range; Section 1009.2.3.1 for the deck space adjacent to a pool lift; as well as every other point within the standard that references the clear floor space requirements of Section 305 such as the clearances for drinking fountains and lavatories.

For additional information related to the requirements for clear floor space and Type B units, see the pages in this book related to Section 1104.1.1.