

*advantage to this design is that no additional signage is needed because all spaces can accommodate a van with a side-mounted lift or ramp. Also, there is no competition between cars and vans for spaces since all spaces can accommodate either. Furthermore, the wider space permits vehicles to park to one side or the other within the 132 in (3350 mm) space to allow persons to exit and enter the vehicle on either the driver or passenger side, although, in some cases, this would require exiting or entering without a marked access aisle.*

An essential consideration for any design is having the access aisle level with the parking space. Since a person with a disability, using a lift or ramp, must maneuver within the access aisle, the aisle cannot include a ramp or sloped area. The access aisle must be connected to an accessible route to the appropriate accessible entrance of a building or facility. The parking access aisle must either blend with the accessible route or have a curb ramp complying with 4.7. Such a curb ramp opening must be located within the access aisle boundaries, not within the parking space boundaries. Unfortunately, many facilities are designed with a ramp that is blocked when any vehicle parks in the accessible space. Also, the required dimensions of the access aisle cannot be restricted by planters, curbs or wheel stops.

**A4.6.4 Signage.** Signs designating parking places for disabled people can be seen from a driver's seat if the signs are mounted high enough above the ground and located at the front of a parking space.

**A4.6.5 Vertical Clearance.** High-top vans, which disabled people or transportation services often use, require higher clearances in parking garages than automobiles.

## **A4.8 Ramps.**

**A4.8.1 General.** Ramps are essential for wheelchair users if elevators or lifts are not available to connect different levels. However, some people who use walking aids have difficulty with ramps and prefer stairs.

**A4.8.2 Slope and Rise.** Ramp slopes between 1:16 and 1:20 are preferred. The ability to manage an incline is related to both its slope and its length. Wheelchair users with

disabilities affecting their arms or with low stamina have serious difficulty using inclines. Most ambulatory people and most people who use wheelchairs can manage a slope of 1:16. Many people cannot manage a slope of 1:12 for 30 ft (9 m).

**A4.8.4 Landings.** Level landings are essential toward maintaining an aggregate slope that complies with these guidelines. A ramp landing that is not level causes individuals using wheelchairs to tip backward or bottom out when the ramp is approached.

**A4.8.5 Handrails.** The requirements for stair and ramp handrails in this guideline are for adults. When children are principal users in a building or facility, a second set of handrails at an appropriate height can assist them and aid in preventing accidents.

## **A4.9 Stairs.**

**A4.9.1 Minimum Number.** Only interior and exterior stairs connecting levels that are not connected by an elevator, ramp, or other accessible means of vertical access have to comply with 4.9.

## **A4.10 Elevators.**

**A4.10.6 Door Protective and Reopening Device.** The required door reopening device would hold the door open for 20 seconds if the doorway remains obstructed. After 20 seconds, the door may begin to close. However, if designed in accordance with ASME A17.1-1990, the door closing movement could still be stopped if a person or object exerts sufficient force at any point on the door edge.

**A4.10.7 Door and Signal Timing for Hall Calls.** This paragraph allows variation in the location of call buttons, advance time for warning signals, and the door-holding period used to meet the time requirement.

**A4.10.12 Car Controls.** Industry-wide standardization of elevator control panel design would make all elevators significantly more convenient for use by people with severe visual impairments. In many cases, it will be possible to locate the highest control on elevator panels within 48 in (1220 mm) from the floor.