

For Every Step®



classic
architectural group

Car Park Safety Compliance Guide

Bollards Wheel Stops Speed Humps Signage





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shared spaces.
Everyone deserves
easy access.

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Visualise your product in your space with Classic's 3D and Augmented Reality technology, ensuring it's perfect before implementation.



Committed to Sustainability

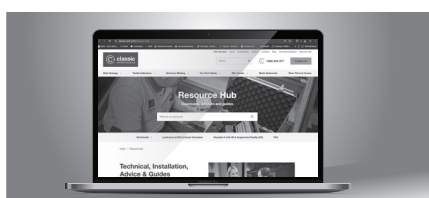
Our Low Impact For the Environment (LIFE®) Program shows our commitment to sustainability from production to end-of-life.



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With local manufacturing and operations across Australia, we ensure fast turnarounds and reliable service.

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Why is compliance important?

Car park compliance is crucial for ensuring the safety and well-being of all individuals who utilise or interact with car park facilities. Compliance with regulations and standards helps mitigate risks associated with accidents, injuries, and property damage. By adhering to established guidelines, car park operators can create a safe and accessible environment for both drivers and pedestrians, reducing liability, and enhancing the overall user experience for everyone.

What codes and standards are relevant?

The National Construction Code (NCC) is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. The Building Code of Australia (BCA) forms chapters 1 and 2 of the NCC.

The primary standard governing car park design and safety in Australia is AS2890, which consists of several parts. The BCA adopts AS2890 and requires mandatory compliance with the standard. Specifically, AS2890.2:2018 - Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities, which provides detailed requirements for the design, layout, and operation of off-street commercial car parks. Additionally, other parts of AS2890 address different aspects of parking facilities, such as off-street car parking (AS2890.1:2004), bicycle parking (AS2890.3:2015), and off-street parking for people with disabilities (AS2890.6:2022).

Where are these applicable?

The AS2890 standard is applicable to various types of parking facilities across Australia, including those associated with commercial, residential, and public developments. Compliance with these standards is mandatory for new car park developments and may also apply to renovations or expansions of existing facilities. Additionally, AS2890 standards serve as a reference for local government authorities, architects, engineers, and developers involved in the planning and construction of parking facilities.

Outline of AS2890 requirements:

Outlined below are the key requirements from AS2890 pertaining to car park safety relevant to bollards, wheel stops, speed humps, signage and bike storage:

Bollards:

AS 2890.1: Parking facilities - Part 1: Off-street car parking:

This standard provides general guidelines for the design, layout, and operation of off-street parking facilities, including recommendations for the installation of bollards. While it does not specifically focus on bollards, it sets the framework for ensuring safety within car parks. Some general and recommended guidelines are;

Safety Regulations: Bollards should be installed to ensure the safety of pedestrians and vehicles. This might include protecting pedestrians from vehicle impact, preventing vehicle access to certain areas, and guiding traffic flow.

Materials and Design: Bollards should be constructed from durable materials capable of withstanding impacts, such as steel or concrete. They should also be designed to be highly visible, either through reflective materials or bright colours, to minimise the risk of accidents.

Spacing and Layout: The placement and spacing of bollards should be carefully considered to effectively control traffic flow and prevent unauthorised access. They should be strategically placed to protect structures, pedestrian walkways, and other vulnerable areas.

Accessibility: Bollards should be installed in a way that does not impede accessibility for individuals with disabilities. This might include ensuring there are clear pathways and sufficient space around bollards for wheelchair users and those with mobility aids.

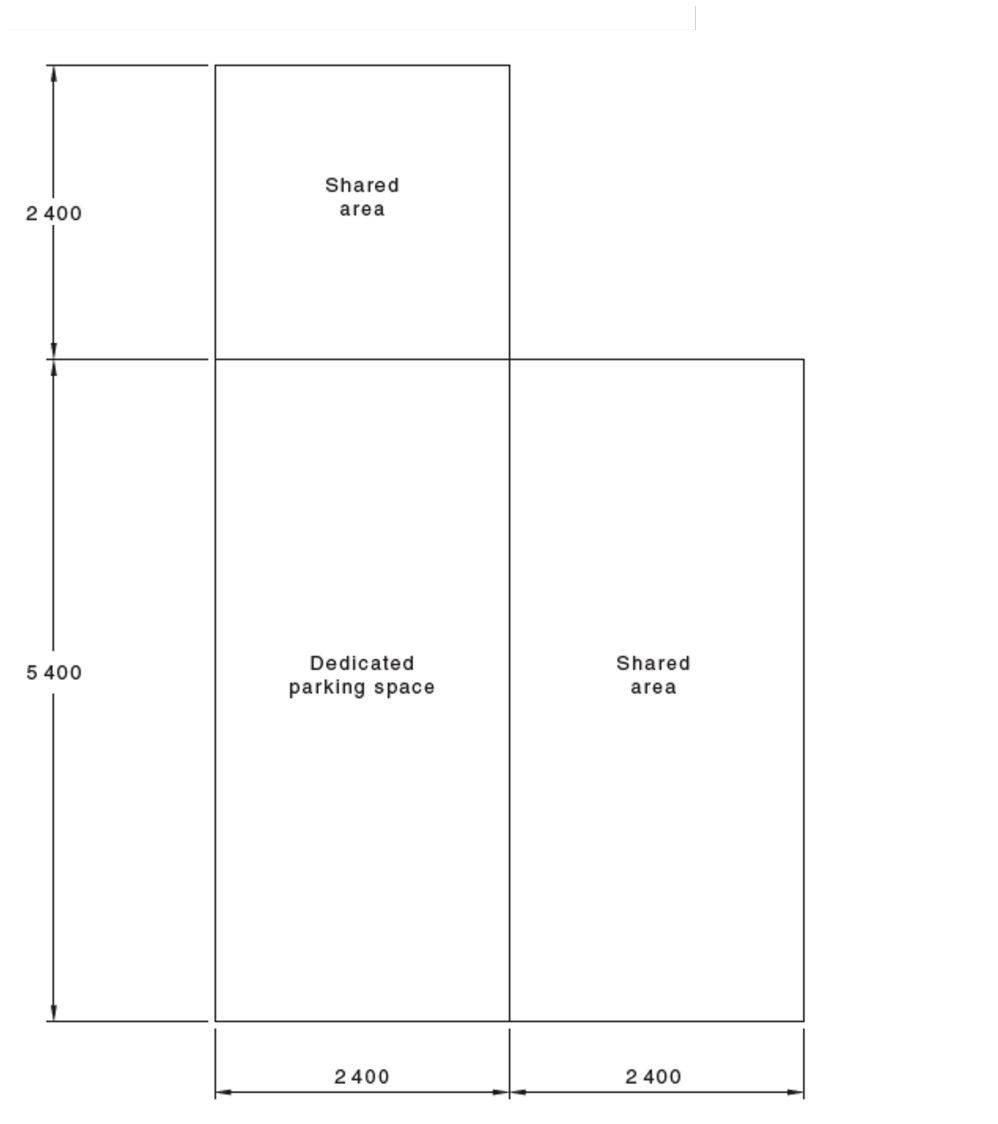
Clearance: Although AS 2890.1 does not specifically mandate a 1000 mm clear pedestrian path between bollards or a 300 mm setback from columns or walls, these dimensions are widely recognised as best practice in access and safety design. Providing these clearances supports safe and comfortable pedestrian movement, facilitates maintenance access to protected structures, and ensures compatibility with vehicle swept paths. Incorporating these allowances is strongly recommended to enhance usability and safety, even though they are not explicitly stated in the standard.

AS 2890.6: Parking facilities - Part 6: Off-street parking for people with disabilities:

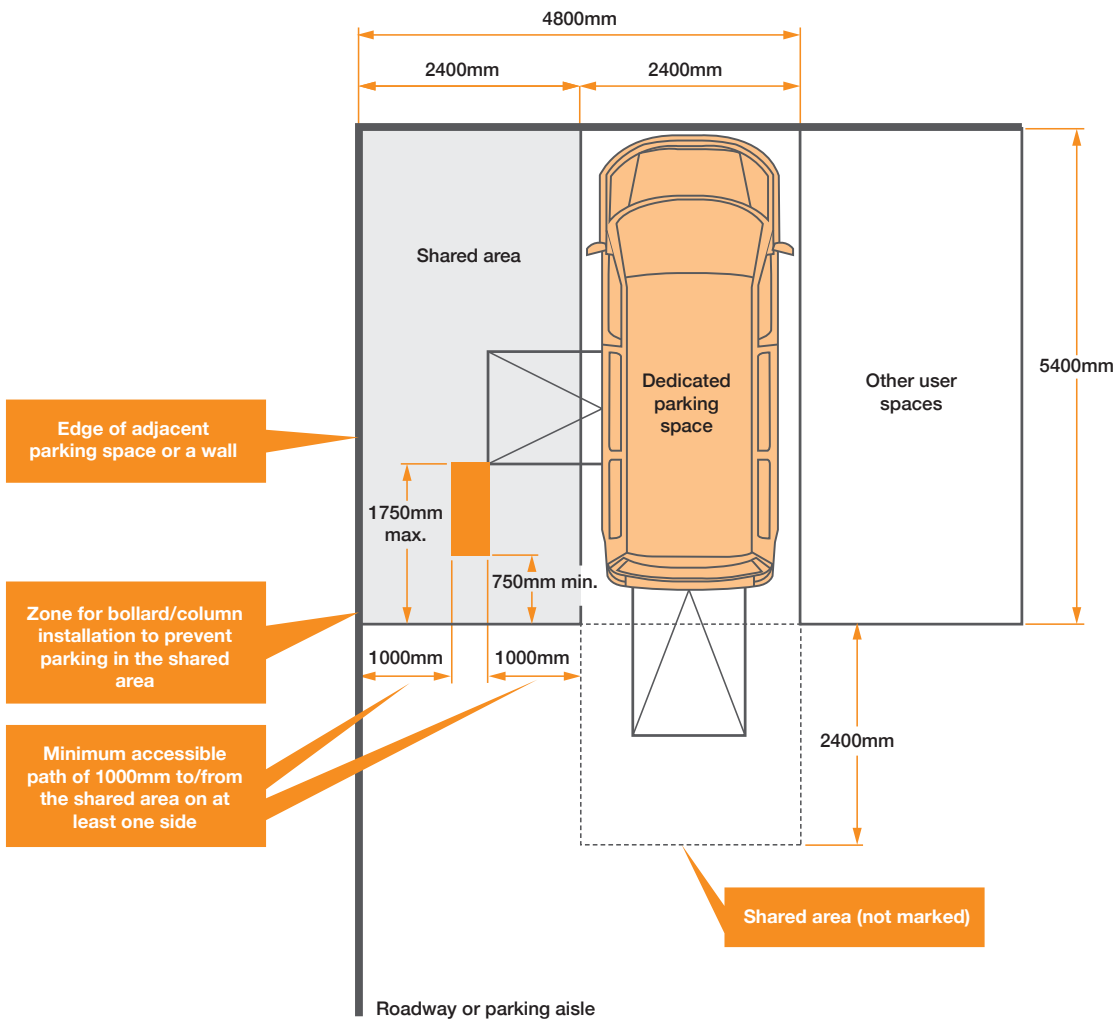
This standard addresses accessibility requirements, including provisions for the installation of bollards to protect accessible parking spaces reserved for people with disabilities.

Section 2 specifies that shared areas must be located to the rear and a minimum of one side of every accessible parking space. A bollard (or post or column) must then be located within any shared area to prevent the use of the shared area by a car or motorbike. The bollard must have a minimum installed height of 1300mm high with a minimum 300mm reflective coloured band, located at a minimum of 900mm in height above the car park floor, that provides minimum 30% luminance contrast to the pavement (measured in accordance with AS 1428.1).

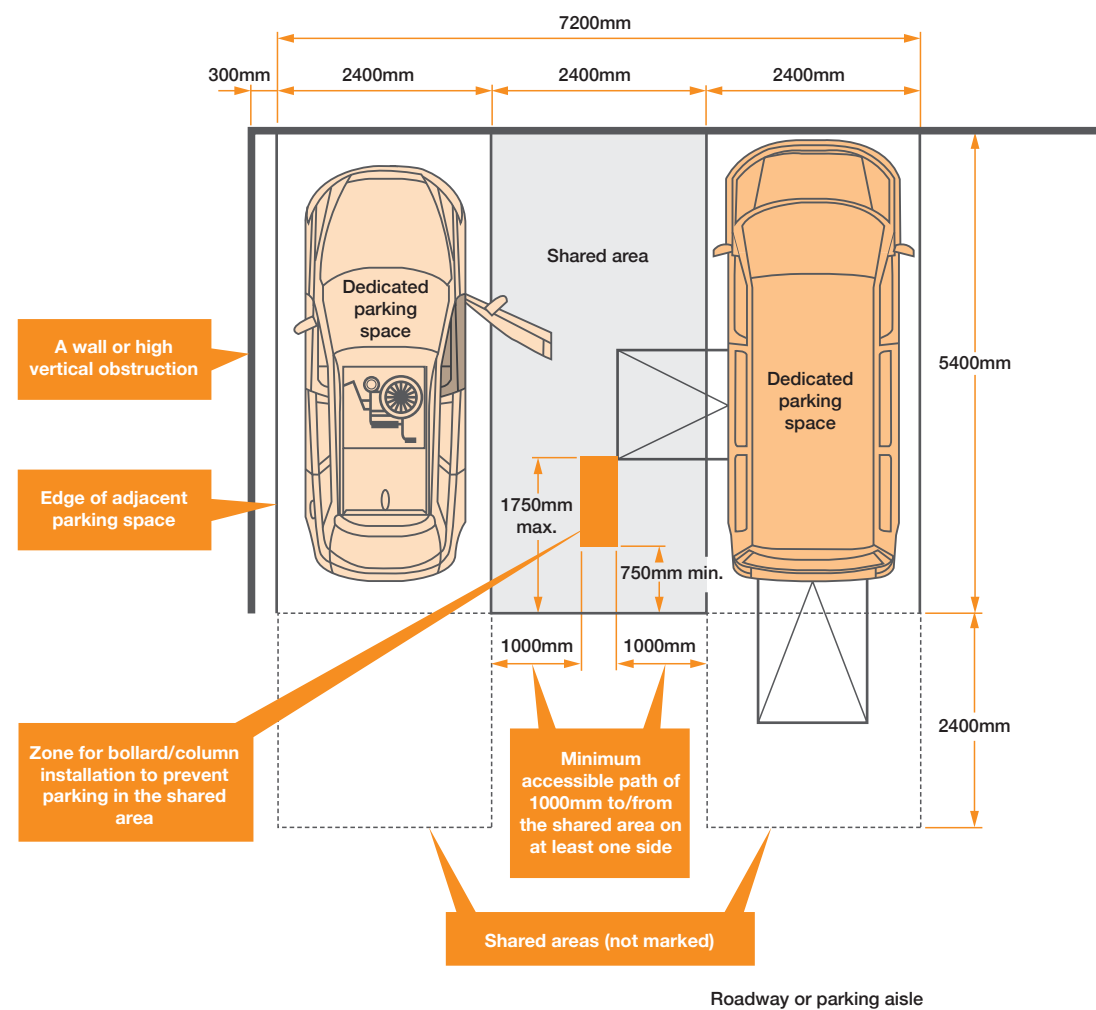
See the following example of the specified shared areas for a disabled parking space;



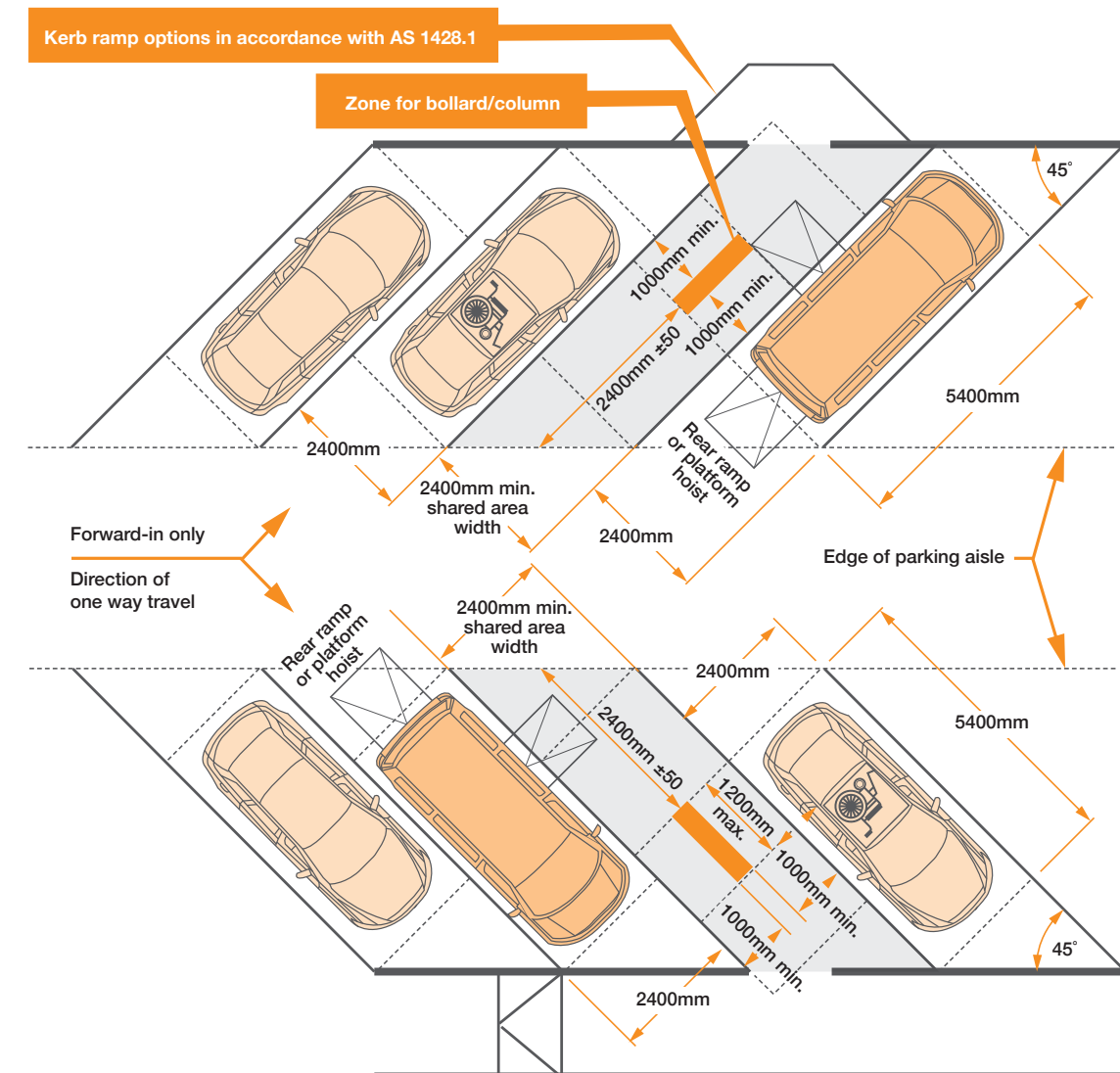
Example of a single angle parking space with shared area on one side only;



Example of two parking spaces with a common shared area;



Example of an angle parking space of 45 degrees with an adjacent shared area;



Other standards and regulations applicable to Bollards products:

AS 4685: Playground equipment and surfacing: Although primarily focused on playground equipment, this standard includes guidelines for the design and installation of impact-absorbing bollards to enhance safety in areas frequented by children, such as car parks near schools or childcare centres.

AS 3845: Road safety barrier systems: Covering road safety barrier systems, this standard provides specifications for bollard materials and construction. This includes the minimum bollard height, diameter, and thickness required to withstand impact. It also outlines bollard testing and certification requirements to ensure bollards meet all safety standards before installation.

AS 1742.3: Traffic management: Covering bollard maintenance and inspection, this standard ensures that bollards are regularly checked and maintained to ensure their effectiveness.

Local Regulations: Local councils or authorities may have specific requirements or guidelines for bollard installation in car parks. It is important to consult with these authorities to ensure compliance with local regulations.

Wheel Stops:

AS 2890.1: Parking facilities - Part 1: Off-street car parking:

This standard outlines requirements for the installation of wheel stops to prevent vehicles from encroaching into pedestrian walkways, adjacent structures, or other restricted areas within car parks.

Wheel stops should be installed where it is necessary to limit the travel of a vehicle into a parking space.

Compliant wheel stops must be:

- 90-100mm in height
- 1600-1700mm in width
- A contrasting colour to the surroundings

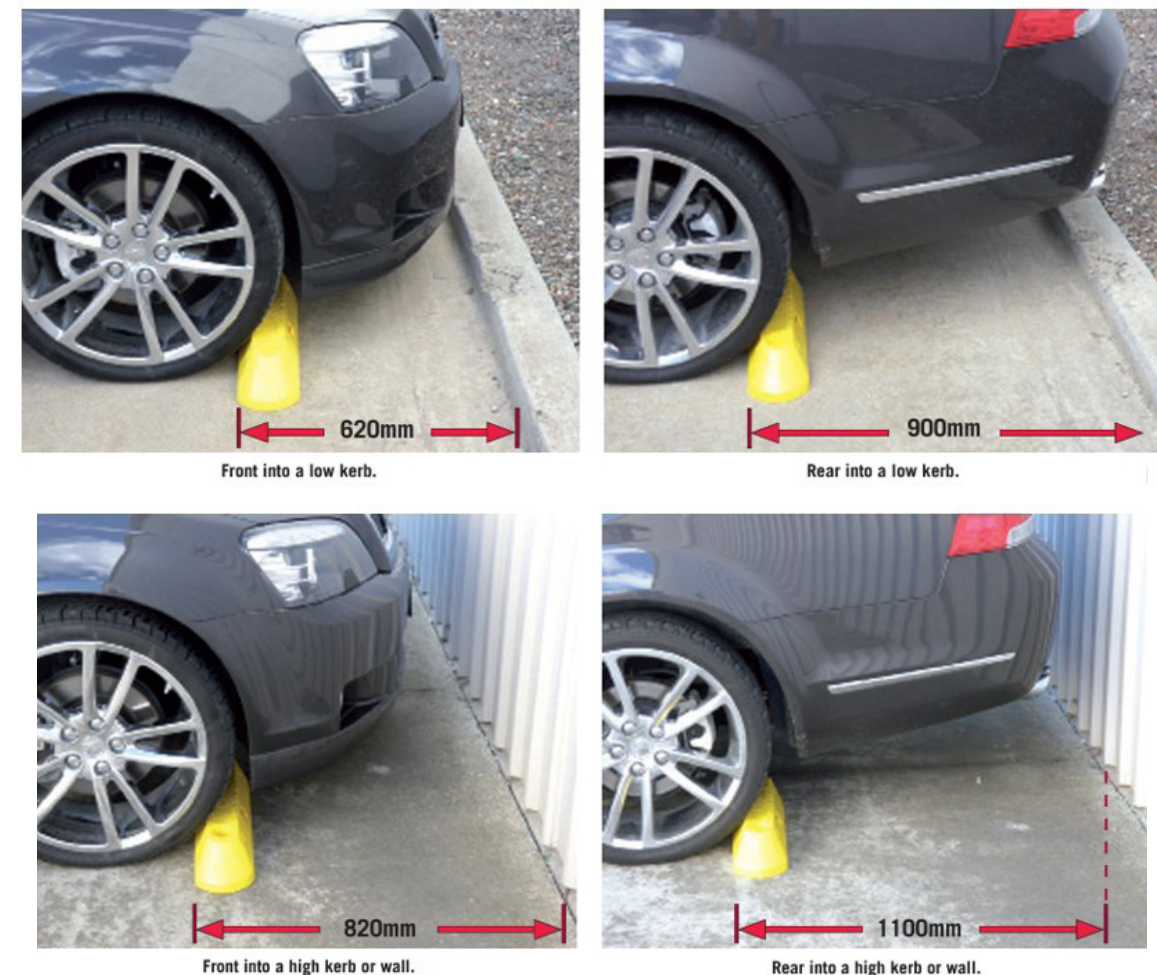
Where reverse-in parking is unlikely, eg. angle parking, or one-way aisles, wheel stops should be positioned in the 'front-in' position. If reverse-in parking is likely, wheel stops should be positioned in the 'rear-in' position.

Wheel stop installation distance from a low kerb:

- Front-in: 620mm
- Rear-in: 900mm

Wheel stop installation from a high kerb or wall:

- Front-in: 820mm
- Rear-in: 1100mm



Note: the standard specifies the maximum height for wheel stops is 100mm, unless installed to prevent contact with a kerb or wall higher than 150mm, in which case it should be installed a further 200mm away (e.g. 820mm distance instead of 620mm).

Wheel stops should only be avoided if they encroach on the path of pedestrians who are moving to or from parked cars or crossing a car park for any other purpose.

AS 2890.6: Parking facilities - Part 6: Off-street parking for people with disabilities:

Wheel stops must be installed in accessible parking spaces to prevent vehicles from overhanging into designated access aisles, ensuring unobstructed access for individuals with disabilities. For details regarding compliant installation, please refer to AS2890.1:2004 (outlined above).

Speed Humps:

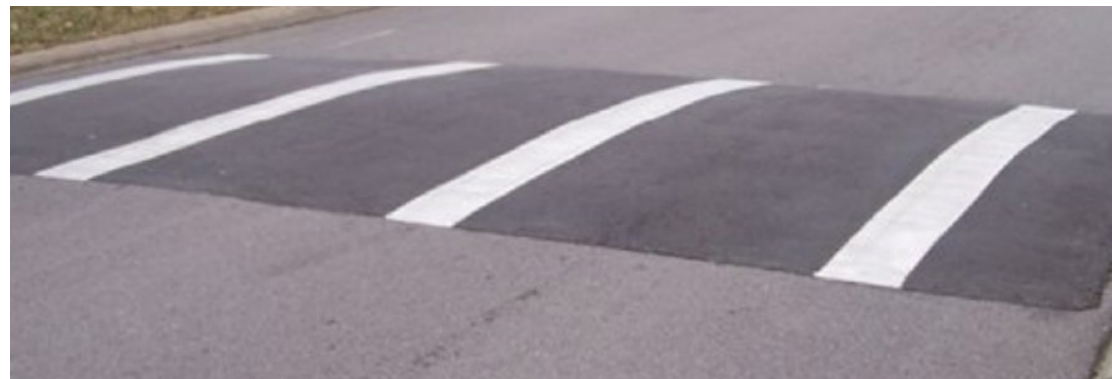
AS 2890.1: Parking facilities - Part 1: Off-street car parking:

Provides guidance on the design and installation of speed humps within car parks to control vehicle speeds, enhance safety for pedestrians, and reduce the risk of accidents.

Depending on their location and the range of speed reduction required, there are generally two types of speed humps used for car parks.

Type 1:

- Intended for use on long aisles and circulating roadways in large outdoor car parks.
- To reduce speeds to about 25km/h or less.
- 75mm maximum height from road level.
- 2500mm in total width.



Type 2:

- For installation in relatively confined areas of covered and multi-storey car parks.
- To reduce speeds to about 30km/h or less.
- 25 to 75mm maximum height (H) from road level, with a 1:2 ramp angle.
- 100 to 150mm in width for the raised flat-top cross-section and an additional (2 x H) on either side for the road level width.
- Must have alternating parallel white or yellow stripe markings of 250mm wide



However, if more speed control is required for more extended roadways, the larger road hump specified in AS1742.13 (for local area streets) may be more appropriate.

Location of car park speed humps:

- The humps should be located clear of intersections and curved roadways.
- The humps should not impede any pedestrian or wheelchair traffic.
- At least 1m of travel space is required on either side of the hump when placed near an accessible travel path provided for people with disabilities.

Required spacing of speed humps:

- Type 1 road humps should be spaced apart by a minimum of 30m along a single aisle or roadway.
- Type 2 road humps should be spaced apart by a minimum of 10m along a single aisle or roadway.
- A maximum spacing of 50m is required for roadways that require a continuation of controlled speed.

Additional safety measures & considerations:

- In low-lit outdoor locations, raised reflective pavement markers may also be required in addition to the hump stripe markings.
- A warning sign should be used if the road hump is not sufficiently visible in time for drivers to slow down.

Signage:

AS 2890.1: Parking facilities - Part 1: Off-street car parking:

This standard includes guidelines for the design, placement, and content of signage within car parks, including directional signs, parking restriction signs, pedestrian crossing signs, and other regulatory signage.

Signs are required for the following purposes:

- To control traffic movement and driver behaviour ie. speed.
- To warn against hazards to personal safety or potential damage to vehicles.
- To identify sections or rows of parking spaces so that pedestrians can easily find their parked vehicles.
- To direct and inform drivers entering and circulating within the car park about vehicular entry points, exits and parking locations.
- To direct pedestrians to lifts, stairs, amenities and other parts of the building.

AS 2890.2: Parking facilities - Part 2: Off-street commercial vehicle facilities:

Specifies requirements for signage related to commercial vehicle parking facilities, such as loading zones, truck parking areas, and height clearance restrictions.

Loading Zones:

- Loading zones should be clearly marked with signage indicating their purpose and any associated restrictions.
- Signage should specify the allowable time limits for loading and unloading activities.
- Loading zone signage should be prominently displayed and easily visible to drivers entering the area.

Truck Parking Areas:

- Signage should designate areas within the car park specifically reserved for truck parking.
- Truck parking signage should indicate any size or weight restrictions applicable to the designated areas.
- Where applicable, signage should specify any additional requirements or regulations related to truck parking, such as securing loads or chocking wheels.

Height Clearance Restrictions:

- Signage should be installed at entrances to the car park to indicate the maximum allowable height clearance for vehicles.
- Height clearance signage should be positioned at a height and location that is easily visible to drivers approaching the entrance.
- Where necessary, additional signage may be installed within the car park to remind drivers of height restrictions at certain locations, such as low clearance areas or underpasses. Additional safety measures & considerations:
- In low-lit outdoor locations, raised reflective pavement markers may also be required in addition to the hump stripe markings.
- A warning sign should be used if the road hump is not sufficiently visible in time for drivers to slow down.

Bike Storage:

Guidance on parking and safe storage of bicycles at a car park is given in AS2890.3, please refer to Classic's Compliance Guide for Bike Storage for further explanation.

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