



Compliance Guide Bike Storage

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a safe step**

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Why is compliance important?

Compliance ensures that bike storage areas are designed to meet safety, accessibility, and functionality standards, promoting the well-being of cyclists and the general public. Adhering to the Australian and New Zealand Standards helps create spaces that are user-friendly, efficient, and legally compliant.

What codes and standards are relevant?

New Zealand regulations are influenced by Australian standards. The National Construction Code of Australia (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 Building Code of Australia (BCA) adopts AS2890.3:2015 and requires mandatory compliance with AS2890.3. This standard specifies the requirements for the construction of buildings and structures, including provisions for bike storage areas. It provides a set of minimum requirements for the layout, design and security of bicycle parking facilities for architects, planners, builders, property managers and service providers.

Where are these applicable?

New residential, commercial, or industrial developments often must offer safe and protected bike parking and meet all requirements of the AS2890.3:2015.

Outline of AS2890.3:2015 requirements: Location and Access

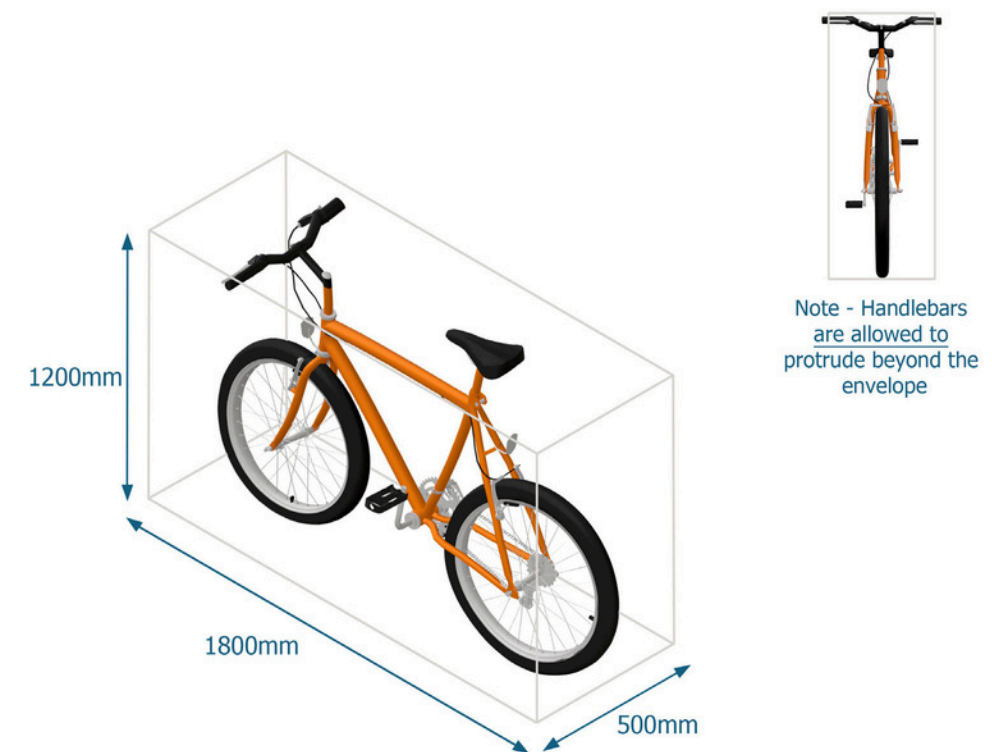
- Bike storage areas should be conveniently located and easily accessible for cyclists.
- They should be situated close to building entrances and amenities, such as showers and changing facilities, where possible.

Design and Layout

- In most cases, local government will advise the number of parking spaces required for development approval
- The bike storage design should accommodate a range of bicycle types, including standard bikes, electric bikes, and cargo bikes.
- The bike storage area must include a minimum of 20% horizontal, ground level bike parking, to ensure access for users unable to lift a bicycle.
- Consideration should be given to security features such as lighting, surveillance, and proximity to high-traffic areas for deterrence against theft and vandalism.

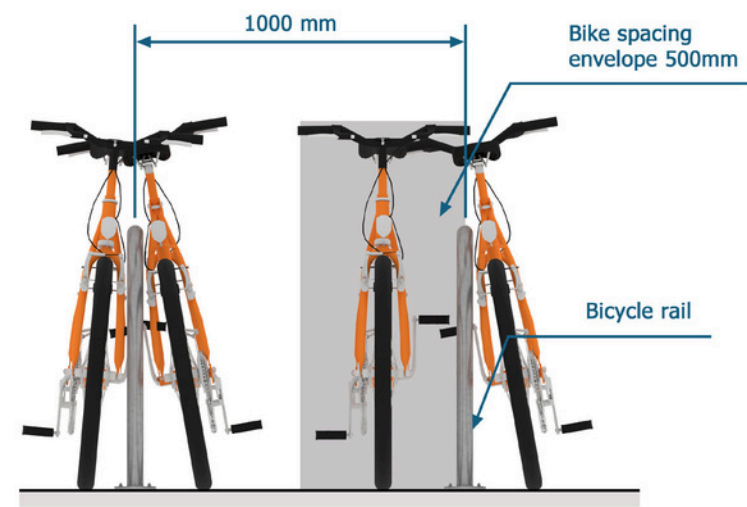
Spacing and Dimensions

- Bicycle Spacing Envelope - According to the AS2890.3:2015, the Bicycle Spacing Envelope is the space required for a standard bicycle, which allows for locking and parking movements. The dimensions of the Bicycle Spacing Envelope are 1800mm x 1200mm x 500mm.

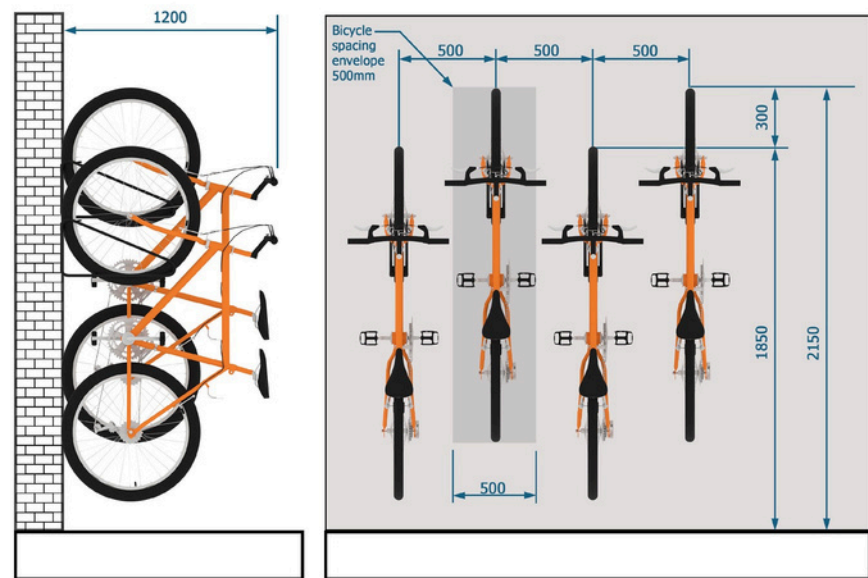


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- Horizontal Parking – Where a bike is parked horizontally, the spacing envelope must be 1800mm in length and 500mm in width.

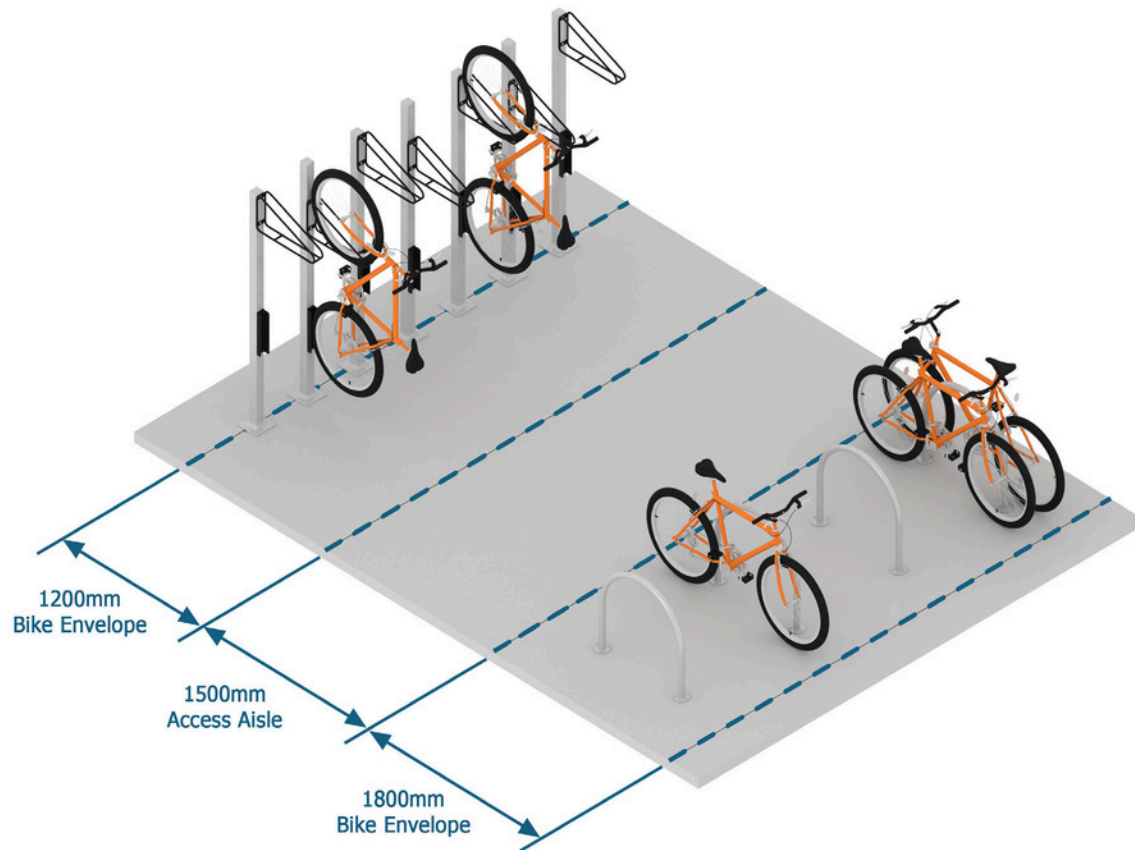


- Vertical Parking - Where a bike is parked vertically, the spacing envelope must extend 1200mm from the wall or post. Where adjacent spaces are offset, as per below diagram, 500mm width is required. Where vertical parking spaces are not offset, 700mm width is required.



- Access Aisle - An access aisle must be placed behind all bike parking spaces, it must be obstacle free, but can be a shared space such as a walkway or driveway.

- The required aisle widths are;
- o Horizontal parking (side by side) 1500mm
 - o Vertical parking (side by side) 1500mm
 - o Multi-tier parking 2000mm
 - o Bicycle lockers 2000mm

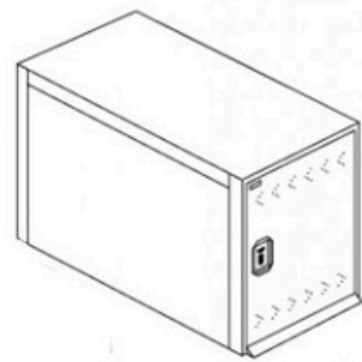


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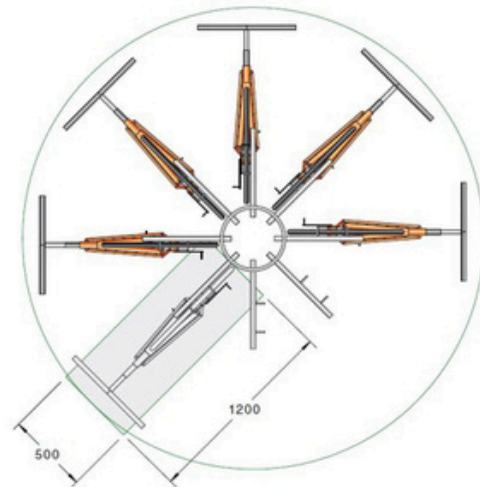
- Exceptions to the Bicycle Spacing Envelope –

- o Dynamic Bike Racks require a reduced Bicycle Spacing Envelope width of 400mm (see page 10 for further information on Dynamic Bike Racks).

- o The Bicycle Spacing Envelope does not apply to bicycle lockers or radially arranged vertical parking.

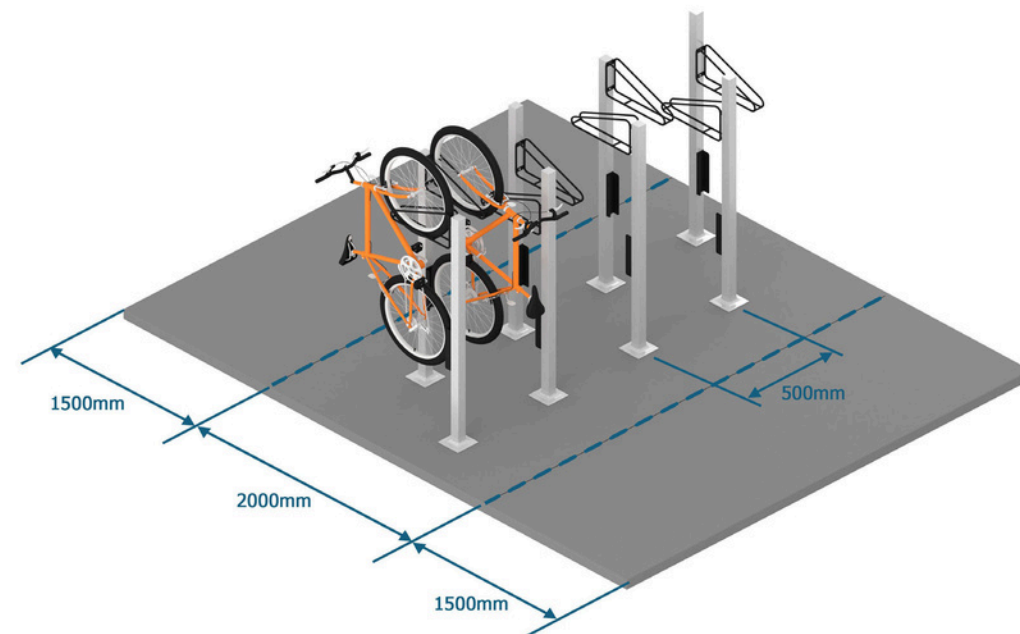


Example of bicycle locker

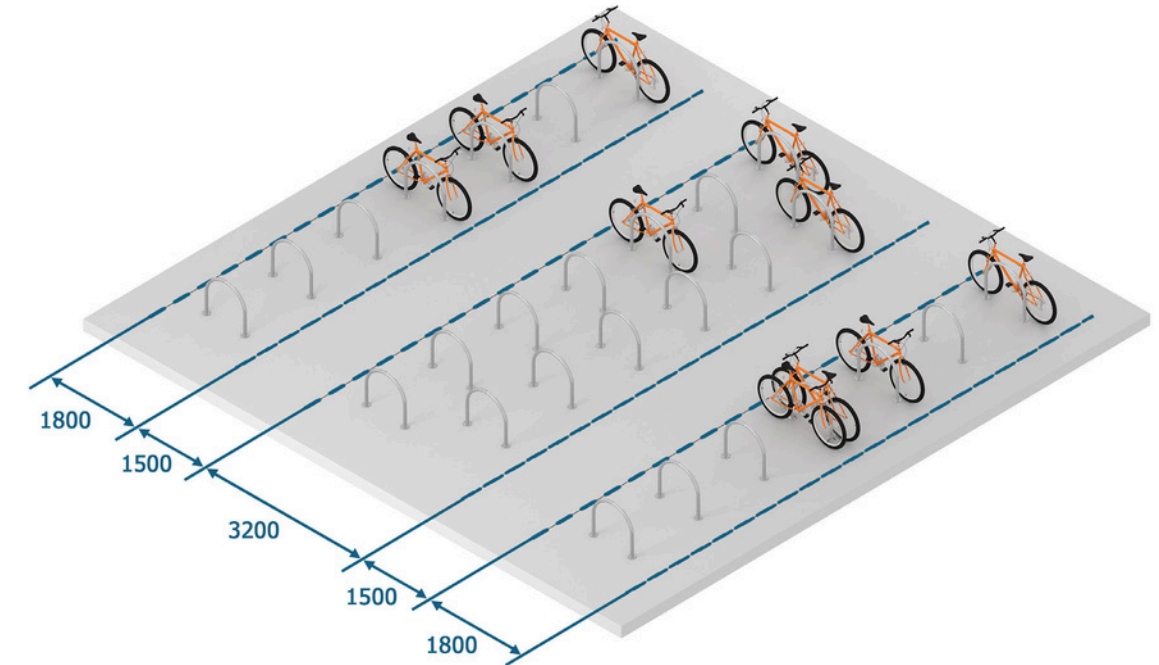


Example of radially arranged vertical parking

- o Staggered, back to back parking rows can overlap to reduce the Bicycle Spacing Envelope length from 2400mm (2 x 1200mm) to 2000mm.



- o Staggered configuration, reducing the combined bicycle parking envelope from 3600mm (2 x 1800mm) to 3200mm.



Compliant Bike Racks

- Requirements for a compliant Bike Rack include;

- o The ability to lock at least one wheel and frame directly to the rack with the user's own D-lock.

- o The Bike Rack must provide sufficient support to prevent a standard bicycle from falling over when properly secured.

- o The Bike Rack must be made with high-security materials that are resistant to cutting, bending and breaking.

- Below examples are non-compliant Bike Racks, as frame would not be supported in a stable position, and cyclists are unable to lock the bike frame and wheel with a D-lock.

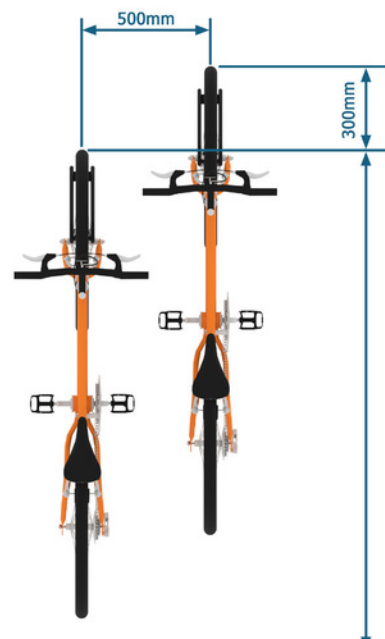


Dynamic Bike Racks

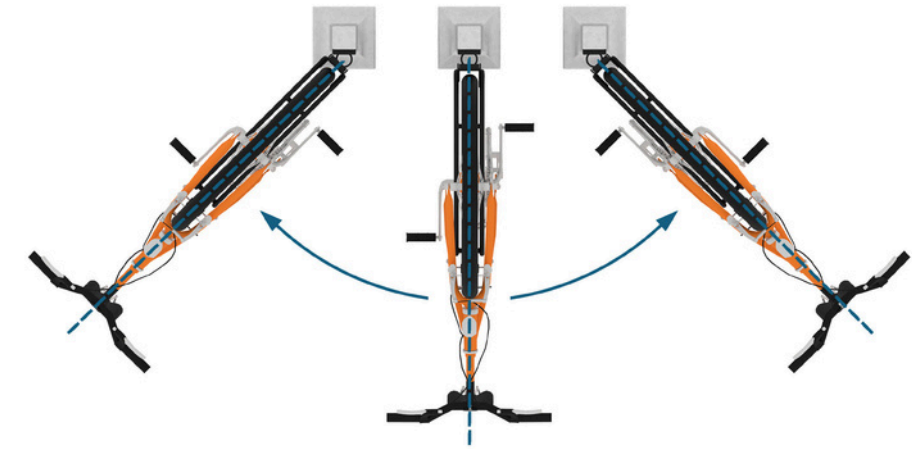
- A Dynamic Bike Rack often features movable or adjustable components and are designed to maximise space efficiency and user convenience.
- A Dynamic Bike Rack requires bikes to be moved to create the minimum Bicycle Spacing Envelope required for locking and parking movements.
- A Dynamic Bike Rack requires a reduced Bicycle Spacing Envelope width of 400mm, if the following criteria is met:
 - o The horizontal or vertical position of adjacent bicycles are offset by a minimum of 300mm, or head to tail positions are used; and
 - o A clearance width of 500mm can be created by moving the Dynamic Bike Rack (to allow locking and parking movements).
 - o No more than 8 bikes shall be required to be moved to create the minimum Bicycle Spacing Envelope width of 500mm.



Example of offset horizontal bike racks



Example of offset vertical bike racks



Example of vertical moveable Dynamic Bike Racks

Multi-tier Bike Racks

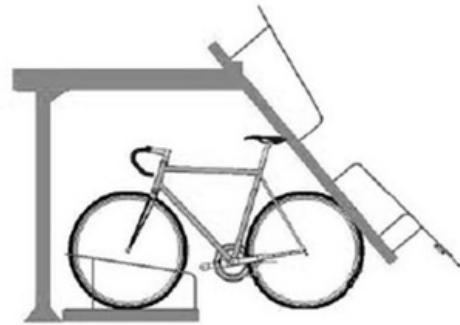
- Requirements for a compliant Multi-tier Bike Rack include:
 - o Must include a lift assist mechanism to allow easy access to the upper tier.
 - o There is an increased bicycle envelope width of 700mm for upper-level bikes, if adjacent bikes are not at staggered heights.
- A compliant Multi-tier Bike Rack with dynamic elements has a reduced bicycle envelope width of 400mm.



Example of a dynamic upper tier with static lower tier. The static lower tier must allow 500mm for the width of each bicycle space.



Example of a fully dynamic double tier system that uses dynamic upper tier and dynamic lower tier to allow the width of the Bicycle Spacing Envelope to be reduced to a minimum of 400mm.



If the lower tier parking spaces are static, minimum spacing for the lower tier is 500mm - not 400mm, even if lower spaces use offset heights.

Maintenance and Inspection

- Regular maintenance and inspection should be conducted to ensure the functionality and safety of bike storage facilities.
- Any defects or damage should be promptly repaired to maintain compliance and prevent accidents or injuries.

Installation and Fixing

- Rack should be securely fixed to the ground or structure to prevent displacement or theft.
- Installation should adhere to manufacturer guidelines and AS 2890.3:2015 specifications to ensure stability and durability.

Signage and Markings

- Clear signage should indicate the location of bike storage areas and any relevant regulations or restrictions.
- Markings on the ground or walls can delineate designated parking spaces and pathways for cyclists.



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