



# Designing Outdoor Handrails for Accessibility & Safety

**moddex<sup>®</sup>**  
EVERYTHING FITS





## INTRODUCTION

About 43 million people, or one in five Australians, live with disability.<sup>1</sup> Seventy-seven percent of these individuals have physical disabilities, which makes it challenging for them to access public spaces without assistance.<sup>2</sup> To ensure that people with disabilities are not disadvantaged, accessibility standards for the design and construction of public spaces are in place.

The Disability Discrimination Act (DDA) is an important piece of legislation in Australia that works to foster a society in which all people can fully participate. The goal of the DDA is to guarantee equal access to public areas and includes regulations regarding accessibility handrails, particularly for outdoor spaces that provide routes between buildings or along walkways.

In the built environment, accessibility is the concept that a space can be used by everyone, however they may encounter it. It involves the interaction between a health condition and environmental factors. These factors may affect a person's capacity to carry out daily tasks and take part in community life.

In some environments, such as on outdoor walkways that could become slippery during bad weather, it is especially important to consider accessibility measures. Handrails are one of the more prominent examples of such measures, offering stability and support to all users.

Whether it's a school, stadium, or public park, handrails are a standard legal requirement under DDA legislation. In this paper, we provide a practical summary of the outdoor handrail requirements across the relevant Australian standards.







## ACCESSIBLE ROUTES AND OUTDOOR WALKWAYS

The DDA states that it is “unlawful to discriminate against a person, in many areas of public life, including accessing public places, because of their disability”.

Section 23 of the DDA makes it illegal to discriminate against individuals with disability or their associates when it comes to access to and use of premises that are open to the public. The term “premises” refers very broadly to places, buildings, and structures (whether or not they are enclosed or built upon), so it would include, for example, public parks, playgrounds, streetscapes, outdoor areas, footpaths and road crossings.

“Continuous accessibility path of travel” is defined in AS 1428.1 as follows: “An uninterrupted path of travel to, into or within a building providing access to all accessible facilities.”

Accessibility handrails are required by DDA regulations to ensure that all individuals have a continuous accessible path of travel to different areas, allowing people with disability to access those areas in the same way as people without disability. This applies to any built environment, landscape or complex consisting of several connected buildings, such as parks, schools, and shopping malls.

Navigating outdoor walkways can be challenging for those with balance or mobility issues. Walkways that include drops, uneven terrain, or are near bodies of water increase the risk of falls. Handrails can be used to significantly reduce this risk and provide confidence for all users to traverse these areas safely.



# ACCESSIBILITY HANDRAIL REQUIREMENTS

## Design standards

When designing outdoor spaces, contractors must always consider accessibility for individuals with disability, especially in the design of stairs, ramps, and balustrades. They should adhere to AS 1428, which sets the minimum standards for new building work and is applicable in various contexts. AS 1428 contains detailed specifications for public spaces to enhance accessibility and ease of use. For example, AS 1428 requires public areas to be clear and easily accessible to people in wheelchairs and other mobility aids.

AS 1428 sets out the specifications for handrails, including where they are required. Following these specifications will ensure that handrails can be used safely and conveniently by individuals with disability.

## When is a handrail required?

Handrails should be installed to give everyone, especially those who struggle to negotiate changes in level, a safe means of access. Accordingly, handrails are required on both sides of a stair or ramp, with a minimum of 1000 mm of clearance between both handrails.

## Height

The distance between the top of the handrail and the nosing of a stair or the plane of the finished floor level on a ramp, walkway, or landing must be at least 865 mm and no more than 1000 mm. The measurement of the handrail height must be taken vertically, starting from the tread nosing to the top of the handrail. The height of the handrail must remain constant throughout the landing, stair and ramp.

If a balustrade is required at a height greater than the handrail, both shall be provided.

## Dimensions

The installation of handrails shall be in accordance with AS 1428.1 Clause 12. Some of the key requirements are as follows:

- The cross-section of the handrail must be circular or elliptical, with a height and width of not less than 30 mm or greater than 50 mm for 270° around the uppermost surface. The horizontal axis on elliptical handrail must be the axis with the greater dimension.
- A clear space between a handrail and an adjacent wall or other obstruction must not be less than 50 mm. A clear space of 600 mm is also required above the top of the handrail.

- Handrails shall have no obstruction to the passage of a hand along the rail.

AS 1428.2 sets out enhanced accessible features to be considered for the design of buildings and facilities. In relation to handrails, AS 1428.2 Clause 10.1.1 adds the following requirements:

- The end of the handrail shall be extended parallel to the surface below for a minimum of 300 mm (450 mm is preferred). The end shall be a continuous rail, turned down 100 mm or returned fully to the end post or wall face.
- Where a handrail is not continued, a tactile indicator in the form of a domed button shall be provided.
- Handrails shall not rotate within their fittings.
- Where a high proportion of users are short (i.e., not necessarily children), a second handrail should be provided. The handrails should be designed to eliminate the risk of head and neck entrapment.

## Stairways

The installation of stairway handrails shall be in accordance with AS 1428.1. Some of the key specifications from AS 1428.1 Clause 11.2 include the following:

- The handrail shall extend a minimum of 300 mm horizontally past the last and top riser.
- Handrails shall be installed on both sides of the stairs (a minimum of 1000 mm apart).
- Handrails shall have no vertical sections and shall follow the angle of the stairway nosings.

AS 1428.2 adds the following requirements for consideration:

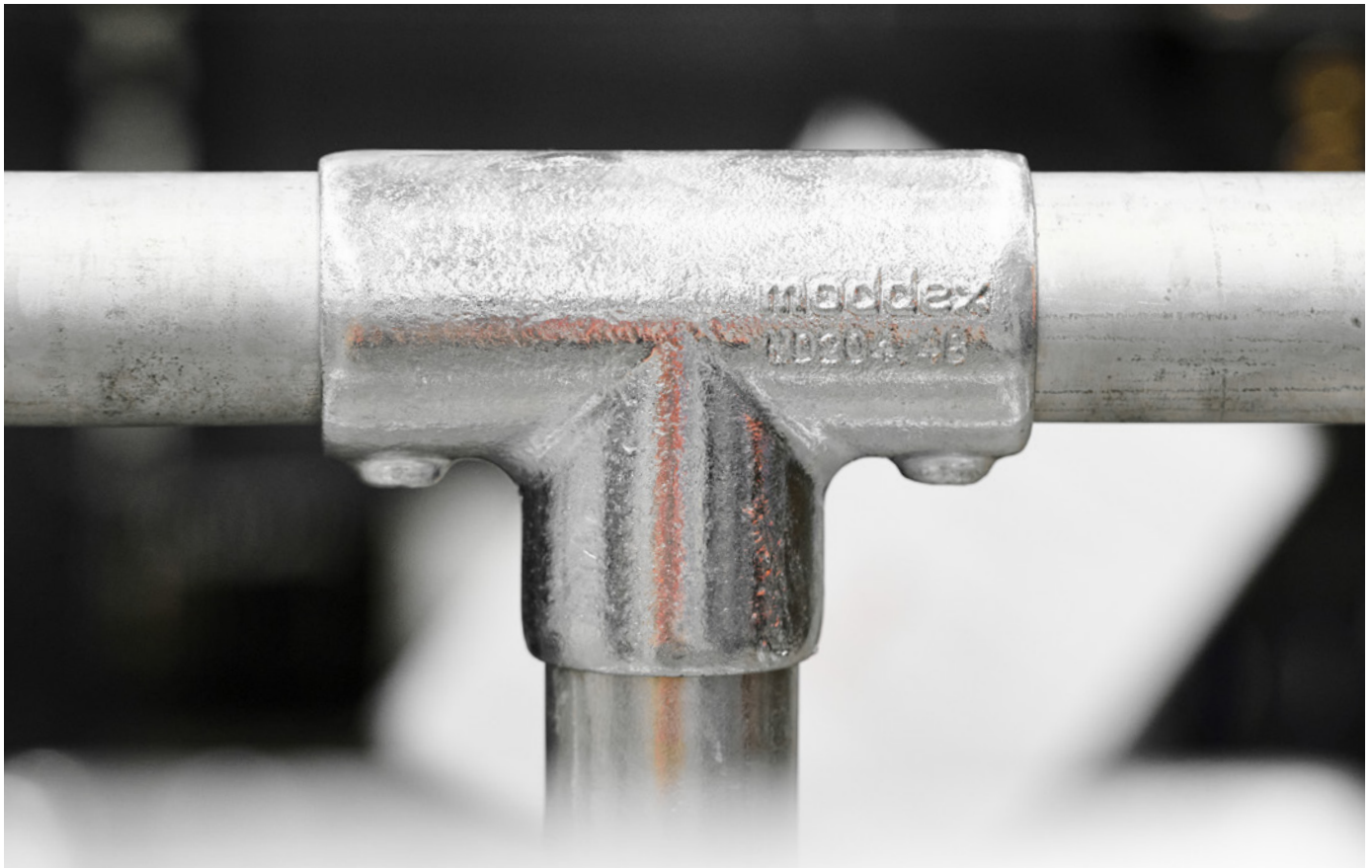
- Wherever practicable, the outside handrail shall be continuous throughout the stair flights and around landings.
- The inside handrail shall always be continuous, and at landings, it shall maintain a height that is parallel to the finished floor.
- Where there is a background wall, handrails shall have a luminance contrast factor with the wall of not less than 0.3 (30%).

## MATERIALS FOR OUTDOOR HANDRAILS

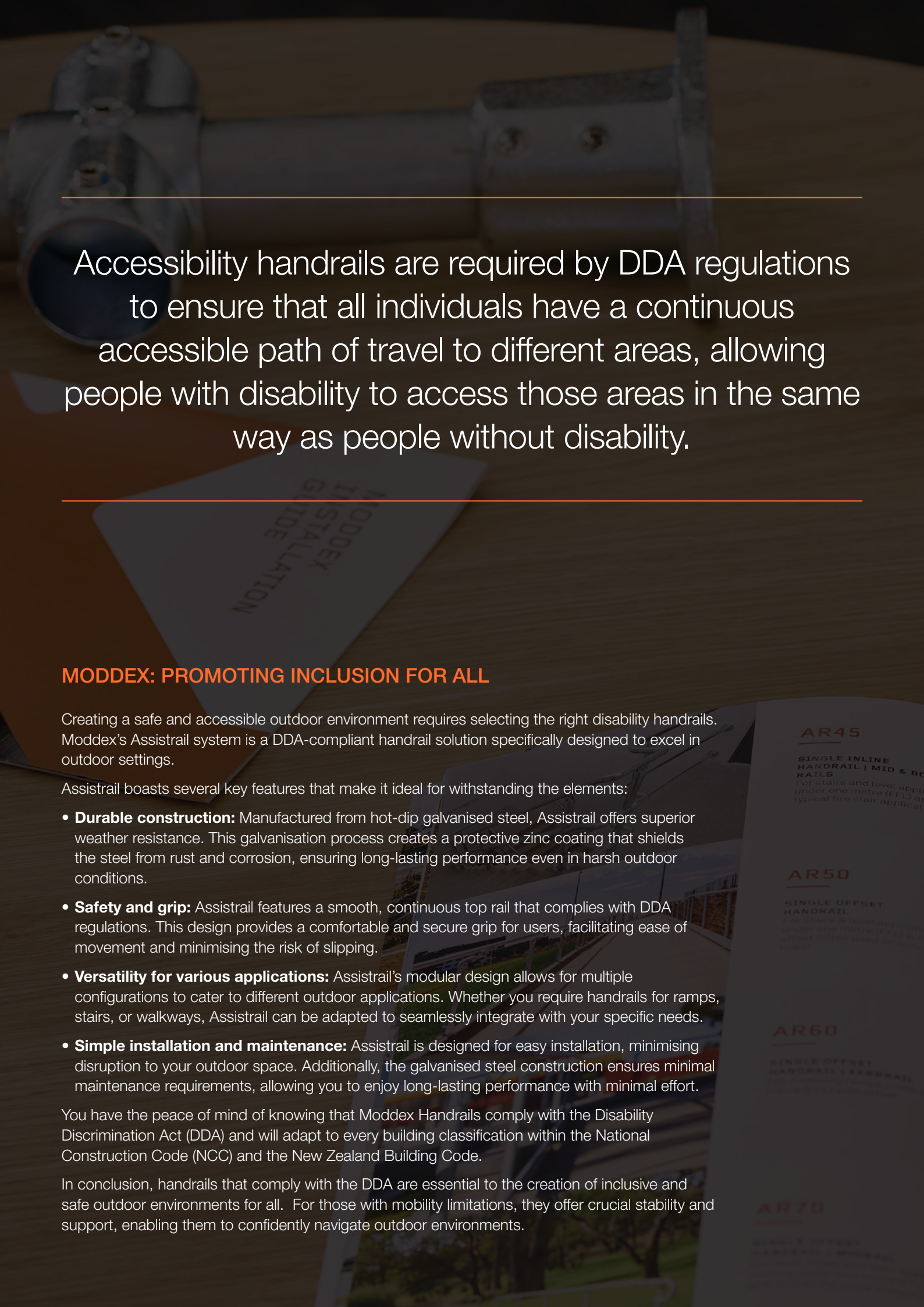
Selecting the right materials for outdoor handrails is crucial for both aesthetics and longevity. Durable construction ensures the handrails contribute to the beauty and functionality of the space over the long term.

Depending on the needs of the project, materials such as wood, aluminum, stainless steel, and hot-dipped galvanised steel each have their own special benefits. Your choice should take into account aspects like the environment, budget, style and maintenance requirements. Below are some relevant considerations:

- **Stainless steel** is known for its exceptional durability and resistance to corrosion, making it ideal for withstanding the elements. Stainless steel handrails are resistant to rust and deterioration even in the most severe weather conditions, such as rain, snow, and extremely high temperatures. While there are many different grades of steel available, 316 Marine Grade and 304 Grade Stainless Steel are two popular choices. 316 Marine Grade is advised for applications in environments characterised by high chloride or saline levels, particularly in proximity to coastal areas. For more typical applications, 304 Grade Stainless Steel is an effective choice.
- **Hot-dipped galvanised (HDG) steel** is a popular outdoor handrail material due to its durability, low-maintenance and relatively low cost. However, keep in mind that environmental factors, such as proximity to corrosive zones, affect its longevity.
- **Aluminium** offers excellent corrosion resistance as the material naturally forms a protective oxide layer on its surface, providing a robust barrier against rust and corrosion. The material is also lightweight, malleable, strong and non-toxic, making it a good choice for both indoor and outdoor applications. Aluminum handrails allow for an array of colour and finishing options, including powdercoating, providing endless design possibilities.
- **Wood** is a robust material known primarily for its natural beauty. However, this material demands regular maintenance to prevent it from succumbing to rot, warping, or decay.







Accessibility handrails are required by DDA regulations to ensure that all individuals have a continuous accessible path of travel to different areas, allowing people with disability to access those areas in the same way as people without disability.

## MODDEX: PROMOTING INCLUSION FOR ALL

Creating a safe and accessible outdoor environment requires selecting the right disability handrails. Moddex's Assistrail system is a DDA-compliant handrail solution specifically designed to excel in outdoor settings.

Assistrail boasts several key features that make it ideal for withstanding the elements:

- **Durable construction:** Manufactured from hot-dip galvanised steel, Assistrail offers superior weather resistance. This galvanisation process creates a protective zinc coating that shields the steel from rust and corrosion, ensuring long-lasting performance even in harsh outdoor conditions.
- **Safety and grip:** Assistrail features a smooth, continuous top rail that complies with DDA regulations. This design provides a comfortable and secure grip for users, facilitating ease of movement and minimising the risk of slipping.
- **Versatility for various applications:** Assistrail's modular design allows for multiple configurations to cater to different outdoor applications. Whether you require handrails for ramps, stairs, or walkways, Assistrail can be adapted to seamlessly integrate with your specific needs.
- **Simple installation and maintenance:** Assistrail is designed for easy installation, minimising disruption to your outdoor space. Additionally, the galvanised steel construction ensures minimal maintenance requirements, allowing you to enjoy long-lasting performance with minimal effort.

You have the peace of mind of knowing that Moddex Handrails comply with the Disability Discrimination Act (DDA) and will adapt to every building classification within the National Construction Code (NCC) and the New Zealand Building Code.

In conclusion, handrails that comply with the DDA are essential to the creation of inclusive and safe outdoor environments for all. For those with mobility limitations, they offer crucial stability and support, enabling them to confidently navigate outdoor environments.

### AR45

SINGLE INLINE  
HANDRAIL | MID & BO  
RAILS  
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### AR50

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When designing outdoor spaces, contractors must always consider accessibility for individuals with disability, especially in the design of stairs, ramps, and balustrades.

## Reference

<sup>1</sup> Disability Advocacy and Complaints Service of South Australia. "Disability in Australia." DACSSA. <https://dacssa.org.au/your-rights/disability-in-australia> (accessed 20 June 2024).

<sup>2</sup> Independence Australia. "Why is accessibility important?" Independence Australia. <https://www.independenceaustralia.com.au/accessibility/why-accessibility-is-important> (accessed 20 June 2024).