

Ensuring Safety and Compliance

with AM-BOSS Access Ladders



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ACCESS LADDERS

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INTRODUCTION

With research showing that roughly 5,000 Australians are hospitalised for ladder fall injuries each year and a 47% increase in these injuries between 2002 and 2012,¹ it's imperative that designers and specifiers opt for high-performance ladder solutions that prioritise safety. Safe Work Australia has also noted that working at heights is one of the highest risk activities in the workplace, with 11% of all deaths at work occurring after a fall from height.² Statistics like these even led to the launch of a Government campaign in 2016 aimed at the highest-risk section of Australian society, older men, to educate them of the potentially life-threatening dangers of improper ladder use.³

At the same time, a crisis of confidence has rippled through Australia's construction industry following numerous high-profile compliance breaches in recent years. This led to the Building Minister's Forum releasing the *Building Confidence – Improving the effectiveness of compliance and enforcement systems for the building and construction industry across Australia* report in February 2018 which included numerous recommendations on strengthening the effective implementation of the National Construction Code (NCC).

When it comes to ladder specification, user safety and compliance are front of mind. There are also a number of additional considerations specifiers must take into account, such as load capacity, durability and ease of installation. By making an informed decision, specifiers can ensure they select the right ladder for their specific purpose, saving time and money during construction.

This whitepaper provides an in-depth examination of the key concerns for specifiers when choosing high-performance access ladders along with an overview of the key Australian Standards and additional regulatory frameworks that apply.





SELECTING THE RIGHT LADDER FOR THE PROJECT

Load Capacity

Access ladders are a necessary part of the maintenance infrastructure for large buildings to facilitate access to pipes, ventilation or rooftop areas, but specifiers must consider how they will be utilised in order to select a product with the requisite load capacity. As a minimum, any access domestic ladder should be tested and rated to 100kg load capacity (at a single point, not spread weight). This would be suitable for basic single-person access, for example. Any industrial / commercial ladder should be tested and rated to 120kg load capacity, however where there is potential for greater weights to be involved, specifiers should ensure that the ladder they select has a greater capacity. As a guideline, heavy duty ladders load tested up to 400kg are suitable for these applications.

Safety and Security

Depending on a number of factors such as height or whether the ladder is for internal or external use, a variety of safety or security options should be considered. One of the most practical fall protection solutions for taller applications is a ladder cage - indeed, Australian Standards mandate the use of ladder cages where a person may fall 6 metres or more.⁴ Cages are lockable to prevent unauthorised access and optional extras like a flat locking plate serve to secure the ladders from trespassers - particularly useful for external ground-to-roof applications. Where suitable, options like handrails, wider treads and non-slip treads can provide an extra degree of comfort and confidence for users. Safety features such as these are particularly desirable in domestic applications where users may be less experienced in proper ladder safety protocols.

High-performance materials

Specifiers should be cognisant of what materials ladders are constructed from and at every stage opt for something with high strength and low weight in order to provide maximum performance and ease of installation. Aluminium alloys are ideal for ladders. They can be as strong as steel at one-third the weight, while natural oxide coatings ensure they are weather-proof, corrosion-resistant and immune to the harmful effects of UV rays.⁵ Lightweight aluminium is also easier to transport, install and handle during construction. Specifiers should also consider the extra parts of ladders (such as springs for pull-down ladders) and what they are made of. Options like zinc-plating can reduce wear and tear and thus decrease ongoing maintenance requirements.

Ease of installation

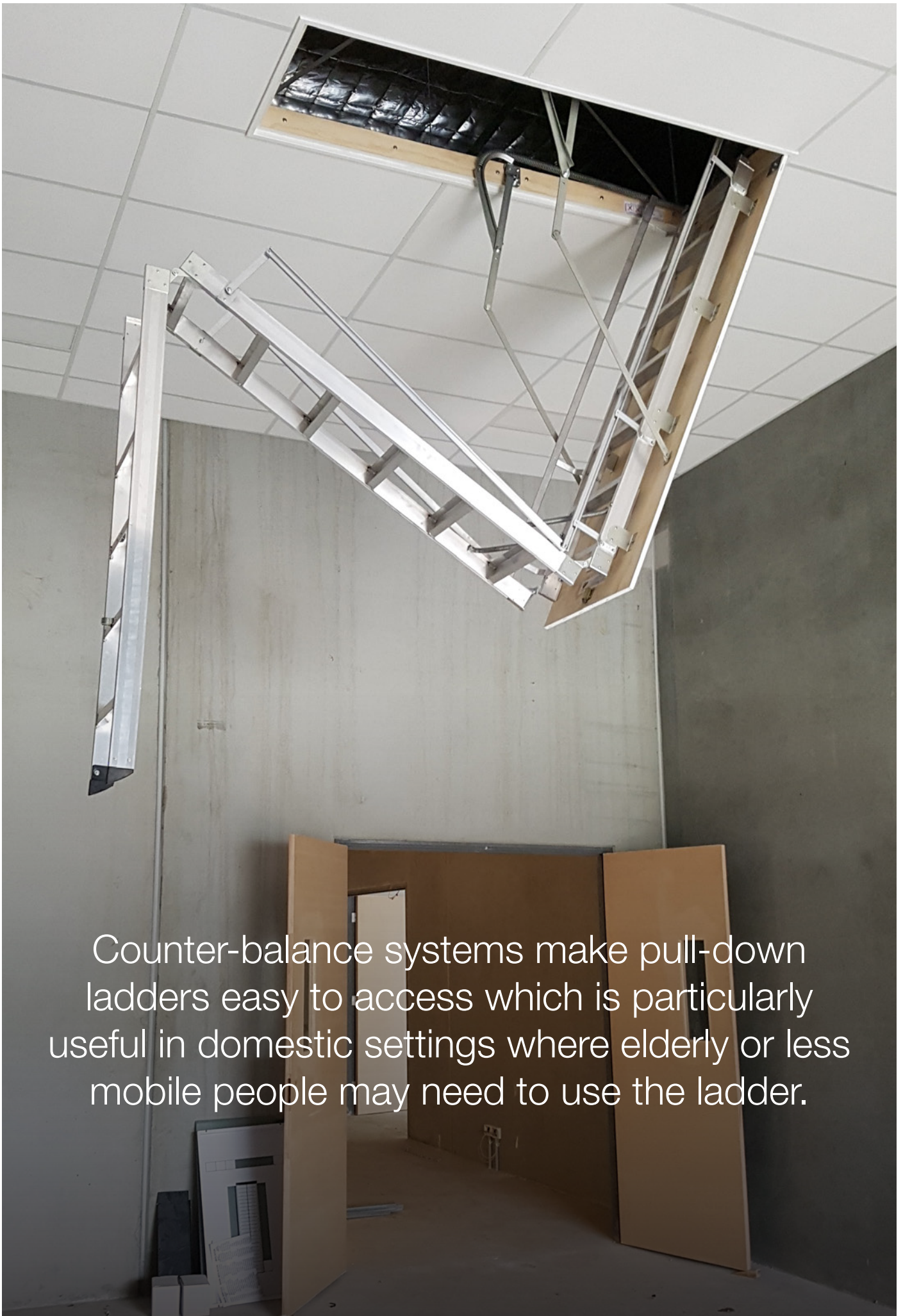
It follows from the previous section that a high-performance, lightweight aluminium ladder will be easy to install due to easier transportation and lesser manpower

required. There are other considerations that are relevant depending on the specifics of the installation. For example, while fixed-rung caged ladders are frequently used to facilitate external rooftop access on multi-storey buildings, internal rooftop access is often through a manhole behind a suspended ceiling. Internal roof-access ladders may require specific suspended ceiling access frames. These frames will attach to the underside of the roof hatch with a brace to keep the support frame above the suspended ceiling to ensure the weight of the ladder is supported by the roof, not the ceiling. Specifiers should check with suppliers about available options specific to their requirements prior to selection.

Ease of Use

Specifiers must always keep the ladder end-user front of mind when choosing the right access ladder for the project. The requirements of users in commercial applications may differ greatly from those in domestic settings. Generally the use requirements for external or fixed-rung ladders are simple - the ladder must be easy to access, secure and safe to use. Pull-down or attic-style ladders are far more common internally, so in addition to the above requirements, an effective counter-balance system must be in use. Counter-balance systems make pull-down ladders easy to access which is particularly useful in domestic settings where elderly or less mobile people may need to use the ladder. Counter-balance systems also minimise wear and tear on ladder parts, extending part life and minimising maintenance requirements.





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THE COMPLIANCE LANDSCAPE

AS1657:2018

*AS1657:2018 Fixed platforms, walkways, stairways and ladders - Design, construction and installation*⁶ is the general standard that outlines performance requirements for ladders. It covers safety requirements (such as use of guardrails, or the need for fall cages for heights of more than 6 metres) as well as guidelines pertaining to materials and design-specific regulations. It is important to note that this standard does not cover “into ceiling” pull-down access ladders as it relates to fixed and portable ladders, however some manufacturers do incorporate the relevant elements of this standard across all of their designs.

AS1530.4:2014

Where ladders may be used in emergency settings or fire rating is a requirement, this is a relevant standard. *AS1530.4:2014 - Methods for fire tests on building materials, components and structures, Fire-resistance tests for elements of construction* outlines the testing methods for which fire ratings can be achieved and verified.⁷ Fire-rated ladders must be specifically designed for improved mobility in emergency situations and the ability to maintain structural integrity at high temperatures.

AS1891 Series

The *AS1891 - Industrial fall-arrest systems and devices* is the premier standard relating to fall safety for those working or operating at heights. It is important to note that this standard does not directly apply to ladder selection, however for specifiers selecting ladders for commercial use, it contains imperative information.⁸ Among other things, the standard contains guidance on the types and configurations of fall-arrest systems along with their suitability for different applications and how they should be maintained. Ladder suppliers should be knowledgeable on AS1891, able to install and test fall arrest systems in accordance with the standard and to provide any additional advice required by specifiers in order to make the correct choice.

CodeMark Certification

As a voluntary third-party scheme, CodeMark certification has become shorthand in the industry for products that are compliant with the Building Code of Australia.⁹ When selecting a high-performance ladder solution, specifiers should always check for a CodeMark certificate to ensure that the product has undergone all necessary testing prior to approval.

AM-BOSS ACCESS LADDERS

For over 40 years, AM-BOSS has provided high-quality, safe and compliant ladder solutions to the Australian market. AM-BOSS offers a range of access ladders with load capacity from 150kg to 400kg (at a single point, not spread weight). AM-BOSS ladders are fit for use in a range of spaces, heights and applications like commercial buildings, residences, factories and hospitals.

AM-BOSS ladders are built to last. They are constructed using 100% Australian welded aluminium which means they are strong but lightweight and corrosion resistant. Steel parts (such as springs) are zinc-plated to extend lifespan and reduce ongoing maintenance requirements. AM-BOSS has a team of certified technicians who can install and maintain ladders in any scenario.

AM-BOSS ladders are compliant with all relevant standards, and AM-BOSS is certified to install and test fall arrest systems in accordance with the AS1891 series. The company was the first to manufacture pull-down access ladders and folding ladders that are compliant with the Building Code of Australia and CodeMark certified. AM-BOSS staff are knowledgeable in all relevant standards and guidelines and can provide guaranteed project-specific advice to designers and specifiers.

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