

CHOOSING THE RIGHT WINDOWS AND DOORS FOR YOUR NEXT PROJECT



There are several factors to weigh up when choosing the right windows and doors for your project. Windows and doors are major architectural components in the design of a building and need to be carefully selected. Working with Darley Aluminium means that the research has already been done for you but let's take a look at some of the things that need to be considered.

All Australian windows and doors must meet certain requirements under Australian Building regulations. To ensure they can withstand Australian conditions, Darley Aluminium's products are tested for attributes including wind loads, air infiltration, water penetration and ultimate strength.

The National Construction Code (NCC) is produced and maintained by the Australian Building Codes Board (ABCB). Under the NCC, the Building Code of Australia (BCA) is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia. It allows for variations in climate and geological or geographic conditions.

"A very important factor to consider when choosing a window is the wind load, as it's a deciding factor for the type of window that will be used as it needs to structurally withstand the loads on the site," said Ray Kwan, National Sales Manager. "Serviceability Limit State (SLS) and Ultimate Limit State (ULS) are the two different types of ratings that measure the wind loads for windows and doors."

Two Australian Standards are used to determine wind loads for a building: AS/NZS 1170.2 Structural Design Actions and AS 4055 Wind Loads for Housing. Every site for every building in Australia should be assessed for wind load requirements according to AS/NZS 1170.2 Structural Design Wind Actions or AS 4055 Wind Loads for Housing.

Once the building/site requirements have been determined the next step is to ensure the windows being selected meet these requirements. Windows need to be tested for several conditions that will impact on their performance and durability. They are tested in accordance with the requirements in AS 2047.

The tests completed during this process include:

- Structural: Measures deflection of the window (SLS) at Span/250.
- Operating Force: Confirms opening force is within the set limits.
- Air Infiltration: Measures air leakage through the window or door.
- Water Penetration: Measures water penetration resistance (WPR).
- Ultimate Strength: Confirms the window meets ULS requirements.

"Windows are tested for combinations of wind loads (SLS and ULS) and WPR for all classes of building types. Based on the requirements for the type of construction and site, the performance results dictate where the windows and doors can be used," said Ray.

To ensure performance and durability, Darley Aluminium make sure that their products meet all of the following BCA provisions:

- Products are structurally adequate to meet site requirements for SLS and ULS.
- Products have a water penetration resistance that meets the site requirements.
- Flashing required to window and door systems to prevent water penetration around the system.
- Manifestation required for glass doors and panels that could be mistaken for a door or unimpeded path of travel.
- Bushfire requirements.
- Balustrades and barriers. This includes restricted or protected openings.
- Energy efficiency requirements.
- Sealing requirements to stop air leakage which significantly reduces energy efficiency.

By choosing a tested and certified Darley Aluminium system, you have the confidence that the chosen product will meet the stringent requirements of the Building Code of Australia. "All of Darley's window and door systems including our KlassicView residential and CityView commercial systems have been tested according to all these stringent testing requirements of the Building code of Australia," said Ray.

Darley Aluminium is an Australian, family owned and operated business with warehouses in New South Wales, Queensland, Victoria and Western Australia. With over 25 years of experience, Darley Aluminium has developed into a highly respected business in the aluminium industry.



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