

Anoguard™ Anodising

Anodising Aluminium Finish



Anodising is a well proven, surface coating process that has been established in New Zealand for over 40 years.

The anodising process delivers a highly durable coating on the aluminium and is available in five colour finishes.

What is Anodising?

Aluminium naturally protects itself by forming a protective layer whenever the base metal is exposed to air. The anodising process produces even thicker protective layers, resulting in a coating that's as hard as ruby or sapphire and provides good protection against sunlight, corrosion, heat and moisture. This process differs from powder coating in that anodising is a thickening of the base metal itself, rather than adding a coating, like paint.

Key Facts

Anodising is a process that forms a protective layer on the metal and improves its resistance to weather and corrosion.

- Anodising is one of the most durable joinery coatings available
- Aluminium joinery with an anodised finish comes in a range of colours, from natural (silver) through to bronzes and black
- **Anodising delivers an imperfect coating (because anodising is a translucent coating and shows the grain of the base metal and can exhibit die and flow lines) and whilst all care is taken to produce a consistent colour and finish, variations will always exist. We recommend discussing coating and colour/finish with your Altus Industrial representative before deciding on your preferred surface coating**
- With regular maintenance, anodised aluminium can stay looking as new for the life of the joinery

The Anodising Process

The anodising process involves passing a controlled electric current through extruded aluminium that is immersed in an acid solution. This forms a protective anodic film on the surface. The thickness of the anodic layer produced affects its anti-corrosion performance and longevity: the thicker the oxide layer produced, the better the corrosion resistance. Thickness is selected based on environmental conditions for the end use of the product, this ensure the performance and longevity of the coating. Thinner coatings are used for internal applications and thicker coatings are used in marine and industrial applications (refer corrosion zone map).

Benefits of Anodised Aluminium Joinery

- Durable and weather-resistant
- Extremely hard and will not flake or chip off
- Has an even film thickness, even around sharp edges
- Cost-efficient over its lifetime
- A selection of fade-resistant colours is available for exteriors
- Deep metallic appearance as the coating is translucent revealing the base metal beneath the coating
- Excellent UV resistance
- Anti Graffiti – paint is easily removed from anodised finishes – refer to the 'Maintenance of Anodising' for cleaning solution guidance

Durability

The natural beauty and luster of anodised aluminium can be maintained for the lifetime of the product with proper maintenance. Accumulated dirt and grime retains contaminated moisture, which can attack the surface and damage the coating, so it's important to follow the maintenance instructions and keep your anodised aluminium clean.

Choosing Colours and Textures

The natural colour of anodised aluminium is silver, but by adding additional processing steps a standard range of shades can be achieved. In window joinery, the range starts off with a light bronze, and deepens through to medium and dark bronze, and on to black.

Anodising can highlight naturally occurring grain in the surface of the aluminium, not unlike timber or stone. This grain affects the way the surface refracts light and can lead to minor shade variation on the surface of the component. The Matt Etch finish will minimise this shade variation. However, this will not affect the performance or durability of the joinery itself.

Colour Matching

Anodising is a batch process. Batch to batch colour uniformity cannot be guaranteed. It is important to note that the colour matching of retrofit products, or metal ordered at different times (in stages) and in some cases metal of different sizes and thickness may not result in an exact match.

Natural (Silver) is available in both Standard Anodising and Matt Etch Anodising. The remainder of colour finishes are available in Matt Etch.

Standard Anodising

Standard Anodising features a more natural finish allowing the surface to showcase natural die & flow lines. This gives a clean, but less refined industrial look and finish.

What is Standard Anodising?

Standard Anodising utilises a chemical process to produce a bright surface finish.

Why Use Standard Anodising?

Standard Anodising has a very hard finish, has a high resistance to salt and is less prone to scratching. The standard process produces a natural, more industrial and brighter finish.

Matt Etch Anodising

Matt Etch delivers improved surface consistency, ideal for minimising naturally occurring die & flow lines and maintaining a consistent finish.

What is Matt Etch?

Also referred to as Smooth Etch, Fine Etch, High Aluminium Caustic Etch or Acid Etch, it utilises a chemical pre-treatment process to produce a superior matt surface finish.

Why Use Matt Etch?

Matt Etch produces better surface consistency than standard anodising and unlike Bead Blasting, does not risk physically deforming the surface of the product.

The Matt Etch process reduces visual imperfections such as die and flow lines.

Key Benefits of Matt Etch:

- Increased surface consistency
- Reduced appearance of die and flow lines
- Low Sheen matt finish

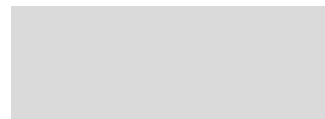
Matt Etch Technical Details

Matt Etch is performed in the etching process prior to anodising. Matt Etch smooths surface imperfections such as extrusion lines, producing a more uniform appearance as well as changing the bright surface to a matt finish.

Matt Etch Surface Topography

- Matt Etch anodising features a significantly more consistent surface topography compared to standard anodising
- Surface roughness tests show Matt Etch anodising produces a more consistent surface roughness

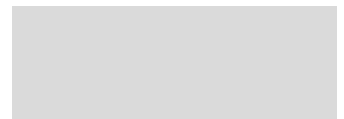
Standard Anodising comes in one colour finish:



Natural - Standard

- 12 Micron (450)
- 20 Micron (452)
- 25 Micron (453)

Matt Etch comes in a range of colour finishes:



Natural - Matt Etch

- 12 Micron (454)
- 20 Micron (455)
- 25 Micron (456)



Light Bronze - Matt Etch

- 12 Micron (457)
- 20 Micron (458)
- 25 Micron (459)



Medium Bronze - Matt Etch

- 12 Micron (460)
- 20 Micron (461)
- 25 Micron (462)



Dark Bronze - Matt Etch

- 20 Micron (468)
- 25 Micron (469)



Black - Matt Etch

- 20 Micron (470)
- 25 Micron (471)

Colours are indicative only

Visual Inspection

- Inspection of anodised product shall be performed at a distance of not less than two meters
 - Your Altus Industrial representative shall agree and document the acceptable variations in the finished work by reference to a range of standard samples – Ask your Altus Industrial representative to see a sample range of colours
 - Indicative variations may include, but are not limited to; colour variation, brightness and die & flow lines
- NOTE 1. It is sometimes possible to observe, on close inspection or from certain viewing angles, variations in colour, brightness, banding, streaking and other visual effects on the significant surfaces. These seldom impair the performance of the anodised aluminium and, as such, are not grounds for rejecting the product on an aesthetic or performance basis
- NOTE 2. The provision of colour samples is a useful guide in selecting colour, but it should be recognized that they are of limited value in assessing final appearance, since different forms and sizes of material may respond to the anodising process in slightly different ways
- NOTE 3. The metal composition, surface texture, as well as the viewing angle, will exert a profound effect on the subjective impression of colour. **Exact matching of adjacent hardware and components is not guaranteed**

Maintenance of Anodising

As with all anodising, some deterioration of the anodic oxide coating may occur, mainly as a result of grime deposition and subsequent attack by moisture, particularly if the moisture is contaminated with sulphur compounds.

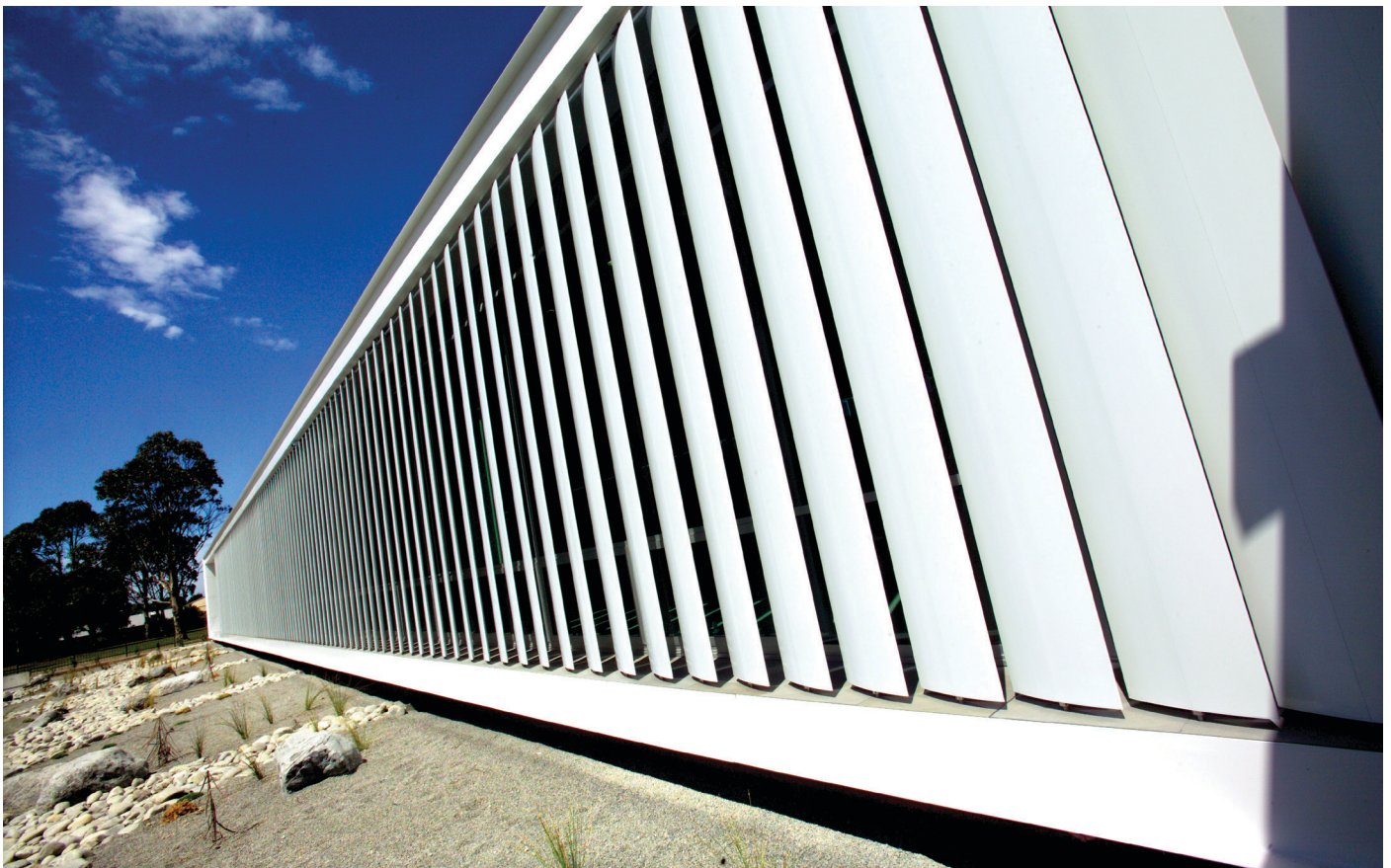
Regular cleaning is essential to preserve the finish of anodised aluminium over a long period.

- Anodised aluminium should be washed with warm water and suitable wetting agent or mild soap. A fine brush may be used to loosen dirt or grime. The use of anything more abrasive, for example; wire brush, steel wool and emery paper are not recommended under any circumstances as they may result in damage to the surface. Once Scratched, anodised metal will not easily buff out
- Strong acids, for example; Hydrochloric, Acetic, etc. or alkali cleaners should not be used as these will damage anodic films
- Do not allow mortar or mortar cleaning chemicals to come into contact with anodised surfaces
- Do not allow strong alkalis such as caustic soda, lime etc. to come into contact with anodised aluminium
- Do not allow Brass or Copper to come into direct contact or close proximity to anodising aluminum
- Where greasy deposits or hard to remove grime is present, a soft cloth dipped in white spirit, turpentine, kerosene, or a mild liquid scourer may be used, followed by wiping with a dry rag - Note: All solvents must be kept from contact with the vinyl glazing gasket materials, as most solvents damage glazing gaskets (the "rubber" seal around the glass)

It is essential to rinse anodised aluminium thoroughly with copious applications of clean water after cleaning, particularly where crevices are present and then dry the glass to avoid any marks developing. Regular washing of your anodised aluminium will ensure a long lasting product. In general, the following programme is recommended:

- Rural: Every six months
- Urban: Every three months
- Industrial and Marine Environments: (With-in 1km of the sea): Three monthly warm water detergent wash, as well as monthly cold water washing

For additional protection, waxing with a good quality car wax after washing will assist in lifting and maintaining the appearance of your anodised surface.



Anodising Warranty

Altus anodising complies with the Window & Glass Association of New Zealand (WGANZ) specification for Anodic Oxide Coatings on Wrought Aluminium for External Architectural Applications anodising standard SFA 3502-03: 2005 specifically for New Zealand conditions, 2004 (revised 2005).

- Reference: <https://www.wganz.org.nz/industry-standards/>

12 Micron: Altus offer a 10 year anodising warranty on all Altus Extrusion and Joinery with a film thickness of 12 microns.

20 & 25 Micron: Altus offer a 15 year anodising warranty on all Altus Extrusion and Joinery with a film thickness of 20-25 microns.

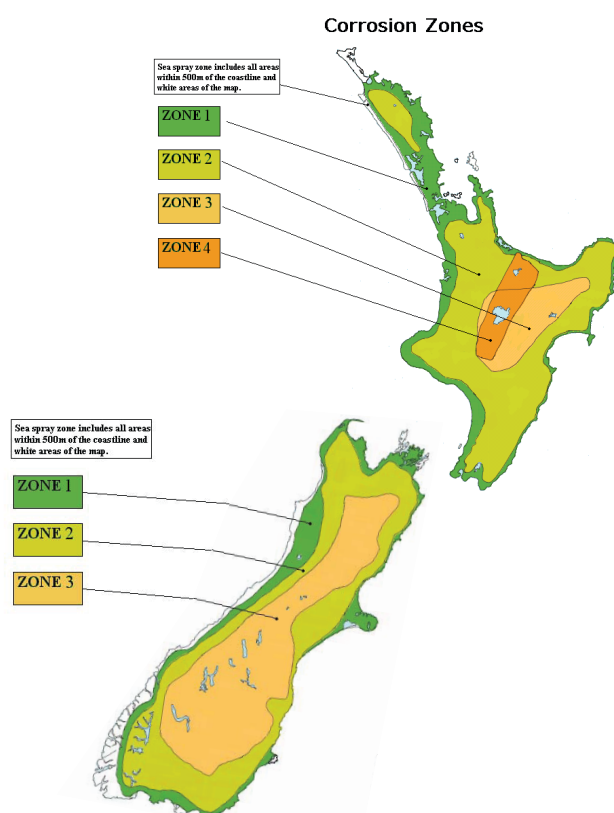
The above warranties are valid if instructions on maintenance are followed and the following conditions are met:

- Warranty applies to joinery in a Residential or Commercial environment
- Regular maintenance of joinery as per instructions outlined on this document
- This warranty applies to Altus standard colours; Natural (silver), Light Bronze, Medium Bronze, Dark Bronze and Black. It excludes special colours which can be affected by ultraviolet light colour degradation in some environments
- This warranty applies to Altus standard metal surface finishes; Standard, Matt Etch (also known as Acid Etch & Smooth Etch), Sheer (also known as bead blast)

Altus will not accept any claim for loss or damage caused by the failure to follow the current instructions on use and maintenance.

Minimum Coating Thickness Recommendations

NZS 3604 Corrosion Zone		Minimum Thickness Microns	Suggested Thickness Microns
Sea Spray Zone	Typically within 500m of the sea or within 100m of tidal estuaries. Predominantly the West coast of the South Island and the West coast of the top half of the North Island. This zone also includes all off shore islands.	25	25
Zone 1	Coastal areas that are not deemed "Sea Spray" but are still close to the coast, this includes most of Auckland.	20	25
Zone 2	Inland Coastal areas that would normally lie between Coastal and hill country.	12	20
Zone 3	Inland New Zealand, typically hill country where rainfall is plentiful.	12	12
Zone 4	Geothermal areas. Other areas to be included in this zone would be, Swimming pools/Polluted and high corrosion risk areas.	25	25
Notes			
Zone 1	All exterior Black minimum 20 micron - application specific.	20	25
Zone 2	All Bright Anodised maximum 20 micron to avoid dulling of finish.	12	Application specific



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