

Worth doing, Worth Dulux.®

Dulux Powder Coatings are an ideal choice for the long term protection of architectural aluminium items for your next project and provide assurance through the issue of Alumi Shield™ warranties.



The project: The Wine House, Orewa, New Zealand.
 Company Name: Crosson Architects
 Photo credit: Mark Scowan
 2019 Dulux Colour Awards
 Finalist: Commercial and Multi Residential Exterior

Suitable substrates

Dulux Alumi Shield™ warranties are available for architectural aluminium applications, including perforated and expanded aluminium, on approved specifications when applied by a Dulux Accredited or Dulux Prime Accredited Powder Coater to the warranty specification for the following project types:

	NON-HABITABLE	RESIDENTIAL <4 LEVELS	RESIDENTIAL >3 LEVELS	LIGHT COMMERCIAL <4 LEVELS	COMMERCIAL >3 LEVELS	PRESTIGIOUS COMMERCIAL	MONUMENTAL
INTERIOR	•	•	•	•	•	•	•
EXTERIOR	•	•	•	•	•	•	•

- Non-habitable projects are those that are not dwelling types. Examples can be furniture, bus shelters, signage etc.
- Residential properties < 4 levels are typically easy to maintain, given their height and access.
- Light commercial projects <4 levels are sheltered from neighbouring buildings, but require greater durability due to higher usage and wear.
- High-rise residential and commercial projects are less sheltered from neighbouring buildings, raising their exposure and reducing their ease of maintenance.
- Prestigious commercial projects attract attention and require high quality finishes to uphold the longevity and design requirements.
- Monumental projects attract the most attention and have the highest standards required to uphold the reputation and protection expected from landmark sites.

Warranty benefits

A Dulux Alumi Shield™ warranty is made up of two key components, a colour warranty (for fade and chalking) and a durability warranty (film integrity).

Durability Warranty	Colour Warranty
<p>The Alumi Shield™ Durability warranty is your assurance of film integrity. The powder coating will not peel, crack or flake for the warranty period from the date the product is applied to the metal.</p>	<p>The Alumi Shield™ Colour warranty is your assurance that the colour integrity will be maintained. It is made up of two components:</p> <ul style="list-style-type: none"> • Fade¹ • Chalk²

Terms and conditions apply

- Dulux Alumi Shield™ warranties are your assurance that the coating will not:
 - Fade** – Colour fade testing will give a delta E (Hunter) laboratory reading less than five units from the original colour in accordance with ASTM D2244.
 - Chalk** – Not exceed a rating of 2 for whites & pastels and a rating of 3 for deep colours as assessed in accordance with AS1580.481.1.11 test method.
- The Alumi Shield™ durability warranty is your assurance the powder coating won't peel, crack or flake for the warranty period from the date the product is applied to the metal.
- Warranties are only valid when applied by a Dulux Accredited or Dulux Prime Accredited Powder Coater to the warranty specification on recommended project types and conditions.

All Dulux premium powder coat products are backed by product specific Alumi Shield™ warranties. Below is an overview of the warranty periods by product available from Dulux

	Warranty	Fluoraset	Electro	Duratec	Duralloy
Alumi Shield™ Warranty	Aluminium Durability	35 Years	25 Years	25 Years	10 Years
	Aluminium Colour	30 Years	15 Years	20 Years*	10 Years

*Excludes Intensity – 15 Years.

Important design considerations

Dulux Alumi Shield™ warranties are available on a wide range of fabricated architectural aluminium items, but those items must be designed, prepared (pre-treated), coated, fabricated and installed to standard ensuring that the item is fully protected.

It is essential that any item that is coated must be designed and fabricated to ensure:

- **It meets key standards** – Refer to AS 2312.1 and the relevant building code.
- **Protection is a key consideration at the early stages of design** – The design should allow the item to be prepared for coating correctly and that the minimum thickness of the specified coating can be achieved.
- **Sealed areas are appropriately sealed to last the duration of the warranty** – It is essential that the choice of other materials that contribute to protection such as sealants should be made to ensure that a Alumi Shield™ warranty is not void due to the sealants failure. This is important if only one side of a section of metal is to be coated, it must be in a sealed environment, i.e. not exposed to moisture, air and excessive heat. Should the seal fail, and a claim is made this warranty will be void as the integrity of the seal is not the responsibility of Dulux.
- **The following design elements are avoided** – Narrow crevices, poor air circulation, depressions, sharp edges and corners, large flat ledges (not window ledges), intermittent welding, undrained flat surfaces, unsealed hollow sections, flat surfaces in loose contact where moisture may be drawn in between them by capillary action or where water and foreign matter will lodge, as these areas may result in premature failure of the coating system.
- **Failure caused by post formed or post fabrication processes are avoided** – Please be aware warranties shall not apply to areas where a failure is caused from post formed or post fabrication processes, such as metal perforation, welding or any other circumstances beyond the reasonable control of Dulux. Many post fabrication processes can impede achievement of a continuous layer of pre-treatment and the minimum film build of powder coating. Where there is doubt please consult the relevant guideline or regulation such as the building code or window association for information on mitigating any potential damage that could be caused by post fabrication processes.

Please refer to our warranty examples where you can review all terms and conditions. These are available by calling **0800 800 975** or visiting duluxpowders.co.nz

Project suitability

It is important to define your project correctly to ensure the correct standard of product is specified and the performance and warranty is able to be gained for your project.

Product suitability by project

Use the following table to help identify the product choice you have to gain an Alumi Shield™ warranty on your project. Refer to the conditions information to determine the environment that your project will be exposed to.

Project, Environment and Conditions			Top Coat Choice							
Project Type	Environment	Conditions	Fluoraset ¹		Electro ²		Duratec ²		Duralloy ³	
			Durability Warranty	Colour Warranty	Durability Warranty	Colour Warranty	Durability Warranty	Colour Warranty	Durability Warranty	Colour Warranty
Monumental	Exterior	Mild, Severe	35 Years	30 Years	-	-	-	-	-	-
Prestigious Commercial	Exterior	Mild, Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Commercial Developments (>3 Levels)	Exterior	Mild, Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Light Commercial Developments (< 4 Levels)	Exterior	Mild, Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Residential (>3 levels)	Exterior	Mild, Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Residential (<4 levels)	Exterior	Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Residential (<4 levels)	Exterior	Mild	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	10 Years	10 Years
Non Habitable	Exterior	Severe	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
Non Habitable	Exterior	Mild	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	10 Years	10 Years
All Projects	Interior	Moderate Interior	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	-	-
All Projects	Interior	General Interior	35 Years	30 Years	25 Years	15 years	25 Years	20 Years*	10 Years	10 Years

*Duratec Intensity – Colour Warranty 15 Years

Alumi Shield™ warranties

Alumi Shield™ warranties are available, in line with the following stipulations:

- Alumi Shield™ warranties are available when applied by a Dulux Accredited or Dulux Prime Accredited Powder Coater to the warranty specification on recommended project types and conditions
- All Dulux powder products are NOT suitable in strongly acidic or caustic environments, so the pH must be between 5 and 9.

Impact of distance to the sea

1. Fluoraset may be suitable in locations <10m from the high tide line e.g. harbours (contact Dulux for advice).
2. Electro and Duratec are only suitable for environments >10m from the high tide line.
3. Duralloy is only suitable for environments >100m from the high tide line.

Perforated and expanded aluminium

Alumi Shield™ Warranties on perforated and expanded aluminium are available for products recommended for the indicated projects, environments and conditions above. Powder Primers may be necessary as detailed below:

- a. **Interior** – General interior conditions (E-Prime/Grey Primer base coat not mandatory); Moderate Interior (E-Prime/Grey Primer base coat mandatory).
- b. **Exterior** – Mild (E-Prime/Grey Primer base coat not mandatory); Severe: (E-Prime/Grey Primer basecoat mandatory).

Other considerations

All Dulux powder products are NOT suitable in strongly acidic or caustic environments so the pH must be between 5 and 9.

Please refer to interior and exterior environments close to liquids considerations on page 6 for warranty implications where powder coatings may be in close proximity to liquids other than the sea.

Please refer to Geothermal considerations on page 6 for warranty implications.

Conditions

Use the following table which references AS 2312.1, SNZ TS 3404 and ISO 9223 to identify the environment, conditions and atmospheric corrosivity categories. To pinpoint your projects corrosivity zone this table should be used together with the Dulux Macroclimate Corrosivity Zone Maps of New Zealand Guide available at duluxpowders.co.nz

Environment	Conditions	Corrosivity Zone	Aluminium Corrosion Rate (g/m ²) ⁴	Example Environments
Exterior Environment	Mild	C2 Low	≤ 0.6	Arid, dry, urban, inland, city
		C3 Medium	0.6 – ≤ 2.0	Light Industrial, geothermal (>500m from source) ¹ and inland coastal (mild sea spray zone)
	Severe	C4 High	2 – ≤5	Sea shore (medium sea spray zone), offshore Islands ³ and or geothermal (<500m from source) ²
		C5 Very High Marine & Industrial	5 – ≤10	Sea shore (high sea spray zone e.g. surf), offshore Islands ³ and heavy industrial

Environment	Conditions	Corrosivity Zone	Aluminium Corrosion Rate (g/m ²) ⁴	Example Environments
Interior Environment	General Interior	C1 Very Low	Negligible	Dry interiors (homes, offices, shops)
		C2 Low	≤ 0.6	Minor condensation (warehouses, sports halls)
	Moderate Interior	C3 Medium	0.6 – ≤ 2.0	High moisture (dairy and food processing plants, breweries, and commercial laundries)
		C4 High	2 – ≤5	Significant contamination (swimming pools)

1. Geothermal environments greater than 500m of a bore, mud pool, steam vent, or other source with a pH between 5 and 9. For a pH outside this consult Dulux.
2. Geothermal hot spots within 500m of a bore, mud pool, steam vent, or other source.
3. All offshore islands including Waiheke Island, Stewart Island, Fraser Island and Pacific islands e.g. PNG, Fiji, Samoa, Tonga, Tahiti, Noumea

4. The corrosion rates for the first year of exposure for the different corrosivity categories of aluminium are determined by the following standard:
 - ISO 9223 - Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation.

For more information about specifications call our Advice line on 0800 800 975 or visit duluxpowders.co.nz

Important warranty considerations

Your warranty can also be impacted by its proximity to liquids other than the sea and geothermal environments whilst a regular care and maintenance program must be implemented for warranty compliance.

Interior and exterior environments close to liquids other than the sea

For powder coated assets close to liquids other than the sea, e.g. fences near swimming pools, fountains, bathrooms or furniture etc. Please refer to the guidance below for your product choice and to understand the warranty limitations in these environments.

	Chemically Treated ¹	Clean Tap, Fresh or Potable Water	Salt Water ¹	Other
Fluoraset	◆	●	◆	Seek advice from Dulux Call 0800 800 975
Electro	◆	●	◆	
Duratec	◆	●	◆	
Duralloy	○	●	✓	

1. Aggressive liquids such as chemically treated liquids and salt water must be cleaned off immediately as per the Dulux Care and Maintenance guide.

Please note chemically treated water includes antimicrobial treatments, e.g. in pools, anti-corrosive chemicals, and soapy water in bathrooms and showers.

◆ Where indicated Alumi Shield™ warranties are available on areas >than 1m from the liquid.

✓ Where indicated Alumi Shield™ warranties are available on areas >than 2m from the liquid (i.e. outside the splash zone).

○ Where indicated Alumi Shield™ warranties are available on areas >1m from the liquid on interior applications and >2m on exterior applications.

● Where indicated Alumi Shield™ warranties are available any distance from the liquid.

All Dulux powder products are NOT suitable in strongly acidic or caustic environments so the pH must be between 5 and 9.

Alumi Shield™ warranties are not available if the powder coating is immersed in any liquid.

Geothermal considerations

For powder coated assets close to geothermal zones, the choice of product is dependent on the level of geothermal activity and specifically the distance from the geothermal source. For those close to geothermal activity (within 500m of the source) powder coating products that are super durable or ultra-durable can be considered. For areas that are more than 500 metres beyond the geothermal source (such as Sulphur Bay, Rotorua), and have been assessed using the smell test as having minimal or non-existent geothermal influence, the standard corrosion zones or categories apply based on distance from the sea apply and other factors.

* Distance to Geothermal Environment	Fluoraset	Duratec	Electro	Duralloy
Less than 500m from source	✓	✓	✓	✗
Greater than 500m from source	✓	✓	✓	✓

* Distance from bore, mud pool, steam vent, or other source with a pH between 5 and 9. For a pH outside this consult Dulux.

Care and maintenance

Care and maintenance is essential for warranty compliance

To ensure the life of your asset is maximised and to comply with Dulux Alumi Shield™ and Steel Shield™ warranty requirements, a simple and regular maintenance program must be implemented and recorded in line with the Dulux Care and Maintenance of Powder Coated Surfaces brochure.

For more information refer to the Dulux Care and Maintenance of Powder Coated Surfaces brochure visit duluxpowders.co.nz/tech-advice



Technical requirements for Alumi Shield™ warranty

AAMA Standards

With over 50 years of experience, the AAMA (American Architectural Manufacturer's Association) is regarded as the standards leader for finishes on architectural aluminium. The AAMA objective is to develop and improve quality standards, encourage research & development and set benchmarks for product performance of architectural products. For finishing of architectural aluminium, Dulux recommend three internationally recognised AAMA standards, AAMA 2603, 2604 and 2605 for projects types across NZ Building Code Classifications.

Project, Environment and Conditions			AAMA Standard		
Project Type	Environment	Conditions	AAMA 2605	AAMA 2604	AAMA 2603
Monumental	Exterior	Mild, Severe	●		
Prestigious Commercial	Exterior	Mild, Severe	●	●	
Commercial Developments (>3 Levels)	Exterior	Mild, Severe	●	●	
Light Commercial Developments (< 4 Levels)	Exterior	Mild, Severe	●	●	
Residential (>3 levels)	Exterior	Mild, Severe	●	●	
Residential (<4 levels)	Exterior	Severe	●	●	
Residential (<4 levels)	Exterior	Mild	●	●	●
Non Habitable	Exterior	Severe	●	●	
Non Habitable	Exterior	Mild	●	●	●
All Projects	Interior	Moderate Interior	●	●	
All Projects	Interior	General Interior	●	●	●

Specifying powder coatings that comply with one of the AAMA standards removes all doubt for the fabricator and applicator. The standards spell out the level of both colour performance and film properties required. The Dulux powder coating products that meet or exceed these standards are shown below.

	Fluoraset	Electro	Duratec	Duralloy
AAMA 2605	●			
AAMA 2604	●	●	●	
AAMA 2603	●	●	●	●
Coating Type	Ultra Durable Fluoropolymer	Super Durable Polyester	Super Durable Polyester	Durable Polyester

Dulux Accredited Powder Coaters

Only Dulux Accredited and Dulux Prime Accredited Powder Coaters are able to issue our Dulux Alumi Shield™ warranties after demonstrating their capability to meet stringent quality conditions and international standards. Warranties are only valid when applied by a Dulux Accredited or Dulux Prime Accredited Powder Coater to the warranty specification on recommended projects, and subject to specified warranty terms and conditions.



For more information visit duluxpowders.co.nz/accredited

Advice line

Our dedicated consultants can help simplify the specification process, saving you time and money by providing the right coating advice for your project. They can provide:

- Documented project specific specifications
- Written confirmation of your project's eligibility for an Alumi Shield™ warranty
- Design, coating system and colour advice

Call 0800 800 975 or visit duluxpowders.co.nz

Offices

New Zealand

Dulux Powder Coatings
31B Hillside Road
Glenfield, Auckland 0627
T (64) 4 896 0911

Australia

Dulux Powder Coatings
1-15 Pound Road West
Dandenong South VIC 3175
T (61) 3 8787 4500

Singapore

DGL International Powder Coatings
100 Pasir Panjang Road
#02-10, Singapore 118518
T (65) 6 8381 010

China

DGL International Powder Coatings
Room 406, No.8, Lane 1977, JinShaJiang Road
Shanghai, China, PC 200333
T (86) 21 6173 8800

