

Dulux Powder Coatings Crystal Clear Industrial Range

NZ_DP02755

Product Code	904-Line Crystal Clear finish
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Description

The Crystal Clear industrial powdercoat range is a collection of clear finishes available in gloss and matt, designed for interior and exterior usage on a multitude of non-architectural projects as a single coat or as a top coat over a solid finish, delivered with tough polyester thermosetting powder.

Ideal for applications over;

- On pre-treated aluminium
- On mild steel, bright/semi bright steel, black steel and blue steel
- It can also be used on Galvanised steel, stainless steel and Zinalume®.

Note: Crystal Clear industrial range is not part of the Dulux Alumi Shield or Steel Shield warranty programs.

Zinalume is a registered trade mark of Bluescope Steel Limited.

Features And Benefits

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| <ul style="list-style-type: none"> • Polyester Thermosetting Powder. • Good flow out • Clear coat finishes in gloss and matt • No solvents or solvent emissions & TGIC free. | <ul style="list-style-type: none"> • Hard wearing finish • Versatile industrial finish for non-architectural projects such as furniture, wheel barrows, bicycles etc. • Suitable for exterior environments greater than 500m from the high tide mark • Recycle via appropriate application reclaim processes. |
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Uses

The Crystal Clear industrial powdercoat range has been developed for use over various substrates including steel and aluminium on interior and non-habitable (architectural) exterior product applications combined with excellent overall performance. Examples include: interior furniture and storage equipment, electrical cabinets other industrial metal products such as bicycles, garden tools, lawn mowers, and automotive components.

The Crystal Clear industrial powdercoat range is suitable for coastal environments >500m from the high tide and is NOT suitable in strongly acidic or caustic environments so the pH must be between 5 and 9.

It is ideal for;

- Exterior projects;
- Non-habitable or Ancillary.

Interior projects;

- Commercial buildings,
- Residential buildings,
- Non-habitable or Ancillary.

*Subject to the environment and condition.

Precautions And Limitations

The Crystal Clear industrial powdercoat range is available in clear gloss and matt finishes which meet Dulux Powder Coatings criteria.

The Crystal Clear industrial powdercoat range is suitable for coastal environments >500m from the high tide and is NOT suitable in strongly acidic or caustic environments so the the pH must be between 5 and 9.

Not recommended for components which are exposed to constant temperatures exceeding 120°C. Powder coated surfaces are not designed to be touched or mechanically abraded above 50°C.

Not recommended for post fabrication processes such as post-forming. Many post fabrication processes can impede achievement of a continuous layer of pre-treatment and the minimum film build of powder coating.

Cutting and drilling must be done with very sharp saws, drills, etc as blunt tools will likely result in chipping. Cutting lubricants must be cleaned off as per the Dulux Care & Maintenance instructions. For more information refer to the Dulux Care and Maintenance brochure available at duluxpowders.co.nz/tech-advice or call 0800 800 975.

IMPORTANT DESIGN CONSIDERATIONS;
It is recommended that any item that is coated should be designed and fabricated using AS 2312.1 and the relevant building code as guides.

The following design elements should be avoided: narrow crevices, poor air circulation, depressions, sharp edges and corners, large flat 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 and contact between dissimilar metals, e.g., with screws, rivets, etc.

Take care if non-metallic substrates are required to be or cannot avoid being powder coated. On these non-metallic surfaces powder coatings may not adequately adhere and the final visual appearance may not be acceptable.

When aluminium and steel items are exposed to interior and exterior environments it is essential that should only one side of a section of metal be coated, it must be in a sealed environment, i.e., not exposed to moisture, air and excessive heat.

Performance Guide

Exterior Durability	Reasonable resistance to weathering.	Salt	Good salt spray corrosion resistance over pre-treated aluminium (500 hours according to ASTM B117).
Heat Resistance	Good resistance to 120°C continuous service conditions. Surfaces are not designed to be touched or mechanically abraded above approximately 50°C.	Solvent	Resistant to methylated spirits and isopropyl alcohol.
Acid	Avoid contact.	Alkali	Avoid contact.

Typical Properties			
Gloss Level	Visual Gloss - due to reflective impact of substrate on gloss meters.	Coverage	8 - 10m ² /kg corresponds to 80µm cured film thickness when fully reclaiming over sprayed powder in accordance with Dulux recommendations.
Shelf Life	2 years from date of manufacture if stored at < 25 °C in dry conditions.	V.O.C Level	Not formulated with Volatile Organic Compound (VOCs).
Colour	Clear gloss and matt finishes are available. Call 0800 800 975 for more information.	Film Build (microns)	Recommended 80µm, range 60-120µm.
Clean Up	Dust or vacuum loose powder. Avoid use of compressed air.	Application Method	Electrostatic Spray.
Specific Gravity	1.2 - 1.3.	Flexibility	< 9Nm (< 80 in/lb) by direct impact with a 3mm substrate deformation.
Pencil Hardness	Min H - no rupture of film per ASTM D3363.	Cross Hatch Adhesion	No removal
Chemical Resistance	<p>Methylated Spirits Good resistance.</p> <p>Isopropyl Alcohol Good resistance.</p> <p>Acid Avoid contact.</p> <p>Alkali Avoid contact.</p> <p>Stronger Solvents Avoid contact with, for example white spirits, mineral turpentine and kerosene etc.</p>		
Cure Schedule	Metal Temperature (°C)	Time (minutes)	Comments
	210	8 mins minimum	Metal temperature (matt product).
	200	10 mins minimum	Metal temperature (matt product).
	190	15 mins minimum	Metal temperature (matt product).
	200	5 mins minimum	Metal temperature (gloss product).
	180	8 mins minimum	Metal temperature (gloss product).
	175	10 mins minimum	Metal temperature (gloss product).

Application Guide

<p>Surface Preparation</p>	<ul style="list-style-type: none"> ▪ PREPARATION FOR ALUMINIUM SUBSTRATES <p>Etch;</p> <ul style="list-style-type: none"> • The etch process is an important stage of pre-treatment and close consultation with your pre-treatment supplier is strongly recommended to ensure optimum adhesion & corrosion resistance is obtained. • Etch rates must be a minimum of 1gm/m². <p>Chrome Conversion Coatings;</p> <ul style="list-style-type: none"> • Chrome conversion weights must be a minimum of 431mg/m². <p>Chrome-free conversion coatings;</p> <ul style="list-style-type: none"> • Chrome-free - refer to your pre-treatment supplier as currently no standards address chrome-free. <p>Final Deionised Water Rinse;</p> <ul style="list-style-type: none"> • The conductivity of the final rinse water draining from the aluminium articles must be less than 80 micro Siemens/cm² at 20°C. <p>Post rinse dry off temperature - consult your pre-treatment supplier but generally;</p> <ul style="list-style-type: none"> • < 75° C for chrome pre-treatment, • < 120° C for chrome-free pre-treatment. <p>Pre-treated aluminium must be handled very carefully with clean lint-free gloves and powder coated within the time specified by the pre-treatment supplier - this is generally within 16 to 48 hours.</p> <ul style="list-style-type: none"> ▪ PREPARATION FOR STEEL SUBSTRATES <ol style="list-style-type: none"> 1. Wash and degrease all surfaces to be coated in accordance with AS1627.1 with a free-rinsing, neutral/alkaline detergent, in strict accordance with the manufacturer's written instructions and all safety warnings. 2. Wash with fresh potable water and ensure that all soluble salts are removed. Testing if required can be done in accordance with AS 3894.6 for the determination of residual contaminants. 3. Grind all sharp edges with a power tool to a minimum radius of 2mm. 4. Hand or power tool clean welds to AS1627.2 to remove roughness. Remove filings, preferably by vacuum. 5. Abrasive blast clean all steel surfaces to be powder coated in accordance with AS 1627.4 to the visual cleanliness standard of SA 2.5. Use a medium that will generate a surface profile of 35 to 65 microns. In situations where it is not possible to prepare your item on all surfaces as described above, for long term protection against corrosion it is strongly recommended whenever possible, that an alternative substrate such as aluminium be considered. 6. The steel must be coated within 4 hours of blasting and stored in an area which is clean and dry.
<p>Application Procedure And Equipment</p>	<ul style="list-style-type: none"> ▪ APPLICATION <p>Powder must be < 2 years from date of manufacture and stored at < 25 °C in dry conditions. Application is generally by electrostatic spray.</p> <p>Theoretical Coverage rate at recommended film thickness; A coverage rate of 8-10m²/kg corresponds to 80µm cured film thickness assuming minimal loss i.e., over sprayed powder is reclaimed or recycled, sieved and mixed with virgin (fresh) powder under controlled conditions – a general rule of thumb is < 20% of reclaim powder continuously added to the fresh (virgin) powder to maintain a consistent finish. Practical coverage rates will vary due to such factors as method of application and surface profile.</p> <p>Apply with equipment and control systems to enable correct metal pre-treatment and control of the application and stoving.</p> <ol style="list-style-type: none"> 1a) For fluidised bed, ensure uniform fluidisation of powder. Powder found to be compacted may require fluidising for a few minutes prior to coating powder should resemble a rolling motion. 2 Apply by electrostatic spray. 3 Cure as per recommendations outlined above. Air temperatures exceeding 220°C may result in irreversible discolouration & gloss variation and excessive temperatures may result in irreversible damage to the powder coating film. 4 Test for cure of the coating by contact with a drop of PGMEA for 30 seconds. Surface should be wiped dry and left for 60 seconds and then checked for softening. Only slight softening should occur. <ul style="list-style-type: none"> ▪ SPECIFICATIONS <p>Specifications for all approved substrates are available that detail full coatings systems required.</p> <p>For more information about all specifications for aluminium and mild steel substrates call 0800 800 975 or visit duluxpowders.co.nz</p>

Care And Maintenance

PACKAGING PRE INSTALLATION

Attention to packing is essential for powder coaters and fabricators to ensure that all powder coated sections are received in good condition.

When packing powder coated assets, it is recommended that;

- Sections must be adequately cooled prior to packing - the metal temperature must not exceed 40°C on packing.
- Appropriate protective wrapping is recommended prior to packing to avoid damage during transport. It is recommended these are tested prior to use to confirm they are suitable.
- If protective tapes are used, ensure that the tape will remain removable following transport, fabrication and installation and not irreversibly mark or damage the coating. Tapes should be used in accordance with the manufacturer's instructions and only remain in contact for the minimum amount of time. It is recommended these are tested prior to use to confirm they are suitable.
- Packed metal should be kept away from direct sunlight and moisture to avoid coating defects.
- When applying sealants take care to ensure the sealant doesn't come into contact with the powder coating film. If it does it must be immediately cleaned off in accordance with the Dulux Care and Maintenance procedure.

CARE & MAINTENANCE POST INSTALLATION

A SIMPLE AND REGULAR MAINTENANCE PROGRAM MUST BE IMPLEMENTED AND RECORDED IN LINE WITH THE DULUX POWDERS CARE AND MAINTENANCE SCHEDULE TO ENSURE THE LIFE OF YOUR ASSET IS MAXIMISED.

It is important that architects, specifiers, powder coaters, fabricators, manufacturers and builders ensure they reinforce this message to the end asset owner.

For more information refer to the Dulux Care and Maintenance brochure available at duluxpowders.co.nz/tech-advice or call 0800 800 975.

Health And Safety

MSDS Number	DLXNZLEN001380 (non-hazardous) DLXNZLEN001381 (hazardous)	Safety Precautions	The SDS is an integral part of using this product as it contains information on the potential health effect of exposure, personal protective equipment needed and other relevant SH&E information. For detailed information, refer to product label and the current Safety Data Sheet available at duluxpowders.co.nz or call 0800 800 975.
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In the case of emergency, please call 0800 734 607

Transport And Storage

Package Weight	15 Kg.	Shipment Name	Not classified as dangerous goods in Australia or NZ according to the SDS.
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