

## Dulux Powder Coatings Duralloy®+Plus Solid Colour Range

NZ\_DP02746

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| <b>Product Code</b> | 20S-Line Solid Colours  |
| <b>Approval</b>     | Architectural Aluminium Standards; Meets or typically exceeds AS3715, AAMA2604   Classification of fire performance for the Duralloy®+Plus Solid Colour Range has a Group Number Classification of 1 according to the National Construction Code (NCC) Volume One Specifications C1.10 of the Building Code of Australia (BCA) and a Group Number Classification of 1-S according to the NZ Building Code (NZBC) Verification Method C/VM2 Appendix A: Establishing Group Numbers for lining materials. |

### Description

The Duralloy®+Plus Solid Colour Range is a collection of popular solid colours, delivered with warranty grade\* advanced highly durable polyester thermosetting powder.

Ideal for warranty grade applications over;

- Architectural aluminium including perforated and expanded aluminium,
- Steel (mild), bright/semi bright steel, black steel and blue steel.

The Duralloy®+Plus Solid Colour Range can also be used on the following metals but these are not warranted;

- Galvanised steel, stainless steel and Zinalume®.

The Duralloy®+Plus Solid Colour Range is supported by Alumi Shield™ and Steel Shield™ warranties\* when applied by Dulux Accredited and Dulux Prime Accredited Powder Coaters to the warranty specification on recommended project types and conditions.

\*Subject to the terms and conditions of the relevant product warranty. Please contact your local Dulux representative for further details.

#### IMPORTANT INFORMATION - 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:

1. Comply with Dulux Warranty Requirements,
2. 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](http://duluxpowders.co.nz/tech-advice) or call 0800 800 975.

Zinalume is a registered trade mark of Bluescope Steel Limited.

### Features And Benefits

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| <ul style="list-style-type: none"> <li>• Highly Durable Polyester Thermosetting Powder.</li> <li>• Alumi Shield™ Warranty 15 Year Aluminium Durability and 15 Year Aluminium Colour Warranty.</li> <li>• Steel Shield™ Warranty - Up to 10 Year Steel Corrosion Warranty and 15 Year Steel Colour Warranty.</li> <li>• Solid Colour Finish.</li> <li>• No solvents or solvent emissions &amp; TGIC free.</li> <li>• Formulated to meet: AS 3715 and AAMA 2603.</li> </ul> | <ul style="list-style-type: none"> <li>• *Guaranteed performance on appropriately pre-treated aluminium and steel.</li> <li>• Very good colour retention.</li> <li>• Highly durable finish.</li> <li>• Ideal for use on environments greater than 10m from the high tide mark.</li> <li>• Recycle via appropriate application reclaim processes.</li> </ul> |
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### Uses

The Duralloy®+Plus Solid Colour Range has been developed for use on a wide range of metal substrates including, most architectural aluminium applications such as window and door system, louvres, balustrades, sunshades, perforated screen, curtain walls, shop fronts, furniture and shelving.

The Duralloy®+Plus Solid Colour Range is suitable for coastal environments >10m 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:

- Light commercial buildings <4 levels.
- Residential buildings <4 levels.
- Non-habitable or Ancillary.

Interior projects (All NZBC Classifications);

- All commercial buildings,
- All residential buildings,
- Non-habitable or Ancillary.

\*Subject to the terms and conditions of the relevant product warranty.

**Precautions And Limitations**

The Duralloy®+Plus Solid Colour Range is only available in solid colours which meet Dulux Powder Coatings pigmentation criteria. Strong, bold colours may not necessarily meet these criteria and should be referred to Dulux Powder Coatings before specifying.

It is recommended that each project is coated with the same batch of powder by the same applicator and if possible at the same time.

As a result of possible wide application variations and oven curing conditions, some products and colours may show variation between Dulux Powder Coatings prepared samples and production applied material. Therefore, it is the applicator and/or their customer's responsibility to ensure the product conforms to their requirements.

The Duralloy®+Plus Solid Colour Range is suitable for coastal environments >10m from the high tide and is NOT suitable in strongly acidic or caustic environments so 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, zipping for double or triple glazing or punching. Many post fabrication processes can impede achievement of a continuous layer of pre-treatment and the minimum film build of powder coating. 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.

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](http://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 (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 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, e.g., thermal break strips in double or triple glazing. 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. Should the seal fail, and a claim is made for an Alumi Shield™ or Steel Shield™ warranty project this will be void as the integrity of the seal is not the responsibility of Dulux.

**Performance Guide**

|                            |  |                 |  |
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| <b>Exterior Durability</b> | Excellent resistance to weathering, providing extended protection for aluminium.   | <b>Salt</b>     | Excellent salt spray corrosion resistance over pre-treated aluminium (3000 hours according to ASTM B117) and on suitably prepared mild steel (1,500 hours according to ASTM B117) with a Dulux approved 3-coat system. |
| <b>Heat Resistance</b>     | Excellent resistance to 120°C continuous service conditions. Surfaces are not designed to be touched or mechanically abraded above approximately 50°C. | <b>Water</b>    | Excellent resistance to blistering at 38°C/100% humidity for 3000 hours on pre-treated aluminium and 1,000 hours on suitably prepared mild steel with a Dulux approved 3-coat system.                                  |
| <b>Solvent</b>             | Resistant to methylated spirits and isopropyl alcohol.   | <b>Abrasion</b> | Very good resistance to abrasion. Abrasion Coefficient > 20 (ASTM D968 falling sand test method).  |
| <b>Acid</b>                | Resistant to the 15 minute spot test for Muriatic Acid, and 30 minute Nitric Acid test as per AAMA 2604.   | <b>Alkali</b>   | Resistant to spills of dilute alkali at room temperature. Avoid contact.   |

| Typical Properties         |   |                             |   |
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| <b>Gloss Level</b>         | Matt 21-45 at 60°   Satin 46-75 at 60°   Gloss >76 at 60°   | <b>Coverage</b>             | 8 - 10m <sup>2</sup> /kg corresponds to 80µm cured film thickness when fully reclaiming over sprayed powder in accordance with Dulux recommendations.     |
| <b>Shelf Life</b>          | 2 years from date of manufacture if stored at < 25 °C in dry conditions.  | <b>V.O.C Level</b>          | Not formulated with Volatile Organic Compound (VOCs).   |
| <b>Colour</b>              | A limited range of solid stock colours are available. If you cannot find the colour you require Dulux offer a Custom Colour Service. Call 0800 800 975 for more information.  | <b>Film Build (microns)</b> | Recommended 80µm, range 60-120µm. NOTE: For optimum coverage and colour consistency white & light colours require a tighter film build range of 70-100µm. |
| <b>Clean Up</b>            | Dust or vacuum loose powder. Avoid use of compressed air.   | <b>Application Method</b>   | Electrostatic Spray.  |
| <b>Specific Gravity</b>    | 1.3 - 1.7 depending on colour.  | <b>Flexibility</b>          | < 9 Nm (< 80 in/lb) by direct impact with a 3mm substrate deformation.  |
| <b>Pencil Hardness</b>     | Min H - no rupture of film per ASTM D3363.  | <b>Cross Hatch Adhesion</b> | No removal (ref AAMA 2604 test method).   |
| <b>Chemical Resistance</b> | <p><b>Mortar</b> PASS (24 hours Pat test ref. EN 12206-1).</p> <p><b>Methylated Spirits</b> Good resistance.</p> <p><b>Isopropyl Alcohol</b> Good resistance.</p> <p><b>Acid</b> Resistant to dilute acid at ambient temperatures. Avoid contact.</p> <p><b>Alkali</b> Resistant to dilute alkali at ambient temperatures. Avoid contact.</p> <p><b>Stronger Solvents</b> Avoid contact with, for example white spirits, mineral turpentine and kerosene etc.</p> |                             |   |
| <b>Cure Schedule</b>       | <b>Metal Temperature (°C)</b>   | <b>Time (minutes)</b>       | <b>Comments</b>   |
|                            | 210   | 8 mins minimum              | Metal temperature (Matt products).  |
|                            | 200   | 10 mins minimum             | Metal temperature (Matt products).  |
|                            | 190   | 15 mins minimum             | Metal temperature (Matt products).  |
|                            | 210   | 4 mins minimum              | Metal temperature (Gloss & Satin products).   |
|                            | 200   | 5 mins minimum              | Metal temperature (Gloss & Satin products).   |
|                            | 180   | 8 mins minimum              | Metal temperature (Gloss & Satin products).   |

| Application Guide          |  |
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| <b>Surface Preparation</b> | <ul style="list-style-type: none"> <li>• PREPARATION FOR ALUMINIUM SUBSTRATES</li> </ul> <p>Etch;</p> <ul style="list-style-type: none"> <li>• 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 &amp; corrosion resistance is obtained.</li> <li>• Etch rates must be a minimum of 1gm/m<sup>2</sup>.</li> </ul> <p>Chrome Conversion Coatings;</p> <ul style="list-style-type: none"> <li>• Chrome conversion weights must be a minimum of 431mg/m<sup>2</sup>.</li> </ul> <p>Chrome-free conversion coatings;</p> <ul style="list-style-type: none"> <li>• Chrome-free - refer to your pre-treatment supplier as currently no standards address chrome-free.</li> </ul> <p>Final Deionised Water Rinse;</p> <ul style="list-style-type: none"> <li>• The conductivity of the final rinse water draining from the aluminium articles must be less than 80 micro Siemens/cm<sup>2</sup> at 20°C.</li> </ul> <p>Post rinse dry off temperature - consult your pre-treatment supplier but generally;</p> <ul style="list-style-type: none"> <li>• &lt; 75° C for chrome pre-treatment,</li> <li>• &lt; 120° C for chrome-free pre-treatment.</li> </ul> <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> <p>Dulux Accredited and Dulux Prime Accredited Powder Coaters must comply with the metal pre-treatment guidelines set out in the Accredited Alumi Shield™ Manual.</p> <ul style="list-style-type: none"> <li>• PREPARATION FOR STEEL SUBSTRATES</li> </ul> <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. Grind all sharp edges with a power tool to a minimum radius of 2mm.</li> <li>4. Hand or power tool clean welds to AS1627.2 to remove roughness. Remove filings, preferably by vacuum.</li> </ol> |

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|   | <p>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. Failure to suitably prepare your steel substrate may void your Steel Shield™ Warranty.</p> <p>6. The steel must be coated within 4 hours of blasting and stored in an area which is clean and dry.</p> <p>Dulux Accredited and Dulux Prime Accredited Powder Coaters must comply with the metal pre-treatment guidelines set out in the Accredited Steel Shield™ Manual.</p>   |
| <p><b>Application Procedure And Equipment</b></p> | <ul style="list-style-type: none"> <li>▪ APPLICATION</li> </ul> <p>Powder must be &lt; 2 years from date of manufacture and stored at &lt; 25 °C in dry conditions.<br/>Application is generally by electrostatic spray.<br/>Light colours may require a higher minimum film build for optimum coverage and colour consistency.</p> <p>Theoretical Coverage rate at recommended film thickness;<br/>A coverage rate of 8-10m<sup>2</sup>/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 &lt; 20% of reclaim powder continuously added to the fresh (virgin) powder to maintain a consistent finish. Extra care should be taken with reclaiming blended products. Practical coverage rates will vary due to such factors as method of application, surface profile and texture.</p> <p>Apply with equipment and control systems to enable correct metal pre-treatment and control of the application and oven condition. Dulux Accredited and Dulux Prime Accredited Powder Coaters must comply with recommendations as set out in the Accredited Applicator Manuals.</p> <p>1a) For fluidised beds, 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.<br/>1b) Box feeders can be used when spraying bonded pearls and metallic powders, though it is not best practice. Box feeders are not recommended for spraying blended pearls and metallic powders.<br/>2 Apply by electrostatic spray.<br/>3 Cure as per recommendations outlined above. Air temperatures exceeding 220°C may result in irreversible colour &amp; gloss variation in light and bold colours and excessive temperatures may result in irreversible damage to the powder coating film.<br/>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 and minimal colour transfer to test cloth should occur.</p> <ul style="list-style-type: none"> <li>▪ SPECIFICATIONS</li> </ul> <p>Specifications for all approved substrates are available that detail full coatings systems required including where primers are required. These include,</p> <p>On Aluminium;<br/>Powder Primers may be necessary on appropriately pre-treated perforated and expanded aluminium for a Alumi Shield™ Warranty as detailed below;<br/>a. Interior - General Interior conditions (E-Prime™/Grey Primer base coat not mandatory); Moderate Interior (E-Prime™/Grey Primer base coat mandatory).<br/>b. Exterior - Mild (E-Prime™/Grey Primer base coat not mandatory); Severe: (E-Prime™/Grey Primer basecoat mandatory).</p> <p>On Mild Steel,<br/>Powder Primers are required for all Steel Shield™ Warranties on appropriately prepared mild steel substrates as detailed below;<br/>a. In Mild (Medium) exterior and Moderate Interior (medium) environments a 5 year corrosion warranty is available with a Zincshield® and the specified topcoat system.<br/>b. In Mild (Medium) exterior and Moderate Interior (medium) environments a 10 year corrosion warranty is available with a Zincshield®, E-Prime™/Grey Primer and the specified topcoat system.</p> <p>For more information about all specifications for aluminium and mild steel substrates call 0800 800 975 or visit <a href="http://duluxpowders.co.nz">duluxpowders.co.nz</a></p> |

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| <p><b>Care And Maintenance</b></p>  |
| <p><b>PACKAGING PRE INSTALLATION</b><br/>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;</p> <ul style="list-style-type: none"> <li>• Sections must be adequately cooled prior to packing - the metal temperature must not exceed 40°C on packing.</li> <li>• 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.</li> <li>• 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.</li> <li>• Packed metal should be kept away from direct sunlight and moisture to avoid coating defects.</li> </ul> <p><b>CARE &amp; MAINTENANCE POST INSTALLATION</b><br/>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.</p> <p><b>A SIMPLE AND REGULAR MAINTENANCE PROGRAM MUST BE IMPLEMENTED AND RECORDED IN LINE WITH THE DULUX POWDERS CARE AND MAINTENANCE SCHEDULE TO;</b></p> <ol style="list-style-type: none"> <li>1. Comply with Dulux Warranty Requirements,</li> <li>2. Ensure the life of your asset is maximised.</li> </ol> <p>It is important that architects, specifiers, powder coaters, fabricators, manufacturers and builders ensure they reinforce this message to the end asset owner.<br/>For more information refer to the Dulux Care and Maintenance brochure available at <a href="http://duluxpowders.co.nz/tech-advice">duluxpowders.co.nz/tech-advice</a> or call 0800 800 975.</p> |

**Health And Safety**

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| <b>MSDS Number</b>  | DLXNZLEN001560 | <b>Safety Precautions</b> | 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.<br>For detailed information, refer to product label and the current Safety Data Sheet available at <a href="http://duluxpowders.co.nz">duluxpowders.co.nz</a> or call 0800 800 975. |
| <b>In the case of emergency, please call 0800 734 607</b> |                |                           |  |

**Transport And Storage**

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|-----------------------|--------|----------------------|--|
| <b>Package Weight</b> | 20 Kg. | <b>Shipment Name</b> | Not classified as dangerous goods in Australia or NZ according to the SDS. |
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**Images**



For more information visit [duluxpowders.co.nz/accredited](http://duluxpowders.co.nz/accredited)

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