

## Dulux Powder Coatings Armourspray® Anti Graffiti Range

NZ\_DP02729

<b>Product Code</b>	912-Line - solid, pearlescent and clear finishes
<b>Approval</b>	Architectural Aluminium Standards: Meets or typically exceeds AS3715, AAMA2603.

### Description

The Armourspray® anti graffiti range is a collection of solid colours, pearlescent and clear finishes delivered with durable polyurethane thermosetting powder.

Ideal for applications over;

- Architectural aluminium,
- Steel (mild), bright/semi bright steel, black steel and blue steel,
- Galvanised steel, stainless steel and Zinalume®.

#### 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. 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>• Tough durable polyurethane thermosetting powder.</li> <li>• Enables removal of commonly used spraycans and marker pens used for graffiti with widely available removal products.</li> <li>• No solvents or solvent emissions &amp; TGIC free.</li> <li>• Formulated to meet; AS 3715 and AAMA 2603.</li> <li>• Excellent solvent resistance.</li> </ul> | <ul style="list-style-type: none"> <li>• Good colour retention</li> <li>• Durable finish</li> <li>• Allows easy removal of most forms of graffiti</li> <li>• Recycle via appropriate application reclaim processes</li> </ul> |
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### Uses

The Armourspray® anti graffiti range has been developed for use on a wide range of metal substrates including aluminium and steel for applications such as, platform signage, train components, bus shelters, security lockers, telephone boxes, road and general signage, roller shutter doors, transformers, furniture for industry and schools, toilet and shower cubicles, wall partitioning, food court benches, outdoor/street furniture, fixtures and fittings.

Armourspray® 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;

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

Interior projects;

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

**Precautions And Limitations**

The Armour spray® anti graffiti range is only available in solid colours, pearlescent and clear finishes 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.

Powder coatings containing pearlescent/mica and metallic pigments scatter and reflect light in a random way, therefore, exact colour uniformity should not be expected. Some subtle colour and appearance changes should also be expected when viewing in different light, at different angles and from varying distances.

It is recommended that each project is coated with the same batch of powder, by the same applicator, in the same direction, i.e., all vertically or all horizontally and if possible at the same time. This is especially important when large visible areas of a project are powder coated, for example, flat sheets.

As a result of possible wide application variations and stoving 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 Armour spray® anti graffiti range 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. 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, 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, eg. with screws, rivets, etc

Take care if non-metallic substrates are required to be or cannot avoid being powder coated as on these 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**

<b>Exterior Durability</b>	Good resistance to weathering, providing extended protection for aluminium.	<b>Salt</b>	Excellent salt spray corrosion resistance over pre-treated aluminium (3,000 hours according to ASTM B117).
<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 3,000 hours on pre-treated aluminium.
<b>Solvent</b>	Resistant to methylated spirits and isopropyl alcohol.	<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			
<b>Gloss Level</b>	Matt 21-45 at 60°   Satin 46-75 at 60°   Gloss >76 at 60°   Visual gloss - due to reflective impact of pearl on gloss meters.	<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 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: White & light colours may require a higher minimum film build for optimum coverage and colour consistency.
<b>Clean Up</b>	Dust or vacuum loose powder. Avoid use of compressed air	<b>Application Method</b>	Electrostatic Spray.
<b>Specific Gravity</b>	1.2 - 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 2H - no rupture of film per ASTM D3363.	<b>Cross Hatch Adhesion</b>	No removal (ref AAMA 2603 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 prolonged contact with, for example white spirits, mineral turpentine and kerosene etc.</p>		
<b>Cure Schedule</b>	<p><b>Metal Temperature (°C)</b></p> <p>210</p> <p>200</p> <p>195</p>	<p><b>Time (minutes)</b></p> <p>10 mins minimum</p> <p>12 mins minimum</p> <p>15 mins minimum</p>	<p><b>Comments</b></p> <p>Metal temperature.</p> <p>Metal temperature.</p> <p>Metal temperature.</p>

Application Guide	
<b>Surface Preparation</b>	<ul style="list-style-type: none"> <li>▪ PREPARATION FOR ALUMINIUM SUBSTRATES: Etch;  <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 are recommended to be a minimum of 1gm/m<sup>2</sup>.</li> </ul> </li> <li>Chrome Conversion Coatings;  <ul style="list-style-type: none"> <li>• Chrome conversion weights are recommended to be a minimum of 431mg/m<sup>2</sup>.</li> </ul> </li> <li>Non-Chrome conversion coatings;  <ul style="list-style-type: none"> <li>• Chrome-free - refer to your pre-treatment supplier as currently no std's address chrome-free.</li> </ul> </li> <li>Final deionised water rinse;  <ul style="list-style-type: none"> <li>• The conductivity of the final rinse water draining from the aluminium articles is recommended to be less than 80 micro Siemens/cm<sup>2</sup> at 20°C.</li> </ul> </li> <li>Post rinse dry off temperature - consult your pre-treatment supplier but generally;  <ul style="list-style-type: none"> <li>• &lt; 75° C for chrome pre-treatment,</li> <li>• &lt; 120° C for non-chrome pre-treatment.</li> </ul> </li> <li>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.</li> <li>▪ PREPARATION FOR STEEL SUBSTRATES:  <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. Power tool clean welds to AS1627.2 to remove roughness. Remove filings, preferably by vacuum or compressed air.</li> </ol> <ul style="list-style-type: none"> <li>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.</li> <li>6. The steel must be coated within 4 hours of blasting and stored in an area which is clean and dry.</li> </ul> </li> </ul>
<b>Application Procedure And Equipment</b>	<ul style="list-style-type: none"> <li>▪ APPLICATION Powder must be &lt; 2 years from date of manufacture and stored at &lt; 25 °C in dry conditions. Application is generally by electrostatic spray. Light colours may require a higher minimum film build for optimum coverage and colour consistency.</li> <li>Theoretical coverage rate at recommended film thickness: 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.</li> <li>Apply with equipment and control systems to enable correct metal pre-treatment and control of the application and oven curing time and temperatures.  <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>2. Apply by electrostatic spray.</li> <li>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.</li> <li>4. Test for cure of the coating by conducting a 30 MEK double rub within 30 seconds test. The 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.</li> </ol> </li> <li>▪ SPECIFICATIONS Specifications for all approved substrates are available that detail full coatings systems required.</li> <li>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></li> </ul>

**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.

**CARE & MAINTENANCE POST INSTALLATION**

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

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**Health And Safety**

<b>MSDS Number</b>	DLXNZLEN003502	<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. 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
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**In the case of emergency, please call 0800 734 607**

**Transport And Storage**

<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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