

## Dulux Powder Coatings Zincshield® Powder Primer

NZ\_DP02724

<b>Product Code</b>	990-Line Zincshield® Powder Primer
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### Description

Zincshield® Powder Primer is a zinc rich epoxy modified thermosetting powder primer designed to inhibit rust and subsequent adhesion loss on ferrous (steel) metals. It is a key component of the Dulux Steel Shield™ warranty system suitable for use with top coats from the Fluoroseal®, Duratec®, Electro®, Duralloy®, and PG288® ranges.

Ideal for warranty grade applications over:

- Blasted steel (mild), bright/semi bright steel, black steel and blue steel with a specified powder topcoat.

Zincshield® is supported by Steel Shield™ warranties\* when applied by Dulux 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 of the topcoat 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.

### Features And Benefits

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| <ul style="list-style-type: none"> <li>• Excellent corrosion protection.</li> <li>• Steel Shield™ Warranty - Up to 10 Year Steel Corrosion Warranty and Steel Colour Warranty in accordance with the topcoat used.</li> <li>• Excellent film integrity.</li> <li>• No solvents or solvent emissions &amp; TGIC free.</li> <li>• Sacrificial anti-corrosion layer increasing service life of asset.</li> </ul> | <ul style="list-style-type: none"> <li>• Guaranteed performance on appropriately pre-treated steel.</li> <li>• Recycle via appropriate application reclaim processes.</li> </ul> |
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### Uses

Zincshield® Powder Primer has been specifically designed for coatings over ferrous (steel) metals as a sacrificial primer coating that must be overcoated with a suitable powder topcoat.

Suggestions for use include ironwork, street and garden furniture, gas cylinders and tanks, agricultural machinery, transport (trailers), valves, and transformers.

It is ideal as a primer with an appropriately specified topcoat for;

Exterior projects (All NZBC Classifications);

- All commercial buildings,
- All residential buildings,
- 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**

Zincshield® Powder Primer is only available in a grey colour.

As a result of possible wide application variations and stoving conditions Zincshield® Powder Primer 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.

Zincshield® Powder Primer 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.

Severe over-baking may result in intercoat adhesion problems. For optimal intercoat adhesion refer the cure details in the application section of this data sheet.

Not recommended for post fabrication processes such as post-forming 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, eg. 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 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 a Steel Shield™ warranty project this will be void as the integrity of the seal is not the responsibility of Dulux.

**Performance Guide**

<b>Exterior Durability</b>	Zincshield® Powder Primer is not recommended for exterior use without a topcoat. It contains an epoxy component which will chalk on exterior exposure.	<b>Salt</b>	Excellent salt spray corrosion resistance over suitably prepared mild steel (up to 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 1,000 hours on suitably prepared mild steel with a Dulux approved 2 or 3-coat system.
<b>Solvent</b>	Avoid contact.	<b>Acid</b>	Avoid contact.
<b>Alkali</b>	Avoid contact.		

Typical Properties			
<b>Gloss Level</b>	40-50 @ 60°.	<b>Coverage</b>	4-5 m <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>	Grey.	<b>Film Build (microns)</b>	Recommended 80µm, range 60-100µm.
<b>Clean Up</b>	Dust or vacuum loose powder. Avoid use of compressed air.	<b>Application Method</b>	Electrostatic Spray.
<b>Specific Gravity</b>	2.35-2.45.	<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 2604 test method).
<b>Chemical Resistance</b>	<p><b>Methylated Spirits</b> Good resistance.</p> <p><b>Isopropyl Alcohol</b> Good resistance.</p> <p><b>Acid</b> Avoid contact.</p> <p><b>Alkali</b> 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>	<p><b>Metal Temperature (°C) Time (minutes) Comments</b></p> <p>200 10 mins minimum. Metal temperature</p> <p>150 5 mins minimum Metal temperature - GREEN or PARTIAL CURE.</p> <p>When applying subsequent coats of solid and pearlescent solid colours you can partially cure at 150°C for 5 minutes metal temperature. (often referred to as a green cure). You must then fully cure the combined coating system for a minimum of 200°C for 10 minutes metal temperature or the topcoat curing schedule if longer than 10 minutes.</p> <p><b>IMPORTANT NOTE;</b></p> <p>When applying texture, ripple, or hammer topcoats you must fully cure the Zincshield Primer at 200°C for 10 minutes metal temperature. Failure to do so may result in a poorly defined pattern.</p>		

Application Guide	
<b>Surface Preparation</b>	<ul style="list-style-type: none"> <li>▪ PREPARATION FOR STEEL SUBSTRATES</li> <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> <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. Failure to suitably prepare your steel substrate may void your Steel Shield™ Warranty.</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> <p>Dulux Accredited Powder Coaters must comply with the metal pre-treatment guidelines set out in the Accredited Steel Shield™ Manual.</p>
<b>Application Procedure And Equipment</b>	<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. Application is generally by electrostatic spray.</p> <p>Theoretical Coverage rate at recommended film thickness; A coverage rate of 4-5m<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 preparation and control of the application and stoving. Dulux Accredited Powder Coaters must comply with recommendations as set out in the Accredited Applicator Manuals.</p> <p>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. 1b) Box feeders can be used.</p> <p>2 Apply by electrostatic spray.</p> <p>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.</p> <p>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> <p>*Curing It is recommended that Zincshield® is coated within 12 hours due to possible moisture uptake which may adversely impact the adhesion and corrosion resistance of the coating. Top coat is applied within 12 hours; Partially cure Zincshield® for 5 minutes at 150°C metal temperature. This partial cure is referred to as a green cure. Not applicable for effects coatings such as textures and ripples. Green cured metal is prone to chipping/cracking if not handled with care. Ensure green cured metal is protected from mechanical damage caused by unloading/stacking. Once the top coat is applied the cure schedule of Zincshield® must be completed.</p> <p>If the top coat is to be applied after 12 hours; Fully cure Zincshield® for 10 minutes at 200°C metal temperature. Avoid over cure as this may inhibit inter-coat adhesion with the top coat.</p> <p>Zincshield® must be fully cured when over-coating with ripple, textured or other special effect finishes as pattern formation may be affected if Zincshield® is green cured.</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 Mild Steel; Powder Primers are required for all Steel Shield™ Warranties on appropriately prepared mild steel substrates as detailed below; a. In Mild (Medium) exterior and Moderate Interior (medium) environments a 5 year corrosion warranty is available with a Zincshield® and the indicated topcoat system. 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 indicated 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>

**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>	DLXNZLEN001382	<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>	Classified as dangerous goods in Australia or NZ according to the SDS.
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**Images**



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