

Product Code	90E Line
Approval	Architectural Aluminium Standards: Meets or exceeds AS3715, AAMA2604 Classification of fire performance for Duratec Elements™ has a Group 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 Verification Method C/VM2 Appendix A: Establishing Group Numbers for lining materials.

Description

The Duratec Elements™ textured range is a range of distinctive, robust mar-resistant textured finishes built to withstand the elements, delivered with warranty grade advanced super durable polyester thermosetting powder.

Ideal for warranty grade applications over:

- Architectural aluminium including perforated and expanded aluminium

Duratec Elements™ can also be used on the following metals but these are not warranted:

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

Duratec Elements™ is supported by Alumi Shield™ warranties* when applied by a DGL Accredited Powder Coater 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 DGL 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 DGL POWDERS CARE AND MAINTENANCE SCHEDULE TO:

1. Comply with DGL warranty requirements,
2. Ensure the life of your asset is maximised.

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

For more information refer to the DGL Care and Maintenance brochure available at dglpowders.com/tech-advice.

Zinalume is a registered trade mark of Bluescope Steel Limited.

Features And Benefits

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| <ul style="list-style-type: none"> • Super Durable Polyester Thermosetting Powder • Alumi Shield™ warranty - 25 year aluminium durability and 20 year aluminium colour warranty • On trend flat textured finish • No solvents or emissions & TGIC free. • Formulated to meet: AS 3715, AAMA 2603 and AAMA 2604 • Recycle via appropriate application reclaim processes | <ul style="list-style-type: none"> • Guaranteed performance on appropriately pretreated aluminium* • Excellent colour retention • Super durable finish • Ideal for use on environments greater than 10m from the high tide mark • Ideal for areas where additional mar-resistance is critical** • Potential for a reduction in visible damage in transport, fabrication, construction and service life** • Textured pattern helps hide irregularities in substrates • ***The product is designed to reduce the visible mar and scuffing that can happen during transportation, fabrication, onsite during construction and service life when compared to smooth powder coat finishes. |
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Uses

The Duratec Elements™ textured 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 Duratec Elements® textured 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;

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

Interior projects;

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

Precautions And Limitations

The Duratec Elements® textured range is only available in solid and pearlescent colours which meet DGL Powder Coatings pigmentation criteria. Strong, bold colours may not necessarily meet these criteria and should be referred to DGL 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, ie, 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, cladding and perforated and expanded aluminium sheets.

As a result of possible wide application variations and stoving conditions, some products and colours may show variation between DGL 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 Duratec Elements® Textured 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 DGL Care & Maintenance instructions. For more information refer to the DGL Care and Maintenance brochure available at dglpowders.com/techadvice.

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, eg. 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 items are exposed to interior and exterior environments it is essential that should only one side of a section of metal be coated, or if a section is cut exposing the raw metal, they must be sealed to protect the non coated area from the environment, i.e. not exposed to moisture, air and excessive heat. Should the seal fail, and a claim is made for an Alumi Shield™ warranty project the warranty for the area affected will be void as the integrity of the seal is not the responsibility of DGL.

Performance Guide

Exterior Durability	Excellent resistance to weathering, providing extended protection for aluminium.	Salt	Excellent salt spray resistance over pre-treated aluminium. (3,000 hours ASTM B117).
Heat Resistance	Excellent resistance to 120°C continuous service conditions. Surfaces are not designed to be touched or mechanically abraded above 50°C.	Water	Excellent resistance to 38°C/100% humidity for 3,000 hours on pre-treated aluminium.
Solvent	Resistant to methylated spirits and isopropyl alcohol. Avoid contact with, for example white spirits, mineral turpentine and kerosene, etc.	Abrasion	Very good resistance to abrasion. Abrasion Coefficient > 20 (ASTM D968 falling sand test method).
Acid	Resistant to the 15 minute spot test for Muriatic Acid, and 30 minute Nitric Acid test as per AAMA 2604.	Alkali	Resistant to spills of dilute alkali at room temperature. Avoid contact.

Typical Properties			
Gloss Level	Flat 3-11 at 60°	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	A limited range of stocked colour. If you cannot find the colour you require DGL offer a Custom colour service. Visit dglpowders.com		
Meets GBCA VOC Requirement?	N/A		
Film Build (microns)	Recommended 80um, range 80-120µm	Application Method	Electrostatic Spray. When applying Duratec Elements® Textured Pearlescent finishes (as opposed to solid colour finishes) it is recommended reducing the electrostatic charge by reducing the voltage or limiting the current.
Specific Gravity	1.3-1.7 @ colour	Flexibility	< 9 Nm (< 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 (ref AAMA 2604 test method).
Chemical Resistance	<p>Mortar PASS (24 hours Pat test ref. EN 12206-1).</p> <p>Methylated spirits Good resistance.</p> <p>Isopropyl alcohol Good resistance.</p> <p>Acid Resistant to dilute acid at ambient temperatures. Avoid contact.</p> <p>Alkali Resistant to dilute alkali at ambient temperatures. Avoid contact.</p> <p>Stronger solvents Avoid contact with, for example white spirits, mineral turpentine and kerosene etc.</p>		
Cure Schedule	<p>Metal Temperature (°C)</p> <p>210</p> <p>200</p> <p>180</p>	<p>Time (minutes)</p> <p>8 Mins</p> <p>10 Mins</p> <p>15 Mins</p>	<p>Comments</p> <p>Metal temperature</p> <p>Metal temperature</p> <p>Metal temperature</p>

Application Guide	
Surface Preparation	<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 30 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> <p>DGL Accredited Powder Coaters must comply with the metal pre-treatment guidelines set out in the Accredited Alumi Shield Manual.</p> <p>PREPARATION FOR STEEL SUBSTRATES.</p> <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.
Application Procedure And Equipment	<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. Light colours may require a higher minimum film build for optimum coverage and colour consistency.</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. 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 curing conditions. DGL Accredited Powder Coaters must comply with recommendations as set out in the Accredited Applicator Manuals.</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. 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. <ol style="list-style-type: none"> 2 Apply by electrostatic spray. 3 Cure as per recommendations outlined above. Air temperatures exceeding 220°C may result in irreversible colour & gloss variation in light and bold colours 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 and minimal colour transfer to test cloth should occur. <p>SPECIFICATIONS.</p> <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, Powder Primers may be necessary on appropriately pre-treated perforated and expanded aluminium for a Alumi Shield™ Warranty as detailed below;</p> <ol style="list-style-type: none"> a. Interior: General interior conditions (E-Prime™ base coat not mandatory); Moderate interior (E-Prime™ base coat mandatory). b. Exterior: Mild (E-Prime™ base coat not mandatory); Severe: (E-Prime™ base coat mandatory). <p>For more information about all specifications for aluminium and mild steel substrates visit dglpowders.com.</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. Spiral wrapping is industry best practice for transporting over long distances.
- 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.
- Packed metal should be kept away from sunlight or moisture to avoid coating defects.

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Health And Safety

MSDS Number	DLXGHCEN003362	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 on dglpowders.com
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In the case of emergency, please call 1800 033 111

Transport And Storage

Package Weight	20 KG	Shipment Name	Not dangerous goods. No special transport requirement according to the SDS.
Flash Point	N/A	UN Number	N/A
Dangerous Goods Class	N/A	Package Group	N/A

Images



For more information visit duluxpowders.com.au/accruited

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Please note that this document is only valid for 60 days from the date of issue.

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