DuSpec+ Datasheet Brought to you by DGL INTERNATIONAL POWDER COATINGS | PACIFICGOLD™ Powder Coatings

AUDG000P01 Pacific Gold PG900PA Range

Introduction

Product Line **PG900PA**	Finish **Solid Colour, Pearlescent, Metallic and Texture Finishes**
Technology **Highly Durable Polyester**	

Product Overview and Image

The **PG900PA** range is a collection of highly durable solid, pearlescent, metallic and textured finishes delivered with a highly durable polyester thermosetting powder. The range is backed with a Product Guarantee for applications that meet the performance requirements of GB/T 5237.4 - GA40 level I, specifically for all architectural residential projects and light commercial projects (<4 levels) constructed in China.

Ideal for applications over:

- Pre-treated architectural-grade aluminium, including perforated and expanded aluminium.

PG900PA can also be used on the following metals, but these do not have a Product Guarantee.

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

Important

- From the date of application of the product, the Product Guarantee can be provided by DGL to the Powder Coater who powder coats architectural aluminium to the Guarantee specifications and conditions for all residential and light commercial projects (<4 levels) constructed in China. Please contact your DGL representative to access the Product Guarantee.
- Coaters must comply to the application specification detailed in this data sheet and must meet the Product Guarantee Compliance requirements stipulated.

Zincalume® is a registered trademark of Bluescope Steel Limited.

Features and Benefits

- Highly durable polyester thermosetting powder
- A collection of highly durable solid, pearlescent, metallic and texture finishes with 10-year Product Guarantee for color retention and film durability for recommended projects
- Not formulated with VOCs, and no VOCs added
- Meets the performance requirements of GB/T 5237.4 - GA40 level I
- Supported by Product Guarantee from the date of the application of the product
- Ideal for use in environments greater than 10m from the high tide mark
- Recycle via appropriate application reclaim processes

Product Uses

The **PG900PA** solid, pearlescent, metallic and texture colour range has been developed for use on a wide range of metal substrates, including most architectural aluminum applications such as window and door systems, louvres, balustrades, sunshades, perforated screens, curtain walls, shop fronts, furniture, and shelving.

The **PG900PA** solid, pearlescent, metallic and texture 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:

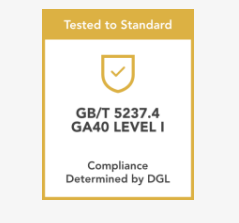
Exterior projects:
- All residential buildings
- Light commercial buildings <4 levels
- Non-habitable

Interior projects:
- All residential buildings
- All commercial buildings
- Non-habitable

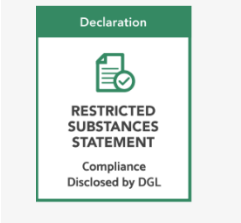
Product Guarantee, Material and Look

For full details on the Product Guarantee, including terms and conditions, visit **dglpowders.com**

Meet Standards



Meets the performance requirements of GB/T 5237.4 - GA40 level I



Complies with China RoHS2.0

Standards and Certifications

For full details on these standards and certifications visit **dglpowders.com/spec-solutions**

Care and Maintenance

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 and 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.

Post installation

Application of sealants

When applying sealants, take care to ensure the sealant doesn't contact with the powder coating film. If it does, it must be immediately cleaned off in accordance with the Pacific Gold Care and Maintenance procedure.

Care and Maintenance Program

A simple and regular care and maintenance program must be implemented and recorded in line with the Pacific Gold Powders Care and Maintenance Schedule to:

1. Comply with PG900PA Product Guarantee 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 Pacific Gold Care and Maintenance brochure available at **dglpowders.com/tech-advice**

Precautions and Limitations

1. Products in this range are only available in solid, pearlescent, metallic and texture colours which meet DGL International Powder Coatings pigmentation criteria. Strong, bold colours may not necessarily meet these criteria and should be referred to DGL International Powder Coatings before specifying.
2. 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 DGL International 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. Note: This is of greatest importance for large flat visible surfaces such as cladding – please refer to **dglpowders.com/spec-solutions** for best advice on coating cladding.
3. 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.
4. 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 guidelines or regulations such as the building code or window association for information on mitigating any potential damage that could be caused by post fabrication processes.
5. 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 Pacific Gold Care & Maintenance instructions. For more information refer to the Pacific Gold Care and Maintenance brochure available at **dglpowders.com/tech-advice** .

Design Considerations

It is recommended that any item that is coated should be designed and fabricated using GB/T 5237.4 and the relevant local 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. Powder coatings may not adequately adhere to these non-metallic surfaces, 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, 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.

Powder Properties

Gloss Level **Matt 21-45 at 60°** **Satin 46-75 at 60°** **Gloss >76 at 60°**	Specific Gravity **1.2 - 1.7 (g/cm³) depending on colour**
Film Build **Recommended 80µm, range 60-120µm. No single point should be below 40 µm. NOTE: For optimum coverage and colour consistency, white & light colours require a tighter film build range of 70-100µm.**	Coverage **8-10m ²/kg corresponds to 80µm cured film thickness when fully reclaiming over sprayed powder in accordance with DGL recommendations.**
Shelf Life **6 months from the date of manufacture if stored at < 25 °C in dry conditions.**	Colour Range **A collection of highly durable solid, pearlescent, metallic and texture colours.**
VOCs (Volatile Organic Compounds) **Not formulated with VOCs, and no VOCs added.**	

Cure Schedule

Metal Temp (ºC):	Time (minutes)	Comments:
200	**10**	**Metal temperature**
190	**12**	**Metal temperature**
180	**15**	**Metal temperature**

Coating Performance Guide

Exterior Durability Testing
Very good resistance to weathering – Meets GB/T 5237.4 – GA40 Level I minimum 1,000 hour accelerated weather resistance and 1 year Florida exposure.

Corrosion Testing

	Performance Rating
Salt Spray Corrosion Resistance	**Pass - 1,000 hours according to GB/T 10125**
Filiform Corrosion Resistance	**Pass - filiform corrosion coefficient = 0.18, filiform corrosion length = 1.0mm**

Adhesion Testing

	Performance Rating
Dry Adhesion (GB/T 9286)	**Pass - Level 0**
Wet Adhesion (GB/T 9286)	**Pass - Level 0**
Boiling Water Adhesion (GB/T 9286)	**Pass - Level 0**
Boiling Water Resistance (GB/T 9286)	**Pass - Level 0**

Mechanical Testing

	Performance Rating
Indentation Hardness (GB/T 9275)	**Pass - 91**
Impact Resistance (GB/T 1732)	**Pass**
Cupping Resistance (GB/T 9753)	**Pass**
Bending Resistance (GB/T 6742)	**Pass**
Abrasion Resistance (GB/T 8013.1)	**Pass - 5.2L/µm**

Chemical Resistance Testing

	Performance Rating
Hydrochloric Acid Resistance	**Pass**
Mortar Resistance	**Pass**
Solvent Resistance (GB/T 8013.3)	**Pass - Level 4**
Detergent Resistance	**Pass**

Humidity and Heat Resistance Testing

	Performance Rating
1,000 hours at 47°C ± 1°C (GB/T 1740)	**Pass - Level 1**

Application

Surface Preparation

Preparation for Aluminium Substrates

Etch

- 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 with a minimum of 2gm/ m² for applications on perforated and expanded aluminium.

Chrome Conversion Coatings

- Chrome conversion weights must be a minimum of 431mg/m².

Chrome-free conversion coatings

- Chrome-free - refer to your pre-treatment supplier and YS/T 1189.

Final deionised water rinse

- The conductivity of the final rinse water draining from the aluminium articles must be less than 80 micro Siemens/cm² at 20°C.

Post rinse dry off temperature - consult your pre-treatment supplier but generally

- < 75° C for chrome pre-treatment.
- < 120° C for chrome-free pre-treatment.

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.

Preparation for Steel Substrates

Wash and degrease all surfaces

- Wash and degrease all surfaces to be coated with a free-rinsing, neutral/alkaline detergent in strict accordance with the relevant manufacturer's written instructions and all safety warnings.
- Wash with fresh potable water and ensure that all soluble salts are removed. Testing if required can be done for the determination of residual contaminants.

Grind all sharp edges

- Grind all sharp edges with a power tool to a minimum radius of 2mm.

Clean welds to remove roughness

- Hand or power tool clean welds to remove roughness. Remove filings, preferably by vacuum.

Abrasive blast cleans all surfaces to be powder coated

- Abrasive blast cleans all steel surfaces to be powder coated
- 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.

Coat within 4 hours of blasting

- The steel must be coated within 4 hours of blasting and stored in an area which is clean and dry.

Application Procedure and Equipment

Ensure the powder is within date and stored correctly

- Powder must be < 6 months from date of manufacture and stored at < 25 °C in dry conditions.

Application Method

Apply with equipment and control systems to enable correct metal pre-treatment and control of the application and oven condition.

1. a) 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.
   b) 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.
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.

Ensure film thickness advice is adhered to:

- 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.
- Light colours may require a higher minimum film build for optimum coverage and colour consistency.

Solvent Test for Cure

- Test for cure of the coating by contact with a drop of MEK for 10 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.

Recycling

1. One of the significant benefits of powder coatings over other types of finishes is the ability to collect and reuse the oversprayed powder that doesn't initially adhere to the items being coated. Under controlled conditions, recycling overspray in this way can in fact achieve over 95% recovery if the system is optimised, so can present considerable production efficiencies. And as an environmentally friendly waste solution, it's well worth considering if powder coat recycling is suitable for your application process.
2. When reclaiming or recycling oversprayed powder it must be 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.
3. Extra care should be taken when recycling overspray from pearlescent powder coatings as the different compositions of bonded and blended powders may have a significant impact on the final appearance.
4. For more information refer to the Pacific Gold Tech Advice brochure on Recycling powder coat overspray at **dglpowders.com/tech-advice**

Product Guarantee Compliance

For Product Guarantee compliance the coater must record the following detailed key information at least once per shift when using PG900PA.

All records must be maintained in an orderly manner. There is no specific format in which the records must be maintained, provided the information which DGL stipulates can be easily retrieved and demonstrated. Complete records of all the below requirements must be maintained accurately by the applicator and retained for a minimum of 2 years after the period of the guarantee following the application of the powder coating.

These records must be accessible to DGL Powder Coatings as requested. All records should be traceable back to the appropriate substrate used on the project.

Details to be recorded must include:

- Pre-treatment:
  - Etch rate
  - Conversion coating weight
  - Deionised water conductivity
- Oven/metal temperature profile
- Test results for: dry film thickness (DFT), gloss, solvent cure
- Factory inspection items as required by GB/T 5237.4 Table 8
- Bill of quantities/order
- Project information
- Test samples
- Batch number(s)
- Box number(s)

The applicator must be able to demonstrate that the cleaning and pre-treatment system for the aluminium metal complies with the requirements.

The applicator must establish an in-plant testing and monitoring regime that will ensure that the system is maintained within the limits specified by the pre-treatment chemicals supplier.

Records must be kept showing the time and date of all tests carried out, the results obtained and the limits that the tests are required to meet. Any resultant recommendations of chemicals to be added to the pre-treatment system to adjust its parameters must be recorded together with a record of the additions being made.

These records together with copies of the appropriate test methods must be available to DGL for inspection at any time.

Health and Safety	
SDS Number **PG900PA: DLXCHNEN004614**	SDS Link **View SDS Link (CHN SDS EN)**
SDS Number **PG900PA: DLXCHNZH004614**	SDS Link **View SDS Link (CHN SDS ZH)**
Using 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	
Please refer to SDS Link. In case of emergency, please call China +86 532 8388 9090	

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Unless DGL International has provided you with a customised, project-specific specification, this Data Sheet does not represent that any particular product or product system will be suitable for your project.

Any information provided in this Data Sheet is given in good faith and is believed by DGL International to be correct at the time of publication. Products and coating systems can be expected to perform as indicated in this Data Sheet, provided the substrate is in good condition, the coatings are applied by a suitably experienced and skilled applicator, and the preparation, application and maintenance is followed strictly as set out in this Data Sheet, and as recommended on the applicable Safety Data Sheets for the relevant products, available from www.duspecplus.com.au. Climatic conditions at application time can affect product suitability and performance.

The correct colour or colour match is the responsibility of the applicator. Colours will change over time and DGL International does not guarantee that the same colour newly mixed will match a colour applied earlier which has been subjected to weathering or other change elements. No product colour is guaranteed against colour change.

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