



HMG Powder Coatings Limited

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Architectural Polyester

827 Series

Product Description Designed for both exterior and internal use, this range of powder coatings offers both excellent outdoor durability and decorative aspect. Designed for use on architectural applications such as aluminium profiles, doors, window frames, facades, urban furniture, fences, steel. The range meets the requirements of:

- BS EN 12206-1 (previously BS 6496)
- BS EN 13438 (previously BS 6497)
- Qualicoat Class 1 - Approvals: P-1145 (Gloss), P-1613 (Matt)



QUALICOAT is a quality label for licensed coaters

Powder Properties	Chemistry	Thermosetting carboxylated polyester cured with a multifunctional curing agent.
	Application	Corona and Tribo
	Coating Thickness	Depending on covering power and shade, general recommendation is 60-100 microns (μm), with a minimum thickness of 60 μm .
	Gloss (ISO 2813)	Gloss 85 \pm 10 Semi-Gloss 69 \pm 5 Matt 30 \pm 5
	Specific Gravity	1.40 – 1.70 g/cm ³ depending on colour.
	Coverage	From 10-14 m ² /kg at 60 microns film thickness.
	Storage & Shelf Life	When stored in a cool (<20°C), dry environment: 24 months.
	Curing Conditions (Object Temperature)	Gloss 17–37min @ 170°C / 10–30min @ 180°C / 7–20min @ 190°C Matt 17–30min @ 190°C / 10–20min @ 200°C / 7–15min @ 210°C
	Curing Coefficient	We recommend that where the coatings may be subjected to temperatures above 210°C, a trial is first carried out to ensure there is no unwanted colour variation. Direct-fired gas ovens may also cause colour to change from the expected result. For oven temperature recorders, use the minimum time values at temperature presented above. Set the minimum cure temperature to 155°C.

Pretreatment To ensure maximum adhesion the substrate must be thoroughly clean, free from grease, oil, rust, mill scale or any other contaminant. Cleaning may be carried out either by shot blasting, solvent or chemical degreasing. For applications where high corrosion or chemical resistance is required the substrate should be chemically treated prior to powder coating, typically:

Ferrous substrates	iron or zinc phosphate
Zinc coated steel	zinc phosphate or chromate conversion
Aluminium	chromate conversion, or Qualicoat-approved chrome-free system.

Advice should be sought from the chemical pretreatment supplier on the use of their products.

Mechanical Tests Unless otherwise specified, all tests were carried out under laboratory conditions on 0.8mm aluminium panels prepared to the specifications described in the Qualicoat Standard. A powder coating DFT of 60-70 microns was used.

Hardness	ISO 2815 Buchholtz Indentation	>80
Flexibility	ISO 1519 Cylindrical Mandrel	Pass >5mm
Adhesion	ISO 2409 2mm Crosshatch	Pass Gt0
Cupping	ISO 1520 Erichsen	Pass >5mm
Impact	BS 3900: Part E7	>25kg cm (N)

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Corrosion and Durability	Sulphur Dioxide	Kesternich Test ISO 3231	After 24 cycles, infiltration <1mm from scratch
	Salt Fog	Acetic Acid ISO 9227	After 1000 hours, per 10cm scratch: Total Corrosion <16mm ² Maximum Length <4mm
	Mortar Resistance	ASTM C207	Easy to remove. No staining
	Boiling Water	2 hours boiling water	No defects or detachments
	Humidity	BS3900: Part F2	Pass. 1000 hours without any effect.
Weathering	Natural	Florida Sun Test ISO 2810	After 12 months exposure, residual gloss > 50%
	Accelerated	Xenon SUN Test ISO 11341 UV-B 313 Test ISO 11507	After 1000 hours, residual gloss > 50% After 300 hours, residual gloss >50%
Colour Fastness	Natural	Florida Sun Test ISO 2810	Colour differences (ΔE) within tolerances specified by Qualicoat.
	Accelerated	Xenon SUN Test ISO 11341	
Chemical Resistance	The range shows excellent resistance to water, brine, hydrochloric acid, dilute sulphuric, acetic and phosphoric acids, dilute alkalis, peroxides and bleach, alcohols and urea. Certain cleaning products may cause damage to the appearance of the coating; test a small inconspicuous area first.		
Fire Resistance	<p>Construction</p> <p>The range has been tested to the requirements of BS 476 parts 6 & 7 and has a Class 0 surface as defined in various national building regulations.</p> <p>The range has been tested to the requirements of EN 13823 and ISO 1716 and is classified as A2 s1 d0 according to EN 13501-1</p> <p>Rail</p> <p>Additional to the above, the range has been tested to EN 45545-2+A1 Annex C and meets the requirements of London Underground S1085 'Fire Safety Performance of Materials' and is Authorised for use by Transport for London, Certificate Number: 2434.</p> <p>Aerospace</p> <p>The range has been tested to:</p> <ul style="list-style-type: none"> • FAR/JAR 25.853(a) Appendix F Part I (a)(1)(i) (Flammability) • FAR/JAR 25.853(d)/(c) Appendix F Part IV (g) (Heat Release) • FAR/JAR 25.853(d)/(c) Appendix F Part V (b) (Smoke Emission) • Airbus Industries ABD0031 paragraph 7.3.2 (Smoke Emission) • Airbus Industries ADB0031 paragraph 7.4 (Smoke Toxicity) <p>These data demonstrate indicatively that the range meet the requirements of the above.</p>		
Colour Availability	A wide range of BS and RAL colours are available from stock. All colours from BS 5252, BS 4800, BS 381C, RAL Classic, RAL Design, Pantone and NCS ranges. Any submitted colour standard can be manufactured to customer's requirements		
RoHS/RoHS2/RoHS3	This product range conforms to the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations Directives. Refer to our full statement on the hmgpowdercoatings.co.uk website.		
Health & Safety	Consult the relevant health and safety data sheet indicated in the box label before use.		

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Example Application Procedure

1. Prepare the substrate properly for the environment that the object will be placed (refer to ISO12944-2 for a list of environmental categories). Ensure the process cleans and provides an adequate key to the substrate. Pay particular attention to sharp edges, water traps, or other likely points of premature corrosion.
 2. Spray using an electrostatic gun designed for powder coating application. Typical settings are 70 kV. Ensure that the minimum film thickness is being met.
 3. Cure the coated objects in an oven, ensuring that the metal substrate achieves the correct temperature for the required duration.
 4. Allow to cool before handling. Wrapping should be used that does not allow moisture to be trapped against the powder coating.
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