



# HMG Powder Coatings Limited

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## High Reactivity Polyester

727 Series

<b>Product Description</b>	Designed for both exterior and internal use, this range of powder coatings offers both excellent outdoor durability and decorative aspect. The higher reactivity of the system offers the powder coater the choice between a faster line speed/lower oven dwell time, or a lower oven set temperature; either option offers better energy efficiency compared to standard cure systems, decreasing the environmental impact and costs attributable to the curing process. Common applications include heavy gauge componentry – particularly for the ACE market, garden furniture, street furniture, office furniture, automotive parts, machinery, and electrical enclosures. The range meets the requirements of BS EN 13438, particularly recommended is the 'DG' modification	
<b>Key Attributes</b>	<ul style="list-style-type: none"><li>• High reactivity, offering 30-40% increase in throughput compared with conventional technology</li><li>• Excellent exterior durability</li><li>• Good corrosion resistance</li><li>• Excellent smoothness</li></ul>	
<b>Powder Properties</b>	Chemistry	Thermosetting carboxylated polyester cured with a multifunctional curing agent.
	Application	Corona electrostatic spray. The system can be modified for Tribo application on request.
	Coating Thickness	Depending on covering power and shade, general recommendation is 60-100 microns ( $\mu\text{m}$ ), with a minimum thickness of 60 $\mu\text{m}$ .
	Gloss (ISO 2813)	Gloss 85 $\pm$ 10 Semi-Gloss 65 $\pm$ 7 Matt 30 $\pm$ 5
	Specific Gravity	1.40 – 1.90 g/cm <sup>3</sup> depending on colour.
	Coverage	From 10-14 m <sup>2</sup> /kg at 60 microns film thickness.
	Storage & Shelf Life	When stored in a cool (<20°C), dry environment: 24 months.
	Curing Conditions	10–37min @ 160°C / 5–25min @ 180°C  We recommend that where the coatings may be subjected to temperatures above 190°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.
	Curing Coefficient	For oven temperature recorders, use the minimum time values at temperature presented above. Set the minimum cure temperature to 155°C.
<b>Pretreatment</b>	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.	
<b>Mechanical Tests</b>	Unless otherwise specified, all tests were carried out under laboratory conditions on 0.8mm degreased and zinc phosphated steel panels. A powder coating DFT of 60-70 microns was used.	
	Hardness	ISO 2815 Buchholtz Indentation >80
	Flexibility	ISO 1519 Cylindrical Mandrel Pass >4mm

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	Adhesion	ISO 2409 2mm Crosshatch	Pass Gt0
	Cupping	ISO 1520 Erichsen	Pass >4mm
	Impact	BS 3900: Part E7	>20kg cm (N)
<b>Corrosion and Durability</b>	Sulphur Dioxide	Kesternich Test ISO 3231	After 24 cycles, infiltration <1mm from scratch
	Neutral Salt Fog	ASTM B117 (500 hours)	Corrosion creep <2mm from scratch Adhesion – Gt0
	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.
	Exterior Durability	After 12 months, minimal loss of gloss or colour change. No film breakdown or reduction in protective properties	
<b>Chemical Resistance</b>	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.		
<b>Fire Resistance</b>	<b>Construction</b>	The range has been tested to the requirements of EN 13823 and ISO 1716 and is classified as <b>A2 s1 d0</b> according to EN 13501-1	
	<b>Rail</b>	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'.	
<b>Colour Availability</b>	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.		
<b>Structured Effects</b>	This range is also available in sandpaper texture (839 LB), ripple texture (828 LB), and hammer (729 LB) effects.		
<b>Available Modifications</b>	<b>DG</b>	Zinc surfaces out-gas at elevated temperatures, causing unsightly cratering in the powder coating surface; these craters are corrosion hot spots resulting in 'white rust' deposits. 'DG' polyesters have been modified to significantly reduce, or even eliminate, the occurrence of this cratering whilst still maintaining excellent recoatability.	
	<b>EC</b>	Where there are issues with sharp corner and edge covering, these coatings are modified to reduce sagging and help protect steel surfaces from premature corrosion.	
	<b>AM</b>	Antimicrobial surface. See 967 series data sheet for more information.	
<b>RoHS/RoHS2/RoHS3</b>	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 <a href="http://hmgpowdercoatings.co.uk">hmgpowdercoatings.co.uk</a> website.		
<b>Health &amp; Safety</b>	Consult the relevant health and safety data sheet indicated in the box label before use.		
<b>Example Application Procedure</b>	<ol style="list-style-type: none"> <li>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 attention to sharp edges, water traps, or other likely points of premature corrosion.</li> <li>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.</li> <li>3. Cure the coated objects in an oven, ensuring that the metal substrate achieves the correct temperature for the required duration.</li> </ol> <p>Allow to cool before handling. Wrapping should be used that does not allow moisture to be trapped against the powder coating.</p>		

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