

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>The Chatfield Applied Research Laboratories Ltd</h3>	
	<p>Issue No: 023 Issue date: 20 December 2010</p>	
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<p>Testing performed at the above address only</p>		

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>PAINTS, VARNISHES and SIMILAR MATERIALS</p>	<p><u>Physical and Chemical Tests and related Opinions and Interpretations</u></p>	
	<p>Viscosity</p>	<p>1) BS 3900 - A7.1(2000) (2006) 2) BS EN ISO 2884-1:1999</p>
	<p>Flashpoint at 5° - 110°C</p>	<p>1) BS 3900 - A9:1986(2000) 2) BS 6664 - 2:1986 3) ISO 1523:1983</p>
	<p>Volume of Dry Coating</p>	<p>1) BS 3900 - A10:1998 2) ISO 3233:1998</p>
	<p>Density by Pyknometer Method</p>	<p>1) BS 3900:Part A12:1975(1991) (withdrawn) 2) BS 3900 - A19:1998 3) BS EN ISO 2811-1: 2001</p>
	<p>Infra-red spectroscopy Wavelength range: 450-4000 nm</p>	<p>Flexible Scope FS1 Methods including: BS 4181-1:1985(2002) ISO 4650:1984 ASTM D2621-87 BS ISO 4650:2005 and any other methods identified to fall within the capability of the laboratory as determined by the generic protocol document, Appendix H8 of Quality Manual</p>



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PAINTS, VARNISHES and SIMILAR MATERIALS (cont'd)	<u>Physical and Chemical Tests and related Opinions and Interpretations (cont'd)</u>	
	Volatile and non-volatile (solids) contents Test temperature range: 35-150 °C Test duration range: 1-24 hr Test sample mass: 0.1-100 g	Flexible Scope FS2 Methods including: BS 3712:Part 4:1985 (withdrawn) BS 3900:Part B2:1970(1991) (withdrawn) BS EN ISO 3251:2003 BS 3900-B18:2003 BS 5889:1989, Clause 9 (withdrawn) ASTM D2369-93 and any other methods identified to fall within the capability of the laboratory as determined by the generic protocol document, Appendix H8 of Quality Manual
	<u>Film Formation</u>	
	Surface drying test	1) BS 3900:Part C2:1994 2) BS EN ISO 1517:1995(1999)
	Film Thickness	1) BS 3900 - C5:1997, Methods 5, 6, 7, 10 2) BS EN ISO 2808:2001
	<u>Optical Tests</u>	
Specular gloss of non-metallic paint film at 20° and 60°	BS EN ISO 2813:2007	
Colour and Colour Difference	BS 3900-D9:1986(2000) ISO 7724-2:2000 BS 3900-D10:1986(2000) ISO 7724-3:2000	



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PAINTS, VARNISHES and SIMILAR MATERIALS (cont'd)	<p><u>Mechanical Tests and Related Opinions and Interpretations</u></p> <p>Adhesion by Cross Cut and X-Cut</p> <p>Bend test (cylindrical mandrel)</p> <p>Skid/slip resistance</p> <p><u>Durability Tests and related Opinions and Interpretations</u></p> <p>Resistance to humidity</p> <p>Resistance to artificial weathering (fluorescent UV and water)</p>	<p>1) BS 3900 - E6:2007</p> <p>2) BS EN ISO 2409:2007</p> <p>3) ASTM D3359-08</p> <p>1) BS 3900:Part E1:1970 (withdrawn)</p> <p>2) BS EN ISO 1519:1995</p> <p>1) BS EN 14231:2003</p> <p>2) Guidelines Recommended by the UK Slip Resistance Group</p> <p>3) BS 7976-1:2002</p> <p>4) BS 3262-1:1989 (1995) App.J (withdrawn)</p> <p>5) BS 6044:1987(1995) App.K (withdrawn)</p> <p>BS 3900 - F2:1973(2000)</p> <p>1) BS 3900 - F16:2007</p> <p>2) BS EN ISO 11507:2007</p> <p>3) ASTM D4587-05</p> <p>4) ASTM G154-06</p> <p>5) BS EN ISO 4892-3:2006</p>



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PAINTS, VARNISHES and SIMILAR MATERIALS (cont'd)	<p><u>Durability Tests and related Opinions and Interpretations</u> (cont'd)</p> <p>Designation of degrees of blistering, rusting, cracking and flaking of paints and varnishes</p> <p>Resistance to salt spray exposure Test temperature range: 25-40 °C Test duration range: 8 - 2000 hr Mass for salt solution make-up: 0.5 g - 6 kg Deposition rate: 0.0001 - 50 g</p> <p>Natural Weathering Test</p>	<p>1) BS 3900 - H1:2003 2) BS 3900 - H2:2003 3) BS 3900 - H3:2003 4) BS 3900 - H4:2003 5) BS 3900 - H5:2003</p> <p>1) BS EN ISO 4628-1:2003 2) BS EN ISO 4628-2:2003 3) BS EN ISO 4628-3:2003 4) BS EN ISO 4628-4:2003 5) BS EN ISO 4628-5:2003</p> <p>Flexible Scope FS3 Methods including: BS 1224:1970, Appendix K (withdrawn) BS 3900:Part F4:1968(2000) BS 3900:Part F12:1997 (withdrawn) BS 7479:1991 BS EN ISO 7253:2001(withdrawn) ISO 9227:2006 ASTM B117-09 and any other methods identified to fall within the capability of the laboratory as determined by the generic protocol document, Appendix H8 of Quality Manual</p> <p>1) BS 3900 - F6:1976(2000) 2) ISO 2810:1974</p>



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PAINTS, VARNISHES and SIMILAR MATERIALS (cont'd) Powder coatings for aluminium	<u>Physical and Chemical Tests and related Opinions and Interpretations</u> Surface appearance Colour Gloss Thickness Adhesion Impact test for cure Quality of pre-treatment Resistance to acetic acid/salt spray	BS 6496:1984(2000) Clauses 4.2 - 4.4, 4.7 - 4.11, 4.13, 10.2 - 10.8 BS EN 12206-1:2004 Clauses 4.5.2 - 4.5.8
Powder coatings for galvanised steel	Surface appearance Colour Gloss Thickness Adhesion Quality of pre-treatment Resistance to acetic acid/salt spray	BS 6497:1984(2000) Clauses 4.6 - 4.9, 4.11, 10.2 - 10.7 BS EN 13438:2005 Clauses 6.6.2 - 6.6.6
Road marking materials	Colour UV ageing Softening point	BS EN 1871:2000
BITUMINOUS MATERIALS	<u>Physical Tests and related Opinions and Interpretations</u> Flash Point (Cleveland)	1) IP 36/84(89) 2) AASHTO T-48 3) ASTM D92 - 96
	Determination of needle penetration of bituminous material	1) BS 2000 - 49:1993 (withdrawn) 2) ASTM D5-86 (withdrawn) 3) AASHTO T-49 4) IP 49/86(89)



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BITUMINOUS and THERMOPLASTIC PRODUCTS	<u>Physical Tests and related Opinions and Interpretations</u> Softening point of bitumen (ring and ball) Temperature range: 30-150°C Rate of temperature increase: 5 ± 0.5°C/minute	Flexible Scope FS4 Methods including: BS 2000 - 58:1993 (withdrawn) BS 2000 - 58:2000/2001(withdrawn) BS 3262 - 1:1989, Appendix E (withdrawn) BS EN 1427:2000 BS EN 1871:2000, Annex F ASTM D36-86 IP 58/86(89) IP 58/2000 and any other methods identified to fall within the capability of the laboratory as determined by the generic protocol document, Appendix H8 of Quality Manual
SEALANTS Hot-applied joint sealants	<u>Physical Tests and related Opinions and Interpretations</u> Extension Flow Penetration Degradation Fuel resistance Flow resistance Flow resistance after heat degradation Penetration after heat degradation Penetration after fuel immersion Resistance to fuel immersion Resilience Adhesion and cohesion following extension and compression after fuel immersion Bitumen compatibility Bitumen compatibility after heat degradation	BS 2499 - 3:1993 Methods 6 - 17



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SEALANTS (cont'd)	<u>Physical Tests and related Opinions and Interpretations</u> (cont'd)	
One-part gun grade silicone sealants	Resistance to flow Elastic recovery Tensile properties at maintained extension Adhesion/cohesion properties at variable temperatures Adhesion/cohesion properties at constant temperatures Adhesion/cohesion properties at maintained extension after water immersion Skin formation time Slump properties Force on extension and elastic recovery Loss of mass after heat ageing Adhesion and cohesion in tension Staining Adhesion in peel	ISO 11600:2003 BS 5889:1989 (withdrawn) Clauses 5 - 12
SEALANTS AND RESINOUS COMPOSITIONS	Tensile and elongation properties Strength at break: 0.1 N - 25 KN Rate of extension: 0.02 - 500 mm/min Test temperature: -20 °C to +25 °C Extension at break: 0 - 500 mm	Flexible Scope FS5 Methods including: BS 2782 - 3:1976(1996) Method 320A BS 3712:Part 4:1985, Clause 4 (withdrawn) BS 3712-4:1991(2006) BS 4254:1983(1991) (obsolescent) BS 5889:1989, Clauses 8 and 10 (withdrawn) ISO 11600:2003 Highways Agency Clause 9.24 and any other methods identified to fall within the capability of the laboratory as determined by the generic protocol document, Appendix H8 of Quality Manual
	END	