

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>UKAS TESTING 0386</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Institute of Spring Technology</h3> <p>Issue No: 025 Issue date: 21 October 2009</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
METALS, ALLOYS and METAL PRODUCTS	<u>Metallurgical Tests</u>	
	Depth of decarburisation	BS EN ISO 3887:2003 (Microscopic methods only) Documented In-house Method OI 36
	Grain size	BS EN ISO 643:2003
	Non metallic inclusions/cleanliness - particle size and number	Documented In-house Method OI 65
	Identification of microconstituants	Documented In-house Method OI 37 ASM Handbook No 8 (8 th Edition)
	Measurement of depth of surface defects and corrosion pits	Documented In-house Method OI 36
	Metallic coatings - Uniformity of plating	BS EN ISO 1463:2004 BS EN ISO 3882:2003 Documented In-house Method OI 36
	Measurement of fracture surface features and determination of fracture mode (at magnifications of X25 to X10000)	Documented In-house Method OI 19 ASM Handbook No 9 (8 th Edition)
Visual examination of surface features	Documented In-house Method OI 51	



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<p><u>Mechanical Tests</u></p> <p>Torsion/torque testing within the ranges of 0.5Nm to 1000Nm (ambient temperature)</p> <p>Tensile testing and proof load tests, and any combination of the above within the ranges of 5N to 100kN at temperatures in the range of -60°C to 1000°C</p> <p>Compression tests within the range of 5N to 50kN at temperatures in the range of -60°C to 300°C</p> <p>Tensile strength (UTS only) at ambient temperature (forces up to 100 kN)</p> <p>Bend</p> <p>Simple torsion</p> <p>Wrapping</p> <p>Vickers hardness (5kg, 10kg & 30kg)</p>	<p>Documented In-House Methods developed using Section D3 of the Quality Manual</p> <p>Documented In-House Methods developed using Section D3 of the Quality Manual</p> <p>Documented In-House Methods developed using Section D3 of the Quality Manual</p> <p>BS EN 10002-1:2001 BS 4A4 Part 1:Section 1:1966 (2009) BS EN 10218-1:1994</p> <p>BS EN ISO 7438:2005 BS EN 10218-1:1994</p> <p>BS EN 10218-1:1994 BS ISO 7800:2003</p> <p>BS EN 10218-1:1994 ISO 7802:1983</p> <p>BS EN ISO 6507-1:1998 (superseded)</p>
As received wires and related products	<p>Torsion Fatigue (torques up to 100 Nm)</p> <p>Relative Coilability and Surface Friction (Fracmat Test)</p>	<p>BS 3518:Part 1:1993(2009) To documented plans agreed with customers</p> <p>Documented In-house Method OI 58</p>



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Stainless steel and coatings SPRINGS and SPRING ASSEMBLIES Compression, Extension, Torsion, Disc, Flat and Wireforms	<u>Corrosion Tests</u> Neutral Salt Spray (pH values in range 6.5 to 7.2) 100% Humidity	Documented In-house Method OI 29 BS 3900:Part F2:1973(2008) BS EN ISO 6270-1:2001 Documented In-house Method OI 46
	<u>Mechanical Tests</u> Load and Rate tests: - Compression springs (forces up to 50 kN)	BS 1726-1:2002 BS 8726:Part 1:2002 DIN 2095:1973 DIN 2096:Part 1:1981 DIN 2096:Part 2:1979
	Compression springs, non-axial force measurement (forces up to 2 kN)	Documented In-house Method OI 54 and documented plans agreed with customers.
	Extension springs (forces up to 100 kN)	BS 1726-2:2002 DIN 2097:1973
	Torsion springs (torque up to 1350 Nm)	BS 1726-3:2002 BS 8726-2:2002
	Disc springs (forces up to 50 kN)	DIN 2093:2006
	Flat springs (forces up to 50 kN)	Documented In-house Methods OI 28, OI 39 and documented plans agreed with customers
	Wireforms (forces up to 50 kN) (torque up to 1350 Nm)	Documented In-house Methods OI 24, 27, and documented plans agreed with customers



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SPRINGS and SPRING ASSEMBLIES Compression, Extension, Torsion, Disc, Flat and Wireforms (cont'd)	<u>Mechanical Tests (cont'd)</u> Fatigue at ambient and elevated temperatures up to 673K:- Compression springs (forces up to 50 kN, strokes up to 250 mm) Extension springs (forces up to 50 kN, strokes up to 350 mm) Torsion springs (torque up to 100 Nm) Disc springs (forces up to 50 kN) Relaxation at ambient and elevated temperatures:- Static, up to 923 K (forces up to 50 kN) Dynamic, up to 673 K (forces up to 1000 N)	BS 3518:Part 1:1993 (2009) BS ISO 12107:2003 BS 1726-1:2002 BS 8726-1:2002 Documented In-house Methods OI 23, 25, 26, 33, 42 and 50 and documented plans agreed with customers BS 3518:Part 1:1993 (2009) BS ISO 12107:2003 BS 1726-2:2002 Documented In-house Methods OI 23, 26, 33,42 and 50 and documented plans agreed with customers BS 3518:Part 1:1993 (2009) BS ISO 12107:2003 BS 1726-3:2002 BS 8726-2:2002 DIN 2092: 2006 Documented In-house Method OI 57 and documented plans agreed with customers Documented In-house Method OI 57 and documented plans agreed with customers



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SPRINGS and SPRING ASSEMBLIES Compression, Extension, Torsion, Disc, Flat and Wireforms (cont'd)	<u>Dimensional Measurements</u> Compression springs Extension springs Torsion springs Disc springs Flat springs and Wireforms	BS 1726-1:2002 BS 8726-1:2002 DIN 2095:1973 DIN 2096:Part 1:1981 DIN 2096:Part 2:1979 Documented In-House Method OI 64 BS 1726-2:2002 DIN 2097:1973 Documented In-House Method OI 64 BS 1726-2:2002 BS 8726-2:2002 Documented In-House Method OI 64 DIN 2093:2006 Documented In-house Method OI 47
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