

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>0136</b>  Accredited to <b>ISO/IEC 17025:2005</b>	<b>Sheffield Testing Laboratories Limited</b>	
	Issue No: 033      Issue date: 05 December 2011	
	50-56 Nursery Street Sheffield South Yorkshire S3 8GP	Contact: Mr L Mangham Tel: +44 (0)114 272 6581 Fax: +44 (0)114 272 3248 E-Mail: <a href="mailto:hq@sheffieldtesting.com">hq@sheffieldtesting.com</a> Website: <a href="http://www.sheffieldtesting.com">www.sheffieldtesting.com</a>
Testing performed by the Organisation at the locations specified below		

### Locations covered by the organisation and their relevant activities

#### Laboratory locations:

Location details	Activity	Location code
<b>Address</b> 50-60 Nursery Street Sheffield South Yorkshire S3 8GP	<b>Local contact</b> Mr L Mangham  Tel: +44 (0)114 272 6581 Fax: +44 (0)114 272 3248	Mechanical testing Elemental analysis Metallurgical tests Corrosion testing Dimensional measurements  A

#### Site activities performed away from the locations listed above:

Location details	Activity	Location code
<b>Any suitable customer site</b>	Mechanical testing - lifting mechanisms in precast concrete structures	B



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
<b>METALS, ALLOYS and METAL PRODUCTS</b>	<u>Chemical Tests</u>		
Cast iron, Ferrous alloys, High speed tool steel, Stainless steels	C, Si, Mn, P, S, Cr, Mo, Ni, Al, Cu, B, Co, Pb, Ti, V, Nb, W, Sn, Mg, Zr, H <sub>2</sub> , N <sub>2</sub> , O <sub>2</sub>	Documented In-House Methods using spark OES, SpectroMax OES, Photometric, Gravimetric, Volumetric, ICP AES, Combustion & Fusion techniques. Methods to BS Handbook Number 19:1970, BS 6200 & ASTM Annual Book of Standards	A
Aluminium alloys	Cu, Si, Mn, Cr, Ni, Bi, Cd, Pb, Mg, Sn, Ti, V, Zn, Fe, Zr	BS 1728:Parts 1;5;6;8-12,14-25 Documented In-House Methods using Photometric, ICP AES, Gravimetric & Volumetric techniques	A
Copper alloys	Si, Mn, P, S, Cr, Ni, Al, Bi, Cd, Sb, Cu, Pb, Mg, Sn, Be, Zn, Ag, Fe, N <sub>2</sub> , O <sub>2</sub>	BS 1748: Parts 1-9 Documented In-House Methods using SpectroMax OES, Photometric, Gravimetric, Volumetric, ICP AES & combustion techniques	A
Nickel alloys	C, Si, Mn, P, S, Cr, Mo, Ni, Al, Co, Cu, Pb, Ti, W, V, Nb, Fe, N <sub>2</sub> , O <sub>2</sub>	BS 3727:Parts 1-16, 20-22 BS 7455:Parts 1-9 Documented In-House Methods using SpectroMax OES, Gas Fusion, ICP AES & combustion techniques	A
Titanium alloys	Ti, C, V, Al, Fe, H <sub>2</sub> , Mg, Mn, Zr, Mo, Si, Sn, Cu, N <sub>2</sub> , O <sub>2</sub>	Documented In-House Methods using Gas Fusion and ICP AES techniques	A
Tungsten Carbides	C, W, Ta, Co	Documented In-House Methods using Gravimetric, ICP AES and Combustion techniques	A
White Metals (Lead, Tin and Zinc alloys)	Mn, Ni, Pb, Bi, Sb, Fe, Cu, Al, Sn, Zn	Documented In-House Methods using ICP AES techniques	A
Ferrous alloys and stainless steels, Cu alloy & Ni alloy	Nitrogen and Oxygen	Documented In-House Methods using Leco TC36	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Chemical Tests (cont'd)</u>		
Stainless steels, Nickel alloys, Titanium alloys, Cobolt alloys and Aluminium alloys	Categorisation of alloys	Documented In-House Method XRF 1 using Niton XRF Alloy Analyser	A, B
	<u>Corrosion Tests</u>		
Iron, Steels and other ferrous metals	Intergranular corrosion	BS EN ISO 3651-2:1998 ASTM A262-10	A
	Hydrogen induced cracking (HIC)	NACE TM0284-03 Documented In-House Method CTP01	A
	Sulphide stress corrosion cracking (SSCC)	NACE TM0177-05 Method A Documented In-House Method CTP02	A
	<u>Mechanical Tests</u>		
	Bend	BS EN ISO 7438:2005	A
	Creep and stress-rupture (forces from 1.5 kN to 30 kN) (ambient temperature to 1000°C)	BS 4A4-1:Section 3:1967(2000) BS EN ISO 204:2009 ASTM E139-06 ASTM E292-09	A
	Compression (temperature - ambient) (forces from 0.4 kN to 600 kN)	Documented In-House Methods MTP12	A
	Hardness: Brinell (10/3000, 10/1000, 5/750)	BS EN ISO 6506-1:2005 ASTM E10-10	A
	Rockwell (Scales B & C)	BS EN ISO 6508-1:2005 ASTM E18-08	A
	Vickers (0.3, 0.5, 1.0, 10 & 30kg)	BS EN ISO 6507-1:2005 Documented In-House Method MET 5	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Mechanical Tests</u> (cont'd)		
	Impact: Izod Charpy (V- and U- notches) (temperatures -196°C to ambient)	BS 131-1:1961(1996) BS EN ISO 148-1:2010 ASTM E23-07a <sup>e1</sup>	A
	Tensile: (temperature - ambient) (forces from 0.2 kN to 600 kN)	BS EN ISO 6892-1:2009 BS EN 2002-1:2005 BS 4A4-1:Section 1:1966 ASTM A370-11 ASTM E8/E8M-09	A
	Proof and Tensile strength (temperature - ambient) (forces from 0.2 kN - 2000 kN)	Documented In-House Method MTP2	A
Bolts, screws and nut	Tension and compression	To documented plans agreed with clients. BS 4882:1990 Appendix D BS EN ISO 898-1:2009 BS EN 20898-2:1994 BS EN ISO 3506-1:2009 (Excluding clause 7.2.5) BS EN ISO 3506-2:2009 BS 3692:2001 (nuts) BS 3692:1967 (withdrawn) ASTM A194/A194M-10a ASTM A370-11 ASTM F606/F606M-11 SAE J429: 99 NES 862 Part 3 NES 862 Part 5	A
Chains, chain slings, rings, links, hooks, shackles, swivels, eye-bolts and pulley blocks	Proof load (forces from 0.4 to 2000 kN)	Factories Act:1961 Section 26(1)(e) Docks Regulations 1998 Shipbuilding and Ship-repairing Regulations 1960 Regulations 36(1) and 36(2) The Construction (Lifting Operations) Regulations 1961 Regulations 34(1) (b) and 35	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Mechanical Tests</u> (cont'd)		
Wires and wire ropes	Tensile, torsion and reverse bend (temperature - ambient) (forces from 0.4 to 2000 kN)	BS 302-1:1987(1998) (Withdrawn) BS EN 12385-1:2009+ A1 BS EN 10264-1 to 3 BS ISO 7800:2003 ISO 7801:1984 NCB 186:1970 Documented In-House Method MTP18	A
	Tensile properties of high tensile steel wire strand	BS 5896:1980 Appendix A2	A
Steel bars for reinforcement of concrete	Tensile (forces up to 2000 kN)	BS 4449:2005+A2 BS 6744:2001+A2	A
Metal Scaffolding Couplers	Behaviour under load of parallel, right angle and swivel couplers (forces 3 to 60 kN)	BS EN 74-1:2005 (Section 7) EN 74-1:1998 (withdrawn) BS 1139-2.2:2009	A
	Friction type sleeve couplers - bending moment		
	Right angle couplers - rotation, cruciform bending moment and stiffness, pull apart force, and indentation test	BS EN 74-1:2005 (Section 7.4.1 & 7.4.2)	A
	Failure force for parallel, right angle and swivel couplers		A
	Slippage force for parallel, right angle, swivel and sleeve couplers		A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Metallurgical Tests</u>		
Austenitic stainless steels	Case depth Decarburised depth	BS 6286:1982(1989) ISO 2639:2002 ISO 3754:1976 Documented In-House Method MET1	A
	Macroscopic determination of grain flow	Documented In-House Method MET3	A
	Grain size	ASTM E112-96(04) <sup>e2</sup>	A
	Identification and counting of inclusions	ASTM E45-05 Documented In-House Methods MET2	A
Weldments and brazings	Tests designated in specified welding codes as detailed below  Bend, Fracture, Hardness, Impact, Tensile, Micro and Macro-examination tests in accordance with specified welding and brazing codes	BS 4871-3:1985 BS 4872-1:1982(1999) BS 4872-2:1976(1999) BS EN 287-1:2004 BS EN ISO 9606-2:2004 BS EN ISO 15614-1:2004 BS EN ISO 15614-2:2005 BS EN ISO 15614-8:2002 BS EN ISO 4136:2011 BS EN ISO 5173:2010 BS EN ISO 5176:2011 BS EN ISO 9015:2011 BS EN ISO 9016:2011 BS EN 1321:1997 BS 2633:1987 PD 5500:2000 ASME IX- 2007 DGQA Inspection Instruction AVP 84 and technically equivalent specifications	A
Steel tubes	<u>Physical Tests</u>  Dimensional assessment	BS EN 39:2001 Documented In-House Method MTP19	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)			
WRENCHES (Adjustable, ring, open-ended and stilson) and SOCKET WRENCHES and ACCESSORIES	<u>Mechanical Tests</u> Dimensions and Torque (up to 1350 Nm)	BS 192-1:1996 (2005) BS 3555:1988 (2005) BS 3594-1:1963 (2005) BS 4006:1992 (2005) BS ISO 6787:2001 ISO 1711-1:1996	A
Machinery & mechanical devices Engineering Components & tools (dimensional)	General dimensional measurements with a best measurement capability (uncertainty) of:  Length up to 1000 x 750 x 500 mm - 0.8 + (3 x length in metres) micrometres  Diameter from 1 up to 400 mm - 2.5 micrometres  Length up to 10 metres - 2 mm  Angle up to 360 degrees - 10 minutes of arc  Squareness up to 400 mm - 3 micrometres  Straightness of steel tubing, rod and bar up to 7.5 metres - 50 micrometres	Documented In-House Method MTP21 and associated customer drawings and specifications	A  A  A  A  A  A
Construction	Concrete structures Pull out/tensile testing of lifting mechanisms (Loads up to 300kN)	Documented In-House Method MTP25	B
END			