

# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <b>0136</b>  <b>Accredited to ISO/IEC 17025:2005</b>	<b>Element Materials Technology Sheffield Ltd, Trading as Element Materials Technology Sheffield – Magna Way</b>	
	<b>Issue No: 046</b>	<b>Issue date: 15 March 2018</b>
	<b>3 Ignite Magna Way Rotherham South Yorkshire S60 1FD</b>	<b>Contact: Mr L Mangham Tel: +44 (0)114 272 6581 Fax: +44 (0)114 272 3248 E-Mail: info.sheffield@element.com Website: www.element.com</b>
<b>Testing performed by the Organisation at the locations specified below</b>		

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

#### Laboratory locations:

Location details		Activity	Location code
<b>Address</b> 3 Ignite Magna Way Rotherham South Yorkshire S60 1FD	<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
Any suitable customer site	Alloy categorisation	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	Documented In-House Methods OES MAX1, ICP 6000 and Combustion CS344 using spark OES, ICP-OES, Combustion & Fusion techniques  Documented in-House Methods Si1, Si2, Mn1, P1, Cr2, Cr4, Mo1, No2, Ni1 and Ni2 for Photometric, Gravimetric and Volumetric techniques	A
Aluminium alloys	Cu, Si, Mn, Cr, Ni, Bi, Cd, Pb, Mg, Sn, Ti, V, Zn, Fe, Zr	Documented In-House Methods OES MAX1 and ICP6000 using spark OES and ICP-OES techniques	A
Cobalt alloys	C, Si, Mn, P, S, Cr, Ni, Mo, Fe, W, Al, Sn, Ti, B, N, Co	Documented In-House Methods OES MAX1 and ICP6000 using spark OES and ICP-OES techniques	A
Copper alloys	Si, Mn, P, S, C, Cr, Ni, Al, Bi, Cd, Sb, Cu, Pb, Mg, Sn, Be, Zn, Ag, Fe	Documented In-House Methods OES MAX1, ICP 6000 and Combustion CS344 using spark OES, ICP-OES, Combustion & Fusion techniques	A
Nickel alloys	C, Si, Mn, Ta, P, S, Cr, Mo, Ni, Al, Co, Cu, Pb, Ti, W, V, Nb, Fe	Documented In-House Methods OES MAX1, ICP 6000 and Combustion CS344 using spark OES, ICP-OES, Combustion & Fusion techniques	A
Titanium alloys	Ti, C, V, Al, Fe, Mg, Mn, Zr, Mo, Si, Sn, Cu	Documented In-House Methods OES MAX1, ICP 6000 and Combustion CS344 using spark OES, ICP-OES, Combustion & Fusion techniques	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Chemical Tests</u> (cont'd)		
Tungsten Carbides	C, W, Ta, Co	Documented In-House Methods ICP 6000 and Combustion CS344 using ICP-OES, Combustion & Fusion techniques	A
White Metals (Lead, Tin and Zinc alloys)	Mn, Ni, Pb, Bi, Sb, Fe, Cu, Al, Sn, Zn	Documented In-House Methods OES MAX1 and ICP6000 using spark OES and ICP-OES techniques	A
Ferrous alloys and stainless steels, Cu alloy, Co alloy, Ni alloy & Ti alloy	Hydrogen, Nitrogen and Oxygen	Documented In-House Methods RH 1, TC36 and ONH836 using Leco TC36 combustion/fusion techniques	A
Steel, stainless steel, Nickel alloy, Cobalt alloy, Titanium alloy, and Aluminium alloy	Categorisation of alloys	Documented In-House Method XRF 1 using Niton XLt 898P XRF analyser	A, B
	<u>Corrosion Tests</u>		
Iron, Steels and other ferrous metals	Intergranular corrosion	BS EN ISO 3651-2:1998 ASTM A262-15 Methods A, C & E ASTM G28-02(2015) Method A	A
	Pitting corrosion	ASTM G48-11(2015) Method A	A
	<u>Mechanical Tests</u>		
	Bend	BS EN ISO 7438:2016	A
	Compression (temperature - ambient) (forces from 0.4 kN to 2000 kN)	Documented In-House Methods MTP12	A
	Impact: Izod Charpy (V- notch) (temperatures -196°C to ambient)	BS 131-1:1961(2007) BS EN ISO 148-1:2016 ASTM E23-16b	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	Hardness: Brinell (10/3000, 10/1000, 5/750)	BS EN ISO 6506-1:2014 ASTM E10-17	A
	Rockwell (Scales B & C)	BS EN ISO 6508-1:2016 ASTM E18-16	A
	Vickers (0.3, 0.5, 1.0, 10 & 30 kg)	BS EN ISO 6507-1:2005 ASTM E92-17 ASTM E384-16 Documented In-House Method MET 5	A
	Stress-rupture (forces from 1.5 kN to 30 kN) (ambient temperature to 1000°C)	BS EN 2002-5:2007 BS EN ISO 204:2009 ASTM E139-11 ASTM E292-09e1 <sup>1</sup>	A
	Tensile: (temperature - ambient) (forces from 0.2 kN to 600 kN)	BS EN ISO 6892-1:2016 BS EN 2002-1:2005 BS 4A4-1:Section 1:1966 (withdrawn) ASTM A370-17 ASTM E8/E8M-16a	A
	Tensile: (Elevated temperature from ambient to 1000°C) (forces from 0.2 kN to 600 kN)	BS EN ISO 6892-2:2011 BS EN 2002-2:2005 ASTM E21-09	A
	Proof and Tensile strength (temperature - ambient) (forces from 0.2 kN - 2000 kN)	Documented In-House Method MTP2	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Bolts, screws and nut	Tension and compression	To documented plans agreed with clients. BS 4882:1990(2012) Appendix D BS EN ISO 898-1:2013 BS EN ISO 898-2:2012 BS EN ISO 3506-1:2009 (Excluding clause 7.2.5) BS EN ISO 3506-2:2009 BS 3692:2014 (nuts) BS 3692:1967 (withdrawn) ASTM A194/A194M-17 ASTM A370-17 ASTM F606/F606M-16 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 0.4kN 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) Lifting operations and lifting equipment regulations 1998	A
Wires and wire ropes	Tensile, torsion and reverse bend (temperature - ambient) (forces from 0.4kN to 2000 kN)	BS 302-1:1987(1998) (Withdrawn) BS EN 12385-1:2002+ A1 :2012 BS EN 10264-1:2012 BS EN 10264-2:2012 BS EN 10264-3:2012 BS ISO 7800:2012 ISO 7801:1984 NCB 186:1970 Documented In-House Method MTP18	A
Metal Scaffolding Couplers	Behaviour under load of parallel, right angle and swivel couplers (forces from 3kN to 60 kN)  Friction type sleeve couplers - bending moment	BS EN 74-1:2005 (Section 7) EN 74-1:1998 (withdrawn) BS 1139-2.2:2009(+A1:2015)	A



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METALS, ALLOYS and METAL PRODUCTS (cont'd)	<u>Mechanical Tests</u> (cont'd)		
	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
METALS, ALLOYS and METAL PRODUCTS	<u>Metallurgical Tests</u>		
Austenitic stainless steels	Case depth Decarburised depth	BS 6286:1982(1989) BS EN 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 E112-13	A
	Identification and counting of inclusions	ASTM E45-13 Documented In-House Methods MET2	A



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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(2011) BS 4872-1:1982(2013) BS 4872-2:1976(2013) BS EN 287-1:2011 BS EN ISO 9606-2:2004(2009) BS EN ISO 15614-1:2017 BS EN ISO 15614-2:2005 BS EN ISO 15614-8:2016 BS EN ISO 4136:2012 BS EN ISO 5173:2010+A1:2011 BS EN ISO 5178:2011 BS EN ISO 9015-1:2011 BS EN ISO 9015-2:2016 BS EN ISO 9016:2012 BS EN ISO 9017 :2013 BS EN 17639 :2013 BS 2633:1987(2011) PD 5500:2015+A1 ASME IX-2015 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
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 (2011) BS 3555:1988 (2011) BS 3594-1:1963 (2011) BS 4006:1992 (2011) BS ISO 6787:2001(2006) ISO 1711-1:2015	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	Documented In-House Method MTP21 and associated customer drawings and specifications	A  A



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Machinery & mechanical devices Engineering Components & tools (dimensional) (cont'd)	General dimensional measurements with a best measurement capability (uncertainty) of: (cont'd)	Documented In-House Method MTP21 and associated customer drawings and specifications(cont'd)	A
	Diameter from 1 up to 400 mm - 2.5 micrometres		A
	Length up to 10 metres - 2 mm		A
	Angle up to 360 degrees - 10 minutes of arc		A
	Squareness up to 400 mm - 3 micrometres		A
	Straightness of steel tubing, rod and bar up to 7.5 metres - 50 micrometres		A
END			



# United Kingdom Accreditation Service

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## ACCREDITATION CERTIFICATE



**CALIBRATION LABORATORY**  
**No. 0157**

**Element Materials Technology Sheffield Limited, Trading as  
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is accredited in accordance with the recognised International Standard ISO/IEC 17025:2005 - General requirements for the competence of testing and calibration laboratories.

This accreditation demonstrates technical competence for a defined scope as detailed in and at the locations specified in the schedule to this certificate, and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated April 2017).

The schedule to this certificate is an essential accreditation document and from time to time may be revised and reissued by the United Kingdom Accreditation Service. The most recent issue of the schedule of accreditation, which bears the same accreditation number as this certificate, is available from the UKAS website [www.ukas.com](http://www.ukas.com).

This accreditation is subject to continuing conformity with United Kingdom Accreditation Service requirements. The absence of a schedule on the UKAS website indicates that the accreditation is no longer in force.

*Operations Director, United Kingdom Accreditation Service*

**Initial Accreditation date**  
**8 June 1988**

**This certificate issued on**  
**15 March 2018**

UKAS is appointed as the sole national accreditation body for the UK by The Accreditation Regulations 2009 (SI No 3155/2009) and operates under a Memorandum of Understanding (MoU) with the Department for Business, Energy & Industrial Strategy (BEIS)