Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

0566

Accredited to ISO/IEC 17025:2017

Tyneside Standards Limited

Issue No: 040 **Issue date:** 02 September 2024

Rolling Mill Road
Viking Industrial Park
Jarrow
Tyne & Wear
NE32 3DP

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Calibration performed by the Organisations at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address Rolling Mill Road Viking Industrial Park Jarrow Tyne & Wear NE32 3DP	**Local contact** Mr Daniel Watson-Straughan Tel: +44 (0)191 428 3471 E-Mail: sales@tyneside-standards.co.uk	Dimensional Electrical Pressure Torque Mass (Weighing machines)	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
At customers premises	Dimensional Electrical Pressure Mass (Weighing machines)	B

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Calibration performed by the Organisation at the locations specified

Calibration and Measurement Capability (CMC)

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED				
PLAIN PLUG & RING GAUGES			NOTES	
Plain plug gauges (parallel), cylindrical setting standards and rollers See Note 5	1 to 50 diameter 50 to 100 diameter 100 to 150 diameter 150 to 200 diameter 200 to 300 diameter	0.80 1.0 1.5 2.0 3.0	1. All linear calibrations may be made in inch units. 2. The uncertainty quoted is for the departure from : flatness, straightness, or squareness; i.e. the distance separating the two parallel planes which just enclose the surface under consideration. 3. Single start symmetrical threads only 4. Functional test of size using setting plugs calibrated with a CMC of 3.0 µm 5. Calibrated using length measuring machine and/or end standards. 6. Calibrated using a profile projector.	A
Thread measuring cylinders	As BS 3777, BS 5590 and specials. 0.1 to 5	0.5 on diameter		A
Steel and synthetic ruby balls See Note 5	1 to 50 diameter 50 to 100 diameter	0.80 on diameter 1.0 on diameter		A
Plain ring gauges (parallel) and setting standards See Note 5	1 to 12 diameter 12 to 25 diameter 25 to 50 diameter 50 to 100 diameter 100 to 150 diameter 150 to 200 diameter 200 to 300 diameter	2.0 0.8 1.0 1.5 on diameter 2.0 3.0 4.0		A
Plain gap gauges, parallel See Note 5	3 to 50 50 to 100 100 to 150	3.0 5.0 8.0		A
SCREW THREAD GAUGES				
Screw plug gauges (parallel) See Notes 3 and 5	1 to 100 diameter 100 to 150 diameter 150 to 300 diameter	3.0 5.0 8.0		A
Screw plug gauges (taper) including check plugs See Notes 3 and 5	1.5 to 100 diameter 100 to 250	5.0 10		A
Screw ring gauges (parallel) See Notes 3 and 5	1.5 to 100 diameter 100 to 150 diameter 150 to 300 diameter	5.0 6.0 on pitch 10 diameter		A
Screw ring gauges(taper) See Notes 3 and 5	1.5 to 100 100 to 250	7.0 10		A
Screw pitch See Notes 3 and 5	0.2 to 8	1.5		
Screw flank angle See Note 6	0° to 52°	5.0 minutes of arc		
Screw calliper gauges, parallel	From 3 up to 150	See note 4		A

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
RANGE IN MILLIMETRES AND UNCERTAINTY IN MICROMETRES UNLESS OTHERWISE STATED				
Feeler gauges	BS 957:2008	1.0		A
OTHER MEASURING INSTRUMENTS, EQUIPMENT AND MACHINES				
Micrometers				A
External	BS 870:2008 0 to 600	Heads: 2.0 Setting and extension rods 1.0 + (8.0 x length in m)		
	Flatness of anvils Parallelism of anvils	0.30 1.00		
Internal	BS 959:2008 0 to 900	Heads: 2.0 Setting and extension rods 1.0 + (8.0 x length in m)		A
Depth	BS 6468:2008 0 to 300	Heads: 2.0 Setting and extension rods 1.0 + (8.0 x length in m)		A
	Flatness of base Parallelism (Type S)	1.0 2.0		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
OTHER MEASURING INSTRUMENTS, EQUIPMENT AND MACHINES (Cont'd)				
Length Gauges, Flat & Spherical-ended (excluding length bars) – See Note 5	0 to 3000	1.0 + (8.0 x length in m) Minimum 1.5		A
Micrometers, 3 point bore	0 to 100	5.0	Calibrated using the checking fixture and / or by comparison with setting rings.	A
Vernier type gauges including dial and digital				
Caliper	BS 887:2008 0 to 1000 Overall performance:	 10 + (30 x length in m)		A
Depth	BS 6365:2008 0 to 600 Overall performance:	 10 + (30 x length in m)		A
Height	BS 1643:2008 0 to 1000 Overall performance:	 10 + (30 x length in m)		A
	ISO 13385-1 2019 Partial surface contact error (E) 0 to 1000 mm	 4	Calibration by comparison to length standards	A
	Shift error (S) internal jaws 3 to 50 mm	4	The stated uncertainty has been calculated in accordance with ISO 14253-5 and relates to the test value uncertainty The uncertainty quoted excludes contributions relating to the instrument under test	
	Shift error (S) depth and step 3 to 50mm	4		
Height gauges - (Simple) including vernier, dial and digital types	BS EN ISO 13225:2012 Length measurement error (E): 0 to 150 150 to 300 300 to 600 600 to 1000	 15 19 28 40	The stated uncertainties have been calculated in accordance with ISO 14253-2	A

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
Dial gauges and dial test indicators	As BS 907:2008 and BS 2795:1981 0 to 50 Discrimination	2.0 1.5		A
Steel rules	0 to 1000 mm	15 + (10 x length in m)	Calibrated using a profile projector.	A
ANGLE				
Bevel protractors	As BS 1685:2008 0° to 360°	6 0 minutes of arc		A
Squares				
Blade type (see npote 2)	As BS 939:2007 50 to 300 300 to 450	 3.0 5.0		A
Sine Bars and Tables	BS 3064:1978 0 to 500 length	Linear dimensions 1.0 + (10 x length in m) Overall performance 3.0 seconds of arc		A
Profile projectors	10 to 100 magnifications Linear 0 to 100 100 to 200 200 to 300 Angular 0° to 360°	231 at the screen 3.0 3.2 9.4 2.0 minutes of arc	Calibrated using glass scales / graticules.	A, B
FORM				
Surface plates Granite and Cast iron	BS 817:2008 (and above) 160 x 100 to 6000 x 4000 Flatness of working surface (Note 2): Local variation of working surface:	 1.5 + (0.80 x diagonal in m) 1.5		A, B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
ELECTRICAL All electrical measurements are carried out using the method of direct comparison or transfer to laboratory reference standards unless otherwise determined in the remarks column.				
MEASUREMENTS				
RESISTANCE	0 Ω to 100 Ω 100 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 10 MΩ 10 MΩ to 100 MΩ	55 μΩ/Ω + 4.6 mΩ 58 μΩ/Ω + 43 mΩ 59 μΩ/Ω + 58 mΩ 64 μΩ/Ω + 4.2 Ω 32 μΩ/Ω + 1.2 kΩ 0.25 % + 12 kΩ 0.55 % + 49 kΩ		A, B
DC VOLTAGE	0 mV to 100 mV 100 mV to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V	21 μV/V + 4.0 μV 37 μV/V + 3.5μV 9.5 μV/V + 58 μV 19 μV/V + 870 μV 9.9 μV/V + 11 mV		A, B
DC CURRENT	0 mA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 3 A	0.013 % + 740 nA 0.013 % + 12 μA 0.010 % + 150 μA 0.010 % + 480 μA		A, B
	3 A to 20 A 20 A to 100 A 100 A to 200 A 200 A to 500 A 500 A to 1000 A	75 mA 170 mA 1.1 A 1.6 A 1.8 A	Simulated current using 50 turn coil, for the calibration of clamp-on ammeters.	A, B
AC VOLTAGE	30 μV to 100 mV 40 Hz to 10 kHz	87 μV/V + 30 μV		A, B
	100 mV to 1 V 40 Hz to 10 kHz	0.035 % + 160 μV		
	1 V to 10 V 40 Hz to 10 kHz	0.028 % + 3.1 mV		
	10 V to 100 V 40 Hz to 10 kHz	0.028 % + 23 mV		
	100 V to 1 kV 40 Hz to 10 kHz	0.023 % + 150 mV		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
AC CURRENT	10 mA to 1 A *40 Hz to 1 kHz* 1 A to 3 A *40 Hz to 1 kHz*	 0.074 % + 350 μA 0.10 % + 1.5 mA		A, B
	60 Hz 3 A to 20 A 20 A to 100 A 100 A to 200 A 200 A to 500 A 500 A to 1000 A	 75 mA 170 mA 1.1 A 1.6 A 1.8 A	Simulated current using 50 turn coil, for the calibration of clamp-on ammeters.	A, B
GENERATION				
RESISTANCE Spot Values	 175 mΩ 100 mΩ 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1000 MΩ	 5.9 mΩ 5.9 mΩ 0.014 % + 8.0 mΩ 0.0072 % + 8.0 mΩ 0.0060 % + 62 mΩ 0.0060 % + 0.60 Ω 0.006 % + 7.0 Ω 0.014 % + 63 Ω 0.050 % + 770 Ω 0.70 % + 6.3 kΩ 1.5 % + 61 kΩ		A
Range values	0 Ω to 100 Ω 100 Ω to 330 Ω 330 Ω to 1 kΩ 1 kΩ to 3.3 kΩ 3.3 kΩ to 10 kΩ 10 kΩ to 33 kΩ 33 kΩ to 100 kΩ 100 kΩ to 330 kΩ 330 kΩ to 1 MΩ 1 MΩ to 3.3 MΩ 3.3 MΩ to 10 MΩ 10 MΩ to 33 MΩ 33 MΩ to 100 MΩ 100 MΩ to 330 MΩ 330 MΩ to 1 GΩ	0.01 % + 52 mΩ 0.01 % + 52 mΩ 0.01 % + 130 mΩ 0.01 % + 140 mΩ 0.01 % + 1.2 Ω 0.01 % + 2.3 Ω 0.01 % + 2.3 Ω 0.01 % + 2.3 Ω 0.01 % + 23 Ω 0.01 % + 0.23 kΩ 0.01 % + 3.6 kΩ 0.01 % + 3.6 Ω 0.05 % + 16 Ω 1.0 % + 16 Ω 2.0 % + 520 Ω		
DC VOLTAGE	0 mV to 200 mV 0.2 V to 2 V 2 V to 20 V 20 V to 200 V 200 V to 1 025 V	36 μV/V + 5.0 μV 22 μV/V + 7.0 μV 22 μV/V + 52 μV 25 μV/V + 600 mV 29 μV/V + 6.0 mV		A
DC CURRENT	0 μA to 200 μA 0.2 mA to 2 mA 2 mA to 20 mA 20 mA to 200 mA 0.2 A to 2 A 2 A to 30 A	60 nA 70 nA 0.60 μA 8.0 μA 80 μA 1.0 mA		A

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
AC VOLTAGE				A
	0 mV to 200 mV			
	10 Hz to 45 Hz	0.10 % + 40 μV		
	45 Hz to 10 kHz	0.030 % + 44 μV		
	10 kHz to 20 kHz	0.080 % + 55 μV		
	20 kHz to 50 kHz	0.14 % + 62 μV		
	50 kHz to 100 kHz	0.45 % + 80 μV		
	100 kHz to 500 kHz	0.70 % + 460 μV		
	0.2 V to 2 V			
	10 Hz to 45 Hz	0.070 % + 140 μV		
	45 Hz to 10 kHz	0.030 % + 150 μV		
	10 kHz to 20 kHz	0.090 % + 150 μV		
	20 kHz to 50 kHz	0.12 % + 250 μV		
	50 kHz to 100 kHz	0.30 % + 800 μV		
	100 kHz to 500 kHz	0.63 % + 1.3 mV		
	2 V to 20 V			
	10 Hz to 45 Hz	0.070 % + 1.4 μV		
	45 Hz to 10 kHz	0.030 % + 1.2 μV		
	10 kHz to 20 kHz	0.090 % + 1.5 μV		
	20 kHz to 50 kHz	0.12 % + 1.3 μV		
	50 kHz to 100 kHz	0.30 % + 2.8 μV		
	20 V to 200 V			
	30 Hz to 45 Hz	0.070 % + 8.0 mV		
	45 Hz to 10 kHz	0.080 % + 12 mV		
	10 kHz to 20 kHz	0.11 % + 16 mV		
	20 kHz to 50 kHz	0.12 % + 16 mV		
	50 kHz to 100 kHz	0.30 % + 110 mV		
	200 V to 1020 V			
	30 Hz to 45 Hz	0.070 % + 160 mV		
	45 Hz to 1 kHz	0.24 % + 50 mV		
	1 kHz to 5 kHz	0.11 % + 50 mV		
	5 kHz to 10 kHz	0.13 % + 140 mV		
AC CURRENT				
	45 Hz to 1 kHz			
	20 μA to 200 μA	0.060 % + 0.17 μA		A
	200 μA to 2 mA	0.080 % + 0.30 μA		
	2 mA to 20 mA	0.060 % + 4.0 μA		
	20 mA to 200 mA	0.060 % + 200 μA		
	200 mA to 2 A	0.070 % + 300 μA		
	2 A to 30 A	0.050 % + 8.0 mA		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
CAPACITANCE Spot Values	1 nF 10 nF 20 nF 50 nF 100 nF 1 μF 10 μF 100 μF 1 mF 10 mF	24 pF 31 pF 47 pF 110 pF 110 pF 1.0 nF 23 nF 85 nF 4.0 μF 40 μF		A
Range Values	0.95uF to 9.5uF 9.5uF to 95uF 95uF to 950uF 0.95mF to 9.5mF 9.5mF to 100mF	0.70 % + 1.2 pF 0.70 % + 12 pF 0.70 % + 120 pF 0.70 % + 1.2 μF 0.70 % + 1.2 μF		
INDUCTANCE	1 mH 10 mH 20 mH 30 mH 50 mH 100 mH 1 H 10 H	0.50 % + 0.12 μH 0.50 % + 1.2 μH 0.50 % + 1.2 μH 0.50 % + 1.2 μH 0.50 % + 1.2 μH 0.50 % + 12 μH 0.50 % + 120 μH 0.50 % + 2.6 mH		
Measurements to support 17th edition type test equipment				A
Earth Bond resistance	2 mΩ to 600 mΩ 600 mΩ to 10 Ω	5.6 mΩ 67 mΩ		
Continuity Reisitance	12 mΩ to 600 mΩ 600 mΩ to 100 Ω	14 mΩ 610 mΩ		
AC Resistance (50 Hz nominal)	50 mΩ to 10 Ω 10 Ω to 1 kΩ	12 mΩ 610 mΩ		
Earth Bond Current	0 A to 100 mA 100 mA to 30 A	11 mA 650 mA		
Insulation Resistance	5 MΩ to 1 GΩ	0.78 % + 37 Ω		
Insulation Voltage Loading Resistance	10 kΩ to 5 MΩ	0.40 % + 1.2 Ω		
Insulation Voltage	50 V to 1 kV	6.5 V		
PAT Test Voltage	50 V to 3 kV	12 V		
PAT Leakage Current	0 A to 10 mA	0.80 % + 350 μA		
RCD Trip Current	10 mA to 300 mA 500 mA to 1 A	0.25 % + 350 μA 0.17 % + 500 μA		
RCD Trip Time	0 s to 1000 s	0.20 % + 4.0 ms		
Load for PAT	0.13 kW	15 Ω	At nominal UK mains supply voltage	A

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
FREQUENCY				A
	100 mHz to 1 Hz 1 Hz to 1 MHz 10 MHz	30 μHz 1.0 μHz/Hz + 1.6 Hz 1.0 μHz/Hz + 11 Hz		
TIME				
Elapsed time	0 s to 10^4 Seconds	50 ms	Electronically triggered event	A B
Events	240 RPM to 60 000 RPM	2.5 RPM	Optical tachometers	
ELECTRICAL SIMULATION OF TEMPERATURE READING AND MEASURING DEVICES				
Thermocouples				
Type K	-200 °C to -50 °C -50 °C to 0 °C 0 °C to 1300 °C	1.2 °C 0.55 °C 0.40 °C	Including Cold Junction compensation.	A, B
Type K	-200 °C to -50 °C -50 °C to 0 °C 0 °C to 1300 °C	1.2 °C 0.50 °C 0.35 °C	Excluding Cold Junction compensation.	
Type J	-180 °C to - 50 °C -50 °C to 0 °C 0 °C to 700 °C	1.30 °C 0.40 °C 0.30 °C	Including Cold Junction compensation.	A, B
Type T	-250 °C to - 50 °C -50 °C to 0 °C 0 °C to 400 °C	1.30 °C 0.40 °C 0.30 °C	Including Cold Junction compensation.	A, B
Type R	0 °C to 400 °C 400 °C to 1700 °C	0.80 °C 0.70 °C	Ambient 20 ± 5.0 °C	A, B
Type S	0° C to 400 °C 400 °C to 1700 °C	0.40 °C 0.30 °C	Including Cold Junction compensation.	A, B
Type N	-200 °C to - 50 °C -50 °C to 0 °C 0 °C to 1200 °C	1.1 °C 0.40 °C 0.30 °C	Including Cold Junction compensation.	A, B
Type B	0 °C to 1000 °C 1000 °C to 1820 °C	0.40 °C 0.30 °C	Including Cold Junction compensation.	A, B
Type E	0 °C to 1000 °C	0.30 °C	Including Cold Junction compensation.	A, B

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
PRT Displays				
RTD PT 100	-50 °C to 0 °C 0 °C to 1000°C	0.40 °C 0.30 °C		A, B
Suitable for reference junction Measurements when using electrical simulation	0 °C in liquid 18 °C to 25 °C in air	0.20 °C 0.50 °C	Temperature measurements for supporting thermocouple reference junction claims.	A,B
PRESSURE			Methods consistent with EURAMET CG17	
Gas pressure (Gauge)				
Calibration of indicating instruments and gauges	-90 kPa to 0 Pa 0 Pa to 1.5 MPa 1.5 MPa to 3.5 MPa 3.5 MPa to 10.0 MPa -90 kPa to 0 Pa 0 Pa to 200 kPa 200 kPa to 2 MPa	87 Pa 103 Pa 288 Pa 2.3 kPa 0.84 kPa 100 Pa 0.89 kPa	Calibration of pressure instruments with an electrical output may be undertaken. Absolute pressures within this range can be calibrated, attracting an additional uncertainty of 22 Pa.	A B
Hydraulic pressure (Gauge)				
Calibration of indicating instruments and gauges	300 kPa to 1 MPa 1 MPa to 110 MPa	0.054 % 0.058 %		A, B
TORQUE				
Torque Wrenches	0.1 N·m to 1356 N·m to BS EN ISO 6789-2:2017	1.0 %	The uncertainty quoted is for both the application of the calibration torque and the characteristics of the device being calibrated. Calibration results may also be given in units of lbf·in and lbf·ft.	A
Hand Torque Tools	0.1 N·m to 1356 N·m BS EN ISO 6789:2003 (Withdrawn & superseded)	1.6 %		

Measured Quantity Instrument or Gauge	Range	Expanded Measurement Uncertainty (k = 2)	Remarks	Location Code
MASS			Methods consistent with EURAMET CG18.	
NON AUTOMATIC WEIGHING MACHINES (Digital, self verifying only)	200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg 50 kg 100 kg 200 kg	0.010 mg 0.010 mg 0.010 mg 0.020 mg 0.025 mg 0.035 mg 0.045 mg 0.070 mg 0.135 mg 0.370 mg 0.700 mg 2.120 mg 3.850 mg 10.500 mg 450.0 mg 740.0 mg 2.120 g 4.200 g 8.500 g	Weights available in OIML class E2 from 1mg to 500g Max Grouped load 1.1kg F1 from 1g to 5kg, Max Grouped load 9kg M1 from 1g to 20Kg Max grouped load 250Kg Other loads within the overall listed range may also be used.	A, B
END				

Appendix - Calibration and Measurement Capabilities

Introduction

The definitive statement of the accreditation status of a calibration laboratory is the Accreditation Certificate and the associated Schedule of Accreditation. This Schedule of Accreditation is a critical document, as it defines the measurement capabilities, ranges and boundaries of the calibration activities for which the organisation holds accreditation.

Calibration and Measurement Capabilities (CMCs)

The capabilities provided by accredited calibration laboratories are described by the Calibration and Measurement Capability (CMC), which expresses the lowest measurement uncertainty that can be achieved during a calibration. If a particular device under calibration itself contributes significantly to the uncertainty (for example, if it has limited resolution or exhibits significant non-repeatability) then the uncertainty quoted on a calibration certificate will be increased to account for such factors.

The CMC is normally used to describe the uncertainty that appears in an accredited calibration laboratory's schedule of accreditation and is the uncertainty for which the laboratory has been accredited using the procedure that was the subject of assessment. The measurement uncertainty is calculated according to the procedures given in the GUM and is normally stated as an expanded uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of $k = 2$. An accredited laboratory is not permitted to quote an uncertainty that is smaller than the published measurement uncertainty in certificates issued under its accreditation.

Expression of CMCs - symbols and units

It should be noted that the percentage symbol (%) represents the number 0.01. In cases where the measurement uncertainty is stated as a percentage, this is to be interpreted as meaning percentage of the measurand.
Thus, for example, a measurement uncertainty of 1.5 % means $1.5 \times 0.01 \times q$, where q is the quantity value.

The notation Q[a, b] stands for the root-sum-square of the terms between brackets: $Q[a, b] = [a^2 + b^2]^{1/2}$