


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 0157 Accredited to ISO/IEC 17025:2005	Sheffield Testing Laboratories	
	Issue No: 036 Issue date: 09 June 2009	
	50-56 Nursery Street Sheffield South Yorkshire S3 8GP	Contact: Mr C Blank Tel: +44 (0)114 272 6581/2 Fax: +44 (0)114 272 3248 E-Mail: hq@sheffieldtesting.com Website: www.sheffieldtesting.com
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 50-56 Nursery Street Sheffield South Yorkshire S3 8GP	Local contact Mr C Blank	Dimensional Force Torque
		P

Site activities performed away from the locations listed above:

Location details	Activity	Location code
At customer premises	Dimensional	S



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DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty (<i>k</i> =2)	Remarks	Location Code																		
FORCE			NOTES																			
Calibration of force measuring devices eg proving devices, strain gauged load cells, load measuring rings and force meters in compression and tension modes	Machine No 1 100 kN up to 500 kN 50 kN up to 500 kN	0.02% 0.05%	1. The uncertainties stated are for the application of the calibration force and do not take into account the characteristics of the device being calibrated. 2. The calibration procedure used may be either in accordance with ISO 376:2004, BS EN ISO 376:2004, ASTM E74-06 or as agreed by UKAS. 3. In the place of the newton, calibrations /verifications may be requested in the following units: tons-force (tonf), pound-force (lbf) or kilogram-force (kgf). 4. The uncertainty quoted is for the application of the calibration torque and does not take into account the characteristics of the device being calibrated. 5. Calibrations may also be in units of lbf.in, lbf.ft and kgf.cm. 6. All calibrations must be carried out in accordance with procedures agreed by UKAS. 7. All dimensional calibrations can be given in Inch units.	P																		
	Machine No 2 10 kN up to 100 kN	0.02%																				
	Machine No. 3, 2 kN up to 56 kN	0.02%																				
	Machine No 4 2.5 kN up to 25 kN 0.5 kN up to 25 kN	0.01% 0.02%																				
	Machine No 5 0.1 N up to 2.5 kN	0.01%																				
		of calibration force See Notes 1, 2 & 3																				
TORQUE																						
Hand torque tools	From 0.5 Nm to 1000 Nm to BS EN ISO 6789:2003	1% of calibration torque See Notes 4 and 5		P																		
LENGTH																						
Gauge blocks Inch (Steel, tungsten carbide and ceramic)	As BS 4311:Parts 1 and 3:1993 Up to 0.4 in Above 0.4 in up to 1 in Size 2 in Size 3 in Size 4 in	Class (See footnotes) <table border="1"> <tr><td><u>C</u></td><td><u>D</u></td><td><u>E</u></td></tr> <tr><td>3</td><td>4</td><td>6</td></tr> <tr><td>4</td><td>5</td><td>8</td></tr> <tr><td>5</td><td>7</td><td>10</td></tr> <tr><td>6</td><td>8</td><td>12</td></tr> <tr><td>7</td><td>10</td><td>14</td></tr> </table> μ inches	<u>C</u>	<u>D</u>	<u>E</u>	3	4	6	4	5	8	5	7	10	6	8	12	7	10	14	4. The uncertainty quoted is for the application of the calibration torque and does not take into account the characteristics of the device being calibrated.	P
	<u>C</u>	<u>D</u>	<u>E</u>																			
3	4	6																				
4	5	8																				
5	7	10																				
6	8	12																				
7	10	14																				
As BS EN ISO 3650:1999 & BS 4311:Part 1 and 3:1993 Up to 10 above 10 up to 25 Sizes 30, 40, 50, 60, 70, 75, 80, 90, 100	<table border="1"> <tr><td><u>C</u></td><td><u>D</u></td><td><u>E</u></td></tr> <tr><td>.08</td><td>.10</td><td>.15</td></tr> <tr><td>.10</td><td>.13</td><td>.20</td></tr> <tr><td>.12</td><td>.17</td><td>.25</td></tr> <tr><td>.15</td><td>.21</td><td>.30</td></tr> <tr><td>.18</td><td>.25</td><td>.35</td></tr> </table>	<u>C</u>	<u>D</u>	<u>E</u>	.08	.10	.15	.10	.13	.20	.12	.17	.25	.15	.21	.30	.18	.25	.35			
<u>C</u>	<u>D</u>	<u>E</u>																				
.08	.10	.15																				
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Measured Quantity Instrument or Gauge	Range	Best Measurement Capability Expressed as an Expanded Uncertainty (k=2)	Remarks	Location Code	
RANGE IN MILLIMETRES AND UNCERTAINTIES IN MICROMETRES UNLESS OTHERWISE STATED					
Comparison					
<p>Class C uncertainties apply to the measurement of length of steel gauges by comparison with grade K standards of length of a similar material. Class C uncertainties apply to grade 0, 1 and 2 gauges to BS EN ISO 3650:1999 and BS 4311:Part 1:1993 and BS 4311:Part 3:1993.</p> <p>Class D and E uncertainties are the maximum applicable to the measurement of length of steel grade 3 and 4 gauges respectively to BS 4311:Part 3:1993, by comparison with grade K standards of length of a similar material. Class D uncertainties also represent the best capability for the measurement of length of tungsten carbide and ceramic gauges by comparison with grade K standards of length of a dissimilar material.</p>					
LENGTH (cont'd)			NOTES (cont'd)		
Thread measuring cylinders	As BS 3777:1964, BS 5590:1978 and specials	0.5	8. 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.	P	
Plain plug gauges (parallel) cylindrical setting standards, gear measuring cylinders and rollers	From 1 up to 50 diameter	0.5		on diameter	
	Above 50 up to 100 diameter	0.8			
	Above 100 up to 150 diameter	1			
	Above 150 up to 200 diameter	1.5			
	Above 200 up to 300 diameter	2			
Plain ring gauges (parallel) and setting standards	Above 300 up to 400 diameter	2.5			
	From 1.5 up to 25 diameter	0.8			
	Above 25 up to 50 diameter	1			
Plain plug gauges (taper)	Above 50 up to 100 diameter	1.5			P
	Above 100 up to 150 diameter	2			
	Above 150 up to 300 diameter	2.5			
Taper up to 1 in 8 on diameter	From 3 up to 50 diameter	3	on diameter		
	Above 50 up to 100 diameter	4			
Taper above 1 in 8 and up to 1 in 3 on diameter	From 3 up to 50 diameter	5			
	Above 50 up to 100 diameter	6			
Plain ring gauges (taper)		6		P	
		7			
		8			
Taper up to 1 in 8 on diameter	From 3 up to 50 diameter	4	on diameter		
	Above 50 up to 100 diameter	5			
	Above 100 up to 200	6			
Taper above 1 in 8 and up to 1 in 3 on diameter	From 3 up to 50 diameter	6			
	Above 50 up to 100 diameter	7			
	Above 100 up to 200 diameter	8			
9. In addition to specified items, other similar items, including parts of measuring instruments and machines, may be calibrated (See Note 6) to the uncertainties stated. Where the item or part calibrated is of lower quality due to wear, errors in geometry or form, or poor surface texture, or where any other factor adversely affects the measurement capability, greater uncertainties must be quoted.					
10. Single start, symmetrical thread forms only.					
11. Single start symmetrical and asymmetrical thread forms only.					



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RANGE IN MILLIMETRES AND UNCERTAINTIES IN MICROMETRES UNLESS OTHERWISE STATED				
LENGTH (cont'd)				
Length gauges, flat and spherical ended	Up to 1000	0.8 + (3 x length in m)		P
Plain gap gauges (parallel)	From 1 up to 100 Above 100 up to 200 Above 200 up to 300	2 3 4		P
Screw plug gauges (parallel) including check and setting plugs See Note 11	From 1 up to 100 diameter Above 100 up to 200 diameter	3 4	Pitch: 1.5 Flank Angle: 2+(800/MxP)* on pitch diameter	P
Screw plug gauges (taper) including check plugs See Note 10	From 5 up to 100 diameter Above 100 up to 200 diameter	5 8		
Screw ring gauges (parallel) See Note 11	From 3 up to 100 diameter Above 100 up to 200 diameter	5 6	Pitch: 1.5 Flank Angle: 2+ (2x800/MxP)*	P
Screw ring gauges (taper) See Note 10	From 5 up to 100 diameter Above 100 up to 200 diameter	7 10		
		*M = Projector magnification *P = Pitch in mm		
Feeler gauges	As BS 957:Part 1:1959 and BS 957:Part 2:1969) 1)		P
Graduated rules	As BS 4372:1968 Up to 2 m	5 + (10 x length in m)		P
Vee blocks	As BS 3731:1987 up to 150	Dependent on size and grade From 2.5 up to 5		P
Parallels	As BS 906:1972	Dependent on size and grade From 1.5 up to 5		P
ANGLE				
Squares				
Blade type	As BS 939:2007 up to 450	3 on squareness See Note 8		P
Angle plates and box angle plates	As BS 5535:1978	Squareness: 3 + (1 per 100 mm) (See Parallelism: 1 + (1 per 100 mm) (Note 8)		P
Sine bars and tables	As BS 3064:1978 up to 500 length	Linear dimensions: 1 + (10 x length in m) Overall performance 3 seconds of arc		P



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ANGLE (cont'd)				
Sine centres	Up to 500 length or between centres	$\left[\begin{array}{l} \text{Linear dimensions} \\ 1 + (10 \times \text{length in m}) \\ \text{Overall performance} \\ 5 \text{ second of arc} \end{array} \right.$		P
Compound sine tables	With tables or equivalent up to 500 length			
Bevel Protractors (and Combination sets)	As BS 1685:1959	1 minute of arc + 1 Vernier division		P
FORM				
Surface plates				P & S
Granite	$\left[\begin{array}{l} \text{As BS 817:1988} \end{array} \right.$	1.5 + (0.8 x diagonal in m) See Note 8		
Cast iron				
Steel balls	From 2 up to 25 diameter Above 25 up to 50 diameter	0.8) on diameter 1.0)		P
MEASURING INSTRUMENTS AND MACHINES				
Micrometers				P
External Internal Depth	As BS 870:1959 and above As BS 959:1959 As BS 6468:1984	$\left[\begin{array}{l} \text{Heads: 2.0 between any two} \\ \text{points} \\ \text{Setting and extension rods:} \\ 0.6 + (3 \times \text{length in m}) \end{array} \right.$		
Micrometer heads	As BS 1734:1959		1.0 between any two points	P
Height setting micrometer	Up to 300	Heads: 1.2 between any two points Stepped column: 1.6 Overall performance: 2.0		P
Riser blocks for above	150 300	1.0 2.0		P
Vernier gauges Caliper Height Depth	As BS 887:1982 As BS 1643:1983	$\left[\begin{array}{l} \text{Overall performance:} \\ 10 + (30 \times \text{length in m}) \end{array} \right.$		P
	Up to 1000			
Height gauges, electronic	Up to 1000	Overall performance 2 + (10 x length in m)		P
Vernier Gauges Bench Mounted	Up to 3000 mm	Overall performance 10 + (30 x length in m)		P & S



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MEASURING INSTRUMENTS AND MACHINES (cont'd)				
Dial gauges and dial test indicators	As BS 907:1965 and BS 2795:1981	1.0		P
Bench centres	Up to 1 m between centres	Linear Dimensions 1 + (10 x length in m)		P
Comparators (external)	As BS 1054:1975 up to 1000 magnifications	1% of range Minimum 0.2		P
Thread diameter measuring machines	As NPL Schedules MOY/SCM 1/9 and MOY/SCM 1/12 up to 300	Overall performance 1.5		P
Receiver, position and profile gauges, jigs and fixtures	Maximum size 1000 mm x 750 mm x 500 mm	See Note 9		P
END				