


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <b>0375</b>  Accredited to <b>ISO/IEC 17025:2005</b>	<b>SERCAL Materials Testing Machines Services Ltd</b>	
	Issue No: 046	Issue date: 06 December 2018
	<b>Southern Avenue</b> Leominster Herefordshire HR6 0QH	<b>Contact: Dr N Wrigley</b> Tel: +44 (0)1527 514015 Fax: +44 (0)1527 514016 E-Mail: <a href="mailto:nigel.wrigley@sercalcalibrations.co.uk">nigel.wrigley@sercalcalibrations.co.uk</a> Website: <a href="http://www.sercalcalibrations.co.uk">www.sercalcalibrations.co.uk</a>

**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
<b>Address</b> Southern Avenue Leominster Herefordshire HR6 0QH	<b>Local contact</b> Dr N Wrigley	Force  P

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

Location details	Activity	Location code
Customer's sites or premises  The customer's sites or premises must be suitable for the nature of the particular calibrations undertaken and will be subject of contract review arrangements between the laboratory and the customer	<b>Contact</b> Dr N Wrigley	Force Hardness  S



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DETAIL OF ACCREDITATION

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k=2$ )	Remarks	Location Code
FORCE			NOTES	
UNIVERSAL MATERIALS TESTING MACHINES				S
Verification and calibration of the force measuring system by force proving instruments in tension	25 N to 600 kN for Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2018	0.20 %	1. Calibration also includes the alignment and restraint of the upper machine platen required by BS EN 12390-4:2000.	
	From 50 N up to 2000 kN for Class 1, 2 and 3 machines to BS EN ISO 7500-1:2018 and ASTM E4-16	0.32 %	2 The indirect verification shall be in accordance with the requirements of BS EN ISO 6508-2:2015 and ASTM E18-17.	
Verification and calibration of the force measuring system by force proving instruments in compression	5 N to 600 kN for Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2018	0.20 %		
	5 N to 16.5 MN for Class 1, 2 and 3 machines to BS EN ISO 7500-1:2018 and ASTM E4-16	0.32 %	3 The indirect verification shall be in accordance with the requirements of BS EN ISO 6506-2:2014 ASTM E10-17.	
Verification and calibration of the force measuring system by calibrated masses in tension	0.01 N to 1000 N for Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2018 and ASTM E4-16	0.10 %	4 The indirect verification shall be in accordance with the requirements of BS EN ISO 6507-2:2005 and ASTM E92-17.	
Verification and calibration of the force measuring system by calibrated masses in compression	0.01 N to 1000 N for Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2018 and ASTM E4-16	0.10 %		
FORCE MEASURING DEVICES				P
Calibration of force measuring devices, eg, strain gauged load cells and load measuring rings (but excluding proving devices in) Tension and Compression	From 0,1 N up to 1 000 N	0.10 %		
	From 500 N up to 500 kN	0.41 %		
COMPRESSION TESTING MACHINES FOR CONCRETE				S
Verification of concrete testing machines by proving devices in Compression	100 kN to 16.5 MN for Class 1, 2 and 3 machines to BS EN ISO 7500-1:2018	0.32 % See note 1		
Rate of application of force (Pacer rate)	As BS EN 12390-2:2000 3 kN/min to 1300 kN/min	2.25 %		
Flatness of platens and spacing blocks	As BS EN 12390-4:2000 40 mm to 300 mm	0.010 mm		



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<b>TENSION CREEP TESTING MACHINES</b>				
Verification of the applied load using force proving instruments	25 N to 500 kN for Class 0.5, 1 and 2 machines to BS EN ISO 7500-2:2006 and ASTM E4-16	0.20 %		S
Verification of the applied load using masses	0.01 N to 1000 N for Class 0.5, 1 and 2 machines to BS EN ISO 7500-2:2006 and ASTM E4-16	0.10 %		
<b>LENGTH</b>				
Extensometers	As BS EN ISO 9513:2012 for the following classes and gauge lengths:  Class 0.2 from 25 mm Class 0.5 from 10 mm Class 1 from 5 mm Class 2 from 5 mm  As ASTM:E83-16 for the following classes and gauge lengths:  B-1 from 20 mm B-2 from 10 mm C from 5 mm  Displacements 0.005 mm to 50 mm			S
Testing machine crosshead displacement and actuator displacement	1 mm to 1200 mm	0.011 mm + (0.13 mm per metre)		
<b>TORSION TESTING MACHINES</b>				
Torque	4 N.m to 5000 N.m	0.43 %		S
Angle	0° to 360°	0.25°		
<b>IMPACT TESTING MACHINES</b>				
Charpy	Absorbed Energy (joules) 1 J to 600 J BS EN ISO 148-2:2016 ASTM E23-12C	0.70 J		S
Izod	BS 131:Part 4:1972			
Plastics	BS ISO 13802:2015	0.0041J		



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Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty ( $k=2$ )	Remarks	Location Code
VERIFICATION OF HARDNESS TESTING MACHINES  Indirect verification of Rockwell Hardness Testing Machines	Rockwell scales: A, B, C, D, E, F, G, H, K, N and T HRA Scale 80 to 85 70 to 79 60 to 69  HRB Scale 80 51 to 79 10 to 50  HRC Scale 60 to 70 40 to 59 20 to 39  HRD Scale 70 to 80 50 to 69 40 to 49  HRE Scale 89 75 to 88 65 to 87  HRF Scale 87 70 to 86 40 to 69  HRG Scale 80 40 to 79 10 to 39  HRH Scale 90 80 to 89 60 to 79  HRK Scale 70 30 to 69 10 to 29	0.15 HRA 0.16 HRA 0.28 HRA  0.42 HRB 0.87 HRB 1.36 HRB  0.31 HRC 0.32 HRC 0.37 HRC  0.17 HRD 0.25 HRD 0.27 HRD  0.54 HRE 0.54 HRE 0.54 HRE  0.40 HRF 0.40 HRF 0.54 HRF  0.30 HRG 0.30 HRG 0.76 HRG  0.40 HRH 0.40 HRH 0.68 HRH  0.40 HRK 0.40 HRK 0.64 HRK	See Note 2	S



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VERIFICATION OF HARDNESS TESTING MACHINES  Indirect verification of Rockwell Hardness Testing Machines (cont'd)	Rockwell scales: HR45N Scale 67 to 75 50 to 66 10 to 49  HR45T Scale 50 to 75 40 to 49 10 to 39  HR30N Scale 77 to 85 60 to 76 40 to 59  HR30T Scale 57 to 85 50 to 56 20 to 49  HR15N Scale 90 to 95 80 to 89 40 to 79  HR15T Scale 88 to 100 80 to 87 20 to 79	0.18 HR45N 0.21 HR45N 0.43 HR45N  0.40 HR45T 0.40 HR45T 0.73 HR45T  0.27 HR30N 0.27 HR30N 0.55 HR30N  0.39 HR30T 0.66 HR30T 0.90 HR30T  0.18 HR15N 0.18 HR15N 0.39 HR15N  0.21 HR15T 0.21 HT15T 0.37 HR15T	See Note 2	
Indirect verification of Brinell Hardness Testing and Calibration machines	Brinell scales: Scale 10/3000 600HBW to 140 HBW  Scale 10/1500 299 HBW to 55 HBW  Scale 10/1000 169 HBW to 55 HBW  Scale 5/750 600 HBW to 140 HBW	8.0 HBW to 2.2 HBW  4.1 HBW to 1.2 HBW  2.3 HBW to 1.2 HBW  9.8 HBW to 2.4 HBW	See Note 3	



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VERIFICATION OF HARDNESS TESTING MACHINES				
Indirect verification of Brinell Hardness Testing machines (cont'd)	Brinell scales: Scale 5/250 169 HBW to 55 HBW  Scale 2.5/187.5 600 HBW to 140 HBW  Scale 1/1 21.8 HBW to 3.18 HBW	2.7 HBW to 1.3 HBW  16 HBW to 2.9 HBW  1.04 HBW to 0.09 HBW	See Note 3	
Indirect verification of Vickers hardness testing machines	Vickers scales: HV 100 200 HV 100 400 HV 100 700  HV 50 200 HV 50 400 HV 50 700  HV 30 200 HV 30 400 HV 30 700  HV 20 200 HV 20 400 HV 20 700  HV 10 200 HV 10 400 HV 10 700  HV5 200 HV5 400 HV5 700  HV3 200 HV3 400 HV3 700  HV1 200 HV1 400 HV1 700	1.2 HV 3.4 HV 4.1 HV  1.9 HV 3.5 HV 6.3 HV  2.0 HV 4.4 HV 9.3 HV  2.5 HV 6.2 HV 11.0 HV  3.1 HV 7.7 HV 14.9 HV  3.9 HV 11.0 HV 19.7 HV  6.9 HV 16.3 HV 31.0 HV  8.7 HV 21.4 HV 44.0 HV	See Note 4	



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VERIFICATION OF HARDNESS TESTING MACHINES				
Indirect verification of Vickers hardness testing machines (cont'd)	Vickers Scales: HV 0.5 200 HV 0.5 400 HV 0.5 700  HV 0.3 200 HV 0.3 400 HV 0.3 700  HV 0.2 200 HV 0.2 400 HV 0.2 700  HV 0.1 200 HV 0.1 400 HV 0.1 700  HV 0.05 200 HV 0.05 400 HV 0.05 700  HV 0.025 200 HV 0.025 400 HV 0.025 700  HV 0.01 200 HV 0.01 400 HV 0.01 700	5.0 HV 15.0 HV 17.0 HV  6.0 HV 16.0 HV 19.0 HV  7.0 HV 17.0 HV 20.0 HV  10.0 HV 30.0 HV 40.0 HV  8.5 HV 19.0 HV 27.0 HV  9.0 HV 20.0 HV 30.0 HV  10.0 HV 30.0 HV 40.0 HV	See Note 4	
END				