Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines, Middlesex, TW18 3HR, UK

7525

Accredited to ISO/IEC 17025:2005

Struers Ltd

Issue No: 005 **Issue date:** 11 November 2016

Unit 11 Evolution
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Calibration 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
Address Unit 11 Evolution Whittle Way, Catcliffe Rotherham S60 5BL **Contact Lee Cobb**	Hardness Testing machines, Rockwell, direct Testing machines, Rockwell, indirect Testing machines, Vickers,and Knoop direct Testing machines, Vickers,and Knoop indirect Testing machines, Brinell, direct Testing machines, Brinell, indirect Accreditation is limited to those machines manufactured for and by the Struers Group of Companies and by EmcoTest Prüfmaschinen GmbH.	P

Site activities performed away from the locations listed above:

Location details	Activity	Location code
Any customer's premises **Contact Lee Cobb**	Hardness Testing machines, Rockwell, direct Testing machines, Rockwell, indirect Testing machines, Vickers,and Knoop direct Testing machines, Vickers,and Knoop indirect Testing machines, Brinell, direct Testing machines, Brinell, indirect Accreditation is limited to those machines manufactured for and by the Struers Group of Companies and by EmcoTest Prüfmaschinen GmbH.	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
CERTIFICATION OF HARDNESS MACHINES IN SERVICE			Note 1 Accreditation is limited to those machines manufactured for and by the Struers Group of Companies and by EmcoTest Prüfmaschinen GmbH.	
Direct verification of Rockwell Hardness Testing Machines	Rockwell scales: A, B, C, D, E, F, G, H, K, N and T Y	See note 2	Note 2 The calibration/ verification shall be in accordance with the requirements of BS EN ISO 6508:2005 and ASTM E18-12.	P & S
	Force	0.12 % force		
	Time	0.1 second	Note 3 The verification shall be in accordance with the requirements of BS EN ISO 6507:2005, BS EN ISO 4545:2005, ASTM E92-16 & ASTM E384-16	
	Length	0.1 μm		
Indirect verification of Rockwell Hardness Testing Machines	Rockwell scales: HRA Scale	See note 2	Note 4 The verification shall be in accordance with the requirements of BS EN ISO 6506:2005 and ASTM E10-12.	P & S
	86 to 85	0.15 HRA		
	70 to 79	0.16 HRA		
	60 to 69	0.28 HRA		
	HRB Scale			
	80	0.42 HRB		
	51 to 79	0.87 HRB		
	10 to 50	1.36 HRB		
	HRC Scale			
	60 to 70	0.31 HRC		
	40 to 59	0.32 HRC		
	20 to 39	0.37 HRC		
	HRD Scale			
	70 to 80	0.17 HRD		
	50 to 69	0.25 HRD		
	40 to 49	0.27 HRD		
	HRE Scale			
	89	0.54 HRE		
	75 to 88	0.54 HRE		
	65 to 87	0.54 HRE		
	HRF Scale			
	87	0.40 HRF		
	70 to 86	0.40 HRF		
	40 to 69	0.54 HRF		
	HRG Scale			
	80	0.30 HRG		
	40 to 79	0.30 HRG		
	10 to 39	0.76 HRG		

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (*k*=2)	Remarks	Location Code
Indirect verification of Rockwell Hardness Testing Machines (cont'd)	Rockwell Scales: HRH Scale 90 80 to 89 60 to 79 HRK Scale 70 30 to 69 10 to 29 HRL Scale 115 90 to 114 HRM Scale 100 70 to 99 HRP Scale 85 40 to 84 HRR Scale 120 100 to 119 HRS Scale 112 110 to 111 HRV Scale 104 to 81 80 to 103 HR15N Scale 90 to 95 80 to 89 40 to 79 HR15T Scale 88 to 100 80 to 87 20 to 79 HR15W Scale 89 to 100 80 to 88 HR15X Scale 88 to 100 80 to 87 HR15Y Scale 94 to 100 85 to 93	See note 2 0.40 HRH 0.40 HRH 0.68 HRH 0.40 HRK 0.40 HRK 0.64 HRK 0.35 HRL 0.35 HRL 0.56 HRM 0.56 HRM 0.65 HRP 0.91 HRP 0.23 HRR 0.40 HRR 0.19 HRS 0.91 HRS 0.20 HRV 0.61 HRV 0.18 HR15N 0.18 HR15N 0.39 HR15N 0.21 HR15T 0.21 HT15T 0.37 HR15T 0.53 HR15W 0.44 HR15W 0.33 HR15X 0.62 HR15X 0.63 HR15Y 1.30 HR15Y		P & S

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (*k*=2)	Remarks	Location Code
Indirect verification of Rockwell Hardness Testing Machines (cont'd)	Rockwell Scales: HR30N Scale 77 to 85 60 to 76 40 to 59 HR30T Scale 57 to 85 50 to 56 20 to 49 HR30W Scale 65 to 100 40 to 64 HR30X Scale 79 to 100 60 to 78 HR30Y Scale 88 to 100 60 to 87 HR45N Scale 67 to 75 50 to 66 10 to 49 HR45T Scale 50 to 75 40 to 49 10 to 39 HR45W Scale 49 to 100 10 to 47 HR45X Scale 69 to 100 40 to 68 HR45Y Scale 82 to 100 60 to 81	See note 2 0.27 HR30N 0.27 HR30N 0.55 HR30N 0.39 HR30T 0.66 HR30T 0.90 HR30T 0.76 HR30W 0.90 HR30W 0.15 HR30X 0.99 HR30X 0.37 HR30Y 0.82 HR30Y 0.18 HR45N 0.21 HR45N 0.43 HR45N 0.40 HR45T 0.40 HR45T 0.73 HR45T 0.12 HR45W 0.29 HR45W 0.34 HR45X 0.81 HR45X 0.29 HR45Y 0.94 HR45Y		P & S
Direct verification of Vickers and Knoop Hardness Testing machines & Indentation Measuring Devices	Vickers scales: HV -100 to HV 0.05 HK 1.0 to HK 0.05 Force Time Length	 0.12 % force 0.1 second time 1 μm		P & S

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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
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 HV2.5 200 HV2.5 400 HV2.5 700 HV2 200 HV2 400 HV2 700 HV1 200 HV1 400 HV1 700 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	See note 3 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 5.0 HV 13.1 HV 24.3 HV 5.7 HV 14.5 HV 27.3 HV 6.9 HV 16.3 HV 31.0 HV 8.7 HV 21.4 HV 44.0 HV 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		P & S

Measured Quantity Instrument or Gauge	Range	Calibration and Measurement Capability (CMC) Expressed as an Expanded Uncertainty (*k*=2)	Remarks	Location Code
Indirect verification of Vickers Hardness Testing machines contiunued	HV 0.1 200 HV 0.1 400 HV 0.1 700 HV 0.05 200 HV 0.05 400	10.0 HV 30.0 HV 40.0 HV 38.6 HV 55.5 HV		
Indirect verification of Knoop Hardness Testing machines	Knoop Scales HK 0.05 200 HK 0.05 400 HK 0.05 700	See note 3 8.5 HK 19.0 HK 27.0 HK		
Indirect verification of Knoop Hardness Testing machines (cont'd)	Knoop Scales HK 0.1 200 HK 0.1 400 HK 0.1 700 HK 0.2 200 HK 0.2 400 HK 0.2 700 HK 0.3 200 HK 0.3 400 HK 0.3 700 HK 0.5 200 HK 0.5 400 HK 0.5 700 HK1 200 HK1 400 HK1 700	See note 3 8.0 HK 18.0 HK 25.0 HK 7.0 HK 17.0 HK 20.0 HK 6.0 HK 16.0 HK 19.0 HK 5.0 HK 15.0 HK 17.0 HK 8.7 HK 21.4 HK 44.0 HK		P & S
Direct verification of Brinell Hardness Testing Machines	Brinell scales: From HBW 10/3000 to HBW 1/1 Force Time Length	 0.24 % 0.1 second 10 μm		P & S
Indirect verification of Brinell Hardness Testing 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	See note 4 8.0 HBW to 2.2 HBW 4.1 HBW to 1.2 HBW 2.3 HBW to 1.2 HBW		P & S

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Indirect verification of Brinell Hardness Testing Machines continued	Scale 5/750 600 HBW to 140 HBW 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	9.8 HBW to 2.4 HBW 2.7 HBW to 1.3 HBW 16 HBW to 2.9 HBW 1.04 HBW to 0.09 HBW		
END				