


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

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

 <p><b>UKAS</b> CALIBRATION</p> <p>0167</p> <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Zwick Testing Machines Limited</h3> <p>Issue No: 037    Issue date: 28 August 2010</p>	
	<p>Southern Avenue Leominster Herefordshire HR6 0QH</p>	<p>Contact: Mr C Stanley Tel: +44 (0)1568 615201/2 Fax: +44 (0)1568 612626 E-Mail: ukaslab@zwick.co.uk Website: www.zwick.com</p>
<p>Calibration performed by the Organisations at the locations specified below</p>		

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

#### Laboratory locations:

Location details	Activity	Location code
<p><b>Address</b> Southern Avenue Leominster Herefordshire HR6 0QH</p> <p>Contact: Mr C Stanley Tel: +44 (0)1568 615201/2 Fax: +44 (0)1568 612626</p>	Hardness	P

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

Location details	Activity	Location code
<p>Any customers' sites or premises must be suitable for the nature of the particular calibrations undertaken and will be the subject of contract review arrangements between laboratory and the customer.</p> <p>Contact: Mr C Stanley</p>	Force	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 UNIVERSAL TESTING MACHINES				S
Verification and calibration of the force measuring system by force proving instruments in tension	2 N to 1200 kN For Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2004	0.20 %		
	2 N to 3000 kN For Class 1, 2 and 3 machines to BS EN ISO 7500-1:2004 and ASTM E4-09a	0.29 %		
Verification and calibration of the force measuring system by force proving instruments in compression	2 N to 500 kN For Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2004	0.20 %		
	2 N to 3000 kN For Class 1, 2 and 3 machines to BS EN ISO 7500-1:2004 and ASTM E4-09a	0.29 %		
Verification and calibration of the force measuring system by calibrated masses in tension	0.01 N to 500 N for Class 0.5, 1, 2 and 3 machine to BS EN ISO 7500-1:2004 and ASTM E4-09a	0.10 %		
Verification and calibration of the force measuring system by calibrated masses in compression	0.01 N to 500 N for Class 0.5, 1, 2 and 3 machines to BS EN ISO 7500-1:2004 and ASTM E4-09a	0.10 %		
CREEP TESTING MACHINES				S
Verification of the applied load using force proving instruments	2 N to 100 kN For Class 0.5, 1 and 2 machines to BS EN ISO 7500 -2:2006	0.20 %		
Verification of the applied load using masses	0.01 N to 500 N For Class 0.5, 1 and 2 machines to BS EN ISO 7500-2:2006	0.10 %		



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EXTENSOMETRY				S
Extensometers	As BS EN ISO 9513:2002 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  Displacements 0.02 mm to 25 mm	2.6 $\mu$ m per mm		
	As ASTM E83-10a for the following classes and gauge lengths:  A from 50 mm B-1 from 20 mm B-2 from 10 mm C from 5 mm  Displacements — 0.02 mm to 25 mm	2.6 $\mu$ m per mm		
	As BS ISO 5893:2002 Grades C, D and E  Displacements From 3 mm to 600 mm	0.04 mm + (0.19 mm per m)		
Testing Machine Cross head/ Actuator displacement	1 mm to 600 mm	0.04 mm + (0.19 mm per m)		
Testing Machine Cross head/ Actuator speed	30 seconds to 10 minutes	0.15 s		
Displacement transducers used with materials testing machines	0.10 mm to 25 mm	0.26 $\mu$ m + (0.85 $\mu$ m per mm)		
IMPACT TESTING MACHINES				S
Charpy	ISO 148:2008 Absorbed Energy (Joules) 1 J to 600 J	0.70 J		
Izod	Plastics BS EN 10045-2:1993 ASTM E23-07 but excluding proof test using certified specimens BS ISO 13082:1999 BS 131:Part 4:1972 ASTM E23-07 BS ISO 13082:1999			



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HARDNESS TESTING METERS  ISO 18898:2006 Calibration of Shore-type durometers, used to measure hardness of vulcanised rubber	Type A and D Instruments			P
Length	0.10 mm to 2.5 mm	0.80 $\mu$ m		
Angle	25 ° to 30 °	0.12 °		
Radius	0.90 mm to 1.10 mm	1.5 $\mu$ m		
Force	1 N to 50 N	0.035 N		
Hardness	1 to 100 Shore units	0.50 Shore unit		
END				