



Accredited Laboratory

A2LA has accredited

NEWAGE TESTING INSTRUMENTS, INC.

Horsham, PA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCCL Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 22nd day of May 2019.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1734.01
Valid to June 30, 2021
Revised March 18, 2021

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

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CALIBRATION

Valid To: June 30, 2021

Certificate Number: 1734.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Mechanical

Parameter/Equipment	Range	CMC ^{2,4,5} (\pm)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers ³	HRA: High Medium Low HRBW: High Medium Low HRC: High Medium Low	0.21 HRA 0.2 HRA 0.43 HRA 0.5 HRBW 0.67 HRBW 1.1 HRBW 0.32 HRC 0.33 HRC 0.39 HRC	ASTM E18, ISO 6508

Parameter/Equipment	Range	CMC ^{2, 4, 5} (±)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers ³ (cont)	HRD:		ASTM E18, ISO 6508
	High	0.12 HRD	
	Medium	0.28 HRD	
	Low	0.15 HRD	
	HREW:		
	High	0.50 HREW	
	Medium	0.19 HREW	
	Low	0.22 HREW	
	HRFW:		
	High	0.47 HRFW	
	Medium	0.46 HRFW	
	Low	0.46 HRFW	
	HRGW:		
High	0.29 HRGW		
Medium	0.25 HRGW		
Low	0.80 HRGW		
HRHW:			
High	0.37 HRHW		
Low	0.43 HRHW		
HRKW:			
High	0.37 HRKW		
Medium	0.39 HRKW		
Low	0.51 HRKW		
HRRW:			
High	0.23 HRRW		
Low	0.34 HRRW		
HR15N:			
High	0.22 HR15N		
Medium	0.24 HR15N		
Low	0.48 HR15N		
HR15TW:			
High	0.43 HR15TW		
Medium	0.28 HR15TW		
Low	0.28 HR15TW		
HR30N:			
High	0.52 HR30N		
Medium	0.53 HR30N		
Low	0.37 HR30N		

Parameter/Equipment	Range	CMC ^{2, 4, 5} (±)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers ³ (cont)	HR30TW: High Medium Low HR45N: High Medium Low HR45TW: High Medium Low	0.29 HR30TW 0.32 HR30TW 0.58 HR30TW 0.18 HR45N 0.34 HR45N 0.50 HR45N 0.40 HR45TW 0.44 HR45TW 0.70 HR45TW	ASTM E18, ISO 6508
Indirect Verification of Leeb Hardness Testers ³	(0 to 750) LD	8 LD	ASTM A956
Indirect Verification of Brinell Hardness Testers ³ –			
HBW 10/3000/10	(96 to 372) HBW (373 to 650) HBW	2.1 HBW 5.9 HBW	ASTM E10, E103; ISO 6506
HBW 10/1500/10	(48 to 186) HBW (187 to 327) HBW	1.5 HBW 2.7 HBW	
HBW 10/1000/10	(96 to 372) HBW (373 to 650) HBW	1.0 HBW 2.2 HBW	
HBW 10/500/10	(16 to 61) HBW (62 to 109) HBW	0.5 HBW 1.1 HBW	
HBW 5/750/10	(96 to 372) HBW (373 to 650) HBW	1.3 HBW 8.8 HBW	
HBW 5/250/10	(32 to 124) HBW (125 to 218) HBW	1.2 HBW 2.1 HBW	
HBW 2.5/187.5/10	(96 to 372) HBW (373 to 650) HBW	2.9 HBW 18 HBW	

Parameter/Equipment	Range	CMC ^{2, 4, 5} (±)	Comments
Indirect Verification of Microindentation Hardness Testers ³ (Knoop and Vickers)	Vickers (≤1 kgf) (100 to 240) HV (240 to 600) HV > 600 HV Vickers (≥1 kgf) (100 to 240) HV (240 to 600) HV >600 HV Knoop: (100 to 250) HK (250 to 650) HK >650 HK	3.9 HV 7.5 HV 11 HV 2.9 HV 7.4 HV 14 HV 5.5 HK 15 HK 15 HK	ASTM E384, ISO 6507
Direct Verification of Rockwell Hardness Testers – Verification of the Test Force Verification of the Depth-Measuring Device	(3 to 150) kgf (0 to 260) μm	0.053 % of full scale 0.14 μm	ASTM E18, ISO 6508
Direct Verification of Brinell Hardness Testers ³ – Verification of the Test Force Verification of the Device for Measuring Indentation Diameter	(125 to 3000) kgf (0 to 7) mm	0.053 % of full scale 2.1 μm	ASTM E10, E103; ISO 6506 Verification of the test force is by load cell per the method of ASTM E4 By stage micrometer

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Direct Verification of Microindentation Hardness Testers ³ – (Vickers and Knoop)			ASTM E384, ISO 6507
Verification of the Test Force	(0 to 1000) gf	0.053 % of full scale	Verification of the test force is by load cell per the method of ASTM E4
Verification of the Device for Measuring Indentation Diagonals	(0 to 200) μm	0.63 μm	By stage micrometer

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

⁴ Indentors are verified by performance only.

⁵ For Rockwell scales using ball indenters, both steel (S) and tungsten carbide (W) are used. CMCs are reflected with the tungsten carbide balls only.