



## Accredited Laboratory

A2LA has accredited

**NEWAGE TESTING INSTRUMENTS, INC.**

*Largo, FL*

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/NCSLI 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 12<sup>th</sup> day of July 2019.

A handwritten signature in blue ink, written over a horizontal line.

Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1734.03  
Valid to July 31, 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

NEWAGE TESTING INSTRUMENTS, INC.  
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 Largo, FL 33773  
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CALIBRATION

Valid To: July 31, 2021

Certificate Number: 1734.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1,3</sup>:

I. Mechanical

Parameter/Equipment	Range	CMC <sup>2,4,5</sup> (±)	Comments
Indirect Verification of MT91 Hardness Testers <sup>3</sup>	HRC: > 60 HRC (40 to 59) HRC (20 to 39) HRC	0.35 HRC 0.37 HRC 0.44 HRC	Newage Testing Instruments internal calibration procedure CP-15
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers <sup>3</sup> (cont)	HRA: High Medium Low  HRBW: High Medium Low  HRC: High Medium Low  HRD: High Medium Low	0.21 HRA 0.20 HRA 0.43 HRA  0.50 HRBW 0.67 HRBW 1.1 HRBW  0.32 HRC 0.33 HRC 0.39 HRC  0.16 HRD 0.19 HRD 0.20 HRD	ASTM E18, ISO 6508

Parameter/Equipment	Range	CMC <sup>2,4,5</sup> (±)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers <sup>3</sup> (cont)	HREW: High Medium Low	0.57 HREW 0.58 HREW 0.48 HREW	ASTM E18, ISO 6508
	HRFW: High Medium Low	0.55 HRFW 0.52 HRFW 0.62 HRFW	
	HRGW: High Medium Low	0.30 HRGW 0.77 HRGW 0.82 HRGW	
	HRHW: High Low	0.41 HRHW 0.58 HRHW	
	HRKW: High Medium Low	0.66 HRKW 0.67 HRKW 0.69 HRKW	
	HRRW: High Low	0.22 HRRW 0.42 HRRW	
	HR15N: High Medium Low	0.22 HR15N 0.24 HR15N 0.48 HR15N	
	HR15TW: High Medium Low	0.34 HR15TW 0.38 HR15TW 0.45 HR15TW	
	HR30N: High Medium Low	0.29 HR30N 0.30 HR30N 0.42 HR30N	



Parameter/Equipment	Range	CMC <sup>2, 4, 5</sup> (±)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers <sup>3</sup> (cont)	HR30TW: High Medium Low  HR45N: High Medium Low  HR45TW: High Medium Low	0.32 HR30TW 0.55 HR30TW 0.58 HR30TW  0.17 HR45N 0.20 HR45N 0.48 HR45N  0.42 HR45TW 0.65 HR45TW 0.75 HR45TW	ASTM E18, ISO 6508
Partial 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  Verification of the test force is by load cell per the method of ASTM E4
Indirect Verification of Brinell Hardness Testers <sup>3</sup> –  HBW 10/3000/10  HBW 10/1500/10  HBW 10/1000/10  HBW 10/500/10  HBW 5/750/10  HBW 5/250/10  HBW 2.5/187.5/10	(96 to 372) HBW (373 to 650) HBW  (48 to 186) HBW (187 to 327) HBW  (96 to 372) HBW (373 to 650) HBW  (16 to 61) HBW (62 to 109) HBW  (96 to 372) HBW (373 to 650) HBW  (32 to 124) HBW (125 to 218) HBW  (96 to 372) HBW (373 to 650) HBW	2.1 HBW 5.9 HBW  1.5 HBW 2.7 HBW  1.0 HBW 2.2 HBW  0.5 HBW 1.1 HBW  1.3 HBW 8.8 HBW  1.2 HBW 2.1 HBW  2.9 HBW 18 HBW	ASTM E10, E103; ISO 6506



Parameter/Equipment	Range	CMC <sup>2,4,5</sup> (±)	Comments
<p>Direct Verification of Brinell Hardness Testers<sup>3</sup> –</p> <p>Verification of the Test Force</p> <p>Verification of the Device for Measuring Indentation Diameter</p>	<p>(125 to 3000) kgf</p> <p>(0 to 6) mm</p>	<p>0.053 % of full scale</p> <p>2.1 µm</p>	<p>ASTM E10, E110; ISO 6506</p> <p>Verification of the test force is by load cell per the method of ASTM E4</p> <p>By stage micrometer</p>
<p>Indirect Verification of Microindentation Hardness Testers<sup>3</sup> – (Knoop and Vickers)</p>	<p>Vickers (≤ 1 kgf): (100 to 240) HV (240 to 600) HV &gt; 600 HV</p> <p>Vickers (&gt; 1 kgf): (100 to 240) HV (240 to 600) HV &gt; 600 HV</p> <p>Knoop: (100 to 250) HK (250 to 650) HK &gt; 650 HK</p>	<p>3.9 HV 7.5 HV 11 HV</p> <p>2.9 HV 7.4 HV 14 HV</p> <p>5.5 HK 15 HK 15 HK</p>	<p>ASTM E384, ISO 6507</p>
<p>Partial Direct Verification of Microindentation Hardness Testers<sup>3</sup> – (Vickers and Knoop)</p> <p>Verification of the Test Force</p> <p>Verification of the Device for Measuring Indentation Diagonals</p>	<p>(10 to 2000) gf</p> <p>(0 to 200) µm</p>	<p>0.053 % of full scale</p> <p>0.63 µm</p>	<p>ASTM E384, ISO 6507</p> <p>Verification of the test force is by load cell per the method of ASTM E4</p> <p>By stage micrometer</p>

<sup>1</sup> This laboratory offers commercial calibration service and field calibration service.

- <sup>2</sup> 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.
- <sup>3</sup> 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.
- <sup>4</sup> Indentors are verified by performance only.
- <sup>5</sup> For Rockwell scales using ball indentors, both steel (S) and tungsten carbide (W) are used. CMCs are reflected with the tungsten carbide balls only.