CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

United Service Company Inc.
43 Cody Street
West Hartford, CT 06110

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

Jason Stine, Vice President

Expiry Date: 16 February 2027
Certificate Number: L1047-1

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. 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).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

United Service Company Inc.
43 Cody Street
West Hartford, CT 06110
Grant H. Gatzen 860-667-4403

CALIBRATION

Valid to: **February 16, 2027** Certificate Number: **L1047-1**

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Brinell Microscopes	(0 to 7) mm	20 µm	Stage Micrometer

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testers	HRA Low Middle High HRBW Low Middle High HRC Low Middle High HREW Low Middle High HRFW Low Middle High	 0.41 HRA 0.16 HRA 0.16 HRA 0.3 HRBW 0.66 HRBW 0.38 HRBW 0.37 HRC 0.32 HRC 0.31 HRC 0.38 HREW 0.46 HREW 0.47 HREW 0.44 HRFW 0.44 HRFW 0.44 HRFW	Indirect verification per ASTM E18 using hardness test blocks.

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Hardness Testers	HRGW		Indirect verification per ASTM E18 using hardness test blocks.
	Low	0.74 HRGW	
	Middle	0.72 HRGW	
	High	0.25 HRGW	
	HRH		
	Low	0.38 HRH	
	High	0.39 HRH	
	HRK		
	Low	0.63 HRK	
	Middle	0.63 HRK	
	High	0.62 HRK	
	HRLW		
	High	0.29 HRLW	
	HRMW		
	Middle	0.51 HRMW	
	High	0.44 HRMW	
	HRRW		
	Middle	0.31 HRRW	
	High	0.34 HRRW	
Rockwell Superficial Hardness Testers	HR15N		Indirect verification per ASTM E18 using hardness test blocks.
	Low	0.39 HR15N	
	Middle	0.19 HR15N	
	High	0.18 HR15N	
	HR15TW		
	Low	0.25 HR15TW	
	Middle	0.21 HR15TW	
	High	0.21 HR15TW	
	HR30N		
	Low	0.4 HR30N	
	Middle	0.27 HR30N	
	High	0.27 HR30N	
	HR30TW		
	Low	0.5 HR30TW	
	Middle	0.3 HR30TW	
	High	0.3 HR30TW	
	HR45N		
	Low	0.44 HR45N	
	Middle	0.19 HR45N	
	High	0.16 HR45N	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell Superficial Hardness Testers	HR45TW Low Middle High HR15WW High HR15XW Low High HR15Y High	 0.64 HR45TW 0.62 HR45TW 0.39 HR45TW 0.44 HR15WW 0.57 HR15XW 0.25 HR15XW 0.45 HR15Y	Indirect verification per ASTM E18 using hardness test blocks.
Knoop Hardness Testers	HK 2 000 Middle High HK 1 000 Middle High HK 500 Middle High HK 300 Middle High HK 200 Middle High HK 100 Middle High HK 50 Middle High HK 25 Middle High	 17 HK 17 HK 17 HK 17 HK 15 HK 18 HK 16 HK 23 HK 13 HK 24 HK 15 HK 21 HK 13 HK 25 HK 16 HK 40 HK	Indirect verification per ASTM E92 using hardness test blocks.

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Vickers Hardness Testers	HV 30 000		Indirect verification per ASTM E92 using hardness test blocks.
	Middle	10 HV	
	High	8.8 HV	
	HV 10 000		
	Middle	6 HV	
	High	9.9 HV	
	HV 5 000		
	Middle	6.4 HV	
	High	9.8 HV	
	HV 2 000		
	Middle	14 HV	
	High	10 HV	
	HV 1 000		
	Middle	14 HV	
	High	12 HV	
	HV 500		
	Middle	9 HV	
	High	21 HV	
	HV 300		
	Middle	11 HV	
	High	23 HV	
	HV 200		
	Middle	9 HV	
	High	24 HV	
	HV 100		
	Middle	15 HV	
	High	32 HV	
	HV 50		
	Middle	15 HV	
	High	29 HV	
	HV 25		
	Middle	15 HV	
	High	39 HV	

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Brinell Hardness Testers	HBW 500 Low High HBW 1 000 Low High HBW 1 500 Low High HBW 3 000 Low High	 1.6 HBW 2.3 HBW 0.3 HBW 7.2 HBW 1.6 HBW 3 HBW 6.4 HBW 6.3 HBW	Indirect verification per ASTM E10 using hardness test blocks.

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 (k=2), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for all parameters, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. This scope is formatted as part of a single document including Certificate of Accreditation No. L1047-1.

Jason Stine, Vice President