



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

WELDER TRAINING & TESTING INSTITUTE

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MECHANICAL

Valid To: March 31, 2019

Certificate Number: 3430.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following base metal, weld metal and welding equipment tests:

<u>Test:</u>	<u>Test Method(s):</u>
Tensile ( $\leq$ 120klbs, Room Temperature)	ASTM E8/E8M; API 1104 para. 5.6.2; ASME Section IX QW-150; AWS B2.1/B2.1M Annex A3 and B4.0 para. 4, D1.1/D1.1M para. 4.9.3.4 & 4.9.3.6, D1.2/D1.2M para. 3.7, AASHTO/AWS D1.5/D1.5M para. 5.18.1 & 5.18.4, D1.6/D1.6M para. 4.6.6, D1.9/D1.9M para. 3.10, D14.1/D14.1M para. 9.11.1, D15.1/D15.1M para. 10.8.1
Bend	ASTM E190; API 1104 para. 5.6.4 & 5.6.5; ASME Section IX QW-160; AWS B2.1/B2.1M Annex A2 and B4.0 para. 6, D1.1/D1.1M para. 4.9.3.1 & 4.9.3.2, D1.2/D1.2M para. 3.8, AASHTO/AWS D1.5/D1.5M para. 5.18.3, D1.6/D1.6M para. 4.6.3 & 4.6.4, D1.9/D1.9M para. 3.11, D14.1/D14.1M para. 9.11.3, D14.5/D14.5M para. 7.8.3, D15.1/D15.1M para. 10.8.3, D17.1/D17.1M Annex C
Fillet Weld Break	ASME IX QW-182; AWS B4.0 para. 9.2
Nick Break	API 1104 para. 5.6.3; AWS B4.0 para. 9.1
Macro-Etch	ASTM E340, E381; API 1104; ASME Section IX QW-183, QW-184; AWS B2.1/B2.1M Annex G, D1.1/D1.1M para. 4.9.4, D1.2/D1.2M Annex G, AASHTO/AWS D1.5/D1.5M para. 5.18.2, D1.6/D1.6M para. 4.6.8, D1.9/D1.9M para. 3.9, D14.1/D14.1M para. 9.11.2, D14.5/D14.5M para. 7.8.2, D15.1/D15.1M para. 10.8.2, D17.1/D17.1M para. 5.3.8.2
Vickers Hardness Testing (HV 1000g, HV 5kg, HV 10kg)	ASTM E92, E384
Brinell Hardness (3000 kg)	ASTM E10

<u>Test:</u>	<u>Test Method(s):</u>
Microhardness (HV 300g)	ASTM E92, E384
Rockwell Hardness (HRA, HRB, HRC)	ASTM E18
Charpy Impact (≤ 300) ft-lbs; (RT to -452) °F	ASTM A370, E23; ASME IX QW-170; AWS B4.0 para. 7
Vickers Hardness (HV 300g, HV 1000g, HV 5kg, HV 10kg)	ASTM E3, E384, E407
Chemical Analysis (Steel, Stainless Steel, Nickel, & Copper Alloys) (Al, C, Co, Cr, Cu, Fe, Mg, Mn, Mo, N, Ni, P, Pb, S, Si, Sn, Ti, V, W, Zn)	ASTM A751, E351, E415, E826, E1086, E1251, E1999, E2209
Weld and Braze Evaluation and Qualification	AMS-STD-1595; API 1104; ASME IX; ASTM A488/A488M; AWS B2.1/B2.1M, B2.2/B2.2M, D1.1/D1.1M, D1.2/D1.2M, D1.3/D1.3M, D1.4/D1.4M, AASHTO/AWS D1.5/D1.5M, D1.6/D1.6M, D1.7/D1.7M, D1.8/D1.8M, D1.9/D1.9M, D9.1/D9.1M, D14.1/D14.1M, D14.3/D14.3M, D14.4/D14.4M, D14.6/D14.6M, D15.1/D15.1M, D17.1/D17.1M; BS EN287-1 (Canceled 7/2011) <sup>2</sup> , 287-2 (Canceled 12/2004) <sup>2</sup> , 288-3 (Canceled 6/2004) <sup>2</sup> , 288-49 (Canceled 4/2005) <sup>2</sup> ; ISO 15614-1; ISO 9606-1; MIL-STD-248D (Canceled 8/1997) <sup>2</sup> , 1595A (Canceled 6/1998) <sup>2</sup> , 2219 (Canceled 9/2009) <sup>2</sup> , 1261 (Canceled 7/2003) <sup>2</sup> ; NACE MR0175/ISO15156-1, 15156-2, 15156-3; NAVSEA S9074-AQ-GIB-010; New York State Steel Construction Manual
Failure Analysis	Using the methods listed above in accordance with the ASM Handbook Volume 11

## CALIBRATION

### I. Electrical – DC/Low Frequency:

Parameter/Equipment	Range	CMC <sup>4</sup> (±)	Comments
Calibration of Welding Equipment <sup>1,3</sup>			
DC Current - Measure	(10 to 30) A (30 to 300) A (300 to 500) A (500 to 1000) A (1000 to 2000) A	1.18E+00 3.55E+00 1.15E+01 3.39E+01 1.07E+02	WTTI-WEC-2  Extech Reference Clamp Meter/DMM
DC Voltage - Measure	(0 to 100) V	1.14E+00	AWS D1.1/D1.1M, D1.5/D1.5M; QC4 para. 3.6
AC Current - Measure	(30 to 300) A (300 to 500) A	3.78E+00 1.67E+01	

<sup>1</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>2</sup> This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

<sup>3</sup> This laboratory offers commercial calibration service and field calibration service.

<sup>4</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.





## *Accredited Laboratory*

A2LA has accredited

### **WELDER TRAINING & TESTING INSTITUTE**

*Allentown, PA*

for technical competence in the field of

### **Mechanical Testing**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. 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 8 January 2009).



Presented this 20<sup>th</sup> day of March 2017.

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

President and CEO  
For the Accreditation Council  
Certificate Number 3430.01  
Valid to March 31, 2019

*For the tests to which this accreditation applies, please refer to the laboratory's Mechanical Scope of Accreditation.*