



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT – WIXOM
51229 Century Court
Wixom, MI 48393-2074
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MECHANICAL

Valid To: May 31, 2021

Certificate Number: 0388.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following test on metals, ores, slags, and other metal-related substances, consumer products, computer components, and metal fasteners:

<u>Test Technology</u>	<u>Test Method(s)</u>
<u>Coatings Testing</u>	
Coating Adhesion	ASTM C633, D3359; GMW14829
Coating Weight	ASTM A90/A90M, A428/A428M
<u>Fastener Testing (External Threads)</u>	
Tensile (Axial, Wedge & Proof Load)	ASTM F606/F606M
Hardness	ASTM F606/F606M
<u>Mechanical Testing</u>	
<u>Abrasion/Wear Testing</u>	
Rubber Wheel	ASTM G65
Pin Abrasion	ASTM G132
Bend Test	ASTM A370, E190, E290; AWS D1.1/D1.1M
Break (Fillet Weld)	AWS D1.1/D1.1M, D1.2/D1.2M
<u>Fatigue</u>	
Load-Controlled Axial (Up to 650 °C)	ASTM E466; GMN7152 (Inactive 2012) ¹ ; GMW16704, GMW16705
Axial Strain Controlled Low Cycle Fatigue at Ambient and Elevated Temperatures (Up to 425 °C)	ASTM E606/E606M; GMW16704, GMW16705
<u>Hardness</u>	
Brinell (2.5 mm ball @ 187.5 kgf load, 10 mm ball @ 500, 1000, 3000 kgf load)	ASTM E10, A370, E140
Rockwell (A, B, C, E, F, G, H, R)	ASTM E18, A370
Superficial (15N, 30N, 45N, 15T, 30T, 45T)	ASTM E18; SAE J417
Vickers (Up to 50 kg)	ASTM E92, E384
<u>Microhardness</u>	
Knoop / Vickers (Automated Up to 1 kg)	ASTM E384

<u>Test Technology</u>	<u>Test Method(s)</u>
<u>Mechanical Testing (cont.)</u>	
Impact	
Charpy @ Controlled Temperatures	ASME Section IX; ASTM A327/327M, A370, E23; AWS D1.1/D1.1M, D1.5/D1.5M; EN 10045-1 (Withdrawn 1990) ¹ ; ISO 148-1
Modulus	ASTM E111; SOP MT-11
Poisson's Ratio	ASTM E132; SOP MT-12
Shear	ASTM B769
Tension (Up to 120,000 lb), (-100 to 450) °F	ASTM A370, B557/B557M, E8/E8M, E21; ISO 6982-1
n-value	ASTM E646
r-value	ASTM E517
Discontinuities	SAE J122, J123
Weld Procedure & Operator Qualification Testing	ASME Section IX; AWS D1.1/D1.1M (Sections Visual Insp. 4.9.1, Mechanical 4.9.3, Bend 4.9.3.1, Reduced Section Tensile 4.9.3.4, CVN Part D 4.34 – 4.3.9, All Weld Tensile 4.9.3.6, Macroetch 4.9.4), D1.5/D1.5M (Sections Tension 5.18.1, Macroetch 5.18.2, Bend 5.18.3)
Visual	ASME Section V, Article 9; AWS D1.1/D1.1M (Section 4.9.1)
<u>Metallographic Evaluation</u>	
Sample Preparation	ASTM E3
Case Depth	SAE J423
Depth of Decarburization	ASTM E1077
Grain Size	ASTM E112, E930
Inclusion Ratings by Image Analysis	ASTM A247, E45 (Methods A, B, C, D, E), E1245
Intergranular Corrosion	ASTM A262 (Practice A)
Macro-Etching	ASTM E340
Micro-Etching	ASTM E407; SOP MG-MP00
Plating Thickness	ASTM B487-85(2013)
Optical Microscopy	ASTM E883; SOP MG-OM09
SEM/EDS	ASTM E1508
Failure Analysis	Using the methods listed on this Scope and Scope 0388.02 in accordance with the ASM Handbook, Volume 11
<u>Environmental Exposure and Corrosion</u>	
Salt Spray (Fog)	ASTM B117; GM4298P; GMW3286; ISO 9227
Humidity	ASTM D2247; GM4465P (Inactive 2010) ¹ ; GMW14729
<u>Other</u>	
Heat Treat	SOP TE-21

SOP – Element Wixom Standard Operating Procedure available upon request

¹NOTE: 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.





Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY DETROIT – WIXOM

Wixom, MI

for technical competence in the field of

Mechanical Testing

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 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 3rd day of October 2019.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0388.01
Valid to May 31, 2021

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