SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT – WIXOM
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MECHANICAL

Valid To: May 31, 2027 Certificate Number: 0098.07

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

Test Technology	**Test Method(s)**
Coatings Testing	
Coating Adhesion	ASTM C633, ASTM D3359; GMW14829, ASTM B571, ASTM B533, ASTM B604; ASTM D2197; FLTM BI 106-01
Chip/Mar Resistance	ASTM D3170; GMW 14700 (method B&C); SAE J400
Coating Weight	ASTM A90/A90M, ASTM A428/A428M
Coating/Plating Thickness	ASTM B487-85(2013), ASTM B764, ASTM B556, ASTM B604, ASTM B504, ASTM B499, ASTM D7091-05; ISO 1463, ISO 2177, ISO 2178, ISO 2808
Dubpernell	ASTM B456 – Appendix X4
Active Sites	ASTM B456 – Appendix X5
Pencil Hardness (6B to 6H)	ASTM D3363; FLTM BI 151-01
Gasoline Drip/Puddle Resistance	GMW14333
Oil Resistance	GMW14671
Cure (Solvent Rub)	GMW15891
Fastener Testing (External Threads)	
Tensile (Axial, Wedge & Proof Load)	ASTM F606/F606M, ASTM A370
Hardness	ASTM F606/F606M
Discontinuities	SAE J122, SAE J123, SAE J419; ASTM F788, ASTM F812
Torsion	ASTM F606/F606M
Hydrogen Embrittlement	ASTM F606/F606M, SAE USCAR-7
Mechanical Testing	
Abrasion/Wear Testing	
Rubber Wheel	ASTM G65
Pin Abrasion	ASTM G132

Test Technology	**Test Method(s)**
Bend Test	ASTM A370, ASTM E190, ASTM E290; AWS D1.1/D1.1M
Break (Fillet Weld)	AWS D1.1/D1.1M, AWS D1.2/D1.2M
Fatigue	
Load-Controlled Axial (Up to 650 ºC)	ASTM E466; GMN7152 (Inactive 2012); GMW16704, GMW16705
Axial Strain Controlled Low Cycle Fatigue at Ambient and Elevated Temperatures (Up to 425 ºC)	ASTM E606/E606M; GMW16704, GMW16705
Charpy Impact at Controlled Temperatures	ASME Section IX; ASTM A327/327M, ASTM A370, E23; AWS D1.1/D1.1M, AWS D1.5/D1.5M; EN 10045-1(Withdrawn 2010); ISO 148-1
Modulus	ASTM E111; SOP MT-11
Poisson's Ratio	ASTM E132; SOP MT-12
Shear	ASTM B769, JIS Z 3198-7
Tension/ Tensile Tests (Up to 120,000 lb), (-100 to 1600) °F	ASTM A370, ASTM B557/B557M, ASTM E8/E8M, E21; ISO 6892-1
n-value	ASTM E646
r-value	ASTM E517
Compression	ASTM E9
Hardness	
Brinell (2.5 mm ball at 62.5kgf &187.5 kgf load, 5mm ball at 150kgf & 750kg, 10 mm ball at 500, 1000, 1500kgf & 3000 kgf load)	ASTM E10, ASTM A370, ASTM E140
Rockwell (A, B, C, E, F,)	ASTM E18, ASTM A370
Superficial (15NW, 30NW, 45NW, 15TW, 30TW, 45TW)	ASTM E18; SAE J417
Vickers (Up to 30 kg)	ASTM E92, ASTM E384
Microhardness	
Knoop / Vickers (Automated Up to 1 kg)	ASTM E384
Metallographic Evaluation	
Sample Preparation	ASTM E3
Case Depth	SAE J423
Grain Size	ASTM E112, ASTM E930, ASTM E1181
Inclusion Ratings by Image Analysis	ASTM A247, ASTM E45 (Methods A, B, C, D, E), ASTM E1245
Intergranular Corrosion	ASTM A262 (Practice A)
Macro-Etching	ASTM E340
Micro-Etching	ASTM E407; SOP MG-MP00
Optical Microscopy	ASTM E883; SOP MG-OM09
SEM/EDS	ASTM E1508
Failure Analysis	Using the methods listed on this Scope and Scope 0098.08 in accordance with the ASM Handbook, Volume 11
Acceptability of Electronic Assemblies	IPC-A-610
Decarburization/Depth	SAE J419; ASTM E1077

Test Technology	**Test Method(s)**
Other	
Heat Treat	SOP TE-21
Surface Roughness (0.1 µin to 3 200 µin)	JIS B0601; DIN/ISO 4287, DIN/ISO 4288; ANSI B46.1
Etch Susceptibility of Stainless Steel	GMW15284
Dye and Pull	IPC-TM-650 2.4.53
Microsectioning (Printed Circuit Boards)	IPC-TM-650 2.1.1
X-Ray Imaging	SOP EN-28
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)
Weld Procedure & Operator Qualification Visual Examination	ASME Section V, Article 9; AWS D1.1/D1.1M (Section 4.9.1)
Environmental Exposure and Corrosion	
Salt Spray (Fog)	ASTM B117; GM4298P; GMW3286; ISO 9227; FMVSS 209; FORD BI 103-01; Nissan NES M0140
Modified Salt Spray (Fog) Testing	ASTM G85 (A1, A5)
Mixed Flowing Gas Corrosion Test	ISO/IEC 60068-2-60, ASTM B827, ASTM B845, EIA-364-65-TP-65B
Humidity / Environmental Cycles	ASTM D2247; GM4465P (Inactive 2010); GMW14729, DIN 50014, ASTM D1735; DIN EN ISO 6270-2; Chrysler LP-463PB-22-01; GMW14124; GMW15288; Chrysler PF.50014
Water Immersion	FLTM BI 104-01
Corrodkote Corrosion Resistance	ASTM B380; Ford BQ-004-01; ASTM B456
Filiform Corrosion	ASTM D2803; GM15287; FLTM BI 124-01
Copper-Accelerated Acetic Acid-Salt Spray Fogg (CASS)	ASTM B368; ASTM B604; GMW14458; ASTM B456
Corrosion (Including Cyclic)	Ford CETP 00.00-L-467; VW PV 1210; ASTM B456; ASTM B604; ASTM B995; FLTM BI 123-03; GMW14124; GMW14872; SAE J1563; SAE J2334; FMVSS 209; Nissan NES M0007; HES D2021
Chloride Resistance (Russian Mud Resistance)	ASTM B995

SOP – Element Wixom Standard Operating Procedure available upon request

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 2nd day of May 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0098.07
Valid to May 31, 2027

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