SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY SEATTLE
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MECHANICAL

Valid To: January 31, 2027 Certificate Number: 2582.03

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory to perform the following tests:

Test Description/ Parameters:	**Test Method(s) [1]:**
Corrosion Testing	ASTM G85
Salt Fog/Salt Spray	ASTM B117; ASTM D1735; ASTM D2247; DIN 50021-SS; IEC 60945, Section 8.12; RTCA/DO-160 D, E, F, G, Section 14 (Category S & T); MIL-STD-202, Method 101E; MIL-STD-810 G, H, Method 509; MIL-DTL-5541F; SAE J1810, Section 5.7; GMW 3172, Section 9.4.8
Solar Radiation	JDQ 53.3, Section 8.1, Level 3; ISO 4892-2; ASTM G26-96; ASTM G155; ASTM D2565
Dust	IEC 60529, Section 13; MIL-STD-202, Method 110A; MIL-STD-810 G, H, Method 510, Procedure I; RTCA/DO-160, Section 12.4 (Category D); GMW 3172, Section 9.5.1
Settling Dust	IEC 60529, Section 13
Blowing Sand	RTCA DO-160 D, E, F, G, Section 12.4; MIL-STD-810 G, H, Method 510, Procedure II

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Test Description/ Parameters	**Test Method(s) [1]:**
High and Low Temperature Range: (-100 to 350) °C	IEC 60945, Sections 8.2 and 8.4; MIL-STD-202, Method 108A; MIL-STD-810 G, H, Methods 501, 502, and 521; RTCA/DO-160 D, E, F, G, Sections 4.5.1, 4.5.2, 4.5.3, 4.5.4, 4.5.5, 5, and 24 (Categories A & C); SAE J1810, Section 5.1; GMW 3172, Section 9.4.1 UN38.3 Section 38.3.4.2 Test T2-Thermal Test
Humidity Range: (10 to 95) %RH	DIN 50017; IEC 60945, Section 8.3; MIL-STD-202, Methods 103B and 106G; MIL-STD-810 G, H, Method 507; RTCA/DO-160 D, E, F, G, Section 6; GMW 3172, Sections 9.4.5 and 9.4.6
Thermal Shock:	RTCA/DO-160 D, E, F, G, Section 6; IEC 60945, Section 8.5; MIL-STD-202, Method 107G; MIL-STD-810 G, H, Method 503; GMW 3172, Section 9.42 UN38.3 Section 38.3.4.2 Test T2-Thermal Test
Vibration: Range: Up to 20 000 lbf (3 to 4,000) Hz, 4-Inch Stroke, with Combined Environments of (-77 to 177) °C and (10 to 95) %RH Acceleration up to 100 Gs	IEC 60945, Section 8.7; MIL-STD 202, Methods 106G, 201A, 204D, and 214A; MIL-STD-810 G, H, Methods 514 and 516, Procedures IV and VI; MIL-STD-167; RTCA/DO-160 D, E, F, G, Section 8; SAE J1810, Section 5.5; GMW 3172, Section 9.3.1 UN38.3 Section 38.3.4.3 Test T3-Vibration
Shock Range: Force: Up to 210 Gs 1/2 Sine Period: < 1 ms to 35 ms at Terminal Peak	MIL-STD-202, Method 213B (higher levels need shock machine); MIL-STD-810 G, H, Method 514; MIL-STD-810 G, H, Method 516, Procedures I, II, III, and V; RTCA/DO-160 D, E, F, G, Sections 7.2 and 7.3.1; SAE J1810, Section 5.4; GMW 3172, Sections 9.3.3, 9.3.4, and 9.3.5 UN38.3 Section 38.3.4.4 Test T4-Shock
Altitude Range: Up to 60,000 feet	RTCA/DO-160 D, E, F, G, Section 4; MIL-STD-810 G, H, Method 500 UN38.3 Section 38.3.4.1 Test T1-Altitude Simulation

Test Description/ Parameters	**Test Method(s) [1]:**
Acceleration/Crash Safety Range: Up to 25 G's	MIL-STD-810 G, H, Method 513; RCTA DO-160 D, E, F, G, Section 7
Immersion	MIL-STD-810 G, H, Method 512; IEC 60945, Section 8.9; SAE J1810, Section 5.8; IEC 60529:2013
Explosive Atmosphere	MIL-STD-810 G, H, Method 511; RTCA/DO-160 D, E, F, G
Icing/Freezing Rain	MIL-STD-810 G, H, Method 521; RTCA/DO-160 D, E, F, G, Section 24
Waterproofness/IP testing	RTCA DO-160 D, E, F, G, Section 10; DIN 40050 (Cat 5, 6, 5K, 6K, 9K); ISO 20653 (Cat 5, 6, 5K, 6K, 9K); IEC 60529 (Cat 5, 6, 5K, 6K, 9K)
Contamination by Fluids/Fluid Susceptibility	MIL-STD-810 G, H, Method 504; RTCA/DO-160 D, E, F, G, Section 11
Drop Test	IEC 60945, Section 8.6.1 UN38.3 Section 38.3.4.6 Test T6-Impact/Crush
Pressure Range: Up to 3000 psi	RTCA/DO-160 D, E, F, G, Section 4.6; Element VC 202
Powered Temperature Cycling Test	GMW 3172, Section 9.4.3
HALT/HASS Range: Random Vibration Level (0 to 80G) g(pk) Temperature (-100 to 200°C)	GMW 8287, 14906; Qualmark 933-0326, Section 10
Loose Cargo	ASTM D4169
Package Testing	ASTM D4169

[1] When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA *R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories*.

Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY SEATTLE

Bothell, WA

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 26th day of November 2024.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2582.03
Valid to January 31, 2027

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

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