SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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MECHANICAL

Valid To: January 31, 2027 Certificate Number: 2582.01

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory to perform the following types of tests on aircraft components, automotive components, marine components, coatings, packaging and containers, electronics, fasteners, and consumer goods:

Test Description/Parameters	**Test Method**[1]
Mechanical Vibration Sine Random Sine-on-Random Gunfire Range: Frequency (1-3,000) Hz Stroke 6” Force up to 12,000 lbs.	MIL-STD 810 E, F, G, H Methods 514, 519; MIL-STD 167-1 (A SHIPS); MIL-STD 202 G Methods 201, 204, 214; MIL-STD 883 G, H Methods 2005, 2007; MIL-STD 1344 A Method 2005; RTCA DO-160 D, E, F, G Sec. 8.0; RTCA DO-227 6/23/1995 Sec. 2.3.1; JESD22 B103B; SAE J1455 Sec. 4.10; BellCore GR-63-CORE 5.4.2, 5.4.3; IEC 68-2-59, Test Fe; IEC 68-2-34, Test Fd; IEC 68-2-35, Test Fda; IEC 68-2-6, Test Fc; SAE J1211; ASTM D4169; UN ST/SG/AC.10/11/Rev.5 Para. 38.3.4.3
Loose Cargo	ASTM D4169
Stacking	ASTM D4169
Handling Drop	ASTM D4169

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Test Description/Parameters	**Test Method**[1]
Packaging Drop	ASTM D4169
Impact	ASTM D4169
Mechanical Shock Range: Drop Shock Force 1, 000 g Period (1 to 40) ms Vibration Shock Stroke 2” Force up to 15,000 lbs Period (1 to 30) ms	MIL-STD 810 E, F, G, H Method 516; MIL-STD 202 G Method 213; MIL-STD 883 G, H Method 2002; MIL-STD 1344 A Method 2004; RTCA DO-160 D, E, F, G Sec. 7.0; RTCA DO-227 6/23/1995 Sec. 2.3.2; JESD22 B104C Conditions A, B, C and D; SAE J1455 Sec. 4.9; IEC 68 Part 2 Ea, Eb; SAE J1211; UN ST/SG/AC.10/11/Rev. 3 Para. 38.3.4.4
Acceleration Range: r = 52” Up to 170 RPM	MIL-STD 810 E, F, G, H Method 513; MIL STD 202 G Method 212; MIL-STD 1344 A Method 2011; RTCA DO-160 D, E, F, G Sec. 7.3
Thermal (Temperature) High/Low Temperature Thermal Shock Temperature Cycling Range: High 235 ºC Low -100 ºC Temperature Shock (-70 to 150) ºC	MIL-STD 810 E, F, G, H Methods 501, 502; RTCA DO-160 D, E, F, G Sec. 4.5; BellCore GR-63-CORE 5.1.1.1, 5.1.1.2; IEC 68-2-1, Test A; IEC 68-2-2, Test B; JESD22-A104C; JESD22-A106B; MIL-STD 883 G, H Method 1011; MIL-STD 810 E, F, G, H Method 503; MIL-STD 202 G Method 107; MIL STD 883 G, H Method 1010; MIL-STD 1344 A Method 1003; RTCA DO-160 D, E, F, G Sec. 5.0; RTCA DO-227 6/23/1995 Sec. 2.3.3; SAE J1455 Sec. 4.1; SAE J1211; UN ST/SG/AC.10/11/Rev.5 Para. 38.3.4.2

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Test Description/Parameters	**Test Method**[1]
Temperature/Humidity Range: (10 to 95) %RH (5 to 95) º C	MIL-STD 810 E, F, G, H Method 507 Tables IV, V, VIII, IX; MIL-STD 202 G Methods 103, 106; MIL-STD 883 G, H Method 1004; MIL-STD 1344 A Method 1002; RTCA DO-160 D, E, F, G Sec. 6.0; RTCA DO-227 6/23/1995 Sec. 2.3.6; SAE J1455 Sec. 4.2; BellCore GR-63-CORE 5.1.1.3, 5.1.2; IEC 68-2-30, Test Db; SAE J1211
Salt Spray Salt Fog Corrosion	ASTM B117, G86 Sec. 1.1.3; MIL-STD 810 E, F, G, H Method 509; MIL-STD 202 G Method 101; MIL-STD 883 G, H Method 1009; MIL-STD 1344 A Method 1001; RTCA DO-160 D, E, F, G Sec. 14.0; SAE J1455 Sec. 4.3; IEC 68-2-52, Test Kb; SAE J2334; GM 9540P; NEMA 250 Sec. 5.8, 5.9
Evaluation: Corrosion Creep-Back	ASTM D1654
Evaluation: Tape Adhesion	ASTM D3359
Altitude (Barometric Pressure) Temperature Altitude Range: Up to 100,000 ft (-65 to 150) ºC	MIL-STD 810 E, F, G, H Methods 500, 520; MIL-STD 202 G Method 105; MIL-STD 883 G, H Method 1001; MIL-STD 1344 A Method 1011; NASA MSFC-SPEC-548; SAE J1455 Sec. 4.9; SAE J1211; UN ST/SG/AC.10/11/Rev.5 Para. 38.3.4.1
Altitude Rapid Decompression/Overpressure Range: Up to 100 psia	RTCA DO-160 D, E, F, G, H Sec. 4.6; RTCA DO-227 6/23/1995 Sec. 2.3.4, 2.3.5; MIL-STD-810 E, F, G, H Method 500.5
Combined Environment	MIL-STD 810 E, F, G, H Method 520
Drop Shock Corner, Edgewise, Flat	ASTM D4169; BellCore GR-63-CORE Sec. 5.3

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Test Description/Parameters	Test Method[1]
Rain, Wind and Rain, Drip	MIL-STD-810 E, F, G, H Method 506
Dust Settling Blowing Sand and Dust	IEC 60529 Sec. IP5X, IP6X; MIL-STD 810H, RTCA DO-160G
Waterproofness	RTCA DO-160 D, E, F, G Sec. 10.0; MIL-STD-810 E, F, G, H Method 512; SAE J1211; NEMA 250 Sec. 5.7; IEC 60529 Sec. IP X1, IP X2, IP X3, IP X4, IP X5, IP X6, IP X7, IP X8
Icing/Freezing Rain	MIL-STD-810 E, F, G, H Method 521; RTCA DO-160 D, E, F, G Sec. 24; NEMA 250 Sec. 5.6
UV Fluorescent Light Exposure	ASTM G154; ISO 4892-3; SAE J2020
Xenon Weathering Test	MIL-STD-810 E, F, G, H Method 505; ISO 4892-2; SAE J1885
Protection Against Solid Foreign Objects	IEC 60529 Sec. IP 1X, IP 2X, IP 3X, IP 4X, IP 5X, IP 6X
Fluid Susceptibility	RTCA DO-160 D, E, F, G Sec. 11; MIL-STD-810 E, F, G, H Method 504
Steam Clean/Pressure Wash	SAE J1455 Sec. 4.5; DIN 40 050 Part 9 Sec. IP X9K
HAST	JESD22-A110-B; JESD22-A118
HALT	Qualmark Guideline 9.0

[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*.

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Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY PORTLAND

Hillsboro, OR

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 29th day of January 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2582.01
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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