



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY BOXBOROUGH  
Massachusetts Division  
1146 Massachusetts Avenue  
Boxborough, MA 01719  
Raouf Naguib Phone: 832-488-0752

MECHANICAL

Valid to: September 30, 2025

Certificate Number: 0214.15

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory, to perform the following tests on aircraft components; automotive components; pipes, hoses, valves and fittings; pressure vessels, consumer electronics, medical devices, industrial controls, test and measurement equipment, IT equipment, HVAC controls and systems, telephone equipment, circuit breakers; and seismic vibration on electrical components, frames, motors and HVAC:

**Title / Description:**

**Test Method(s) <sup>1</sup>:**

Transportation Testing for Telecommunications Equipment ETSI 300 019-2-2\*

Vibration <sup>2</sup>  
*(sine, random, high frequency,  
fatigue, shock, gunfire)  
(4Hz to 3kHz)  
40,000 pounds force  
3" Stroke  
Combined Environment of (-100 to 250) °C*

MIL-STD-810 (Methods 514, 516, & 519)\*;  
MIL-STD-883 (Methods 2005, 2007, & 2026)\*;  
MIL-STD-1344 (Method 2005)\*;  
ANSI/IEEE 344\*, 382\*; ANSI/IEEE C37.98\*;  
ATIS 0600329\*;  
ASTM D999-91\*, D5276-94\*;  
GR-63-CORE\*; GR-3108-CORE\*; GR-3160-CORE\*;  
GR-487-CORE\*; GR-2834-CORE\*;  
EN/IEC 60065\*, 60204-1\*;  
ETS EN 300 019\*;  
IEC 68-2-27\*, 68-2-34\*; IEC 60068\*;  
MIL-STD-167-1\*; MIL-STD-202 (Methods 201, 201A,  
202, 202D, 203B, 204, 204D, 205, 212, 213, & 214) \*;  
MIL-STD-740-2\*; MIL-STD-750\*, -781\*, -810\*, -883\*;  
RTCA/DO-160 (Sections 7 & 8)\*

Performance of Shipping Containers & Systems

ASTM D4169-05\*;  
ASTM D4169-14\* Except Schedule G

**Title / Description:**

**Test Method(s) <sup>1</sup>:**

Mechanical Shock, Random Drop <sup>2</sup>  
*Up to 5000 g's*

MIL-STD-202 (Methods 202 & 203)\*;  
MIL-STD-883 (Method 2002)\*;  
MIL-STD-1344 (Method 2004)\*; ASTM D4169-05\*

Leak Testing

MIL-STD-202 (Method 112)\* Except Conditions E & F

Electronic & Electrical Parts

MIL-STD-202 (Methods 101, 103, 104, 105, 106, 107, 108, 111, 215, 301, 302, 303, 305, 307, & 310)\*

Acceleration

RTCA/DO-160 (Section 7.3)\*;  
MIL-STD-810 (Method 513.5)\*

Altitude <sup>2</sup>  
*Up to 30,000 ft in walk-in chamber*  
*Up to 78,000 ft in 64 cubic feet chamber*  
*Temperature Range -100C to +250C*

GR-63-CORE (Section 4.1.3)\*; GR-3108-CORE\*;  
GR-3160-CORE\*; RTCA DO-160 (Section 4)\*;  
MIL-STD-810 (Method 500)\*

High / Low Temperature, Temperature  
Variation, Operating Temperature

MIL-STD-810 (Methods 501, 502, & 503)\*;  
GR-63-CORE (Section 4.1.2)\*; GR-3108-CORE\*;  
GR-3160-CORE\*; MIL-STD-810 (Method 507.4)\*;  
RTCA/DO-160 (Sections 3.0, 4.0, 5.0, & 6.0)\*;  
IEC 60068\*

Temperature Range:  
-100C to 250C

Salt Spray

MIL-STD-810 (Method 509.4, p1)\*;  
ASTM B117\*; ASTM G85-11\*;  
RTCA DO-160 (Section 14)\*

Acidic Atmosphere

MIL-STD-810 (Method 518)\*

Fluid Testing

RTCA/DO-160 (Section 11)\*;  
MIL-STD-810 (Method 504)\*;  
MIL-STD-202 (Method 215)\*

Sun Simulation  
Procedure I - Heat Load Only

MIL-STD-810 (Method 505)\*

Thermal Shock <sup>2</sup>  
*(-100 to 250) °C*

MIL-STD-810 (Method 503)\*

Rain

MIL-STD-810 (Method 506)\*;  
RTCA DO-160 (Section 10)\*;  
IEC 60068-2-18\*

Freezing Rain

MIL-STD-810 (Method 521)\*;  
RTCA/DO-160 (Section 24)\*



**Title / Description:**

**Test Method(s) <sup>1</sup>:**

Temp & Temp/Humidity Cycling, Humidity,  
Moisture

GR-63-CORE (Section 4.1.2)\*; GR-3108-CORE\*;  
GR-3160-CORE\*; MIL-STD-810 (Method 507)\*;  
RTCA DO-160 (Section 6)\*

Humidity: 30% RH to 95% RH

HALT/HASS <sup>2</sup>  
(-100 to 200) °C  
Up to 50 g's  
5kHz to 10kHz

NOR ENV 06

Degrees of Protection Provided by Enclosures  
Access to Hazardous Parts  
Solid Foreign Objects  
Water  
Dust  
Protection of Electrical Equipment

CEI/IEC 60529, Ed. 2.1 (2001-02)  
(Sections 12.3.1, 12.3.2, 12.3.3, & 15.2)  
(Sections 13.2, 13.3, & 13.4)\*  
(Sections 14.2.1, 14.2.2, 14.2.3, 14.2.4, 14.2.5, 14.2.6,  
14.2.7, & 14.2.8)\*;  
ISO 20653 IPX9K\*

ISTA Preshipment Test Procedures  
Drop, Shock (*except horizontal impact test*),  
Vibration, Rotational Shock  
(NTS Boxborough also listed by ISTA)

ISTA Preshipment Test Procedures:  
1A, 1B, 1C, 1D, 1E, 1G, 1H, 2A, 2B, 2C, 2D, 2E, 3A,  
3E, 3F, 3H, 5B, 7B, 7C, 7D, 6-series\*

Environmental Test Methods & Engineering  
Guidelines

MIL-STD-810 (Methods 500, 501, 502, 503, 506, 507,  
509, 512, & 521)\*

Test Methods & Procedures for  
Microelectronics

MIL-STD-883 (Methods 1001, 1002, 1003, 1004, 1005,  
1007, 1008, 1009, 1010, 1011, 1012, & 1013)\*;  
RTCA/DO-160 (Sections 4, 5, 6 & 9)\*

*Thermal Testing*

Simulated Brush Fire

GR-487-CORE\*; ANSI/SCTE 77\*

Test Methods for Electronic & Electrical  
Component Parts

MIL-STD-202 (Methods 101, 103, 104, 105, 106, 107,  
108, 204 and 213)\*

Test Methods for Semiconductor Devices

MIL-STD-750 (Methods 1001, 1011, & 1021)\*

Needle Flame Testing

EN/IEC 60695-2-2\*; ATIS 0600307\*; ATIS 0600319\*;  
UL 1694\*; GR-63-CORE\*; ASTM D635

FAA Fire Spread

ISO 2685; RTCA DO-160 (Section 26 for Fire  
Resistance or Fire Proof)\*; FAA AC20-135\*;  
FAR Part 25 (Section 25.1) \*

NEBS (Bellcore) Fire Spread

GR-63-CORE (Sections 4.2 and 5.2)\*;  
GR-3108-CORE\*;  
GR-3160-CORE\*; ATIS 0600319\*



**Title / Description:**

**Test Method(s) <sup>1</sup>:**

Seismic

ATIS 0600329\*;  
GR-63-CORE\*; GR-3108-CORE\*; GR-3160-CORE\*;  
IEEE STD 344-2004\*;  
IBC 2000\*;  
AC156\*

Explosive Atmosphere

MIL-STD-810 (Method 511.4)\*;  
RTCA/DO-160 (Section 9)\*

<sup>1</sup> 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.

<sup>2</sup> Also using customer-specified methods directly related to the types of tests and parameters listed above.

\*All Revisions of standard are included.





## Accredited Laboratory

A2LA has accredited

# ELEMENT MATERIALS TECHNOLOGY BOXBOROUGH

Boxborough, MA

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 31<sup>st</sup> day of October 2023.

A blue ink signature of Trace McInturff, written in a cursive style.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 0214.15  
Valid to September 30, 2025  
Revised November 9, 2023

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