



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY MINNEAPOLIS LLC
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MECHANICAL

Valid to: August 31, 2027

Certificate Number: 1719.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory for the following environmental simulation and mechanical tests on the following products and materials: aircraft components, automotive components, gaskets, seals and packings, packaging and containers, pipes, hoses, valves and fittings, rubber and rubber products, tools, windows and doors, wiring harnesses, subassemblies, telecommunication cabinets and components in the Telecommunications, Aircraft, Aerospace, Automotive, Medical, Defense, Electronics and Agriculture industries.

Test Technology/Description:

Test Method(s)/Standard(s)^{2, 4}:

Compression

GR-3125-CORE;
GR-3121-CORE;
GR-3120-CORE;
GR-487-CORE;
GR-771-CORE;
GR-950-CORE;
GR-3178-CORE

Explosion

MIL-STD-810, Method 511;
RTCA/DO-160, Section 9;
ISO 8846

Earthquake / Seismic¹

*Frequency: (1 to 500) Hz
Velocity: 40 in/sec
Displacement: 10.5 in*

GR-63-CORE;
ICC-ES AC 156;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-487-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE

Test Technology/Description:**Test Method(s)/Standard(s)^{2, 4:}**Firearms Resistance³GR-487-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE

Fire Test (powerplant)

DOT/FAA AC 20-135;
ISO 2685;
RTCA/DO-160, Section 26, Cat A & B;
SAE AS4273;
SAE AS1055

Fire Test / Flammability

RTCA/DO-160, Section 26, Cat C;
UL 94;
GR-13-CORE;
GR-63-CORE;
GR-487-CORE;
ANSI T1-319;
GR-3120-CORE;
GR-3125-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3178-CORE;
GR-326-CORE

Fungus

ASTM C1338;
ASTM G21;
GR-13-CORE;
GR-487-CORE;
MIL-STD-810, Method 508;
RTCA/DO-160, Section 13;
SAE J1455;
GR-771-CORE;
GR-950-CORE;
MIL-PRF-28800 F;Hosedown / Water Resistance /
Waterproofness / Enclosure ProtectionIEC 60529, IPX1;
IEC 60529, IPX2;
IEC 60529, IPX3, Section 14.2.3;
IEC 60529, IPX4, Section 14.2.4;
IEC 60529, IPX5, Section 14.2.5;
IEC 60529, IPX6, Section 14.2.6;
IEC 60529, IPX7, Section 14.2.7;
IEC 60529, IPX8, Section 14.2.8;
NEMA 250 (2014);
RTCA/DO-160, Section 10;
UL 50 (2007);
UL 50E (2007);

Test Technology/Description:

Hosedown / Water Resistance /
Waterproofness / Enclosure Protection
(cont.)

Humidity¹

Up to 98% RH

Temperature: (40 to 200) °F

Impact Resistance

Package Testing and Drop

Test Method(s)/Standard(s)^{2, 4:}

MIL-STD-810, Method 512 (Immersion);
GR-3125-CORE;
GR-13-CORE;
GR-487-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE

GR-487-CORE;
GR-63-CORE;
MIL-STD-810, Method 507;
RTCA/DO-160, Section 6;
SAE J1455;
IEC 60945, Section 8.3;
IEC 60068-2-30;
IEC 60068-2-38;
IEC 60068-2-56;
IEC 60068-2-61;
IEC 60068-2-78;
IEC 60068-3-4;
ASTM D4332;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE;
GR-326-CORE

ASTM D2794;
GR-487-CORE;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3178-CORE;
GR-326-CORE

ASTM D4169;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE;
GR-13-CORE;



Test Technology/Description:**Test Method(s)/Standard(s)^{2, 4:}**

Package Testing (*cont.*)

GR-487-CORE;
GR-771-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE;
GR-326-CORE

Salt Spray, Corrosion Resistance, and Cyclic Corrosion¹

8'H x 8'W x 12'L Chamber

Temperature: (30 to 55) °C

ASTM B117; ASTM G85;
GR-487-CORE;
MIL-STD-810, Method 509;
NEMA 250 (2014);
RTCA/DO-160, Section 14;
SAE J1455;
UL 50 (2007); UL 50E (2007);
IEC 60068-2-11;
IEC 60945, Section 8.12;
GR-3121-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE;
GR-326-CORE;
IEC 60945, Section 8.12;
IEC 60068-2-52

Rain / Blowing Rain / Wind Driven Rain¹

Velocity: up to 90 mph

Rainfall Rate: up to 6 in/hr

GR-487-CORE;
MIL-STD-810, Method 506;
NEMA 250 (2014);
UL 497, Para. 34;
UL 50 (2007);
UL 50E (2007);
IEC 60945, Section 8.8;
GR-3125-CORE;
GR-771-CORE;
GR-950-CORE;
GR-3178-CORE;
GR-326-CORE

Test Technology/Description:

Temperature Exposure /
High or Low / Thermal Shock¹
*Temperature: (-100 to 650) °F / Temperature
Shock¹ (-150 to 350) °F*

Test Method(s)/Standard(s)^{2, 4}:

GR-487-CORE;
GR-63-CORE;
MIL-STD-810, Methods 501 and 502;
NEMA 250 (2014);
RTCA/DO-160, Section 4;
SAE J1455;
IEC 60945, Sections 8.2 and 8.4;
IEC 60068-2-1;
IEC 60068-2-2;
IEC 60068-2-14;
IEC 60068-2-53;
IEC 60068-2-61;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE;
GR-13-CORE;
GR-771-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3108-CORE;
GR-3178-CORE;
GR-326-CORE
SAE J1455;
MIL-STD-810, Method 503;
IEC 60945;
ASTM D4332;
GR-13-CORE;
GR-63-CORE;
GR-487-CORE;
GR-950-CORE

Tensile

GR-326-CORE;
GR-3120-CORE

Ultraviolet Resistance

ASTM D4459;
ASTM G53-1996;
ASTM G151;
ASTM G154;
ASTM G155;
GR-487-CORE;
IEC 60945, Section 8.10;
IEC 60068-2-5;
SAE J2527;
UL 746C;
UL 1581;
MIL-STD-810, Method 505

Test Technology/Description:**Test Method(s)/Standard(s)^{2, 4:}**

Altitude / Pressure / Decompression¹
(-2,000 to 120,000) ft

GR-63-CORE;
MIL-STD-810, Method 500;;
RTCA/DO-160;
SAE J1455;
IEC 60068-2-13;
IEC 60068-2-40;
IEC 60068-2-41;
UL 50 (2007);
UL 50E (2007);
ASTM D6653;
GR-3108-CORE

Combined Environment (*excluding vibration*)

MIL-STD-810, Method 520

Sand and Dust

GR-487-CORE;
IEC 60529, IP5X, Sections 13.4 and 13.5;
IEC 60529, IP6X, Sections 13.4 and 13.6;
RTCA/DO-160, Section 12;
MIL-STD-810, Method 510;
MIL-STD-202, Method 110;
IEC 60068-2-68;
GR-326-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3120-CORE;
GR-3123-CORE;
GR-3125-CORE

Highly Accelerated Life Testing (HALT)¹

HALT and HASS (Section 3), Gregg K. Hobbs, Ph.D.,
PE; Hobbs Engineering; 1992. *Accelerated Reliability
Engineering: HALT and HASS* (pp. 31-75);

Highly Accelerated Stress Screening (HASS)¹

*Temperature: (-100 to 200) °C
Ramp Rate: 70 °C/min
50 Grms Repetitive Shock with Six
Degrees of Freedom*

*HALT, HASS & HASA Explained: Accelerated
Reliability Techniques* (pp. 2-25) Harry W. McLean,
ASQ Quarterly Press, 2000

Shock / Drop

GR-487-CORE;
GR-63-CORE;
MIL-STD-810, Method 516;
RTCA/DO-160, Section 7;
SAE J1455;
IEC 60945, Section 8.6;
IEC 60068-2-27;
IEC 60068-2-31;
ASTM D5276;
GR-3121-CORE;
GR-3123-CORE

Test Technology/Description:**Test Method(s)/Standard(s)^{2, 4:}**

Vibration, Standard / Transportation¹
(1 to 3,000) Hz @
18,000 lbf Sine or
15,000 lbf Random

GR-487-CORE;
GR-63-CORE;
MIL-STD-810, Method 514;
RTCA/DO-160, Section 8;
SAE J1455;
IEC 60945, Section 8.7;
IEC 60068-2-6;
IEC 60068-2-50;
IEC 60068-2-51;
IEC 60068-2-53;
IEC 60068-2-64;
IEC 60079-29-1, Section 5.4.13;
IEC 60079-29-4, Section 5.4.8;
ASTM D4728;
ASTM D999;
MIL-STD-167;

Vibration, Standard / Transportation¹
(1 to 3,000) Hz @
18,000 lbf Sine or
15,000 lbf Random
(cont.)

GR-326-CORE;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE

Acceleration¹
Range: (0 to 110) Gs

MIL-STD-810, Method 513, Procedures I and II;
RTCA/DO-160, Section 7;
IEC 60068-2-7

Icing / Freezing Rain

MIL-STD-810, Method 521;
NEMA 250 (2014);
RTCA/DO-160, Section 24;
UL 50 (2007);
UL 50E (2007);
GR-487-CORE;
GR-771-CORE;
GR-950-CORE;
GR-3120-CORE;
GR-3125-CORE

Fluid Susceptibility / Immersion and Splash /
Contamination by Fluids

MIL-STD-810, Method 504;
RTCA/DO-160, Section 11;
SAE J1455;
IEC 60945, Sections 8.8, 8.9, and 8.11;
IEC 60068-2-18;
GR-487-CORE;
GR-13-CORE;
GR-771-CORE;
GR-902-CORE;
GR-937-CORE;
GR-950-CORE;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE



Test Technology/Description:**Test Method(s)/Standard(s)^{2, 4}:**

Acoustic Noise

GR-63-CORE;
GR-487-CORE;
GR-3108-CORE

Steam Cleaning / Pressure Washing

SAE J1455

Telecommunications Tests:

AC Fault

GR-771-CORE;
GR-902-CORE;
GR-950-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE

Backscatter, Attenuation

GR-13-CORE;
GR-326-CORE;
GR-771-CORE;
GR-950-CORE;
GR-3120-CORE;
GR-3121-CORE;
GR-3123-CORE;
GR-3125-CORE

CATV Mechanical Bend and Torque

ANSI/SCTE 10;
ANSI/SCTE 88;
ANSI/SCTE 98;
ANSI/SCTE 149;
ANSI/SCTE 166

CATV Dimensional Measurements

ANSI/SCTE 31;
ANSI/SCTE 33;
ANSI/SCTE 39;
ANSI/SCTE 51

CATV Tensile and Compression

ANSI/SCTE 59;
ANSI/SCTE 61;
ANSI/SCTE 73;
ANSI/SCTE 99;
ANSI/SCTE 191

CATV Environments

ANSI/SCTE 60;
ANSI/SCTE 69;
ANSI/SCTE 143**Industries served:** Telecommunications, Aerospace, Defense, and Electronics

Note: This lab is capable of performing current and older versions of MIL-STD-810 (versions B through G) and RTCA/DO-160 (versions B through G) for the methods listed above.

The methods listed above on this Scope are accredited. The following test method is a guideline utilized to perform the above fungus test: ***MIL-HBK-454B, Guideline 4.***

¹Also using customer specific test methods utilizing any combination of test equipment parameters listed above.

²This scope meets A2LA's *P112 Flexible Scope Policy*.

³This laboratory performs field testing activities for these tests.

⁴When 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*.

Uncontrolled If Printed



Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY MINNEAPOLIS LLC

Minneapolis, MN

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 27th day of October 2025.

A blue ink signature of Mr. Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1719.01
Valid to August 31, 2027

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