



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY CHICAGO – MT. PROSPECT

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MECHANICAL

Valid to: May 31, 2026

Certificate Number: 214.38

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following tests on industrial drives, tractor components, automotive system and subsystems, consumer electronics, and electrical power/distribution equipment:

Test Technology/Description:

Test Methods:

***Tensile/Compression/Flex/Pull/Deflection/
Elongation/Torque***

Cylinder Stroke:

Compression Load (200 to 20000) lbs

Tension Load (200 to 20000) lbs

MIL-STD-202, Method 211;
USCAR 2, Sections 5.4.2 & 5.4.3;
IPC/WHMA-A-620C Section 19.7.2

Hardness-Pencil

ASTM D3363

Fluid/Solvent/Chemical Resistance

MIL-STD-202, Method 215;
MIL-STD-750, Method 1022;
MIL-STD-810, Method 504;
MIL-STD-883, Method 2015;
RTCA/DO-160, Section 11;
NEMA 250, Section 5.14.4;
Chrysler PF-9688, Sections 2.9.1, 2.9.3, & 2.9.4;
USCAR 2, Section 5.6.4

Temperature/Humidity

SAE J1211, Section 4.2;
SAE J1455, Section 4.2;
ASTM D618;
GM 4465P;
GMW3172, Sections 8.5.1, 9.4.5, & 9.4.6;
Ford FLTM BQ 104-07;
MIL-STD-202, Methods 103 & 106;
MIL-STD-750, Method 1021;
MIL-STD-810, Method 507;
MIL-STD-883, Method 1004

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Test Technology/Description:

Test Methods:

Temperature/Humidity (continued)

RTCA/DO-160, Section 6;
Chrysler PF 9688, Sections 2.3.5 & 2.3.6;
USCAR 2, Section 5.6.2

Temperature/Thermal Cycle/Thermal Shock

Temperature and Thermal Cycle:
(-50 to 150) °C

Thermal Shock:
(-60 to 195) °C

MIL-STD-202, Methods 107 & 108;
MIL-STD-750, Methods 1026, 1027, 1031, 1032, 1036,
1037, 1038, & 1051;
MIL-STD-810, Methods 501, 502, 503, 520;
MIL-STD-883, Sections 1005, 1007, 1008, 1010, & 1011;
SAE J1455, Sections 4.1.3.1, 4.1.3.2, & 4.1.3.3;
RTCA/DO-160, Sections 4 & 5;
Ford ES-8A5A-12A. 145AA, Section 3.5;
Chrysler PF 9688, Sections 2.3.1, 2.3.2, 2.3.3, 2.3.4,
2.12, & 2.13;
GMW3172, Sections 8.4, 9.4.1, 9.4.2, & 9.4.3;
UN/ST/SG/AC.10/11/Rev.6, Section 38.3.4.2;
USCAR 2, Sections 5.6.1 & 5.6.3

Altitude/Decompression
(Up to 65,000 feet)

MIL-STD-202, Method 105;
MIL-STD-750, Method 1001;
MIL-STD-810, Method 500;
MIL-STD-883, Method 1001;
RTCA/DO-160, Section 4 (*except Category E1 and E2*);
UN/ST/SG/AC.10/11/Rev.6, Section 38.3.4.1;
SAE J1455, Section 4.9

Salt Fog

ASTM B117;
MIL-STD-202, Method 101;
MIL-STD-750, Method 1046;
MIL-STD-810, Method 509;
RTCA/DO-160, Section 14;
Ford FLTM BI 123-01;
Chrysler PF 9688, Sections 2.7 & 2.8;
GMW3172, Section 9.4.7;
NEMA 250, Sections 5.8, 5.9.1, & 5.10;
UL50, Procedures 38 & 39

Immersion

MIL-STD-202, Method 104;
MIL-STD-750, Method 1011;
MIL-STD-810, Method 512;
MIL-STD-883, Method 1002;
SAE J1455, Section 4.3.3.2;
GMW3172, Section 9.5.3;
USCAR 2, Section 5.6.5;
IEC 60529

Test Technology/Description:

Test Methods:

Solderability

MIL-STD-202, Method 208;
MIL-STD-883, Method 2003

Resistance to Solder Heat

MIL-STD-202, Method 210;
MIL-STD-883, Method 2036 (Test Condition A and B)

Rain Testing

USCAR 2, Method 5.6.7.2;
SAE J1455, Sections 4.4.3.1 & 4.5;
NEMA 250, Sections 5.5.1.3, 5.5.2.1.3, 5.5.2.2.3, & 5.7;
UL 50E, Procedures 30, 33, 35, & 37

Icing Test

RTCA/DO-160, Section 24;
GMW3172, Section 9.5.5;
NEMA 250, Section 5.6;
MIL-STD-810;
UL 50E, Procedure 34

Degree of Protection

IEC 60529 (*Foreign objects & water; except IPX9*);
ISO 20653 (IP1X-6X);
ISO 20653 (IPX1-X9);
GMW3172, Sections 9.5.2 & 9.5.3;
NEMA 250, Sections 5.2, 5.3, 5.4, 5.11 & 5.12;
UL 50E, Sections 36 & 40;
Chrysler PF 9688, Sections 2.9.2 & 2.9.5;
RTCA/DO-160, Section 10;
RTCA/DO-160, Section 12 (blowing sand/dust);
MIL-STD-810, Method 510 (blowing sand/dust)

HALT Testing¹

Up to 64 cubic Feet
(-100 to 175) °C
60° Temperature Change per Minute
60 Grms

Qualmark HALT Guidelines 933-0336;
GMW3172, Section 8.3.1

Vibration/Shock¹

(5 to 2500) Hz
2-inch Peak to Peak Displacement
25,000 pounds Force
Up to 100 g Shock
Up 18 milliseconds Duration

Combined Environment (-40 to 150) °C

Chrysler PF 9688, Sections 2.4, 2.5, & 2.6;
GMW3172, Sections 9.3.1, 9.3.2, & 10.3.1;
MIL-STD-202, Methods 201, 202, 204, 213, & 214;
MIL-STD-750, Methods 2016 & 2056;
MIL-STD-810, Methods 514 & 516;
MIL-STD-883, Methods 2002, 2005, 2007, & 2026;
SAE J1455, Sections 4.10 & 4.11;
SAE/AS23190, Section 4.6.4.1;
UN/ST/SG/AC.10/11/Rev.6, Sections 38.3.4.3 &
38.3.4.4;
RTCA/DO 160, Sections 7 & 8;
USCAR 2, Section 5.4.6

Test Technology/Description:

Drop/Impact

UV/Solar Radiation Test

Test Methods:

UN/ST/SG/AC.10/11/Rev.6, Section 38.3.4.6;
USCAR 2, Section 5.4.8;
ISTA 1A;
MIL-STD-810G, Method 516;
Chrysler PF-9688, Section 2.5

MIL-STD-810, Method 505;
IEC 60068-2-5 (Ed. 2.0);
ASTM G155;
EN ISO 4892-2

¹ Including customer supplied and industry specifications directly related to the test technologies and parameters listed above.



Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY CHICAGO – MT. PROSPECT

Mount Prospect, IL

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 24th day of July 2024.

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

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 214.38
Valid to May 31, 2026

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