



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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MECHANICAL

Valid To: December 31, 2018

Certificate Number: 0767.03

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following mechanical tests on Military, Aerospace, Automotive and Commercial Products:

Altitude: -15,000 ft (170 kPa) to 400,000 ft or $5 \times 10E^{-6}$ TORR - Chamber Volumes up to 745 Cubic Feet
Durability

Dye Penetrant

Explosive Environment: Chamber Volume 75 Cubic Feet, Altitudes up to 50,000 Feet

Fungus: Test Area Size 36 in x 36 in

Temperature and Humidity: Relative Humidity Range from Desert (5 %RH @ 120 °F) to Tropical Forest (100 %RH @ 65 °F to 165 °F)

- Chamber volumes up to 4,500 Cubic Feet

Magnetic Particle Inspection

Salt Fog/Spray Chamber Volume: up to 2,500 Cubic Feet

Sand & Dust Chamber Volumes: up to 200 Cubic Feet; Velocities up to 5,700 Feet/Minute

Seat Belt Assembly Testing

Thermal Shock

Sun/Solar Radiation

Temperature: Chambers from (64 to 4,500) Cubic Feet; Ambient temperatures from (-150 to 350) °F

Water Immersion

Wind and Rain

Freezing Rain/Icing/De-Icing

Fluid Susceptibility

Optical Testing

Abrasion

Material Properties

Using the following specifications directly related to the above listed testing parameters and technologies:

| <u>Test Technology:</u> | <u>Test Method(s):</u> |
|---|---|
| Altitude: Low Pressure | MIL-STD 810C, Method 500.1; MIL-STD 810D, Method 500.2; MIL-STD 810E, Method 500.3; MIL-STD 810F, Method 500.4 |
| Altitude: Temperature | MIL-STD 810G Method 500.5; MIL-STD 810C, Method 504.1; RTCA/DO-160E (4.0) |
| Altitude Temperature / Humidity Altitude Immersion | RTCA/DO-160F; RTCA/DO-160G; MIL-STD 810C, Method 518.1; MIL-STD-1344A |
| Low Temperature/High Temperature | MIL-STD 810C, Method 501.1; MIL-STD 810D, Method 501.2; MIL-STD 810E, Method 501.3; MIL-STD 810F, Method 501.4; MIL-STD 810G, Method 501.5; MIL-STD 810C, Method 502.1; MIL-STD 810D, Method 502.2; MIL-STD 810E, Method 502.3; MIL-STD 810F, Method 502.4; MIL-STD 810G, Method 502.5; ATPD 2352R, Sections 3.3.1.1, 4.3.1.1, 3.3.1.2 and 4.3.1.2; ATPD 2352T, Sections 3.3.1.1, 4.3.1.1, 3.3.1.2 and 4.3.1.2; RTCA/DO-160E (Section 5); RTCA/DO-160F (Section 5); RTCA/DO-160G; MIL-STD 1344A |
| Temperature Shock | MIL-STD 810C, Method 503.1; MIL-STD 810D, Method 503.2; MIL-STD 810E, Method 503.3; MIL-STD 810F, Method 503.4; MIL-STD 810G, Method 503.5; MIL-STD 202, Method 107G; ATPD 2352R, Sections 3.3.4 and 4.3.4; ATPD 2352T, Sections 3.3.4 and 4.3.4; RTCA/DO-160E (Section 5); RTCA/DO-160F (Section 5); RTCA/DO-160G |
| Solar Radiation (Sunshine) | MIL-STD 810C, Method 505.1; MIL-STD 810D, Method 505.2; MIL-STD 810E, Method 505.3; MIL-STD 810F, Method 505.4; MIL-STD 810G, Method 505.5; ATPD 2352R, Sections 3.3.5 and 4.3.5; ATPD 2352T, Sections 3.3.5 and 4.3.5 |
| Rain | MIL-STD 810C, Method 506.1; MIL-STD 810D, Method 506.2; MIL-STD 810E, Method 506.3; MIL-STD 810F, Method 506.4; MIL-STD 810G, Method 506.5 |
| Humidity | MIL-STD 810C, Method 507.1; MIL-STD 810D, Method 507.2; MIL-STD 810E, Method 507.3; MIL-STD 810F, Method 507.4; MIL-STD 810G, Method 507.5; MIL-STD 202, Method 103B; RTCA/DO-160E (6.0); RTCA/DO-160F; RTCA/DO-160G; ATPD 2352R, Sections 3.3.2 and 4.3.2; MIL-STD 1344A; ATPD 2352T, Sections 3.3.2 and 4.3.2 |



Test Technology:**Test Method(s):**

| | |
|-------------------------------------|--|
| Fungus | MIL-STD 810C, Method 508.1; MIL-STD 810D, Method 508.2; MIL-STD 810E, Method 508.4; MIL-STD 810F, Method 508.5; MIL-STD 810G, Method 508.6; RTCA/DO-160E (13.0); RTCA/DO-160F; RTCA/DO-160G |
| Salt Fog/Salt Spray | MIL-STD 810C, Method 509.1; MIL-STD 810D, Method 509.2; MIL-STD 810E, Method 509.3; MIL-STD 810F, Method 509.4; MIL-STD 810G, Method 509.5; MIL-STD 202, Method 101D; RTCA/DO-160E; RTCA/DO-160F; RTCA/DO-160G; ASTM B117; ASTM G85; MIL-STD-1344A |
| Dust (Fine Sand) | MIL-STD 810C, Method 510.1; MIL-STD 810D, Method 510.2; MIL-STD 810E, Method 510.3; MIL-STD 810F, Method 510.4; MIL-STD 810G, Method 510.5; MIL-STD 202, Method 110A; RTCA/DO-160C (12.0); RTCA/DO-160E; RTCA/DO-160F; RTCA/DO-160G |
| Explosive Atmosphere | MIL-STD 810C, Method 511.1; MIL-STD 810D, Method 511.2; MIL-STD 810E, Method 511.3; MIL-STD 810F, Method 511.4; MIL-STD 810G, Method 511.5; MIL-STD 202, Method 109B; RTCA/DO-160E (Section 9.0); RTCA/DO-160F; RTCA/DO-160G |
| Leakage (Immersion) | MIL-STD 810C, Method 512.1; MIL-STD 810D, Method 512.2; MIL-STD 810E, Method 512.3; MIL-STD 810F, Method 512.4; MIL-STD 810G, Method 512.5 |
| Space Simulation (Unmanned Test) | MIL-STD 810C, Method 517.2 |
| Altitude Immersion | MIL-STD 1344A |
| Icing/Freezing Rain | MIL-STD 810D, Method 521.0; MIL-STD 810E, Method 521.1; MIL-STD 810F, Method 521.2; MIL-STD 810G, Method 521.5; RTCA/DO-160E, RTCA/DO-160F, RTCA/DO-160G (Section 24) |
| De-Icing | ATPD 2352R, Sections 3.2.6 and 4.2.6; ATPD 2352T, Sections 3.2.6 and 4.2.6 |
| Waterproofness | RTCA/DO-160E (10.0); RTCA/DO-160F; RTCA/DO-160G |
| Exposure to Fluids | RTCA/DO-160E (11.0); RTCA/DO-160F; RTCA/DO-160G; ATPD 2352R, Sections 3.3.7 and 4.3.7; ATPD 2352T, Sections 3.3.7 and 4.3.7; MIL-STD 810F, Method 504; MIL-STD 810G, Method 504 |

Test Technology:

Test Method(s):

| | |
|--|---|
| Seat Belt Testing | FMVSS 209 - S4.1 Paragraphs (d) Hardware, (h) Webbing, (i) Strap, (j) Marking and (m) Workmanship; FMVSS 209 - S4.2 Requirements For Webbing (<i>excluding paragraph (f) Resistance to Micro-Organisms</i>); FMVSS 209 - S4.3 Requirements for Hardware; FMVSS 209 - S4.4 Requirements for Assembly Performance; FMVSS 302 Flammability |
| Transportation Seal Tensile Test | ISO 17712:2010(E), Section 5.2 (<i>excluding Section 6</i>); ISO 17712:2013(E), Section 5.2 (<i>excluding Section 6</i>); ASTM F1157 |
| Transportation Seal Shear | ISO 17712:2010(E), Section 5.3 (<i>excluding Section 6</i>); ISO 17712:2013(E), Section 5.3 (<i>excluding Section 6</i>); ASTM F1157 |
| Transportation Bend Test | ISO 17712:2010(E), Section 5.4 (<i>excluding Section 6</i>); ISO 17712:2013(E), Section 5.4 (<i>excluding Section 6</i>); ASTM F1157 |
| Transportation Impact Test | ISO 17712:2010(E), Section 5.5 (<i>excluding Section 6</i>); ISO 17712:2013(E), Section 5.5 (<i>excluding Section 6</i>); ASTM F1157 |
| Evidence of Tampering | ISO 17712:2010(E), Section 4.4.3 |
| Bolt Seal Diameter Qualification | ISO 17712:2013(E), Section 4.1.3 |
| Optical Testing | ASTM F801-96; ASTM F2156-06; ASTM D1003-00; ASTM D1044-08; ATPD 2352R, Sections 3.4.1, 3.4.1.1, 3.4.2, 3.4.3, 3.4.4, 4.4.1, 4.4.1.1, 4.4.2, 4.4.3 and 4.4.4; ATPD 2352T, Sections 3.4.1, 3.4.1.1, 3.4.2, 3.4.3, 3.4.4, 4.4.1, 4.4.1.1, 4.4.2, 4.4.3 and 4.4.4 |
| Abrasion | ANSI/SAE Z26.1-1996, Sections 5.17 and 5.18; ATPD 2352R, Sections 3.3.6 and 4.3.6; ATPD 2352T, Sections 3.3.6 and 4.3.6 |
| Nital Etch | MIL-STD-867C |
| Grain Size | ASTM E112 |
| Hardness Scales (HR, B, C, 15N, 15TW Scales) | ASTM E18 |



Test Technology:**Test Method(s):**

Microhardness

ASTM E18

Inclusions

ASTM E45

Electrical Conductivity of
Aluminum Alloys

AMS 2658

Optical Emissions Spectroscopy-
Low Alloy Steel, High Alloy
Steel, Aluminum Alloys,
Titanium Alloys, Magnesium
Alloys

ASTM A751; TP03-0021

Breaking Strength and
Elongation of Pressure-Sensitive
Tape

ASTM D3759; ASTM D3759M-05

Peel Adhesion of Pressure-
Sensitive Tape

ASTM D3330; ASTM D3330M-04

*Also using the above methods and customer supplied test methods directly related to the capabilities listed above.





Accredited Laboratory

A2LA has accredited

DAYTON T. BROWN, INC.

Bohemia, NY

for technical competence in the field of

Mechanical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *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 8 January 2009).



Presented this 5th day of May 2017.

A handwritten signature in black ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 0767.03
Valid to December 31, 2018

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