



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

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MECHANICAL

Valid To: August 30, 2017

Certificate Number: 0584.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the below listed tests on Adhesives & Sealants; Aircraft Components; Automotive Components; Coating, Gasket, Seals & Packing; Metals & Alloys; Plastics & Polymers; Pipes, Hoses, Valves & Fittings; Pressure Vessels; Tools; Mechanical Power Transmission Components; Weld Integrity; Off-Highway Vehicle Components; and Motorcycle Components;

| <u>Test Type</u>                                      | <u>Test Capabilities</u>  | <u>Test Methods</u>  |
|---|---|--|
| Mechanical – Static                                   |   |  |
| Tensile / Compression of Components <sup>1</sup>      | (-40 to 300)°F, (-40 to 150)°C<br>+/- 300,000 lbf (1,300 KN)                                | RIC 1005, 1256, 1257   |
| Mechanical – Dynamic                                  |   |  |
| Fatigue Testing <sup>1</sup>                          | +/- 300,000 lbf (1,300 KN)  | RIC 1218   |
| Vibration Testing: Servo Hydraulic <sup>1</sup>       | Up to 100,000 lbf (450 KN)  | RIC 1218   |
| Vibration Testing: Electro-Dynamic <sup>1</sup>       | Up to 6000 lbf (27 KN)<br>(-165 to 350)°F, (-70 to 175)°C<br>(10 to 95)% RH<br>X, Y, Z Axes | ASTM D5112;<br>Mil-Std 810, Method 514                       |
| Sine  | Up to 2000 Hz   | Mil-Std 810, Method 514;<br>IEC 60068-2-6,<br>IEC 60068-2-64 |
| Random  | Up to 3000 Hz   | Mil-Std 810, Method 514;<br>IEC 60068-2-6,<br>IEC 60068-2-64 |
| Shock   | 2 inch Peak-to-Peak   | Mil-Std 810, Method 516;<br>IEC 60068-2-27                   |
| Sound / Acoustic Testing <sup>1</sup>                 | Single microphone<br>(20 to 22,000) Hz<br>(495,500 to 9,910,000) SPL                        | ANSI/ASA S1.13;<br>RIC 1050                                  |
| Bearing Oscillation and Rotation Testing <sup>1</sup> | (-65 to 1000)°F, (-55 to 540)°C<br>+/- 100,000 lbf (450 KN)                                 | RIC 1046, 1047   |

| <b>Test Type</b>  | <b>Test Capabilities</b>  | <b>Test Methods</b>                                |
|---|---|--|
| <b>Mechanical – Dynamic (continued)</b>                                   |   |  |
| On-Site Testing of Mechanical Components and Structures                   | 48 channels of simultaneous data acquisition; 10,000 Hz max     | RIC 1219, 1050                                     |
| Adhesive & Welded Strain Gage Installation <sup>2</sup>                   | (-50 to 400)°F, (-45 to 200)°C Operation                        | ASTM E1237; RIC 1062, 1063                         |
| Strain Measurement <sup>2</sup>   | 30,000 µε maximum   | RIC 1200, 1259                                     |
| Torque Measurement using FM Radio Telemetry <sup>2</sup>                  | Multi channel   | Equip Manual 1217                                  |
| Temperature Measurement <sup>2</sup>                                      | (-50 to 600)°F, (-45 to 315)°C Operation                        | RIC 1236   |
| Position Measurement <sup>2</sup>   | 0.001” resolution   | RIC1220  |
| Acceleration Measurement <sup>2</sup>                                     | < 100 g; (5 to 4,000) Hz  | RIC 1259   |
| Sound / Acoustic Measurement <sup>2</sup>                                 | Single microphone (20 to 22,000) Hz, (495,500 to 9,910,000) SPL | ANSI/ASA S1.13                                     |
| <b>Metallurgical Evaluation</b>   |   |  |
| Rockwell Hardness   | A, B, C, 15N, 30N, 15T, 30T                                     | ASTM E18   |
| Brinell Hardness  | (500 and 3000) kgf  | ASTM E10   |
| Vickers and Knoop Microhardness   | 500 gf  | ASTM E384  |
| OE Spectroscopy of Carbon, Low Alloy Steel                                | C, Mn, Si, S, P, Cr, Ni, Mo, Nb, Al, Ti, Cu, B, Ta              | ASTM E415  |
| <b>Metallography – Microstructure</b>                                     |   |  |
| Microetching  | Ferrous and Non-Ferrous Alloys                                  | ASTM E3, E407                                      |
| Macroetching  | Ferrous Alloys  | ASTM E340  |
| Surface Discontinuities on Threaded Fasteners                             | Ferrous Alloys  | ASTM F788  |
| Inclusion Content   | Ferrous Alloys  | ASTM E45, Method A                                 |
| Grain Size  | Ferrous and Non-Ferrous Alloys                                  | ASTM E930, E112 (Comparison Method only)           |
| Hydrogen Embrittlement  | Ferrous Alloys  | Visual-SEM   |
| Depth of Decarburization  | Ferrous Alloys  | ASTM E1077, F2328                                  |
| Case Depth  | Ferrous Alloys  | SAE J423   |
| Liquid Penetrant Inspection (Type II, Method C) (Personnel non-certified) | Ferrous and Non-Ferrous Alloy Components                        | ASTM E165/E165M                                    |
| SEM/EDS   | Ferrous and Non-Ferrous Alloys                                  | ASTM E1508   |
| <b>Polymeric / Composites / Elastomers</b>                                |   |  |
| Thermal Analysis by DSC   | (-90 to 550)°C, (-130 to 1022)°F                                | ASTM D3418   |
| FTIR Spectroscopy   | Mid IR, ATR   | ASTM E1252   |
| <b>Environmental Simulation (Steady State and Cyclic)</b>                 |   |  |
| High / Low Temperature Exposure   | (-100 to 375)°F, (-70 to 190)°C                                 | Mil-Std 810, Method 501/502                        |
| Humidity  | (30 to 95)% RH  | Mil-Std 810, Method 507                            |
| Salt Fog  | 35 °C, 95 °F; 5% NaCl   | ASTM B117, D1654                                   |
| Altitude (Static)   | Up to 100 kPa (14.5 psi) (-40 to 150)°F, (-40 to 65)°C          | Mil-Std 810, Method 509<br>Mil-Std 810, Method 500 |

| <b>Test Type</b>                                      | <b>Test Capabilities</b>   | <b>Test Methods</b>   |
|---|----------------------------|---|
| Failure Analysis                                      |                            |   |
| Materials   | Parameters as listed above | Using the methods listed above in accordance with the ASM Handbook Volume 11                |
| Failure Analysis of Mechanical Systems and Components | Parameters as listed above | Using the methods listed above for components in accordance with the ASM Handbook Volume 11 |

<sup>1</sup> Using customer-specified methods directly related to the types of tests listed above.

<sup>2</sup> This laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these tests.



## *Accredited Laboratory*

A2LA has accredited

### **REXNORD INNOVATION CENTER**

*Milwaukee, WI*

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 28<sup>th</sup> day of September 2015.

A handwritten signature in black ink, reading "Peter Abney".

President & CEO  
For the Accreditation Council  
Certificate Number 0584.01  
Valid to August 31, 2017

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