



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

REXNORD INNOVATION CENTER
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MECHANICAL

Valid To: August 31, 2019

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 Type¹</u>	<u>Test Capabilities¹</u>	<u>Test Methods¹</u>
Mechanical – Static		
Tensile / Compression of Components ²	(-40 to 300)°F, (-40 to 150)°C +/- 300,000 lbf (1,300 KN)	RIC 1005, 1256, 1257
Mechanical – Dynamic		
Fatigue Testing ²	+/- 300,000 lbf (1,300 KN)	RIC 1218
Vibration Testing: Servo Hydraulic ²	Up to 100,000 lbf (450 KN) (0.1 to 30) Hz	RIC 1218
Vibration Testing: Electro-Dynamic ²	Up to 6000 lbf (27 KN) (-165 to 350)°F, (-70 to 175)°C (10 to 95)% RH X, Y, Z Axes	ASTM D5112; MIL-STD 810, Method 514; RTCA DO-160, Section 8.0
Sine	Up to 2000 Hz	MIL-STD 810, Method 514; IEC 60068-2-6, IEC 60068-2-64
Random	Up to 3000 Hz	MIL-STD 810, Method 514; IEC 60068-2-6, IEC 60068-2-64
Shock	2-inch Peak-to-Peak	MIL-STD 810, Method 516; IEC 60068-2-27; RTCA DO-160, Section 7
Sound / Acoustic Testing ²	Single Microphone (20 to 22,000) Hz (20-140) dBa	ANSI/ASA S1.13; RIC 1050
Bearing Oscillation and Rotation Testing ²	(-65 to 1000)°F, (-55 to 540)°C +/- 100,000 lbf (450 KN)	RIC 1046, 1047

<u>Test Type</u>¹	<u>Test Capabilities</u>¹	<u>Test Methods</u>¹
Mechanical – Dynamic (cont'd)		
On-Site Testing of Mechanical Components and Structures	48 channels of simultaneous data acquisition; 10,000 Hz max	RIC 1219, 1050
Adhesive and Welded Strain Gage Installation ³	(-50 to 400)°F, (-45 to 200)°C Operation	ASTM E1237; RIC 1062, 1063
Strain Measurement ³	30,000 $\mu\epsilon$ maximum	RIC 1200, 1259
Torque Measurement using FM Radio Telemetry ³	Multi-channel	Equip Manual 1217
Temperature Measurement ³	(-50 to 600)°F, (-45 to 315)°C Operation	RIC 1236
Position Measurement ³	0.001" resolution	RIC 1220
Acceleration Measurement ³	< 100 g; (5 to 4,000) Hz	RIC 1259
Sound / Acoustic Measurement ³	Single microphone (20 to 22,000) Hz, (20-140) dBa	ANSI/ASA S1.13
Metallurgical Evaluation		
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
Metallography – Microstructure		
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
Chemical Analysis		
OE Spectroscopy of Carbon, Low Alloy Steel	C, Mn, Si, S, P, Cr, Ni, Mo, Nb, Al, Ti, Cu, B, Ta	ASTM E415
Polymeric / Composites / Elastomers		
Thermal Analysis by DSC	(-90 to 550)°C, (-130 to 1022)°F	ASTM D3418
FTIR Spectroscopy	Mid IR, ATR	ASTM E1252
Environmental Simulation (Steady State and Cyclic)		
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 MIL-STD 810, Method 500

<u>Test Type</u> ¹	<u>Test Capabilities</u> ¹	<u>Test Methods</u> ¹
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

¹ Finite element analysis and 3-D printing may be used to supplement the testing and predict expected results.

² Using customer-specified methods directly related to the types of tests listed above.

³ 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 1st day of November 2017.

A handwritten signature in black ink, appearing to read "L. J. ...".

President & CEO
For the Accreditation Council
Certificate Number 0584.01
Valid to August 31, 2019

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