



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

INDEPENDENT ENGINEERING LABORATORIES, INC.

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Jackson, MI 49201

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MECHANICAL

Valid To: February 28, 2025

Certificate Number: 1492.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above to perform the following tests (using technologies such as Durability/Performance of Fuel Delivery Modules, Pumps, Regulators, Filters, Rails, Tanks, Injectors, Senders, PPRV Valves, Check Valves, Carbon Canisters, Hoses, "O" Rings, Pressure Transducers, Solenoids, Dampers, Throttle Bodies, and Intake Manifolds) on automotive fuel systems:

Tests:

Fire Resistance/Flammability Testing:

Associated Test Parameters

Temperature: 200°F to 2000°F

Air Velocity: Up to 500 ft/ min

Flame Intensity: Up to 5000 BTU/ hr

Vibration with Combined Environment:

Frequency: (DC to 3000) Hz

Combined Temperature: (-40 to 350) °F; (-40 to 1000) °C

Humidity: (5 to 95) % RH

Random: 30,000 lbs force

Sine: 30,000 lbs force

Shock: up to 100 Gs, 100 msec

Sine on Random: 30,000 lbs force

Test Methods¹:

DOT/FAA AC 20-135;

DOT/FAA Power Plant Engineering Report;
No. 3A;

ISO 2685;

Rolls-Royce Spec. JES 314-1;

RTCA/DO-160, Section 26;

SAE AIR 1377A;

SAE AS 1055;

SAE AS 4273

MIL-STD-810 (F, G) Method 514;

PF 9699;

RTCA/DO-160D, E, F

SAE J2044; ES-4L8E-9F792-AB

MIL-STD-810 (F, G) Method 516

RTCA/DO-160D, E, F

Tests:

Vibration with Combined Environment Cont'd:

Sine on Random: 30,000 lbs force

Test Methods¹:

ESDG93-8260-AA, Section 3.15
Pressure, Vibrations, and Temperature
(PVT) Durability;
ESDG93-18B402-AA, Section 3.11 PVT
(Pressure, Vibration and Temperature
Test);
PF.90080, Section 9.3.1 Heavy Duty
Test Specification;
PF.90080, Section 9.3.2 Standard Duty
Test Specification;
PF-11118, Section 7.1.1 Pressure
Vibration Thermal Cycling Test;
TSB5501G, Section 6.2.10
Pressurization Cycle Resistance Test
under Vibration;
GMW 14785, Pressure Vibration
Temperature (PVT) Cycle Test;
GMW14329, Section 4.3 Coolant
Circulation;
Mazda MES PA 15 185, Section 7.2.4
Vibration Resistance;
Nissan NES D5806 2016-N, Section
6.16 Repeated Pressure Vibration Test
Method;
Daimler Chrysler A 210 006 4099,
Section 4 Coolant Hose Durability Test

Load Testing:

(0 to 5000) lbs Tension or Compression
Travel: Pull apart, Assembly Effort, Side Load

SAE J2044

Cyclic Load: Up to 500 Hz, 10,000 lbs

Environmental Simulation:

High / Low Temperature: (-65 to 650) °F

PF 9699; ES-F8DE-9C968-AA;
GMW 14329, Section 4.6 Fatigue Test;
Nissan NES D5806 2016-N, Section
6.20 Sealing Test at Low Temperature
Test Method

Relative Humidity: (5 to 95) % RH

ES-4L8E-9F792-AB

Thermal Shock: (-40 to 350) °F
Air-to-Air

PF 9699



Tests:

Test Methods¹:

Environmental Simulation Cont'd:

Burst High Pressure: (0 to 25,000) psi Combined Temperature: (-40 to 350) °F Relative Humidity: (5 to 95) % RH	SAE J2044
Leak Testing: Pressure Decay (-40 to 350) °F	SAE J2044; ES-4L8E-9F792-AB
High Pressure Testing ¹ : Nitrogen or Natural Gas, up to 25,000 psi	Eaton 45153
External Chemical and Environmental Resistance ATF, Motor Oil, Brake Fluid, Antifreeze, Diesel, Engine Degreaser, Zinc Chloride	SAE J2044
Fuel Compatibility	SAE J2044

¹Using the following types of specifications and standards: ASTM, Ford, Mazda, Chrysler, Honda, Delphi, GM, SAE, Toyota, Aerospace and directly related to the above tests furnished by the customer on the test methods for the parameters listed above and the equipment capabilities.





Accredited Laboratory

A2LA has accredited

INDEPENDENT ENGINEERING LABORATORIES, INC.

Jackson, MI

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 9th day of December 2022.

A blue ink signature of the Vice President of Accreditation Services.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 1492.01
Valid to February 28, 2025

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