



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

MGA RESEARCH CORPORATION⁴
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MECHANICAL

Valid Until: May 31, 2019

Certificate Number: 0850.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location listed above as well as the satellite laboratory location listed below to perform the following tests on seating systems, instrument panels, glove boxes, storage doors, steering columns, floor and overhead consoles, auto/manual shifter, doors, door panels, windows, hoods, liftgates, decklids/trunks, swing metal components, roof systems, closure systems, structural components and other interior and exterior components including exhaust, drive-train and suspension for the automotive industry and other transportation-related industries including aerospace, rail, train, bus, and defense:

Test Description/Equipment Parameter:⁵

Test Method(s):

Load Testing / Life Cycle Testing
(0 to 1000) lbs

GMW 14497; DC-10859, DC-10254; PF-8401

Drop Tower
Drop Mass (0 to 3500) lbs
Impact Velocity (0 to 30) mph
Impact Pulse (0 to 400) G's

MGATP_DTLM

Environmental Conditioning / Extreme Temperature Testing
Reach-In (2 x 2 x 2) ft. Up to Full-Vehicle Chambers
(19 x 24 x 10) ft.
(-40 to +140) °C

GMW 3172, GMW 14124; PF-11365,
PF-10952, PF-12610, PF-11029, PF-11084;
Ford WSS-M15P4-F

Multiple Axis Vibration Testing (6 DOF MAST)
4'x 6' to 6'x 8' Table Size
10 in. Vertical, 6 in. Horizontal
(0 to 5) G's
(0 to 50) Hz
Conditioning (-40 to +85) °C

ST-0009; DC-10859 (Heidedauerlauf);
IP-0008 (Key Life Test)

Test Description/Equipment Parameter:⁵

Electrical Performance/Characteristics

Output:

Sine (peak to peak): (0 to 21.5) MHz
(0 to 10) V

DC V: (0 to 42) V / DC A: (0 to 10) A

Measure:

Voltage (DC): 1 mV to 1000V

Voltage (AC): 1 mV to 1000V (3 Hz to 300 kHz)

Current (DC): 1 mA to 100 A

Current (AC): 1 mA to 10 A (3 Hz to 300 kHz)

Resistance: 0.003 Ω to 2 GΩ

Test Method(s):

PF 9590; GMW 3172, GMW 3431

FMVSS/CMVSS/MIL-STD Test Procedures:

Door Lock and Retention Components

Test Method(s):

FMVSS 206 (NHTSA) Compliance;
CMVSS 206;
MIL-STD-1180B Section 6

Safety Development Testing:

Drop Tower

Test Method(s):

MGATP_DTLM

Occupant Seating Location H-Point (SAE /ICBC/IIHS)

SAE J826 Rev 95; ST-0007; FMVSS 202a

Dynamic Sled Testing

Dynamic Environment Simulation (i.e., Front Crash,
Side Impact, Rear Impact, Unoccupied Acceleration,
IIHS/IIWPG/RCAR Protocol)

FMVSS 202a, FMVSS 208 Simulation;
ECE-17, Annex 9, Luggage Retention;
FMVSS 207 / ECE-17 P6.3 Acceleration

Environmental/Durability/Life Cycle:

Life Cycle Durability of Various Interior and Exterior
Components

Test Method(s):

PF-11365, PF-10952, PF-11084, PF-12610,
PF-11029, PF-10254, PF-12063;
Ford Seat SDS (ST), Ford Interior SDS
(IP and IT); GMW 14575, GMW 14576,
GMW 14117, GMW 14189, GMW 14493,
GMW 14367, GMW 14518

Multi-Axis Simulation Table Vibration
Vibration Testing of Various Interior and Exterior
Components

ST-0009; DC-10859 (Heidedauerlauf);
IP-0008 (Key Life Test)

Material Test Procedures:

Salt Fog/Spray

Test Method(s):

ASTM B117;
MIL-STD-810 Method 509;
RCTA/DO-160F Section 14;
FMVSS 209 S1c; SAE J386 Section 5.3.1

Material Test Procedures:

Materials Characteristics (Plastics, Foams, Fabrics) –
Tension, Compression, Seam Strength, Stitch Strength,
Stretch & Set, Tear Strength

Test Method(s):

PF.90912 S6.3.4, PF.11365;
Custom Weld Strength

Dust Exposure

SAE J575 Section 3.3;
ISO 20653:2006

Dimensional Testing¹:

Parameter	Range	CMC ² (±)	Technique / Method
Length ³ - 1D	Up to 305 mm (0-12")	0.102 mm (0.004 in)	Calipers
	Up to 36 in Up to 914 mm	0.07 in 1.78 mm	Ruler
- 3D	2 ft. measuring zone 12 ft. measuring zone	0.102 mm (0.004 in) 0.61 mm (0.024 in)	CMM – Faro

¹This laboratory offers commercial dimensional testing service only.

²Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards of nearly ideal measuring equipment. CMC's represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³This test is not equivalent to that of a calibration.

⁴This accreditation also covers testing performed at the following satellite laboratory listed below:

MGA Research Corporation
2807 – 2927A Elliott Avenue
33653 Dequindre Road
Troy, Michigan 48083

Test Description/Equipment Parameter⁵:

Test Method(s):

Load Fatigue Testing
(0 to 160,000) lbs.

ST-0019; GMW 14497;
DC-10859, DC-10254; PF-840; SAE
J2638

Static Crush Testing
(0 to 160,000) lbs.

FMVSS 214, FMVSS 216A; IIHS;
SAE J2258

Linear Impact Testing
Impact Velocity (0 to 30) mph
Impact Pulse (0 to 400) G's

FMVSS 201, FMVSS 202A; ECE-17/25;
GM 9685P; ST-0047

Thermal Shock Testing
Size: (28 x 24 x 20) in
(-60 to +150) °C

GMW 3172; ISO 16750-4; IEC 60068 2-
14; MIL-STD-202G Method 107G

Semi-Anechoic Chamber w/Sound Measurement

GMW 7293, GMW 14011, GMN 5160,
GMW 14628, GMW 14629, GMW 14188;
Ford 01.01-L-407

Size: 9'4" W x 9'4" L x 10' H
Ambient noise level 29 dBA
30 dBA (1.0-1.2 Sones) Vibration System in Chamber
Zwicker Loudness (Sones) DB (SPL/A/B/C/D)
Frequency Range of Microphone (20 Hz to 20 kHz)
Sampling Rate (44.1 kHz & 48 kHz)
Sound Data Analysis using Head Acoustics Artemis
Analyzer

Semi-Anechoic Chamber w/Sound Measurement and
Pitch and Roll (5 DOF) BSR System

ST-0009;
CETP 01.10-L-413, CETP 01.10-L-302

Size: 24'9" W x 21" L x 12" H
Ambient Noise Level: 31 dBA
33 dBA (1.0-1.2 Sones) Vibration System in Chamber
Zwicker Loudness (Sones) DB (SPL/A/B/C/D)
Frequency Range of Microphone (20 Hz-20 kHz)
Sampling Rate (44.1 kHz & 48 kHz)
Sound Data Analysis Using Head Acoustics Artemis
Analyzer
Table Frequency (5 to 300 Hz)

Multiple Axis Vibration Testing (6 DOF MAST)

ST-0009; DC-10859 (Heidedauerlauf);
IP-0008 (Key Life Test); LP.7P112

4'x 6' to 6'x 8' Table Size
10 in. Vertical, 6 in. Horizontal
(0 to 5) G's
(0 to 50) Hz
Conditioning (-40 to +105) °C

Test Description/Parameter:

Vibration Testing (Electro-dynamic, ED)
Sine, Random, Mechanical Shock, and Time-History
Load Capacity (0 to 17,500) lbs
Frequency (2-3000 Hz)
Displacement 2 in (PK to PK)
Acceleration (0 to 140) G's
Combined Environments (-60 to +150)° C
Universal Fixture/Support for Various Components

Dual MAST Exhaust Durability
5'x 7' Tables
12 Actuator MTS RPC Real-Time Simulation Control
Thermal Hot Exhaust Simulation
Hot Gas Simulation (0 to 1000) °C
Diesel Particulate Filter (DPF) Simulation

Durability/Life Cycle:

Durability Cycling of Seat Backs and Cushions

Durability Cycling of Seat Backs, Cushions, Bolsters

FMVSS/ECE Test Procedures:

Occupant Protection in Interior Impact

Head Restraint/Seat Back Impact

Head Restraint Strength

Steering Wheel Impact

Seating Systems

Seat Belt Assembly Anchorages

Test Method(s):

PF-8243, PF-10827; IP-0001;
RCTA/D0-160E Section 8; GMW 3172;
MIL-STD 810, Method 516.6; GMW
14319; MIL-STD-167-1A

ST-0009; CETP 00.00-R-379

Test Method(s):

Jounce and Squirm ST-0036; PF-10859,
PF-8401

Ingress/Egress ST-0035; GMW 14364; PF-
10254

Test Method(s):

FMVSS 201U (NHTSA) Compliance
FMVSS 201 (NHTSA) Compliance;
CMVSS 201; ECE-21 Compliance;
MIL-STD-1180B Section 6

FMVSS 201; ECE-17/21/25 Compliance
TRIAS 32/36 Compliance

FMVSS 202 (NHTSA) Compliance,
FMVSS 202a (NHTSA) Compliance;
ECE-17/25 Compliance; CMVSS 202;
TRIAS 32/36 Compliance

FMVSS 203 (NHTSA) Compliance;
ECE-12 Compliance; CMVSS 203;
MIL-STD-1180B Section 6

FMVSS 207 (NHTSA) Compliance;
ECE-14-Compliance; CMVSS 207;
MIL-STD-1180B Section 6

FMVSS 210 (NHTSA) Compliance,
FMVSS 210 NPRM (FAD); CMVSS 210;
ECE-14-Compliance; MIL-STD-1180B
Section 6

FMVSS/ECE Test Procedures (cont'd):

Side Impact Protection

Test Method(s):

FMVSS 214 (NHTSA) Compliance;
CMVSS 214

Roof Crush Resistance

FMVSS 216a (NHTSA) Compliance;
IIHS Roof Strength; ROPS Testing;
CMVSS 216

Rear Impact Guards

FMVSS 223 (NHTSA) Compliance;
CMVSS 223

Child Restraint Anchorage System Tether and Lower

FMVSS 225 (NHTSA) Compliance;
ECE-14 Compliance
CMVSS 210.1 and 210.2

Ejection Mitigation

FMVSS 226 (NHTSA) Compliance

Child Seat Installation, Annex 17,
Appendix 1 and 2

ECE-16 Compliance

Head Restraints, Whether or Not Incorporated in Vehicle
Seats

ECE-25 Compliance

Safety Development Testing:

Test Method(s):

Occupant Seating Location H-Point
(SAE /ICBC/IIHS)

SAE J826 Rev 95; ST-0007; FMVSS 202a

Airbag Static Deployment or Dynamic Impact

GMW 3118, GMW 3112, GMW 3115;
PF-10827;
AA-0013, Airbag Deployment

Quasi-static Force vs. Deflection Characteristics

Custom Quasi-Static Loading;
GMW 16418; SAE J2258

Dynamic Force vs. Deflection Characteristics

Custom Dynamic Impact; GMW 16610;
TSM 5725G

Pedestrian Protection Testing:

Test Method(s):

Pedestrian Protection
Adult and Child Headform
Upper legform (TRL)
Lower leg (TRL)
Sensing (Small Animal, Various Object)
Temperature Range: (-40 to +80) °C
Voltage: ±5V

EC Directive: 2003/102/EEC; EuroNCAP:
Pedestrian Testing Protocol, v6.2;
EEVC Working Group 17 Report;
GTR No. 9;
EC 631/2009, EC 78/2009;
MGATP_PED_Sensing

⁵ This laboratory also uses customer supplied specifications and/or methods developed by the lab and approved by the client directly related to the types of tests and within the parameters listed above.



Accredited Laboratory

A2LA has accredited

MGA RESEARCH CORPORATION

Troy, MI

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 6th day of June 2017.

A handwritten signature in black ink, appearing to read "L. Sen", written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 0850.01
Valid to May 31, 2019

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