



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT - WARREN 11 MILE
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MECHANICAL

Valid To: February 28, 2021

Certificate Number: 0098.11

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory at the location above *as well as the four satellite laboratory locations listed below* to perform the following tests:

Mechanical Tests: Tensile/Elongation; Hardness (Durometer and Rockwell); Compression; Impact (Izod, Charpy, and GM9300P); Strength at Room and High Temperatures; Shear Strength; Physical Properties Following Fluid Exposure; Hoses and Tubing; Tear Strength Using Tongue, and Trapezoid Methods; Filler, Glass, Carbon Black Content; Volume Change; Specific Gravity and Density; Cleanability; Dimensional Stability; Water Absorption; Melt Flow/Index; Migration and Contact Staining; Flammability; Compression Set; Low-Temperature Brittleness; Deflection Temperature; Permeability, Vapor Transmission; On Plastics, Rubber, Elastomer, Composite, Paper/Paperboard, Construction Elements, and Textile Products.

Environmental Simulation Tests: Weatherometer (Xenon); Sunlamp and QUV Exposure; Fadometer; Ozone Resistance; Fogging; Salt Spray; CASS; Humidity; Condensing; Crocking; Water Immersion; Taber Abrasion; Gravelometer; Specular Gloss; Luminous Transmittance; Chromaticity; Color Reading; Corrodokote; Oil/Gas Immersion Solvent and Detergent Resistance; Thermal Shock; Paint Adhesion; Spot Test Acid/Water and Soap; Cleanability; Coating Thickness; Flexibility; Perspiration; Scrub Resistance; Dime Scrape; Cure Test; Thumbnail Hardness; Oven Aging; Scab Corrosion; Environmental Cycling; Accelerated Corrosion; Filiform Corrosion.

Environmental Chambers Testing: Temperature, Dust and Humidity Exposures are Performed during Durability Cycling Simulating Actual Environment; Microprocessors Control Chambers allowing Automatic Cycling and Tracking of Desired Time, Temperature and Humidity; Sizes up to 4m x 10m x 5m; Flow Measurement (Liquid and/or Gas); Hydraulic Pump Performance; Fan and Blower Delivery Capabilities, Radiator Heat Exchange Capacity, Heater Output; Dynamometer Measurements: 3/4 to 50 Horsepower; Stress Measurements; Pressure Testing; Durability Testing Mechanical/Electrical Cycling; Marine Products (Pumps/Motors/Electronics); Hydrostatic Leak Testing (up to 40,000 psi); Electrodynamic Vibration Systems: Generate Controlled Sine or Random Vibration, Sine-on Random Vibration Control, Transient Vibration Control, Mechanical Shock in Sawtooth, Half-sine and Squared Wave Forms, Field Data Replication, Operating or Non-Operating Mode Environments, High or Low Temperature and Humidity Conditions Can be Applied; Servohydraulic Test Systems: Control of Displacement, Force or Acceleration; Thermal Shock, Liquid and Air; Light Intensity; Sound; MAST, HALT/HASS.Component Durability; Pressure Cycling; Pressure-Vacuum Cycling; Fuel Recirculation;

(A2LA Cert. No. 0098.11 (Formerly 0038.01)) Revised 12/18/2020

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Temperature Cycling; Component Performance Testing; Fuel Exposure and Fuel Compatibility; Fuel Dispensing and Capacity Testing; Performance Testing including Fuel Flow and Electrical Evaluation; Hydrostatic Burst Testing; ECE Burn Testing on Plastic Fuel Tanks, CARB Diurnal Testing, Permeation Testing (including: Guideline 24), Injector and Manifold Testing on Fuel Lines and Connectors; Fuel Tanks; Fuel Pumps and Modules; Fuel Injectors; Fuel Filters; Fuel Pressure Regulators; Fuel Level Senders; Fuel Rails; Fuel Filler Necks, Plastic and Metal Fuel Tanks; Intake Manifolds; Spark Arrestors; Carbon Canisters; Gas Caps.

Using the following capabilities:

<u>Test Technology</u>	<u>Range</u>	<u>Reference Standard</u>
Air Velocity	(25 to 3,000) ft/min	ASTM D3574 (Test G)
Combined Environments:	(-77 to 177) °C; (20 to 95) % RH	MIL-STD-810 (Method 514 Procedure I)
Dimensional	(0.00015 to 36.000) in	WSS-M15P4
Force	(0.01 to 22,000) lbf	GMW3172
Humidity	(5 to 98) % RH	MIL-STD-810
Light Intensity	(0.01 to 3,300) lux	SDS-17
Liquid Flow	0.01 cc/min to 35 gpm	GM10004C
MAST: Multi Axial Simulation Table ²	(1 to 50) Hz 6 Degrees of Freedom +/- Three Axis in all Axis Linear Displacement 2.95 (+/-) Angular Displacement roll 6.8° Pitch and Yaw 8.5° Linear Acceleration at max payload Vertical: 5 g's, Lateral 3 g's, Longitudinal: 2.4 g's Max Payload 1000 lbs 4'x 6' to 6'x 8' Table Size	MAST USC.13324.200X 433132 (Per Customer Specification)
Pressure	(0.008 to 45,000) psi	ESDS7H-19B591-AA
Pulse Pressure	Up to 1000 PSIG, Up to 20 Hz	GMW14139
Servohydraulic Frequencies	Up to 50 Hz	MIL-STD-810 (Method 514 Procedure I)
Servohydraulic Load Capacity	Up to 150,000 lbf	MIL-STD-810 (Method 514 Procedure I)
Servohydraulic Stroke	Up to 50 inches	MIL-STD-810 (Method 514 Procedure I)
Sound	20 Hz to 20 kHz, (30 to 100) dB	USCAR-15
Temperature	(-100 to 650) °C	WSS-M2D496-A1
Torque	1 in·oz to 80,000 in·lbf	GMW15607
Vacuum	(0.008 to 29.98) in Hg	DVM-0001-AS
Vibration:		
Displacement	2 in Peak to Peak	MIL-STD-810 (Method 514 Procedure I)
Load/Impact Velocity	1/2 SINE up to 1 ms to 35 m/s at Terminal Peak	MIL-STD-810 (Method 514 Procedure I)

<u>Test Technology</u>	<u>Range</u>	<u>Reference Standard</u>
Mechanical Shock Capacity	Up to 3,500 g	MIL-STD-810 (Method 514 Procedure I)
Vibration Acceleration	Up to 100 g	MIL-STD-810 (Method 514 Procedure I)
Vibration Frequencies	(3 to 2,700) Hz	MIL-STD-810 (Method 514 Procedure I)
Vibration Load Capacity	Up to 22,000 lbf	MIL-STD-810 (Method 514 Procedure I)

Also using customer specific test methods utilizing any combination of test equipment parameters listed above and the following tests and standards:

<u>Test Method</u>	<u>Test Technology</u>
ABNT NBR 15940	Lead-acid Batteries for use in Motor Vehicles of Four or More Wheels
ABNT NBR 15941	Lead-acid Batteries for Motorcycles, Tricycles and Quadcycles
ASTM D1117	Evaluating Non-woven Fabrics
ASTM D1667	Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers
ASTM D3574	Test Methods for Flexible Cellular Materials (<i>except Test G, I4, Airflow, Test I2 Dynamic Fatigue Test by the Roller Shear at Constant Force, Test I4 Dynamic Fatigue Test for Carpet Cushion</i>)
ASTM D3575	Test Methods for Flexible Cellular Materials Made From Olefin (<i>except Sections 34-35, 45-46, 49-50, 66-67</i>)
ASTM D380	Method for Rubber Hose (<i>except Sections 12-13</i>)
ASTM D3882	Bow and Skew
ASTM D644	Moisture Content of Paper and Paperboard
ASTM D751	Coated Fabrics (<i>except Bursting Strength, Hydrostatic Pressure, Adhesion Coating, Strength of Coating, Crack Resistance, and Crush Resistance</i>)
ASTM D870	Testing Water Resistance of Coatings Using Water Immersion
ASTM F147	Flexibility of Non-metallic Gasket Materials
FLTM BN 024-02	Automotive Materials, Flammability
FLTM BN 106-02	Seam Fatigue Testing
FLTM BN 113-01	Bond Strength of Trim Assemblies
Ford MA-0130	Humidity Aging
GM9635P	Dust-out from Fiber Sound Absorber Pad
GMN8020TP, <i>except photometrics, Section 4.3.1.2.2.4</i>	Lamps – Development and Validation Test Procedures
GMW14130	Scuff and Mar Resistance
GMW14319 Section 4.3.2.0 (pressure cycling) only	Air Conditioning Hose and Coupling Assemblies R134a and R1234yf
GMW14329 (Sections 4.3, 4.5, and 4.6)	Performance Testing of Heater and Coolant Hoses
GMW14906	Lamp Development and Validation Test Procedures
GMW15201	Double-Coated Foam Tape for Exterior Attachments

Test Method**Test Technology**

GMW15724 (Section 4.3.8 (PDT) only)	Transmission and Engine Oil Cooler Plumbing System
GMW16190	Determination of Cantilever Sag Resistance
GMW3172 (Sections 8 and 9 only)	Specification for Electrical/Electronic Component Analytical /Development/Validation (A/D/V) Procedures for Conformance to Vehicle Environmental, Reliability, and Performance Requirements
GMW3182	Determination of Mass per Area
GMW3191	Connector Test and Validation Specification
GMW3211	Resistance to Stretch and Set
GMW3431 (<i>except section 4.4.7</i>)	General Procedures for Testing Switches
GMW4090	Weave and Yarn Count
IEC 60068-2-68 (<i>Except LA1 and LC1</i>)	Dust and Sand
IEC 60068-2-78	Test Cab: Damp Heat, Steady State
ISO 13937-2	Tear Properties of Fabrics
ISO 16750	Road Vehicles – Environmental Conditions and Testing for Electrical and Electronic Equipment
ISO 17235	Leather Softness
ISO 22088-3	Determination of Resistance to Environmental Stress Cracking (ESC)
ISO 291	Standard Atmosphere, Conditioning
ISO 6722	Road Vehicle 60 V to 600 V Single Core Cable Methods
JIS D 0203 (R2, S1, S2)	Moisture, Rain and Spray Test for Automobile Parts
JIS D 0207	Dust Test for Automobile Parts (F-Type Only)
JIS D 1601	Vibration Testing Methods for Automobile Parts
MIL-STD-810C/D/E/F/G (Sections 500-503, 507, 512-514, 516, 520, 524, 528 only)	Environmental Test Methods and Engineering Guidelines
NES M0153	Moisture Resistance Test Method
Nissan 26010NDS00 (<i>Except Photometrics</i>)	Front Lamp Testing
PF 4088	Exterior Automotive Lighting Devices
PF 90080 (Sections 9.3.1 and 9.3.2 only)	Coolant Hoses and Plumbing Assemblies
RTCA DO-160 Section 7.0	Environmental Conditions/Test Procedures for Airborne Equipment: Operation Shocks & Crash Safety
Section 8.0	Vibration
Section 10.0	Waterproofness
Section 12.0	Sand & Dust
Section 14.0	Salt Spray
SAE J323	Cold Cracking of Flexible Plastic Materials
SAE J575	Lighting Devices and Components for Use on Vehicles Less Than 2032 mm
SAE J855	Stretch and Set

Test Method**Test Technology**

SAE J912	Blocking Resistance
SAE J913	Wicking
SH-0117	Floor Mat Retention Clip Button Style Performance Specification
UL 2580 (Sections 30 to 32, 35 to 36, 39 to 41)	Outline of Investigation for Batteries for use in Electric Vehicles
UN ST/SG/AC.10 (T1 to T4 only)	Transport of Dangerous Goods Lithium Batteries
USCAR 15	Specification for Testing Automotive Miniature Bulb Socket/Circuit Plate Assemblies
USCAR 2	Performance Specification for Automotive Electrical Connector Systems
USCAR 20	Field Correlated Life Test Supplement to SAE/USCAR-2
USCAR 21	Performance Specification for Cable-to-Terminal Electrical Crimps
USCAR 3	Standard for Testing Automotive Miniature Bulbs
WSS-M15P27-F	Performance, Headlining, Formed
WSS-M15P27-G	Performance, Headlining, Formed
Abrasion	
ASTM D4157	Abrasion Resistance of Textiles, Wyzenbeek
FLTM BN 157-01	Determination of Leather Softness
GMW15487	Resistance to Abrasion of Organic Coating
NES M0136 Method 1	Abrasion Resistance
SAE J948	Resistance to Abrasion
Martindale Abrasion	
ASTM D4966	Abrasion Resistance of Textile Fabrics
ASTM D4970	Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Martindale Tester
GMW15651	Hook Fastener Resistance
GMW3405	Seam Fatigue for Automobile Textiles
ISO 12945-2	Determination of Fabric Propensity to Surface Fuzzing and to Pilling, Modified Martindale Method
ISO 12947-1	Abrasion Resistance of Fabrics by the Martindale Method
ISO 12947-2	Abrasion Resistance of Fabrics by the Martindale Method – Specimen Breakdown
ISO 12947-3	Abrasion Resistance of Fabrics by the Martindale Method – Mass Loss
ISO 12947-4	Abrasion Resistance of Fabrics by the Martindale Method – Assessment of Appearance Change
Taber Abrasion	
ASTM C501	Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser
ASTM D1044	Abrasion-Taber
ASTM D3389	Coated Fabrics Abrasion Resistance (Rotary Platform, Double-Head Abrader)
ASTM D3884	Abrasion Resistance of Textiles, Taber
ASTM D4060	Taber Abrasion, Organic Coatings
Taber Abrasion (cont'd)	

Test Method**Test Technology**

FLTM BN 108-02	Abrasion-Taber
FLTM BN 108-04	Scuffing
SAE J1530	Resistance to Abrasion, Bearding, and Fiber Loss of Carpet, Taber
SAE J1847	Taber Abrasion
SAE J365	Scuffing Resistance, Taber
Adhesion	
ASTM B571 (Sections 3.8 and 13)	Qualitative Adhesion Testing of Metallic Coatings
ASTM D3359	Adhesion Tape Test
ASTM D952	Bond of Cohesive Strength of Sheet Plastics and Electrical Insulation
GMW14829	Tape Adhesion Test for Paint Finishes
GMW14892 (Section 3.1.5)	Adhesion
Chemical Resistance	
AATCC TM 104	Spot Test Water
AATCC TM 15	Perspiration
AATCC TM 6	Spot Test Acid
ASTM D1693	Environmental Stress Cracking
ASTM D1793	Spot Test Water and Soap
ASTM D471	Rubber Property-Effect of Liquids
ASTM D543	Resistance of Plastics to Chemical Reagents
ASTM D925 Method A	Staining of Surfaces (Contact/Migration/Diffusion)
ASTM F146	Fluid Resistance of Gasket Materials
FLTM BI 113-01	Spot Test Water and Soap
FLTM BI 113-02	Spot Test Acid
GMW14102	Determination of Water Spotting Test
GMW14141	Dye Migration
GMW14334	Chemical Resistance to Fluids
GMW14444	Material Related Interior Part Performance
GMW14445	Sunscreen and Insect Repellent Resistance
GMW3402	Soil and Cleaner Resistance of Automotive Materials
NES M0133 Method 2 & 3	Chemical Resistance Test Methods
Nissan 28401NDS01 [10] Section CH/11	Resistance to Calcium Chloride
Color	
ASTM D1003	Haze and Luminous Transmittance
ASTM D2244	Calculation of Color Differences from Instrumentally Measured Color Coordinates
SAE J1545	Delta-E Value (Color Measurement)
Compression	
ASTM D1056	Compression Force
ASTM D1229	Compression Set at Low Temperatures

Test Method**Test Technology**

Compression (cont'd)

ASTM D1621

Compressive Properties of Rigid Cellular Plastics

ASTM D395

Rubber Property-Compression Set (Method B)

ASTM D575

Rubber Properties in Compression

ASTM D695

Compressive Properties of Rigid Plastics

ASTM F36

Compressibility and Recovery of Gasket Materials

ISO 3386-2

Flexible Cellular Polymeric Materials – Determination of Stress-Strain Characteristics in Compression

ISO 815

Determination of Compression Set of Thermoplastic/Vulcanized Rubber at Ambient, Elevated, or Low Level Temperatures

Corrosion

GMW15282

Corrosion/Undercutting Scribe Creepback

GMW15288

Scab Corrosion Creepback of Paint Systems for Metal Substrates

Salt Spray

ASTM B117

Operating Salt Spray (Fog) Apparatus

ASTM B368

Copper-Accelerated Acetic Acid-Salt Spray (Fog) Testing (CASS Test)

ASTM G85

Corrosion Testing

DIN 50021 (Withdrawn
06/88)¹

Salt Spray

FLTM BQ 105-01

Corrosion Testing, CASS

GM4298P (Inactive 12/10)¹

Salt Spray Test

GM4476P (Inactive 12/10)¹

CASS Test Copper-Accelerated Acetic Acid Salt Spray Test (Fog)

GMW3286

Neutral Salt Spray

GMW14458

CASS Test Copper Accelerated Acetic Acid Salt Spray Test

ISO 9227

Corrosion Testing, Salt Spray

Croaking

AATCC TM 8

Croaking, Dry and Wet

FLTM BN 107-01

Croaking, Dry and Wet

SAE J861

Croaking

GMW14872

Cyclic Corrosion

Chamber Humidity (20 to 100) %RH

Chamber Temperature Ambient to 70°C

Cycle Step Increments > 1 minute

Atomized Solution Collection: Adjustable

ASTM B380

Corrosion Testing of Decorative Electrodeposited Coatings by the Corrodokote Procedure

FLTM BI 123-01

Painted Sheet Metal Corrosion, Apg

SAE J2334

Cosmetic Corrosion

Density

ASTM D1622

Apparent Density of Rigid Cellular Plastics

ASTM D3776

Mass Per Unit Area (Weight) of Fabric

ASTM D792

Density Method A

ISO 1183-1

Determining the Density of Non-Cellular Plastics Using Immersion Method

ISO 845

Cellular Plastics and Rubbers – Determination in Apparent Density (Bulk)

Test Method

Test Technology

Dimensional
ASTM D1777
ASTM D5729
ASTM D7091

FLTM BI 117-01
ISO 2808, Mtd 7C
ISO 5084
SAE J882
SAE J883

Dynamic Mechanical
Properties
ASTM D4065
ASTM D4440

ASTM D5279
ISO 6721-1
ISO 6721-10
ISO 6721-7

Fatigue
ASTM D2097
ASTM D6182
Chrysler LP-463KB-38-01
FLTM BN 102-02

Flexural
ASTM D747
ASTM D790

ISO 178
SAE J949

Fogging
DIN 75201

GMW3235
HES D6508
SAE J1756
Toyota TSM0503G

Gloss
ASTM D523
FLTM BI 110-01
JIS Z 8741

Thickness of Textile Materials
Standard Test Method for Thickness of Nonwoven Fabrics
Standard Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals
Coating Thickness
Paints and Varnishes – Determination of Film Thickness
Determination of Thickness of Textiles and Textile Products
Thickness of Textile Materials
Dimensional Stability of Automotive Textiles

Dynamic Mechanical Properties of Plastics
Rheological Measurements of Polymer Melts Using Dynamic Mechanical Procedures
Dynamic Mechanical Properties of Plastics Using Torsion
Dynamic Mechanical Properties General Principles
Dynamic Mechanical Properties Viscosity, Non-Resonance
Dynamic Mechanical Properties Torsional, Non-Resonance

Newark Flex Test
Flexibility and Adhesion of Finish on Leather
Fabric Lint Pickup and Lint Loss
W Flex

Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
Determination of Flexural Properties
Stiffness (Modulus of Bending)

Determination of Windscreen Fogging Characteristics of Trim Materials in Motor Vehicles
Fogging
Fogging of Interior Materials for Automobiles
Determination of Fogging Characteristics of Interior Automotive Materials
Fogging Test Method for Non-Metallic Materials

Specular Gloss
Specular Gloss
Specular Glossiness Methods of Measurement



Test Method**Test Technology**

Hardness

ASTM D2240, Shore A and D

Durometer Hardness

ASTM D3363

Film Hardness by Pencil Test

ASTM D785 R Scale

Rockwell Hardness of Plastics and Electrical Insulating Materials

ISO 868

Plastic and Ebonite – Determination of Indentation Hardness by Means of a Durometer (Shore Hardness)

Heat

ASTM D2584

Ignition Loss of Cured Reinforced Resins

ASTM D3012

Thermal-Oxidative Stability of Propylene Plastics Using a Specimen Rotator Within an Oven

ASTM D3769

Heat Sag

ASTM D518

Rubber Deterioration-Surface Cracking

ASTM D573

Rubber-Deterioration in an Air Oven

ISO 188

Rubber, Vulcanized Thermoplastic-Accelerated Aging and Heat Resistance Test

ISO 3451-1

Determination of Ash

Humidity

ASTM D1735

Standard Practice for Testing Water Resistance of Coatings Using Water Fog Apparatus

SAE J1389

Corrosion Test for Insulation Materials

Impact

ASTM D2137

Brittleness Point of Flexible Polymers and Coated Fabrics

ASTM D5420

Gardner Impact

ASTM D746

Brittleness Temperature of Plastics Elastomers by Impact

GMW16746

Evaluating Brittleness of Painted Plastics

SAE J400

Chip Resistance of Surface Coatings

Charpy

ISO 179-1

Determination of Charpy Impact Properties, Non-Instrumented Impact Test

Instrumented Impact

ASTM D3763

Standard Test Method for High Speed Puncture Properties of Plastics Using Load and Displacement Sensors

ASTM D5628

Standard Test Method for Impact Resistance of Flat, Rigid Plastic Specimens by Means of a Falling Dart (Tup or Falling Mass)

Izod

ASTM D1822

Tensile Impact

ASTM D256

Izod Pendulum Impact Resistance of Plastics

ASTM D4812

Unnotched Cantilever Beam Impact Strength of Plastics

ISO 180

Plastics – Determination of Izod Impact Strength

Melt Flow

ASTM D1238

Melt Index (Flow Rate)

ISO 1133-1

Plastics – Determination of the Melt Mass-Flow Rate (MFR) and the Melt Volume-Flow Rate (MVR)

Test Method**Test Technology**

Odor

FLTM BO 131-03

GMW3205

GMW3259

SAE J1351

Toyota TSM0505G

VDA 270

VW PV3900

Ozone

ASTM D1149

ASTM D1171

VW PV3305

28400NDS26

Peel

ASTM D1000

ASTM D3330

ASTM D413

ASTM D903

PSTC 101

Permeability

ASTM D737

ASTM E96

Pilling

Chrysler LP-463KB-37-01

FLTM BN 108-03

FLTM BN 108-14

Protection Against Foreign
Objects and WaterDIN 40050-9 (Withdrawn
1993)¹

IEC 60529

ISO 20653

Scratch

FLTM BN 108-13

GMW14688

GMW14698 Method B

Interior Odor Test

Test Method for Determining the Resistance to Odor Propagation of Interior
Materials

Determination of Resistance to Mildew Growth

Hot Odor Test for Insulation Materials

Smell Quality of Non-Metallic Materials

Determination of the Odor Characteristics

Odor Test

Rubber Deterioration Surface Ozone Cracking in a Chamber

Rubber Deterioration Surface Ozone Cracking Outdoors or Chamber
(Triangular)

Test of Ozone Resistance and Permanent Deformation

Exposure Only

Unwind Pull (Method B only)

Peel Adhesion of Pressure Sensitive Tape

Rubber Property-Adhesion to Flexible Substrate

Peel or Stripping Strength of Adhesive Bonds

Non-ASTM Peel

Air Permeability of Fabrics, Fraiser Method

Water Vapor Transmissions

Resistance to Pilling of Textile Fabrics

Resistance to Pilling

Resistance to Pilling Wear of Leather

Protection Against Foreign Objects; Water and Contact; Electrical
Equipment (IP5KX, IP6KX, IPX1 through IPX4, IPX4K, IPX5, IPX6,
IPX6K, IPX7, IPX8, IPX9K only)Degrees of protection provided by enclosures (IP code) (IP5X, IP6X, IPX1
through IPX9 only)Road Vehicles – Degrees of Protection (IP-Code) – Protection Against
Foreign Objects, Water and Access – Electrical Equipment (IP5KX, IP6KX,
IPX1 through IPX4, IPX4K, IPX5, IPX6, IPX6K, IPX7, IPX8, IPX9K only)

Scratch Test

Resistance to Scratching

Scratch Resistance of Organic Coatings and Self-Adhesive Foils

Test Method**Test Technology**

Tear

ASTM D1004

Initial Tear Resistance of Plastic Film and Sheeting

ASTM D2261

Tongue Tear

ASTM D5587

Tearing Strength of Fabrics by the Trapezoid Procedure

ASTM D5733

Tearing Strength of Nonwoven Fabrics by the Trapezoid Procedure

ASTM D624

Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomer

GMW3326

Tearing Strength of Textile Materials by Trapezoid Method

GMW3387

Fiber Degradation of Automotive Textiles

ISO 34-1

Determination of Tear Strength of Thermoplastic/Vulcanized Rubber Using Trouser, Angle and Crescent Pieces

Tensile

ASTM D1708

Tensile Properties of Plastics

ASTM D1894

Static and Kinetic Coefficients of Friction of Plastic Film and Sheeting

ASTM D3163

Strength of Adhesive Bonded Rigid Lap Shear Joints

ASTM D412

Tensile Properties, Vulcanized Rubber and Thermoplastics Elastomers

ASTM D5034

Tensile Strength

ASTM D5035

Breaking Strength, Textile Fabrics, Strip Method

ASTM D638

Tensile Properties of Plastics (Including Poisson's Ratio)

ASTM D882

Tensile Properties Thin Plastic Sheeting

ASTM E132

Poisson's Ratio

ASTM F152

Tension Testing of Nonmetallic Gasket Materials

ISO 1798

Flexible Cellular Polymeric Materials- Determination of Tensile Strength and Elongation at Break

ISO 37

Determination of Tensile Stress/Strain Properties of Thermoplastic/Vulcanized Rubber

ISO 527-1

Tensile Properties Part 1 General Principles

ISO 527-2

Tensile Properties Part 2 Test Conditions for Molding and Extrusion Plastic

ISO 527-3

Tensile Properties Part 3 Film, Sheets

ISO 527-4

Tensile Properties Part 4 Isotropic and Orthotropic Fiber-Reinforced Plastics

ISO 527-5

Tensile Properties Part 5 Test Conditions for Unidirectional Fiber-Reinforced Plastics

ISO 8295

Coefficient of Friction

SAE J2044

Quick Connector Specification for Liquid Fuel and Vapor/Emissions Systems

Thermal Cycle

GM9200P

Accelerated Aging and Steaming

GMW14124

Automotive Environmental Cycles

VW PV1200

Resistance to Environmental Cycle Test (80 to -40) °C

VW PV2005

Resistance to Environmental Cycle Test

Vicat

ASTM D1525

Vicat Softening Temperature of Plastic

<u>Test Method</u>	<u>Test Technology</u>
ASTM D648	Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
ISO 306	Determination of Vicat Softening Temperature (VST) of Thermoplastic Materials
ISO 75-1	Plastics-Determination Temperature of Deflection Under Load Part 1 General Test Method
ISO 75-2	Plastics – Determination of Temperature of Deflection Under Load Part 2 Plastics and Ebonite
ISO 75-3	Plastics – Determination of Temperature of Deflection Under Load Part 3 High Strength Thermosetting
Weatherometer	
ASTM D2565	Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
ASTM D7869	Xenon Arc Exposure Test with Enhanced Light and Water Exposure for Transportation Coatings
ASTM G155	Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials
GMW14162	Colorfastness to Artificial Weathering
GMW3414	Colorfastness to Artificial Light
ISO 4892-2	Xenon Exposure Testing
SAE J1885 (Inactive 2008) ¹	Accelerated Exposure of Automotive Interior Trim Components Using a Controlled Irradiance Water Cool
SAE J1960 (Inactive 2008) ¹	Xenon Arc Accelerated Exposure (External)
SAE J2412	Accelerated Exposure of Automotive Interior Trim Components using a Controlled Irradiance Xenon-Arc
SAE J2527	Accelerated Exposure of Automotive Exterior Materials using a Controlled Irradiance Xenon-Arc

Xenon Weathering utilizing any combination of the following parameters²:

(0.2 to 1.38) W/m ² at 340nm	Chamber Air Temperature (15 to 90) °C
(0.45 to 3.11) W/m ² at 420 nm	Black Panel Temperature (25 to 125) °C
(26 to 166) W/m ² at (300 to 400) nm	Chamber Humidity (10 to 95) %RH

³This accreditation covers testing/calibration performed at the main laboratory listed above, and the following satellite laboratories listed below:

25440 Sherwood
Center Line, MI 48015

<u>Test Method</u>	<u>Test Technology</u>
Fuel Testing	
ES-CU5A-9H307-AA	Sender and Pump Assembly – Fuel Tank (with and without Integral Reservoir)
GMW14081	Fuel Pump Module Specification

Test Method

GMW14638 (Section 3.23)
GMW14658 (Section 3.4.4.2.1)
SAE J2045 (Section 4.5)
SAE J2260 (Section 7.6)
SAE J2260 (Section 7.7)
SAE J2060 (Section 7.8)

Test Technology

Auto-oxidized Fuel resistance
Coating Separation/Adhesion Procedure
Internal Fuel Resistance
Fuel Exposure pre-conditioning
Methanol Resistance
Resistance to Auto-oxidized fuel

14610 Jib Street
Plymouth, MI 48170

Test Method

Ford IP-0105
Ford MA-0128
Ford MA-0130
Ford MA-0131
Ford OR-0329
GMW14124
GMW3191
GMW3431(Sections 4.1.7, 4.3, 4.4,
4.6, 4.7, 4.8, 4.9) (*except 4.3.13,
4.4.3.2, 4.4.4, 4.4.7, 4.4.9*)
GMW8287
NES M0132
Nissan 96030 NDS00
PF-11084
WSS-M15P32-C
WSS-M15P45-A (*except 3.12*)
WSS-M15P4-E
WSS-M15P4-F
WSS-M15P4-G (Sections 3.4.1,
3.4.2, 3.5.1.1)

Test Technology

Instrument Panel Sunload Resistance
Simulated Sunload Resistance – Exterior
Humidity Aging
Heat Age
Sunload Resistance – Exterior Ornamentation
Automotive Environmental Cycles
Connector Test and Validation Specification
General Procedures for Testing Switches

Highly Accelerated Life Testing
Thermal Cycle Test Methods for Plastic Parts
Air Spoiler Testing
Door Trim Panel Assembly and Components
Trim Assembly, Enclosed Luggage Compartment Covering
Performance, Instrument Panel Assembly, Flexible Cover Skin
Material
Interior Trim, Assembly Performance
Assembly Performance, Hard Mold-In-Color Interior Components
Assembly Performance, Hard Mold-In-Color Interior Components



1920 Concept Dr.
Warren, MI 48091-1385

Test(s):

Abrasion Resistance
Taber

Traverse

Abrex

Adhesion Testing

Breaking Strength

Chemical Resistance

Solvent, Acids and Acid Rain,
Soap and Water, Synthetic Perspiration
Hydrogen Sulfide, Various Fluids

Chip or Gravel Resistance

Cleanability of Textiles and Plastics

Color Measurements

Instrumental, sphere

Visual (Light Booth)

Test Method(s):

GMW 15692;
ASTM D3884, D3389, D4060;
Chrysler LP-463KB-21-01;
Ford FLTM BN 108-02;
SAE J948, J1530, J1847;
NES M0141 (Section 6.2.8, Method 4);
NES M0154 (Section 18.1)
NES M0136 (Method 1);
NES M0141 (Section 6.2.8, Method 1)
Ford FLTM BN 155-01;
GS 97024-1, -4, -5

ASTM B571 (*except sections 6 and 11*), D3359;
Ford BI 106-01, BI 106-02;
GM 9502P (Inactive)¹;
GMW 3368, 14829

ASTM D5034

ASTM D1308, D4752;
Chrysler LP-463PB-31-01, LP-463PB-57-03;
Ford FLTM AN 101-01, BI 113-01, BI 113-02, BI 113-07,
BI 113-05, BI 152-01, BN 103-01, BN 112-08;
GMW 14333, 14334, 14864, 14869, 14701, 16625;
SAE J322;

ASTM D3170;
Ford BI 157-04, BI 157-06;
GMW 14700;
Chrysler LP 463PB-52-01;
SAE J400

GM 9531P (Inactive)¹;
GMW 3402, 14334, 14865, 16745;
Chrysler LP-463KC-04-01

ASTM D2244, E1331;
SAE J1545, J1717 (Appendix E)

SAE J1545;
ASTM D1729;
Ford BI 109-01;
AATCC (EP1);
ISO 105-A03



<u>Test(s):</u>	<u>Test Method(s):</u>
Compression Testing Compressibility (Gasket Materials)	ASTM F36
Compression Set (Rubber)	ASTM D395 (Method B)
Compressive Properties (Ridged Plastics)	ASTM D695; ISO 604
Corrosion Testing Spray (CASS) Testing	ASTM B368
Cyclic Corrosion Testing	Ford BQ 105-01, BI 123-01, BI 123-03, CETP 00.00-L-467; GM 4476P (Inactive) ¹ , 9511P, 9540P; GMW 14458, 14872, 15288; NES M0158-96 CCTI & CCTIV; SAE J2334
Crock, Rubbing, and Mar Resistance	Chrysler LP-463PB-54-01; Ford BI 161-01, BN 107-01; SAE J861; AATCC (TM8)
Density of Non-Cellular Plastics	ISO 1183-1 (Method A)
Density and Specific Gravity	ASTM D792, D3574 (Section A), D1217, D1475
Dust or Water Ingress	ISO 20653; IEC 60529; DIN 40 050-9; JIS D 0207; GMW 3431; MIL-STD 810G (Method 510.5)
Dynamic Sled (Crash Simulation, Front Impact, Side Impact, Rear Impact, Acceleration, Whiplash)	14 CFR 23; APTA PR-CS-S-011-99; FMVSS 202a, FMVSS 206 (Doors and Latching Mechanisms), FMVSS 207, FMVSS 208, FMVSS 214 (Side Impact), FMVSS 301 (Rear Impact); IIHS; EuroNCAP Whiplash; CNCAP Whiplash; JNCAP Whiplash; KNCAP Whiplash; IIHS RCAR-IIWPG Seat/Head Restraint Evaluation Protocol; NTEA-AMD Standardized Test Methods; UN ECE-17
Environmental Conditioning & Cycling Brittleness Temperature/ Cold Cracking	Chrysler LP-463LB-11-01-B, LP-463DD-07-01
Cold Cycling	Chrysler LP-463DD-08-02
Humidity	ASTM D1735, D2247; GMW 14729

<u>Test(s):</u>	<u>Test Method(s):</u>
Hot/ Cold/ Humidity Cycling	GM 9200P, 9310P; Chrysler LP-463DD-08-02
Hot/ Cold/ Humidity / IR	GMW 15432
Accelerated Ageing/Automotive Cycles	ASTM D5427; GMW 14124
Environmental Cycles / Exposure / Thermal Shock	Chrysler LP-463CB-10-01, LP-463LB-12-01, LP-463PB-22-01, LP-463PB-52-01, LP-463LB-13-01, LP-463PB-36-01; BI 107-05, BQ 104-07; DVO-0001-IP; GM 9310, 9540P; GMW 14124, 14872, 15432; MIL-STD 810G (Methods 501, 502, 503, 507, 521)
Evaluations	ASTM D610, D660, D661, D714, D1654; Ford BI 160-01 (<i>except procedure A</i>); GM 9102P; GMW 15282
Falling Sand Abrasion	ASTM D968
Filiform Corrosion	ASTM D2803; Ford BI 124-01
Film Thickness	ASTM B487, B659, D7091; Ford BI 117-01; GM4260P
Flexibility	ASTM D522, D4145; GM9503P; GMW16746
Flex/Fold Testing of Uncoated & Coated Textiles	Chrysler LP-463KB-13-01, LP-463LB-09-01; Ford FLTM BN 102-04A, BN 119-01
Flexural Properties of Plastic	ASTM D790; ISO 178; SAE J949
Flow Rates of Thermoplastics by Extrusion Plastomer	ASTM D1238; ISO 1133
Fluorescent UV Condensation Exposure	ASTM D4329, D4587, G151, G154; TSH3130G; SAE J2020
Foams	ASTM D3574 (<i>except G,H, I₂, I₄</i>)

Test(s):

Fogging

Test Method(s):

GMW 3235;
SAE J1756;
Chrysler LP-463DB-12-1;
NES MO153

Gloss/Haze Measurements

ASTM D523, D4039;
Ford BI 110-01;
SAE J1717 (Appendix E)

Hardness

Durometer Hardness (Rubber)

ASTM D2240 (Shore A&D); ISO 868

International Hardness

ASTM D1415 (Type M);

Microindentation Hardness (Knoop & Vickers)
(500 Kg)

Ford BI 112-02; ASTM E384

Pencil

ASTM D3363;

Rockwell Hardness

ASTM D785, E18;

(A,B,C, L, N, T, HRM, HRR)

ISO 2039-01

Humidity Resistance

Water Fog

ASTM D1735, D2247, D4585;

Condensing

Ford BI 104-02, BI 106-03, BQ 104-02;

Cleveland Condensing

GMW 14729

Impact

Gardner

ASTM D2794, D5420 (Geometry GC and GE);
Ford BI 108-01,
BO 151-01 (Method B [Impact Ball Shore A 72.5])

High Speed Puncture Properties of Plastics
Using Load and Displacement Sensors

ASTM D3763

Mass and Thickness Determination

Chrysler LP-463LB-07-01

Metallurgical Preparation & Evaluation

Coating Adhesion Testing

ASTM B571

Coating Thickness by Microscopic
Examination

ASTM B487; GM 4260P

Plating Thickness – Method 1 (Microscopic)

ASTM B659 (Method 7.1)

Mildew Growth / Mildew Resistance

GMW3259

Moisture & Temperature on Adhesive Bonds

ASTM D1151

Odor

Chrysler LP-463KC-09-01;
SAE J1351;
GMW 3205;
NES MO160;
TSM 0505G;
Ford BO 131-03

Test(s):

PACCAR Paint Performance

Salt Spray (Fog) Testing

Scratch/ Scrape/ Scuff/ Snag/ Mar Resistance
Scratch Resistance (Five Finger)

Resistance to Fiber Loss
Erichsen Scratch

Scuff and Mar

Sealer Adhesion

Set & Stretch

Shrinkage

Solvent Wipe

Stain Resistance

Sunscreen Lotion Resistance

Standard Atmosphere for Conditioning & Testing

Surface Roughness

Tear Strength

Tearing Strength (Tongue)

Tearing Strength (Trapezoidal)

Tear Strength of Conventional Vulcanized
Rubber and Thermoplastics

Tensile/Compression/Elongation

Tear Strength

Shear Strength

Bond Strength

Test Method(s):

PACCAR CMT-0033 (*except section 8.1*)

ASTM B117, G85;
ISO 9227;
Ford BI 103-01;
GM 4298P; GMW 3286;
NES M0140-01;
JIS 22371

Ford BN108-13; GMW 14688 (Method A);
Chrysler LP-463DD-18-01

SAE J1530-A (*Taber Abrasion Only*)
Chrysler LP-463DD-18-02

Ford BN 108-04;
GM 9150P; GMW 14130;
SAE J365

SAE J1523

SAE J855

SAE J883

ASTM D5402;
GM 9509P; GMW 15891

GMN 10033; Ford BI 113-08

ASTM D618; ISO 291

Ford BA 003-01

ASTM D2261

ASTM D5587

ASTM D624 (Types B, C & T)

ASTM D412 (Method A -Types A and C)

ASTM D624 (Types B, C and T)

ASTM D638 (Type I, *except Sections 5.2.4, 6.2, and 6.3*),
ASTM D903, D1000 (Sections 11-27, 37-53, 110-122, and
129-139), D1876, D3574 (Sections B-F, K, L);

Test(s):

Test Method(s):

Peels	Chrysler PS-9040; Ford BN 113-01; GMW 3371; SAE J1523
Tension (Plastics)	ASTM D638; ISO 527-1 & 2
Tension (Rubber)	ASTM D412
Tensile Textiles	ASTM D5035
Thickness Textiles	ASTM D1777
Three-Dimensional (3D) Image Blue-Light Scanning	
Scan Volume 200 mm x 150 mm x 150 mm	ATOS V8 SR1 Manual Basic; Customer-Specified
Scan Volume 500 mm x 380 mm x 380 mm	
Water Resistance	
Water Immersion	ASTM D870
Water Chemistry	Ford BI 104-01, BI 104-04
Car Wash	GMW 16745, 14865, 17103
Weathering (Artificial)	
Artificial Weathering (Xenon Arc)	ASTM D2565, D4459, G26; GMW 3414 (Cycle A and B), 14162; ISO 4892, Part 2; SAE J2412, J2527, J1885 (Inactive) ¹ , J1960 (Inactive) ¹ ; Ford BO 116-01
Weight/Mass	ASTM D3776
Whiteware	ASTM C373
(Water Absorption, Density, Porosity & Specific Gravity)	
Wicking	SAE J913
Width of Textile Fabric	ASTM D3774

<u>Test(s):</u>	<u>Test Method(s):</u>	<u>Parameter(s):</u>
<i>Flexible Test Cells</i>		
<u>Electrical</u>		
DC Voltage	AMD 005, 009, 022;	Up to 100 VDC
Resistance	USCAR 2, 15, 21;	(1 to 1,000) mOhm
DC Current	Chrysler PF 9590;	(1 to 100,000) Ohm
	GMW 3172, 3431;	(0.1 to 1.0) TOhm
	Customer Specifications ²	0.01 mA to 100 A
<u>Durability Testing</u>		
Mechanical Cycling	DVM 0019-ST;	Axial & Bending Fatigue:
	GMW 3067, 7699, 7000, 9123 , 3172;	(50,000 lb max)
	Chrysler PF 8502, PF 8401, PF 11029;	Ultimate Strength: (200,000 lb max)
	DC-10859, 10254;	Torsion: (up to 4000 ft./lbs – 100°
	Customer Specifications ²	Rotation)
		Pneumatic & Hydraulic actuation with
		force and/or position feedback
Hot Vibration	Ford CETP: 09.02-E-302,	Multiple Load Inputs
	09.02-E-304, 09.02-E-308,	(10 to 35,000) lbs
	09.02-E-309;	
	GMPT Catalytic Converter Assembly;	
	CTS section 4.4.2.1;	
	Chrysler PF-9010 (Section 2.4);	
	Customer Specifications ²	
Jounce & Squirm	ST-0036;	Durability Cycling of Seat Backs,
	Chrysler PF-10859, PF 8401;	Cushions and Bolster
	Customer Specifications ²	
<u>Multi Axis Simulation Table (MAST)</u> (6 axis) up to 100 Hz	ST-0009; DC-10859 (Heidedauerlauf); IP-0008 (Key Life Test); Customer Specifications ²	6 DOF, vertical, lateral, longitudinal pitch, roll, and yaw inputs (-50 to 177) °C
<u>High Temperature Air Flow/ Environmental Simulation Testing</u>	GMPT Catalytic Converter Assembly; CTS section 4.4.2.1; Ford CEPT: 09.02-E-300, 09.02-E-301; Customer Specifications ²	Rate & Temperature Programmable up to 2200 °F (1204 °C)

Test(s):

Test Method(s):

Parameter(s):

Environmental Testing

Solar Loading/ Heating Testing

High & Low Temperature Testing with Relative Humidity Thermal Shock

AMD 002, 05, 010, 011, 012, 014, 017;
GM9310P;
Chrysler PF 11084, 11029;
Ford SDS IT 0005, 9014;
MES PA 5500 D;
NES MO 131;
Customer Specifications²

Temperature:
(-100 to 374) °F / (-73 to 190) °C
(using various reach-in, walk-in, and drive-in chambers)

Humidity: Up to 95% RH

Noise Analysis Testing

BSR Objective and Jury Evaluator

GMW 7293, 14011;
Customer Specifications²

Real Time 33 db ambient

Vertical Pitch and Roll +4D Quiet Shaker System

GMW 14011, 14144, 14155, 14188, 14240, 14264, 15655;
Chrysler LP.7R027, LP.7R0774,
PF 90192, PF 90052, PF 90223,
PF 90232 (2015), PF 90243,
PF 90283;
Ford CETP 00.00-L-448,
CETP 01.10-L-419_2,
CETP 01.12-L-300,
CETP 18.03-L-400,
CETP 00.00-E-412,
CETP 01.10-L-413,
CETP 12.00-L-403,
CES_Seat Recliner Component Eng.,
CES_Seat Track Component Eng.,
DVM-0010-SM,
ES-6E5H-19980-AJ, Seat SDS v18 or newer

Vibration with and without Environmental Simulation

Sine or Random: Classical Shock

MIL STD 810F, 810G (Methods 514, 516);
MIL STD 202E;
MIL STD 167-1, 167-1A;
IEC-68-2-34;
IEC-68-2-6; IEC-68-2-27;
USCAR 15, 20;
SAE J1455; J1211
GMW 3172;
Customer Specifications and/or customer supplied profiles²

(1 to 5,000) Hz
13,000 pounds force sine
12,000 pounds force random
12,000 pounds sine on random
Field Data Replicator
Temperature: (-100 to 374) °F / (-73 to 190) °C (using various reach-in, walk-in, and drive-in chambers)
Humidity: Up to 95% RH
Remote Conditioners

Test(s):

Test Method(s):

Parameter(s):

Vehicle/ Component Road
Load Data Acquisition

ASTM E1237;
Customer Specifications²

Strain, Load, Acceleration,
Displacement, Temperature, Pressure,
Voltage, Speed.
(Maximum sampling rate speed
250,000 samples per second)

The laboratory is accredited for the test methods listed above. The accredited test methods are used in determining compliance with the material specifications listed below; however, the inclusion of these material specifications on this Scope does not confer laboratory accreditation to the material specifications. Inclusion of these material specifications on this Scope also does not confer accreditation for every method embedded within the specification. Only the methods listed above on this Scope are accredited.

Test(s):

Test Method(s):

Chrysler:

CS-11982

Electrical/Electronic (E/E) Environmental Specification

MS JP 1-3

Color Durability of Interior Materials

MS-DC 40

Co-Extruded Polyethylene Film

PF-10952

Floor Console Assembly System Requirements

PF-11084

Door Trim Panel Assembly and Components

PF-11203

Material Durability Requirements for Interior Plastic Trim Components

Ford:

WSS-M1F27

Luxury Leather

WSS-M8P18

Fabric Performance

WSS-M15P32-C

Trim Assembly, Enclosed Luggage Compartment Covering

WSS-M15P45-A,
except section 3.12

Performance, Instrument Panel Assembly, Flexible Cover Skin Material

WSS-M15P4-E

Interior Trim, Assembly Performance

WSS-M15P4-F

Assembly Performance, Hard Mold-in-Color Interior Components

WSS-M15P4-G

Assembly Performance, Hard Mold-In-Color Interior Components

WSS-M1F28

Leather

FMVSS 571.106

Brake Hoses

GM:

GMW14231

Automotive Fabrics

GMW14650

Performance Requirements for Exterior Plastic Parts

GMW16443

Peel Test Pressure Sensitive Adhesive

Japan:

JIS L 1096

Woven Fabrics

Hyundai:

MS 300-32	Woven, Knit
MS 320-05	Fabrics for Seats
Nissan:	
Nissan NES M0094	Flammability of Automotive Materials
SAE:	
SAE J1128	Wire Testing
SAE J1639	Test Methods for Nylon Materials
SAE J17	Latex Foam Rubbers
Toyota:	
Toyota TSH3130G	Paint Quality for Interior Parts
Volkswagen:	
VW PV3366	Elastomer Seals

¹ This laboratory's scope contains withdrawn or superseded methods. As a clarifier, this indicates that the applicable method itself has been withdrawn or is now considered "historical" and not that the laboratory's accreditation for the method has been withdrawn.

² Using the following standards and test methods:

ASTM, FMVSS, JIS, ISO, IP, SAE, GM, Ford, Chrysler, Mazda, Honda, Toyota, Navistar, Paccar, Volvo, Freightliner, and standards and specifications furnished by the customer for the parameters listed above and the equipment capabilities.



Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY DETROIT – WARREN 11 MILE

Warren, 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 28th day of August 2019.

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

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0098.11 (Formerly 0038.01)
Valid to February 28, 2021
Revised December 18, 2020

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