

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY DETROIT - WARREN 11 MILE 27485 George Merrelli Drive Warren, MI 48092

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MECHANICAL

Valid To: December 31, 2026 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 two satellite laboratory locations listed below to perform the following types of 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; 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; 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, Pressure Cycling; Pressure-Vacuum Cycling; Temperature Cycling; Component Performance Testing; Performance Testing including Electrical Evaluation; Hydrostatic Burst Testing

Using the following capabilities:

(A2LA Cert. No. 0098.11 (Formerly 0038.01)) 02/26/25

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Test Technology	Range	Reference Standard
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
Liquid Flow	0.01 cc/min to 35 gpm	GM10004C
MAST: Multi Axial Simulation Table ¹	(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°	MAST USC.13324.200X 433132 (Per Customer Specification)
	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	
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)
Temperature	(-100 to 650) °C	GMW14124
Torque	1 oz·in to 80,000 lbf·in	GMW15607
Vacuum	(0.008 to 29.98) in Hg	IEC 60068-2-13
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)
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:



Abrasion

ASTM D4157 Abrasion Resistance of Textiles, Wyzenbeek 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

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 D3389 Coated Fabrics Abrasion Resistance (Rotary Platform, Double-Head

Abrader)

ASTM D3884 Abrasion Resistance of Textiles, Taber
ASTM D4060 Taber Abrasion, Organic Coatings

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 Qualitative Adhesion Testing of Metallic Coatings (Except Draw and

Push tests)

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 Adhesion

Brittleness

Chrysler LP-463LB-11-01 Resistance to Cold Cracking of General Trim Materials

Chrysler LP-463DD-07-01

Charpy

ISO 179-1 Charpy Impact Properties, Non-Instrumented Impact Test

AATCC TM 104 Spot Test Water
AATCC TM 15 Perspiration
AATCC TM 6 Spot Test Acid

ASTM D1308 Effect of Household Chemicals on Clear and Pigmented Organic

Finishes

ASTM D4752 Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich

Primers by Solvent Rub

ASTM D1693 Environmental Stress Cracking
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

Chrysler LP-463PB-31-01 Resistance to Various Fluids

Chrysler LP-463PB-57-03 Automotive Fluids Staining of Plastics

FLTM AN 101-01 Resistance of Textiles to Bleeding, Perspiration and Water Spotting

FLTM BI 113-01 Spot Test Water and Soap

FLTM BI 113-02 Spot Test Acid

FLTM BI 113-05 Acid Spotting of Painted Test Panels or Actual Finished Parts

FLTM BI 113-07 Resistance to Synthetic Perspiration Staining

FLTM BI 152-01 Resistance of Paint Films to Solvents

FLTM BN 103-01 Resistance of Coated Fabrics and Plastic Film to Migration Staining

and Blocking

FLTM BN 112-08 Soiling & Cleanability Test for Interior Trim Materials

GMW14102 Determination of Water Spotting Test

GMW14141 Dye Migration

GMW14333 Fuel Resistance of Automotive Exterior Materials and Components

GMW14334 Chemical Resistance to Fluids

GMW14444 Material Related Interior Part Performance GMW14445 Sunscreen and Insect Repellent Resistance

GMW14864 Procedure for Determining the Staining of Trim Materials Due to

Sulfur Dioxide, SO2, and Hydrogen Sulfide, H2S

GMW14701 Resistance of Coatings to Chemical Etching and Distortion

GMW16625 Preparation of Acid Rain Solution

GMW3402 Soil and Cleaner Resistance of Automotive Materials

NES M0133 Method 2 & 3 Chemical Resistance Test Methods Nissan 28401NDS01 [10] Resistance to Calcium Chloride

Section CH/11

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

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

Salt Spray

ASTM B117 Operating Salt Spray (Fog) Apparatus

ASTM G85 Corrosion Testing
DIN 50021 (Withdrawn Salt Spray (SS only)

06/88)

GM4298P (Inactive 12/10) Salt Spray Test GMW3286 Neutral Salt Spray

ISO 9227 Corrosion Testing, Salt Spray

RTCA DO-160 Environmental Conditions/Test Procedures for Airborne Equipment:

Section 14.0 Salt Spray

Crocking

AATCC TM 8 Crocking, Dry and Wet FLTM BN 107-01 Crocking, Dry and Wet

SAE J861 Crocking

Density

ASTM D1622 Apparent Density of Rigid Cellular Plastics ASTM D3776 Mass Per Unit Area (Weight) of Fabric

ASTM D792 Density Method A

GMW3182 Determination of Mass per Area

ISO 1183-1 Determining the Density of Non-Cellular Plastics Using Immersion

Method

ISO 845 Cellular Plastics and Rubbers – Determination in Apparent Density

(Bulk)

Dimensional

ASTM D1777 Thickness of Textile Materials

ASTM D5729 Standard Test Method for Thickness of Nonwoven Fabrics
ASTM D7091 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

FLTM BI 117-01 Coating Thickness

ISO 5084 Determination of Thickness of Textiles and Textile Products

SAE J882 Thickness of Textile Materials

Page

SAE J883 Dimensional Stability of Automotive Textiles

Environmental Exposure

IEC 60068-2-78 Test Cab: Damp Heat, Steady State

ISO 22088-3 Determination of Resistance to Environmental Stress Cracking (ESC)

Environmental Test Methods and Engineering Guidelines

MIL-STD-810C/D/E/F/G (Sections 500-503, 507, 512-514, 516, 520, 524,

528 only)

NES M0153 Moisture Resistance Test Method

SAE J323 Cold Cracking of Flexible Plastic Materials

ISO 4892-3 Plastics - Methods of exposure to laboratory light sources

Fabric, Leather, and Other Textiles

ASTM D1117 Evaluating Non-woven Fabrics

ASTM D751 Coated Fabrics (except Bursting Strength, Hydrostatic Pressure,

Adhesion Coating, Strength of Coating, Crack Resistance, and Crush

Resistance)

FLTM BN 106-02 Seam Fatigue Testing

GMW3211 Resistance to Stretch and Set ISO 13937-2 Tear Properties of Fabrics

SAE J913 Wicking

SAE J855 Stretch and Set

Fatigue

ASTM D6182 Flexibility and Adhesion of Finish on Leather

Flexural

ASTM D790 Flexural Properties of Unreinforced and Reinforced Plastics and

Electrical Insulating Materials

ISO 178 Determination of Flexural Properties SAE J949 Stiffness (Modulus of Bending)

Foams and Flexible Cellular Materials

ASTM D1667 Flexible Cellular Materials-Vinyl Chloride Polymers and Copolymers
ASTM D3574 Test Methods for Flexible Cellular Materials (except Test G, I2, I3, I4,

15)

ASTM D3575 Test Methods for Flexible Cellular Materials Made from Olefin

(except Sections 34-35, 45-46, 49-50, 66-67)

Fogging

GMW3235 Fogging

SAE J1756 Fogging Characteristics of Interior Automotive Materials

Toyota TSM0503G Fogging Test Method for Non-Metallic Materials

Gloss

ASTM D523 Specular Gloss FLTM BI 110-01 Specular Gloss

JIS Z 8741 Specular Glossiness Methods of Measurement

Test Method Test Technology

Handling Drop/Free Fall

GMW3172 section 9.3.10 General Specification for Electrical/Electronic Components -

Environmental/Durability

ISO 16750-3 section 4.3 Mechanical Loads

Hardness

ASTM D2240, Shore A Durometer Hardness

and D

ASTM D3363 Film Hardness by Pencil Test

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 SAE J912 Blocking Resistance

Hoses and Hard/Soft Lines

ASTM D380 Method for Rubber Hose (except Sections 12-13)

GMW14319 Section 4.3.20 Air Conditioning Hose and Coupling Assemblies R134a and R1234yf

(pressure cycling) only

GMW14329 (Sections 4.3, Performance Testing of Heater and Coolant Hoses

4.5, and 4.6)

GMW15724 (Section 4.3.8 Transmission and Engine Oil Cooler Plumbing System

(PDT) only)

PF 90080 (Sections 9.3.1 Coolant Hoses and Plumbing Assemblies

and 9.3.2 only)

Humidity & Water Resistance

ASTM D870 Testing Water Resistance of Coatings Using Water Immersion
ASTM D1735 Standard Practice for Testing Water Resistance of Coatings Using

Water Fog Apparatus

Impact

ASTM D5420 Gardner Impact

GMW16746 Evaluating Brittleness of Painted Plastics SAE J400 Chip Resistance of Surface Coatings

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

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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)

<u>Odor</u>

FLTM BO 131-03 Interior Odor Test

GMW3205 Test Method for Determining the Resistance to Odor Propagation of

Interior Materials

GMW3259 Determination of Resistance to Mildew Growth

SAE J1351 Hot Odor Test for Insulation Materials
VDA 270 Determination of the Odor Characteristics

VW PV3900 Odor Test

Ozone

ASTM D1149 Rubber Deterioration Surface Ozone Cracking in a Chamber (Method B

only)

28400NDS26 Exposure Only

Peel

1993)

ASTM D1000 Unwind Pull (Method B only)

ASTM D3330 Peel Adhesion of Pressure Sensitive Tape
ASTM D903 Peel or Stripping Strength of Adhesive Bonds

PSTC 101 Non-ASTM Peel

Protection against Dust, Sand, Water, or Foreign Object Ingress

DIN 40050-9 (Withdrawn Protection Against Foreign Objects; Water and Contact; Electrical

Equipment (IP5KX, IP6KX, IPX1 through IPX4, IPX4K, IPX5, IPX6,

IPX6K, IPX7, IPX8, IPX9K only)

IEC 60068-2-68 Dust and Sand (except LA1 and LC1)

IEC 60529 Degrees of protection provided by enclosures (IP code) (IP5X, IP6X,

IPX1 through IPX9 only)

ISO 20653 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)

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)

Scratch

FLTM BN 108-13 Scratch Test

GMW14130 Scuff and Mar Resistance GMW14688 Resistance to Scratching

GMW14698 Method B Scratch Resistance of Organic Coatings and Self-Adhesive Foils

Chrysler LP-463DD-18-01 Scratch and Mar Resistance of Automotive Plastics

Tear

ASTM D1004 Initial Tear Resistance of Plastic Film and Sheeting

ASTM D2261 Tongue Tear

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Test Method	Test Technology	
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 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		
GMW14124	Automotive Environmental Cycles	
VW PV1200	Resistance to Environmental Cycle Test (80 to -40) °C	
Ford CETP 00.00.E-412	Sections 6.4.5.1-6.4.5.8	
FCA CS.00056	Sections 5.3.1-5.3.7	
ISO 16750-4 section 5.4	Temperature Shock with Splash Water	
Vibration	Charle	
IEC 60068-2-27	Shock Vibration broadband random and guidanas	
IEC 60068-2-64	Vibration, broadband random and guidance	
JIS D 1601	Vibration Testing Methods for Automobile Parts	

Vicat and HDT/DTUL

ISO 75-3

Materials ISO 75-1 Plastics-Determination Temperature of Deflection Under Load Part General Test Method ISO 75-2 Plastics – Determination of Temperature of Deflection Under Load I	TOWN WHAT TID IT DIE	
Edgewise Position ISO 306 Determination of Vicat Softening Temperature (VST) of Thermopla Materials ISO 75-1 Plastics-Determination Temperature of Deflection Under Load Part General Test Method ISO 75-2 Plastics – Determination of Temperature of Deflection Under Load I	ASTM D1525	Vicat Softening Temperature of Plastic
Materials ISO 75-1 Plastics-Determination Temperature of Deflection Under Load Part General Test Method ISO 75-2 Plastics – Determination of Temperature of Deflection Under Load I	ASTM D648	<u>*</u>
General Test Method ISO 75-2 Plastics – Determination of Temperature of Deflection Under Load 1	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

Plastics – Determination of Temperature of Deflection Under Load Part

ELEMENT MATERIALS TECHNOLOGY¹

3 High Strength Thermosetting

14610 Jib Street Plymouth, MI 48170

<u>Test Method</u> <u>Test Technology</u>

Ford IP-0105	Instrument Panel Sunload Resistance
Ford MA-0128	Simulated Sunload Resistance – Exterior
Ford MA-0130	Humidity Aging
Ford MA-0131	Heat Age
Ford OR-0329	Sunload Resistance – Exterior Ornamentation
GMW14124	Automotive Environmental Cycles
NES M0132	Thermal Cycle Test Methods for Plastic Parts
Nissan 96030 NDS00	Air Spoiler Testing
PF-11084	Door Trim Panel Assembly and Components
WSS-M15P32-C	Trim Assembly, Enclosed Luggage Compartment Covering
WSS-M15P45-A (except 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 (Sections 3.4.1, 3.4.2, 3.5.1.1)	Assembly Performance, Hard Mold-In-Color Interior Components



ELEMENT MATERIALS TECHNOLOGY¹ 1920 Concept Dr.

Warren, MI 48091-1385

<u>Test(s):</u> <u>Test Method(s):</u>

Abrasion Resistance

Abrex Ford FLTM BN 155-01; GS 97024-1, -4, -5; IEC 60068-2-70,

TM5010, DIN68-2-70, D24 5020

Adhesion Testing ASTM B571 (except sections 6 and 11), ASTM D3359;

Ford BI 106-01, BI 106-02; GMW3368, GMW14829

Bend ASTM D522

Mandrel Bend

Chip or Gravel Resistance ASTM D3170; Ford BI 157-04, BI 157-06;

GMW14700; Chrysler LP 463PB-52-01; SAE J400

Color Measurements

Instrumental, sphere ASTM D2244, ASTM E1331;

SAE J1545, J1717 (Appendix E)

Visual (Light Booth) SAE J1545; ASTM D1729; Ford BI 109-01;

AATCC (EP1); ISO 105-A03

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;

GMW14458, GMW14872, GMW15288; GMW15288 NES M0158-96 CCTI & CCTIV; SAE J2334, RTS.1681,

ASTM B380, SAE J2334

Environmental Conditioning &

Cycling

Cold Cycling Chrysler LP-463DD-08-02

Humidity ASTM D1735, ASTM D2247; GMW14729 Hot/ Cold/ Humidity Cycling GM9310P; Chrysler LP-463DD-08-02

Hot/ Cold/ Humidity / IR GMW15432

Accelerated Ageing/Automotive ASTM D5427; GMW14124

Cycles

Environmental Cycles / Exposure / Chrysler LP-463CB-10-01, LP-463LB-12-01,

Thermal Shock 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;

GM9310, GMW14124, GMW14872, GMW15432; MIL-STD 810G (Methods 501, 502, 503, 507, 521)

Evaluations ASTM D610, D660, D661, D714, D1654;

Ford BI 160-01 (except procedure A);

GMW15282

Falling Sand Abrasion ASTM D968

Filiform Corrosion ASTM D2803; Ford BI 124-01 Film Thickness ASTM D7091; Ford BI 117-01;

Fluorescent UV Condensation ASTM D4329, ASTM D4587, ASTM G151, ASTM G154;

Exposure TSH3130G; SAE J2020

Flame UL2596

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<u>Test(s):</u> <u>Test Method(s):</u>

Fogging GMW3235; HES D6508 SAE J1756; VW PV 3015,

BSDM0503,TSM05003, ISO 6452, RTS.1755, VCS 1027,2719,

STD420-003

Chrysler LP-463DB-12-1; NES M0161; DIN 75201

Gloss/Haze Measurements ASTM D523, ASTM D4039; Ford BI 110-01;

SAE J1717 (Appendix E)

Hardness

Pencil ASTM D3363

Humidity Resistance

Water Fog ASTM D1735, ASTM D2247, ASTM D4585; Condensing Ford BI 104-02, BI 106-03, BQ 104-02;

Cleveland Condensing GMW14729

Impact

Gardner ASTM D2794, ASTM D5420 (Geometry GC and GE);

Ford BI 108-01,

BO 151-01 (Method B [Impact Ball Shore A 72.5])

Odor NES M0160; TSM 0505G, GSMD0505, VDA 270, FLTM

BO131-03, TS300-00-0001, GMW3205, STD 429-0001,

GMW3205, STD429-0001, GMW 17914, LP463KC-09-01, MS

Smell Quality of Non-Metallic 300-34, PV3900, SAE J1351

Materials Toyota TSM0505G

PACCAR Paint Performance PACCAR CMT-0033 (except section 8.1, 9.2.4, 9.3, 9.32) Salt Spray (Fog) Testing ASTM B117, ASTM G85; ISO 9227; Ford BI 103-01;

GMW3286; NES M0140-01; JIS Z2371; IEC 60068-2-11

Solvent Wipe ASTM D5402; GMW15891 Standard Atmosphere for ASTM D618; ISO 291

Conditioning & Testing

Three-Dimensional (3D) Image Blue-

Light Scanning

Scan Volume 200 mm x 150 mm ATOS V8 SR1 Manual Basic; Customer-Specified

x 150 mm

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 GMW16745

Weathering (Artificial)

Weatherometer

ASTM D2565 Xenon-Arc Exposure of Plastics Intended for Outdoor

Applications

ASTM D4459 Xenon-Arc Exposure of Plastics Intended for Indoor 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

Ford FLTM BO 116-01 Resistance to Interior Weathering GMW14162 Colorfastness to Artificial Weathering GMW3414 Colorfastness to Artificial Light

(A2LA Cert. No. 0098.11 (Formerly 0038.01)) 02/26/25

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Test(s): **Test Method(s):**

ISO 4892-2 Xenon Exposure Testing

SAE J1885 (Inactive 2008) Accelerated Exposure of Automotive Interior Trim Components

Using a Controlled Irradiance Water Cool

SAE J1960 (Inactive 2008) 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

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

Test(s): **Test Method(s):** Parameter(s):

Flexible Test Cells

Durability Testing

Mechanical Cycling DVM 0019-ST; Axial & Bending Fatigue:

GMW3067, GMW7699, GMW7000, (50,000 lb max)

GMW9123, GMW3172; Ultimate Strength: (200,000 lb

Chrysler PF 8502, PF 8401, PF 11029; max)

DC-10859, 10254; Torsion: (up to 4000 ft./lbs –

Customer Specifications² 100° Rotation)

Pneumatic & Hydraulic actuation with force and/or

position feedback

Slosh PF.90083; PF.8950 Table travel length up to 1250

Table weight capacity 1300 lbs

Table speed up to 300 mm /

Table acceleration up to 1.0 g Table cycle rate up to 3 Hz

Multi Axis Simulation ST-0009; DC-10859 6 DOF, vertical, lateral, longitudinal pitch, roll, and Table (MAST) (Heidedauerlauf);

IP-0008 (Key Life Test); Customer (6 axis) up to 100 Hz vaw inputs

Specifications² (-50 to 177) °C

Environmental Testing GM9310P; Temperature:

> $(-100 \text{ to } 374) \,^{\circ}\text{F} / (-73 \text{ to } 190) \,^{\circ}\text{C}$ Chrysler PF 11084, 11029; (using various reach-in, walk-Ford SDS IT 0005, 9014;

Solar Loading/ in, and drive-in chambers) **Heating Testing** MES PA 5500 D;

NES MO 131;

Test(s):	Test Method(s):	Parameter(s):
High & Low Temperature Testing with Relative Humidity Thermal Shock	Customer Specifications ²	Humidity: Up to 95% RH
Noise Analysis Testing		
BSR Objective and Jury Evaluator	GMW7293, GMW14011; Customer Specifications ²	Real Time 33 db ambient
Vertical Pitch and Roll	GMW14011, GMW14144,	
+4D	GMW14011, GMW14144, GMW14155, GMW14188,	
Quiet Shaker System	GMW14240, GMW14264,	
Quitte summer system	GMW15655;	
	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	

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

Test(s): Test Method(s):

Ford:

WSS-M1F27 Luxury Leather WSS-M8P18 Fabric Performance

WSS-M15P32-C Trim Assembly, Enclosed Luggage Compartment Covering

WSS-M15P45-A, Performance, Instrument Panel Assembly, Flexible Cover Skin Material

except section 3.12

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

GMW15201 Double-Coated Foam Tape for Exterior Attachments

GMW14325 HVAC Air Ducts

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 J1639 Test Methods for Nylon Materials

SAE J17 Latex Foam Rubbers

Toyota:

Toyota TSH3130G Paint Quality for Interior Parts

Volkswagen:

VW PV3366 Elastomer Seals

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.

¹ This accreditation covers the specified testing performed at the laboratory locations listed in this scope of accreditation.

² Using the following standards and test methods:



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 26th day of February 2025.

Mr. Trace McInturff, Vice President, Accreditation Services For the Accreditation Council

Certificate Number 0098.11

Valid to December 31, 2026

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